# A Quantitative and Qualitative Inquiry Into The Relationship Between Self-Esteem and Coping Processes of University Students

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## **ABSTRACT**

University life brings with it many stressful events, which place varying demands on students. During this time many students leave home for the first time, have a new found social life, a part-time job and also have to contend with the academic expectations associated with third level education. Some individuals are able to deal more readily with these stresses than others. This study set out to identify the relationship between levels of self-esteem and coping processes, utilised by students, with factors such as, age, gender, university programme and the year of programme from an Irish perspective.

The research design followed an Explanatory Sequential Mixed Method Design. The study comprised of two phases, phase one quantitative followed by phase two qualitative on a study group of 1200 students, 300 chosen randomly from each annual cohort of University of Limerick undergraduates. Using a cross-sectional correlational design, two published questionnaires namely Rosenberg Self-Esteem Scale and the Folkman and Lazarus Ways of Coping Questionnaire plus a demographic questionnaire were posted to the selected students. A descriptive qualitative design, using semi-structured interviews with eight students, was used to augment and further explain the quantitative findings arising from phase one of the study.

The response rate was 40% (n = 479). The quantitative data were analysed using both parametric and non-parametric methods. Significant associations were found between self-esteem and coping; self-esteem and gender; coping and age; coping and year of university programme, as well as coping and programme title. Using thematic analysis, the quantitative findings were further explored in phase two of the study. The arising themes were the Experiences of Stress, Social Supports and Coping, and Explaining Self-Esteem and Gender and these are discussed in the light of the quantitative results. The conclusions and findings from both phases of the study are discussed collectively and a range of recommendations, including policy implications and topics for further research, are provided.

# **DECLARATION**

I hereby declare that I am the s	sole author of this thesis and that it has not been submitted
for any other academic award.	References and acknowledgements have been made, where
necessary, to the work of other	S.
Signature:	Date:
C	
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## LIST OF ABBREVIATIONS

\* p = .05

\*\* p = .01

\*\*\* p = .001

Agegp2 Age in Two Groups

DCA Detrended Correspondence Analysis

HSS Humanities and Social Sciences

n Sample Size

Natreg Nationalities Regrouped

PCA Principal Component Analysis

RSES Rosenberg Self-Esteem Scale

SEgrp2 Self-Esteem in Two Groups

SEgrp3 Self-Esteem in Three Groups

SET Science, Engineering and Technology

TSE Total Self-Esteem

WOCQ Ways of Coping Questionnaire

## Chapter 1. INTRODUCTION

Whilst university life is generally considered to be a very positive experience, it is regarded by many students as being very stressful (Heiman 2004; Kariv and Heiman 2005; Johnson, Batia and Haun 2008; Bahri-Yusoff, Abdul-Rahim and Yaacob 2010; Calogero, Park, Rahemtulla and Williams 2010; Dahan and Bedos 2010; Liao, Knoesen, Deng, Tang, Castle, Bookun, Hao, Chen and Liu 2010). In addition to becoming accustomed to a new environment, there is also the engagement in new relationships and experiences. Hudd, Dumlao, Erdmann-Sager, Murray, Phan, Soukas and Yokozuka (2000) have identified that the transition to college can be a very stressful process for many students and that individuals, who experience high levels of stress, were more likely to engage in unhealthy behaviours. Helping adolescents, to advance their ways of adapting to stress, facilitates in the prevention of problems occurring in the future (Compas, Phares and Ledoux 1989; Petersen, Louw, Dumont and Malope 2010). The current study examines the relationship between the coping processes of students and their level of self-esteem.

Students within the university setting, bring with them their own unique story. Their evolving stories have been influenced by, for example, their relationships with parents, caregivers, peers, friends and teachers. The 'holding world' or the psychosocial environment of the individual is the world in which an individual is embedded, at any particular time, in their evolutionary journey (Winnicott 1965; Kegan 1982). This world influences everything one does, think and feel. When one is in a good holding world, one copes creatively from within a real and safe place. When the holding world of an individual is not safe, then the coping processes used are still creative. However, they are expressed in a defensive and protective way (Humphreys and Ruddle 2010). Individual's

interpretation of their experiences and ability to cope with stressors is mediated by their sense of self and in particular their self-attitude (Fernandez, Mutran and Reitzes 1998; Mruk 1999; 2006; Abela 2002; Sassaroli and Ruggiero 2005). According to Rosenberg, Schooler, Schoenbach and Rosenberg (1995), the self-attitude, referred to as global selfesteem, is the positive or negative attitude towards oneself; the self refers to the total self rather than to a single dimension. Furthermore, according to Rosenberg et al. (1995), global self-esteem is a good indicator of psychological well-being. Similarly, Robins and Hendin (2001) contend that global self-esteem has great implications for interpersonal and intrapsychic functioning. Global self-esteem is concerned more with self-acceptance and self-respect. How an individual copes with stress is influenced by many factors. To be effective, coping is contextual and changes overtime and across an array of circumstances (Folkman and Lazarus 1985; Goh, Sawang and Oei 2010). The current study has endeavoured to ascertain the relationship between the coping processes of students and their level of self-esteem, age, gender, year of university programme, and programme title. It is a mixed methods study, using an explanatory sequential design, and is comprised of two phases. Phase one involves a cross-sectional correlational design study (n=479). Phase two is comprised of a qualitative descriptive study (n=8). Both phases of the study are interactive with the major emphasis on phase one, the quantitative study. The findings from phase one of the study have been further examined and explained within the qualitative component of the study. Following this introduction, there are ten chapters in this thesis and a synopsis of each is provided below.

Chapter 2, the first chapter of the literature review, outlines the evolving journey of the developing self. The development of the self is seen as a dynamic and continuous process, which is influenced by one's interactions with significant others and the multi-dimensional

environment in which we live. The impact of parenting and attachment and friendships are discussed in the context of the developing individual, from infancy to young adulthood. The substantial evidence highlighting the link between secure parent-child attachment and successful friendships in childhood and adolescence is described (Elicker, Englund and Scroufe 1992). The process of individuation is discussed in this chapter, as is the influence of friends on the lives of adolescents and young adults.

Chapter 3 provides a more in-depth discussion on the self-attitude component of the self namely, self-esteem. The varying theoretical perspectives on self-esteem are argued, with a particular emphasis on Rosenberg's (1965) theory on global self-esteem and the Rosenberg Self-Esteem Scale. The changes in self-esteem levels across the age trajectory are discussed. Whilst there has been evidence of some degree of inconsistencies with studies in this area, generally speaking, higher levels of self-esteem are experienced by younger children and as the child gets older it decreases (Robins, Trzesniewski, Tracy, Gosling and Potter 2002; Robins and Trzesniewski 2005). Self-esteem increases in levels during the college years (18 to 22 years) (Twenge and Campbell 2001; Huang 2010). Gender and differences in self-esteem levels are also examined. The last section of this chapter discusses the associations between coping processes and self-esteem amongst university students.

Chapter 4 explores the theories of stress viz. the response theory (Cannon 1939; Seyle 1956; 1975), the stimulus theory of stress (Holme and Rahe 1967), and the transactional model of stress (Lazarus and Folkman 1984). The relationship between stress and university students is outlined, prior to examining the theories of coping. Coping is

explained and this includes the psychoanalytic approach, coping and hierarchal styles, coping as a trait, the cognitive model of coping and coping as a process. The Ways of Coping Questionnaire (Folkman and Lazarus 1988), which is one of the questionnaires used in the current study, is discussed in relation to research studies which have used it. Age and gender are examined in their relationship with coping processes. Studies, relating to coping and university students, are evaluated in the last section of this chapter.

Chapter 5 provides an overview of the mixed methods research design including sequential explanatory design. The Lazarus and Folkman (1984) Transactional Model of Coping is the theoretical framework applied to the study. The philosophy which inspired the study was that of critical realism. The premise behind critical realism is that entities exist irrespective of how they are theorised and perceived. Maxwell and Mittapalli (2010) contend that beliefs, values, feelings and emotions are important constituents in the causal explanations within social sciences.

Chapter 6 introduces the quantitative methods utilised in phase one of the study. A detailed account of the cross-sectional correlational design is investigated in terms of the research aims, development of the hypotheses, ethical considerations, and the stratified random sampling method which had been used to recruit the cohort of university students (n = 479). The three questionnaires viz. demographic questionnaire, Rosenberg Self-Esteem Scale (Rosenberg 1965), and the Ways of Coping Questionnaire (Folkman and Lazarus 1988), which are used for data collection, are reviewed in this chapter

Chapter 7 introduces the descriptive, and parametric and non-parametric inferential statistics and results. The psychometric tests performed on the Rosenberg Self-Esteem Scale (Rosenberg 1965) and the Ways of Coping Questionnaire (Folkman and Lazarus 1988) are examined and discussed.

Chapter 8 addresses the testing of the ten hypotheses. The many significant findings arising from this study are charted and influence the qualitative phase of the study.

Chapter 9 discusses the design of phase two of the research, namely, the qualitative descriptive study. Furthermore, the data collection method of semi-structure interviews, with a purposive nested sample of students (n=8), is outlined in the chapter (Onwuegbuzie and Collins 2007). The method of thematic analysis, which was used to analyse the interviews is described (Braun and Clarke 2006). The development of the initial and final themes is discussed and the results of phase two are presented.

Chapter 10 discusses the findings from phase one and phase two together. The extensive significant findings from phase one are explained and further elaborated within the qualitative component of the current study. Consequently, the discussion provides an illuminating look at the findings through the themes of the experiences of stress, self-esteem and gender, coping and gender, and self-esteem and coping.

Finally, chapter 11 outlines the main recommendations relating to research and the support of students at university, arising from the findings of the study.

## Chapter 2. THE DEVELOPMENT OF THE SELF

#### 2.1. Introduction

The development of the self is a dynamic and continuous process, which is influenced by one's interactions with parents, teachers, peers, within the multi dimensional environment in which we live. Harter (1999) postulates that the developmental journey of the self is constructed from a psychosocial and cognitive perspective, occurring from early childhood. Who we are, as adolescents and adults today, are a result of the most fascinating and interactive journey of development known to humankind. The self is wonderful and requires love, nurturance and safety in order to blossom and grow. Occasionally, for some, the journey of the self's development is arrested. This may happen when the environment and relationships with significant others do not provide or encourage the prerequisites for its growth.

The following chapter provides a critical overview of some of the writings regarding the self-concept, with a particular focus on the evaluative component, namely, self-esteem. Self-concept is defined within the first section. Factors such as parenting, attachment, friendship and their effects on the developing self are explored, from infancy to young adulthood.

#### 2.2. SELF-CONCEPT

Greenwald (1980) highlights the intricacy of the psychosocial and cognitive construct within which the self develops. Self-concept refers to the affective, behavioural and

cognitive components of the self (Byrne 1996). It is referred to as being complex, in that it integrates a great array of knowledge. The self-concept is person specific, as the knowledge structure is unique to the individual. Within the structure of the personality, the self is very central and important. It includes emotions which are associated with the individual's sense of worth and, as a result, is referred to as being attitudinal. Furthermore, the self is referred to as a schema as it is an 'organized structure of knowledge' (Greenwald 1980, p.30). It is important, for clarity of purpose, to identify self-esteems' contextual relationship with the self-concept. According to Jacobs, Bleeker and Constantino (2003) the developing self has three main functions. Firstly, the organizational role, which helps, gives meaning to the activities of the individual and helps them to interpret their experiences over time. Secondly, it has a goal-setting role and finally it has a motivational role, which is linked to goal setting, and in turn, the beliefs one has about themselves, which can act as a strong motivator for future behaviour.

Many theorists refer to the self as having two parts which are inextricably linked but separate. A frequently referred to concept within psychology is the use of William James' (1890) outline of the 'I-Self' and the 'Me-Self'. The 'I-Self' is the self as a subject and a knower. Similar to Greenwald's (1980) analogy, within the 'I-Self' exists the ability to be self aware of one's feelings; thoughts and ideas, which it created and to sees itself separate to others. The 'I-Self' is the controller of its own thoughts and feelings. The 'Me-Self' is the self as an object made up of different components such as characteristics, ideas; roles, and relationships with others. It is the aggregate of things known about the individual. Lewis (1991) refers to the 'Me-Self' as the idea of oneself which refers to the cognitive representation of the person. Furthermore, Lewis and Brooks-Gunn (1979) refer to the 'I-Self' and the 'Me-Self' as the existential self and categorical self respectively. This is a

simple, but apt description of the 'I-Self and Me-Self' concept. Both aspects emerge before two years of age and the 'Me-Self' develops out of the 'I-Self'. The 'Me-Self' is the evaluative component of the self. The 'I-Self' is often referred to as being a very central part of the self. Referred to frequently as a cognitive schema, it is made up of both knowledge and beliefs in relation to personal attributes and qualities. According to Markus and Zajonc (1977) and Kihlstrom, Cantor, Albright, Chew, Klein and Niedenthal (1988) the self-concept controls the processing of information pertinent to the individual. Similarly, Shavelson and Hubner (1976) refer to the self-concept as a person's perception of themselves — formed in an interactional way between the individual and the environment, reinforcements and significant others. They differentiate between self-concept and inferred self-concept. The former is the person's own description of himself or herself whereas the latter is the acknowledgement of others towards a person's self-concept. The activities of the self, in both range and level, influence the level of self-esteem experienced by the individual.

Harter (1983) in her writings relating to self-identity refers to the three salient components of the self-system namely, self-knowledge, self-evaluation and self regulation. Self-knowledge refers to the ability an individual has to be self-aware, recognise, and describe oneself. The progress of self-knowledge development changes according to the psychosocial developmental stage at which an individual is. Self-regulation, an important component of the self-system, is the ability to self regulate emotions and to possess a belief that one has control over dealing with problems. Bandura (1981) refers to this is as self efficacy whereby an individual has a belief that, when success is achieved in accomplishing a task, this is due to the individual's own abilities rather than simply down to luck or someone else's actions. The final construct, within the self-system according to

Harter (1983), is self evaluation. The self-evaluations that individuals place on themselves change through the developmental stages that they attain and in turn impinge on different aspects of their life.

From a more philosophical perspective, Humphreys and Ruddle (2010) describe the self in a similar way to Assagioli (1986), who believe that the self is:

..the meeting place of conscious and unconscious, as the core of our being that acts as a unifying centre, directing all elements of our being (physical sensations, feelings, thoughts, dreams, images and so on) and attempting to bring them into a unity and a wholeness.

(Humphreys and Ruddle 2010, p.26)

Adding to this, Humphreys and Ruddle (2010) contend that the self as well as being the core of ones being might also be described as the foundation of our love. Love provides the wisdom and energy behind how one expresses the self; physically, spiritually and emotionally.

All of the above descriptions of the self-concept share the fact that the self is indeed complex and a salient component within the personality of an individual. It is influenced by developmental changes and the psychosocial interactions with both individuals and the environment.

#### 2.3. INFANCY

The Swiss born cognitive developmental psychologist Jean Piaget (1896-1980) posits that the young infant, in order to make sense of the world, interacts actively with people and objects and, as result, knowledge is constructed (Berk 2010). The main aim of development, according to Piaget, is to reason in an abstract way, to make sense of

hypothetical situations in a logical fashion and to organise operations (mental routines), into higher order forms (Mussen, Conger, Kagan and Huston 1990). During the process of maturation, more is added to the individual's repertoire by different processes which Piaget refers to as assimilation, accommodation and equilibration (Bee and Boyd 2010). This developmental process is explained by Piaget under four stages, viz. the sensorimotor stage (birth to 2 years), the preoperational stage (2 to 7 years), the concrete operational stage (7 to 11 years) and the formal operational stage (11 years on) (Berk 2010). Whilst the descriptions which Piaget provides of children's thinking are broadly accepted, many researchers have challenged them. Harter (1999) has argued that Piaget did not take into account the differences which may exist between individuals in relation to cognitive development. The sequence of events in Piaget's theory is invariant even though individual differences do occur in relation to the rate of development (Evans and McCandless 1978). The construction of the self is more than a sequential series of accomplishments, as outlined by Piaget. Little emphasis if any is placed, in his theory, on contextual factors such as cultural influences and the process of socialisation and how they impinge on development (Harter 1999).

## 2.3.1. Self-Recognition

The roots, in the development of the self-concept, begin during the first few months of life. According to Piaget, during the sensorimotor stage, the young baby starts life with basic sensory and motor schemes (schemes or schemas according to Piaget are perceptual-motor co ordinations e.g. searching for objects or pulling a string). Through trial and error learning, the young infant learns cause and effect and object permanence (Berk 2010). Self-other fusion exists when the young infant is unable to differentiate themselves from others and this lasts until the infant is six months old (DesRosiers and Busch-Rossnagel

1997). After this period, the young infant is beginning to see itself as separate from its primary care giver, a process known as the separation-individuation (Mahler 1986). This process is enhanced, when the infant experiences, what Winnicott (1958) refers to as, the 'good enough' mother. While the process of individuation is relevant throughout life, the process begins during this stage of development. The initial phase is usually completed between the ages of 3 and 5 years of age (Mahler 1975). The second peak in individuation occurs during adolescence. By the age of two, self-awareness is evident where the young child is beginning to establish its effectiveness in task completion, and also beginning to differentiate between pretence and reality, and very importantly seeing themselves as different to others (Lewis and Brooks-Gunn 1979; Kagan 1981; Harter 1983). The infant's sense of self, now includes the ability of observing the reactions of significant others.

The well-known mirror test, carried out by Amsterdam (1972), demonstrates that children, between the ages of eighteen months and two years of age, are able to recognize themselves. In this empirical study, a red rouge spot was placed on the child's forehead, surreptitiously. On looking at themselves in the mirror, the young children, who had pointed to the rouge spot, also began feeling for the spot on their own face. This study highlighted that children of this age were self-aware. Nielsen, Suddendorf and Slaughter (2006) similarly concur with Amsterdam's study, in that the young child does self-recognise at this age. Furthermore, Kernberg, Buhl-Nielsen and Normandin (2006) have highlighted that the manner in which children react to their image in the mirror is also influenced by their relationship with their mothers. Emotions such as embarrassment and pride, in the presence of others, are experienced only once self-awareness and a sense of self exists (Lewis, Sullivan, Stranger and Weiss 1989). So at this young age, it is evident

that the young infant is not only self-aware but, is also beginning both to notice and consider the responses of significant others, to their behavior. Barrett (2005) carried out a study on 17-month-old toddlers (n = 35) firstly to establish if they responded with guilt and embarrassment, in the presence of externally controlled standards. The second aim of the study was to ascertain if these behaviours were predicted by the toddler's selfrecognition skills or the parent's socialisation practices. In relation to the first component of the study, the findings were found to be significant, when toddlers reacted to the experiment experience of a mishap, in an avoidance/gaze aversion manner (p < .002). Furthermore, significant findings were confirmed when the toddlers showed signs of embarrassment (p < .01) when presented with the experimental mishap. The parental behaviours of reacting in a positive manner to their child successfully mastering an activity and negatively reacting when the child misbehaved, predicted significantly, (p < .004), positive reactions from the toddler to behaving appropriately and mixed reactions to behaving inappropriately. This study highlights the ability of the toddler to display embarrassment or aversion to what they had done. Furthermore, it highlights the toddler's recognition and response to their parent's reactions to what they had just completed.

Studies have found that children, who have been in abusive relationships, have difficulty in the areas of self-recognition (Schneider-Rosen and Cicchetti 1984; Cicchettii 1991). A study was carried out to identify, firstly, the effects of maltreatment on the attachment between infant and primary caregiver, and, secondly, to establish the relationship between visual self-recognition and attachment with a cohort of infants (n=37). Eighteen of the infants (mean age 19 months and 9 days) had been previously maltreated, and nineteen of the infants (mean age 18 months) were in a comparison group, who met the exclusion criteria, of having no history of maltreatment. The results show that the maltreated group

have a significantly higher percentage of insecurely attached infants ( $x^2(1) = 6.06$ , p < .01) in comparison to the non-maltreated group. Furthermore, the non-maltreated group have a significantly higher percentage of attached infants ( $x^2(1) = 6.06$ , p < .01) in comparison to the maltreated cohort. The study has also established that there is a significant difference, ( $x^2(1) = 8.17$ , p < .01), between the two samples in the affective expressions during the mirror test in determining visual self-recognition. The main reaction, in 74% of the non-maltreated group, is a positive effect on seeing the rouge mark on their nose, compared to a similar reaction in only 22% of the maltreated group. Furthermore, a large percentage (78%) of the maltreated group reacted in a sober way or by crying on seeing the rouge, which was applied to their face (Schneider-Rosen and Cicchetti 1984). This study illustrates that the toddlers who were maltreated saw themselves in a negative way, and consequently did not like looking at themselves in the mirror.

#### 2.3.2. ATTACHMENT AND PARENTING

These happenings do not occur in isolation but in the context of relationships and the infant's experience of these relationships, within their environment. The importance of the parent-child relationship, on the development of their child's sense of self or self-concept, is well documented. Diane Baumrind is the person synonymous with parenting styles and, the manner in which they affect children (Baumrind 1971; 1978). Authoritative parenting, which is described under two orthogonal warmth and control, is regarded as the most favourable parenting style (Steinberg 2001; Duchesne, Larose, Guay, Vitaro and Tremblay 2005; Vitaro, Brendgen, Larose and Trembaly 2005; Garcia and Gracia 2009). Warmth refers to the parental behaviours of affection, sensitivity and support (Maccoby and Martin 1983). Control within parenting refers to discipline which

provides the child with regular feedback on behaviour. Furthermore, it refers to the use of inductive reasoning with the child (Cummings, Davies and Campbell 2000). Authoritative parents are evident by being firm and very responsive, within a warm loving environment. Baumrind (1993) highlights that those children, who experience this type of parenting, show high levels of adjustment and internalise their parents' standards which they have experienced, such as meaningful praise for qualities and competencies. Referring to the work of Steinberg, Elmen and Mounts (1989), Baumrind (1993) highlights that the results of investing in authoritative parenting leads to the positive enhancement of the child's self-esteem and self-efficacy beliefs.

Cooley (1902) and Mead (1964; 1967), who developed the 'Early Interactionism Theory', highlights that the judgement of significant others has a major influence on the development of the evaluative component of the self. Attachment between the young infant and the primary caregiver plays a significant role in this area. Ainsworth, Blehar, Waters and Wall (1978) and Ainsworth (1991) purport that, when an affirming bond exists, the infant experiences a great sense of safety and security in the company of their primary caregiver. They identify the environment as being a safe place to explore and learn. Elicker, Englund and Sroufe (1992) outline that secure attachments promote later peer competence. When the primary caregiver is responsive and available, the young child will have positive social expectations (Alejandra and Francisca 2010). Winnicott (1958) refers to the importance of the quality of the mother-infant interactions where the 'good enough' mother promotes feeling of omnipotence in the infant, by responding promptly and appropriately to the child's demands. Furthermore, in promoting a strong sense of self, Winnicott (1958) asserts the importance of the mother allowing the child a

secure space in which they can practice and learn to master activities, with reduced input from their mother. The child mirrors the behaviours and emotional responses of their primary caregiver. By being in an empathetic and responsive relationship with the primary care giver, the child learns about being empathetic and also about reciprocity. The child, who is the recipient of responsive care, experiences a strong sense of self-worth (Luke, Maio and Carnelley 2004; Luke and Coyne 2008). These infants progress into childhood and adolescence with higher levels of self-esteem and display more adaptive self-regulation of their emotions and impulses (Strathearn 2007). Positive models of self, and others, and having an internal secure base, are some of the positive experiences for young infants who have an emotionally responsive relationship with their primary caregivers (Mikulincer, Shaver and Pereg 2003; Mikulincer and Shaver 2004).

Erikson's (1968) psychosocial theory on development has highlighted that, during the stage of 'Trust versus Mistrust', which is from birth to two years of age, if the child experiences a safe, responsive and secure relationship with the primary caregiver, then the 'looking glass image' of the world is one of security and safety. In addition, the infant believes that problems which may occur in the long term are within their remit to be resolved. However, if an insecure and unstable relationship exists with the primary caregiver, then the world is viewed as a very untrustworthy place where anxiety, in some cases, is used as a defence mechanism. According to Belsky and Nezworski (1988), the world may be seen by the young child as a very threatening place. Young infants, who are the recipients of an unresponsive and rejecting attachment with their caregiver, develop negative self-portraits of others and tend to avoid attachment and, as a result, their self-esteem is derived solely from skills. Their self-esteem is referred to as being defensive

and they are described as being high in attachment avoidance (Mikulincer, Dolev and Shaver 2004). According to Shaver, Schachner and Mikulincer (2005), infants, whose caregivers respond to them in an inconsistent way, develop a negative picture of self and tend to have high attachment anxiety where they are constantly seeking approval from others. If the young infant is subjected to parenting which is not sensitive to their subjective needs, it may lead to insecure attachment resulting in poor developmental outcomes (Masur 2009; Baradon 2010). The young infant is assimilating a great deal of information about themselves, others and their world.

Bohlin, Hagekull and Rydell (2000) carried out a longitudinal study of children (n=96), from the age of 6 weeks to 9 years. They have found that children, who have been in secure relationships as infants, are significantly more socially active and popular and reported less social anxiety (p < .10) when older, than those children who have been in insecure relationships with their primary caregivers. Regression analysis had been performed to evaluate the effects of the independent and the combined effects of infancy attachment and concurrent attachment relationship on social functioning. The results indicate that, for the combined effects, there is significance ranging from (r=10.91-9.27, p<.001 -.01) for all the variables, viz, social initiative, prosocial orientation, popularity, positive social behavior and social anxiety. Overall, children who are securely attached as infants are more popular and socially active, in comparison to the children who have been insecurely attached (Bohlin, Hagekull and Rydell 2000; Belsky and Fearon 2002). There is much evidence highlighting the link between secure early parent-child attachment and successful friendships in childhood and adolescence (Verissimo, Santos, Vaughn, Torres, Monteiro and Santos 2011). The initial attachment that the young infant experiences affect all future relationships. According to Bowlby (1980; 1982), children who

experience a loving relationship with emotionally available parents are deemed to see themselves as being worthy, competent and loving. Their self-belief is positive. This form of attachment enables the infant to cope with stressful events (Bowlby 2007). They believe in their capabilities. Securely attached individuals, when experiencing stress, soothe and reduce their stress by seeing themselves as being similar to their support giving caregiver (Mikulincer and Shaver 2004). They mirror the support which they have experienced with their primary care giver, onto themselves. Consequently, the young child has confidence and belief in what they can do. This in turn leads to their belief that they can control certain outcomes to be performed in a successful way – a sense of self-efficacy (Bandura 1997; 2001). Self-efficacy is the standard children have for their own behaviours and their expectations of what they can and cannot do. Once internalised, these factors form the core of the personality (Bandura 1997).

Bandura (1997) purports that children learn a great deal from both reinforcements and modelling. With repeated interactions with caregivers who return smiles etc, children are beginning to feel efficacious. In addition, secure attachment influences the problemsolving abilities of children (Colman and Thompson 2002; Wright 2010). Raikes and Thompson (2008), in a longitudinal study which collected data from children (n=1364), on seven occasions over six years, have found that there is a predictive link between secure attachment at the age of two and three years of age and enhanced social problem solving, and a reduced sense of loneliness with peers. Furthermore, Abaied and Rudolph (2010), in a two-way longitudinal study with children (n=157) and their maternal caregivers (n=157), have found that mothers, who were insecurely attached themselves, relayed their maladaptive coping processes onto their children. The parents' insecure attachment not

only influenced their own ability to cope with stress but also influenced their children's coping ability.

## 2.4. EARLY CHILDHOOD

In relation to Piaget's developmental theory, children's self-knowledge or their ability to describe themselves increases as they progress through life (Damon and Hart 1988). During the preoperational stage, the preschooler is beginning to make internal representations of the world, through the activities of symbolic and make believe play. Language acquisition and its use are becoming more advanced. Many skills are being learned and there is a desire for the young child to practice these skills. Erikson (1968) referred to this stage as 'Autonomy versus Shame and Doubt'. If the child is allowed to develop and practice their skills within a safe, nurturing environment then they will develop a strong sense of self-efficacy and achieve a positive level of self-esteem.

During early childhood, the young child is capable in deducing what people are thinking, a process referred to as 'Theory of Mind' (Berk 2010). Between the ages of five and seven, children are beginning to develop the perspective that others have an opinion towards them (Selman 1980). Whilst they are aware that others are evaluating them, they lack the self-awareness to be critical of their own behaviour (Harter 1999). With the onset of language development and different types of memories, children's view of themselves is enhanced, and their story evolves. There are different types of memories, as outlined by Tulving (1972, 1983), such as semantic memory which may be described as an account of one's traits e.g. 'I am a really pretty girl'. Episodic memory is the memory of a particular experience within a context. Finally, autobiographical memory is an account of experiences. Harter (1999, p.33) refers to this type of memory as the 'basis for one's own

story'. There are no autobiographical memories before the age of two; they come in to fruition at about three years of age. It is through the acquisition of language that children begin to describe and consider both the 'I-self' and the 'Me-self' (Bates 1990; Miller Potts Fung Hoogstra and Mintz 1990). The young child, through language, can formulate their story which includes activities and events (Hudson 1990). Furthermore, in a study of three year old children (n = 131), Wang Doan and Song (2010) have found, that the self-representations of trait and self-evaluation of children are enhanced when their mother discusses internal states (emotions), whilst reminiscing on past stories with their child. Reminiscing and using language, which incorporates the use of emotions; helps expand the self-knowledge of the young child.

The self-descriptions of the child at this stage are expressed as cognitive representations of their observable features and are referred to as categorical identifications (Damon and Hart 1988). The descriptions are strongly linked to behaviour and are not at this stage expressed in a higher order conceptual categorical fashion (Harter 1999). Harter (1999) explains that children may exaggerate their abilities. She cites Freud (1921) and Piaget (1932) who had noted that children at this stage are unable to differentiate their ideal self-concept from their real self-concept. Furthermore, it is evident at this stage that the young child does not believe that they can experience opposing emotions at the one time (Selman 1980; Harris 1983; Taylor and Harris 1983; Carroll and Steward 1984; Reissland 1985; Donaldson and Westerman 1986; Gnepp Mckee and Domanic 1987; Harter and Buddin 1987). In addition, they are unable to think in terms of their overall worth as an individual because this requires a higher order ability to integrate their differentiated domain specific attributes. However, this matter does not preclude the child from experiencing self-esteem (Harter 1990a). The 'all-or none' thinking leads children, depending on their experiences,

to view their attributes as all positive or all negative. Harter (1999) highlights that children, who have received harsh treatment and criticism, tend to view themselves as all bad. Because of cognitive limitations the child's self evaluation during this stage of development tends to be unrealistic (Harter 1999).

## 2.4.1. ATTACHMENT AND PARENTING

Children's sense of self, and how it is displayed behaviourally, continues to be very much influenced by the reactions of primary care givers, especially parents. A longitudinal study was carried out by Mullineaux, Deater-Deckard, Petrill and Thompson (2009) on seventy-seven pairs of monozygotic twins (M=6.08 years old), over a one year period, to estimate the influence of maternal positivity and negativity on their child's behaviour. The study has found that the twin, who receives maternal negativity, tends to display more oppositional behaviours (r=0.29, p<0.01) and the twin, who receives more positive maternal engagement, displays less externalising problems and are higher in positive engagement (r=0.51, p<0.01). Furthermore, studies have found strong predictive links between attachment disorganisation in young children and the later presentation of psychopathology and social maladjustment (Green and Goldwyn 2002; Donnellan, Trzesniewsky, Robins, Moffitt and Caspi 2005). Bowlby (1982, 1969) indicates that young children are beginning to internalise and develop representations of their attachment figures and the perceived availability and support of the attachment figure play a very influential role on the child's sense of self. Children, who are securely attached in infancy, adapt better during the transition from preschool to elementary school in comparison to insecurely attached children (Seven 2010). Additionally, prosocial behaviour in preschool is significantly negatively correlated with aggressive behaviours (r=-.75, p<.01) and shy-withdrawn behaviours (r=-.43, p<.01). Within preschool and first

grade in elementary school, adaptation to school is negatively correlated with shy withdrawn behaviour (r=-.28, p<.01) and positively correlated with prosocial behaviour (r=.34, p<.01) and attachment scores (r=.33, p<.01). The significant predictors of adaptation to elementary school have been found to be attachment (t = 2.86, p<.05) and shy withdrawn behaviour (t=2.09, p<.05) (Seven 2010). The study has highlighted those children, who have secure attachment, have better adaptive abilities and a more positive sense of self. Furthermore, children view their parents as role models in how to deal with problems. A study, with ninety-seven kindergarten children and their parents (n=194), investigated the link between parents and children's social information processing components and their social competence. The study has found that the manner in which parents respond to problem solving scenarios predicts the way in which their five-year-old child responds to very similar problem solving situations (McDowell, Parke and Spitzer 2002). For example, there is a strong significant relationship between parent and child in the use of relational prosocial strategies (r=.24, p<.05) and instrumental confrontation (r=-.32, p<.001) (McDowell et al. 2002). The relationship between the parent and their child has a significant influence in the manner in which the child deals with problems.

# 2.5. MIDDLE CHILDHOOD

According to Piaget, some of the cognitive achievements reached during middle childhood (6–12 years of age) are conservation of quantity and the organization or classification of objects, seriation and spatial reasoning (Berk 2010). Children during this stage are gaining skills in playing games with rules and the ability to engage in arithmetic methods such as addition, subtraction, division and multiplication (Carr 1999). The traits expressed during middle childhood are as a result of a higher order generalizations. During this stage of development, children begin to use concepts which amalgamate different

behaviours e.g. 'I am good at school'. This is a combination of being good at Irish, English and Maths (Fischer 1980; Siegler 1991). These are often referred to as trait labels (general label, which includes a combination of things) (Harter 1999). Furthermore, the opposite attributes such as good and bad can now coexist (Siegler 1991). During middle childhood, the child develops an impression of how they view themselves which leads to the emergence of their global self worth (Harter 1990a). In addition to how they view themselves, there is a great importance placed on how others view them which is a major occurrence during this phase (Harter 1999). This is similar to Cooley's (1902) 'Looking-Glass' theory, whereby the opinions of others are introjected and play apart in the formation of self-esteem. A more balanced view of the self is developing. The descriptions of the individual self during preadolescence are very concrete and relate to their physical characteristics and their personal abilities (Montemayor and Eisen 1977). In relation to the child's self-evaluation, it is not until middle childhood (7 years of age approx.) that children begin to compare themselves to others (Frey and Ruble 1985; 1990).

#### 2.5.1. ATTACHMENT AND PARENTING

In moving and progressing from one stage onto the next, there is a need to have a culture which is comprised of positive affirming and meaningful relationships. It is important that the culture fosters and encourages the integration of positive and negative attributes and positive and negative emotions, so that the child can incorporate them into their self-portrait (Harter 1999). Children, who come from families where poor and destructive parenting exists, tend to receive many negative evaluations and it becomes difficult to develop and incorporate positive self-evaluation into their self-portrait; change is difficult, especially once the negative self-evaluation are *automatized* (Siegler 1991). During middle childhood, the adjustment to school, of children (n=113), with a mean age of ten

year of age, was significantly related to their sense of secure attachment. Granot and Mayseless (2001) contend that this may be as a result of securely attached children having higher levels of self-esteem and an adaptive capacity for emotional regulation.

A study carried out by Borelli, David, Crowley and Mayes (2010), on the relationship between disorganised attachment and psychopathology, in eight to twelve year old children (n=97), has found that disorganised attached children report more depressive symptoms ( $x^2(1) = 14.06$ , p < .001), in comparison to children who are within the organized attachment classification criteria. Furthermore, children classified as disorganised attached report significantly higher levels of social phobia symptoms ( $x^2(1) =$ 3.71, p < .05), compared to children meeting the criteria of organised attached (Borelli et al. 2010). The child's sense of self is reflected in their display of internalising behaviours. In addition, Sümer and Sendağ (2009) have studied the effects of parental attachment on the self-perception of 5<sup>th</sup> and 6<sup>th</sup> grade children and found that children, who have secure parental attachment, have positive evaluations in all self-domains and they also present with lower levels of anxiety. These children have a positive sense of self. Similarly, Clark and Symons (2009) have found that children (n=176), aged between five and nine years of age (m=7.02 years), who are secure have very positive feelings towards themselves (R<sup>2</sup>=.24, p<.001), in comparison to insecure children. Furthermore, the secure children also have very positive appraisals of others.

Positive parenting intervention programmes have been found to have many beneficial effects for both children and parents (Sharry, Guerin, Griffen and Drumm 2005; Coughlin, Sharry, Fitzpatrick, Guerin and Drumm 2009). Heaven and Ciarrochi (2008), in a

longitudinal study of high school students (n=884), have investigated the impact of perceived parenting styles on the developmental trajectories of hope and self-esteem. They have found that in relation to self-esteem, children of authoritative parents are successful in the setting and achievement of goals. Their positive sense of self influences not only how they evaluate themselves but also their belief in their ability and capacity to achieve tasks. Moreover, children with perception of authoritative parenting have high levels of hope, from grade 7 to grade 10 (r=.35-18, p < .01-.001), and conversely, children with perceptions of authoritarian parenting, have low levels of self-esteem from grade 7 to grade 10 (r=-.14- -.10, p<.05-.001) (Heaven and Ciarrochi 2008). This study shows the continued positive effects of authoritative parenting on children's sense of self during middle childhood.

# 2.5.2. PEERS AND FRIENDS

During middle childhood, the child is beginning to view their friends and peers as being very significant players within their lives. Their self-descriptions are related to their competencies and are also very much described in relation to others (Rosenberg 1979; Damon and Hart 1988). During this stage of development, children look to their parents for attachment needs and their friends for companionship needs (Kerns, Tomich and Kim 2006). As the ability to relate one concept to another occurs during middle childhood, children begin to compare themselves to their peers which in turn are incorporated into their self-evaluation (Damon and Hart 1988). From a social perspective, social comparison exists within the school classroom and children become very aware of these (Harter 1996). Parents, furthermore, utilize the social comparison process between the ability of their child and the ability of their siblings or friends (Harter 1999). The development of friendship during preadolescence is major development task and

influences the individual's feelings of self-esteem and a sense of well-being (Harup and Stevens 1999). Furthermore, the National Council for Curriculum Assessment (NCCA) (2008) highlight the importance of ensuring an ethos of enhancing the well-being of students within second level education.

In a study to obtain children's perspective on well-being, friends were found to be a very important category within the child's view of well-being (NicGabhainn and Sixsmith 2006). What is important, regarding friendship during middle childhood, is experiencing acceptance within a general peer group. High quality friendship enhances increased levels of self-esteem and may act as a buffer against the negative effects of stress (Bagwell, Schmidt, Newcomb and Bukowski 2001). Bagwell, Schmidt, Newcomb and Bukowski (1998) have carried out a 12 year follow up study on young adults (n=60) who had originally participated as part of larger group in the first part of the study, when they were in fifth grade (ages 9 to 11). The study has investigated the predictive nature of preadolescent friendship and peer rejection to adult adjustment. The study has found that preadolescents who reported a positive friendship status also had statistical positive correlations with better adjustment in schools and family relationships and had less trouble with authorities, in comparison to their friendless peers. The study has found friendship during middle childhood was a significant predictor of self-worth in adulthood (r=.24, p<.01). The influence of one's peers on self-esteem levels has also been found in the following study. A longitudinal study of elementary school girls (n=656), Kutob, Senf, Crago and Shisslak (2010) has found that the most important predictor of self-esteem, in all grades, was appearance (B=-3.2 to -23.6, p<.001). However, in all grades except eight (ages 13 to 14), it was the teasing from class mates, about weight rather than the weight itself, which predicted lower levels of self-esteem ( $\beta$ = 1.4 – 1.9, p<.001). In fourth and

fifth grades (ages 8 to 11), it was the teasing by girls which was predictive of self-esteem ( $\beta$ = 1.6 – 1.6, p<.001). However, in sixth and seventh grade (age 11-13 years of age), it was the teasing about weight, received from boys, that predicted lower self-esteem in girls ( $\beta$ = 0.7 – 1.6, p<.001). This study highlights the influence of peers on the development of the child's sense of self. Humphreys and Ruddle (2010) have highlighted the importance of the school 'world' for the child:

...the nature of the holding they experience in the relationships in this world has important consequences for whether they are more in a shadow or in openness in their inner terrain...

(Humphreys and Ruddle 2010, p.70).

#### 2.6. ADOLESCENCE AND YOUNG ADULTHOOD

Adolescence is a time of great change and growth in all areas of development - psychological, emotional and physical. For some it can be a difficult transition to adulthood. However, the majority of adolescents progress to this stage without experiencing any major trauma (Corsano, Majorano and Champretavy 2006). The evolving self continues to be shaped and moulded during adolescence. The influencing factors highlighted in the previous sections, whilst still playing an important role, may differ in their intensity and salience in the developing self of the adolescent and young adult. The fifth stage in Eric Erikson's (1950; 1968) psychosocial theory of development, viz. 'identity versus role confusion', is concerned with the adolescent developing a sense of who they really are in terms of goals, personal views, aspirations, ideologies, and beliefs on various aspects of life. He highlights the importance of identity, within personality development, and its influence on one's progress through life. During this stage, it is very important to belong to a group, as is the need to continue and grow as an individual. Loyalty is learnt by the individual, through being part of a group. If a

successful resolution is reached during this stage, the ego is strengthened and incorporated into the personality with the adolescent having a strong sense of self and well being. However, according to Erikson (1968), if there is an unsuccessful outcome to this stage then the adolescent presents with a sense of confusion regarding their own sense of self in terms of their values and beliefs and their relationships with others.

The formal operational stage, in Piaget theory, culminates in adolescence and results in the individual using transformational concepts in an abstract way. The processes, which facilitate the end-result, are by means of operations, such as propositional logic; hypothetico-deductive thinking; combined reasoning; and through the reasoning of probabilities and proportions (Berk 2010). Within this stage of development, adolescence may be subdivided into three different stages, viz. early adolescence, middle adolescence and late adolescence or early adulthood (Harter 1999). Harter (1999) postulates that the interaction between the cognitive developmental processes during this period, as outlined by Piaget, which give rise to the 'I-Self' (James 1890) and the altering social expectations which adolescents encounter, all help formulate the differing 'Me-Self' (James 1890) which is evident throughout the three stages. In early adolescence, the individual selfdescriptions are more abstract. For instance, in the way they describe their abilities e.g. 'good at English and Irish' may now be described as 'I am intelligent' (Harter 1983; Higgins 1991). During this stage, adolescents are beginning to see themselves as others see them, by means of reflecting and evaluating themselves as individuals. The interpersonal attributes and social skills, which appear to have an effect on others and on their own social appeal, become very important to the adolescent for example, being good looking or very good at sport (Harter 1999). During this stage, different selves are forming i.e. different self with parent, teacher or friend. Social comparisons still exist but they are a lot more subtle. An integrated portrait of the self is not in existence at this stage. The reactions of others have a large bearing on their self worth, and because there are varying selves in existence, a fragmented level of self worth permeates, which sometimes becomes more integrated during adulthood.

In middle adolescence, where much introspection is taking place, Rosenberg (1979) notes that the once unquestioned self-truths of the adolescent now begin to take the form of problematic hypothesis. The 'I' continues to develop cognitively and the abstraction, which were expressed as separate entities, are now expressed in comparative ways (abstract mapping) (Case 1985; Fischer 1980). This can, as a result, become a time of great conflictual thinking and James (1890), as cited by Harter (1999) has referred to this as the conflict of the different 'Me's'. It is difficult for the adolescent to establish which of the different me's is the real me (Harter 1999). The expression of different selves in different relationships also causes further conflict and leads to very unstable selfrepresentations (Harter 1999). The self knowledge of the individual is often described in terms of their social skills and how they relate to others. Rosenberg (1986) postulates that varying levels of self-worth exists for the adolescent during this time, as the different people in their range of relationships provide varying evaluations to the adolescent. During middle and late adolescence, studies have highlighted that these young people not only describe themselves differently, in different relationships, but also that some of the opposite descriptors gives rise to conflict (Harter, Bresnick, Bouchey and Whitesell 1997). It is evident from studies that girls, in early, middle and late adolescence, become more upset than boys with this conflict, especially girls with a feminine gender orientation compared to girls with a more androgynous gender orientation (Harter 1999).

Self-esteem levels, during this time, may vary within different relationships. Harter (1990) has noted that global self-esteem may be lower during early and middle adolescence due to the contradictory expectations of self, and responses received from significant others during this time. In contrast, abstract mapping, which Harter refers to in early to middle adolescence, becomes markedly less conflictual during late adolescence and young adulthood and more integrated into their self-portrait (Harter 1999). The higher order thinking, which Piaget refers to as hypothetico-deductive reasoning, permits the individual to rationalise the opposing attributes and relationships which exist between them and different people. Case (1985) and Fischer (1980) refer to this process as higher order abstraction, whereby opposing attributes are combined into one. During this period they advocate the importance of social support for adolescents, from, for example, parents and those involved in education so to enhance the development of integration of opposing attributes into the self. It is important for them to see these opposing attributes as being normal. Global self-esteem increases during late adolescence and Harter (1999) postulates that this occurs for many reasons, viz. namely, the discrepancy between the ideal-self and the real-self becomes less pronounced. In addition, they experience increased autonomy and choice and they tend to select people and groups who enhance their feelings of self worth.

Referring to the work of Erikson, Slugoski, Marcia and Koopman (1984) have outlined that the main ego developmental task in adolescence is the development of a unique 'gestalt' which is a result of synthesizing childhood identifications. According to Marcia (1966) and Rowe and Marcia (1980) a sense of identity in adolescence occurs when the ego is stronger than before the synthesis occurred. Even though the process of identity

formation takes place during late adolescence and early adulthood, the development of self-identity formation is initially moulded by early childhood experiences, as we have seen from the previous sections.

Goossens (2001) has established from a study regarding self report identity measures, on a group of college students (n=339), that most adolescents are at different identity stages in the different domains during the first year of college. For example, political commitments become more salient in the final years of college, whereas first year students focus more on their vocational career (Goossens 2001). Furthermore, in a more recent study, a strong relationship has been found between the development of identity, amongst a cohort of college first year students (n–371), and the planning for their future; both occurring in tandem (Luyckx, Lens, Smits and Goossens 2010).

Marcia (2002) purports that the progression which occurs during late adolescence and young adulthood, from the importance of peer group affiliation to the establishment of self-identity, may give rise to any four identity states. The four resolutions to the identity crisis are viz. identity diffusion, foreclosure, moratorium and identity achievement. Marcia (1966) describes types of identity status along two orthogonal dimensions firstly, identity exploration and secondly, strongly held commitments or convictions. Some individuals move through the phases, from diffusion to identity achievement, and others may reach achievement and go back through the previous stages (Kroger 2007). The ultimate identity status of identity achievement is described by Slugoski, Marcia and Koopman (1984) as being reached when an individual has explored many alternatives, and has made firm commitments to the areas of sexuality, ideology and occupation. Identity

moratorium is reached when individuals may not have explored all options and, as a result, are only vaguely committed. Identity foreclosure is evident when individuals show commitment to the areas of sexuality, occupation and ideology but these views are not developed by the self but usually by parental influence. The final identity status, viz. identity diffusion, is where an individual may not have explored any of these areas and, as a result, shows no commitment to any particular values beliefs or goals (Slugoski, Marcia and Koopman 1984). However, it is important to note that the task of forming an identity is revisited throughout adulthood (Kroger 2007).

## 2.6.1. ATTACHMENT AND PARENTING

The effects which attachment styles have on the young infant and child, have been mentioned in previous sections. Attachment styles are often described by the orthogonal of high versus low attachment anxiety and avoidance (Brennan and Shaver 1998). They highlight that adults, who are securely attached, are low in both attachment anxiety and avoidance. Preoccupied adults are high in anxiety and low in avoidance, dismissing adults are high in avoidance and low in anxiety and fearful adults are high in both attachment anxiety and avoidance (Brennan and Shaver 1998). Research has shown that there are links between attachment styles and levels of self-esteem (Tafarodi and Swann 2001; Park, Crocker and Mickelson 2004). A study carried out by Hepper and Carnelley (2010), using a sample of students and graduates of a British university (n=112), has investigated the link between the attachment styles, the seeking of feedback and the role of self-esteem. They have found that high-avoidant subjects sought more negative feedback across all domains (interpersonal and competence) in comparison to secure individuals. Furthermore, high-anxious individuals were more open to negative feedback and sought

less positive feedback. Participants with any degree of insecurity were more open to feedback regarding their social acceptance. The occurrence of these behaviours may be explained by the need for individuals in maintaining their self-schemas e.g. individuals with high avoidance-attachment tend to maintain their self-worth through mastery and competence and may seek negative feedback to preserve their belief that people are unreliable. In addition individuals with high anxious-attachment are more likely to maintain their negative self views by seeking negative feedback from others (Hepper and Carnelley 2010).

The second major occurrence in the process of individuation occurs during adolescence (Blos 1979). Parents are still very important during this phase. Adolescents begin to see parents as people not just as parents (Steinberg 1990). It must be said that parents may often feel threatened during this phase. A consolidation of self-regulation and selfdetermination of the adolescent begins (Larson, Richards, Moneta, Holmbeck and Duckett 1996). What is important during this phase of late adolescence and young adulthood is not detachment from parents but attachment with parents. The attachment is viewed as a dynamic relationship which changes according to what is required at any particular time and allows for optimal autonomy in the context of emotional support (Ryan and Lynch 1989). Ryan and Lynch (1989) maintain that individuation happens with parents rather than without them. Attachment support from parents is a very predictive variable in the positive adjustment to university life (Holmbeck and Wandrei 1993). Parental support is a very important factor in the well-being of adolescents (NicGabhainn 2000; McGrath Brennan Dolan and Barnett 2009). Adolescents will undoubtedly look to the values and beliefs of their parents and critically appraise same before deciding to refute or accept it into their own values system. Bowlby (1969) highlights that for most people the bond

between individuals and their parents continues into adult life. This continuing relationship affects many different aspects of the individual's life. McKinney, Donnelly and Renk (2008) highlight the important influence of authoritative parenting on predicting high self-esteem during adolescence. Favourable paternal parenting characteristics predict higher self-esteem according to the perceptions of adolescents, in relation to the parenting that they had received (Shek 1999). Similarly, it has also been noted that adolescents, between the 7<sup>th</sup> and 10<sup>th</sup> grades (ages 13 to 17), who had consistently high self-esteem, reported retrospectively that they had a more satisfactory relationship with their parents in comparison to the group who had lower levels of self-esteem (Deihl and Vicary 1997).

A longitudinal study of Hong Kong Chinese adolescents' and parents' (n=378 families), perceptions of family functioning and the effects it has on the adolescents' feelings of hopelessness, life satisfaction, self-esteem, purpose in life and psychological well being, has found that a higher level of adolescent-parent discrepancy in perceptions of the functioning of the family, is a predictor of poor psychological well-being of the adolescent over time (Shek 1998a). In this study, a positive difference score indicates that the adolescent has a more negative perception of family functioning compared to their parent and conversely a negative score was an indicator of more positive perception of family functioning. Using computed partial correlation, it was found that the discrepancy between adolescents and parents' perception of family functioning was significantly related to changes in adolescent girls level of hopelessness (r=20, p<.01) and life satisfaction (r=-22, p<.01) over time and boys psychological well-being (r=-.17, p<.05) over time. Overall, the study has found that girls were more susceptible to effects of the emotional climate of the family, than boys (Shek 1998a). Similarly, Buric, Macuka, Soric

and Vulic-Prtoric (2008) in a study, of young adolescents (n=102), have investigated the contribution of maternal and paternal parenting styles on adolescents. They have found that maternal and paternal emotionality are significant positive predictors of self-esteem. Moreover, maternal psychological control predicted self-esteem in a negative way.

Furnham and Cheng (2000), in a study with young people (n=406), with a mean age of 20.31 years, have found that authoritarian parental style, both maternal and paternal, are very significantly negatively related to self esteem (r=-0.31, p<.001), happiness (r=-0.33, p<.001) and positively related to neuroticism (r=0.18, p<.001), as opposed to authoritative parenting, which is very significantly positively related to self-esteem (r=0.32, p<.001), happiness (r=0.35, p<.001) and extraversion (r=0.22, p<.001). The influence of the parenting style, which children and adolescents receive, continues to have profound effects on their sense of self. In a study examining the influence of parenting behaviours on emotional and behavioural problems in a cohort of adolescents (n=1359), Finkenauer, Engels and Baumeister (2005) have found some very significant findings. hierarchical regression, parental strict control is a significant positive contributing factor in delinquency (R<sup>2</sup>=.14, p<.01), aggression (R<sup>2</sup>=.09, p<.01), depressive mood (R<sup>2</sup>=.07, p<.01), stress (R<sup>2</sup>=.13, p<.05 and a negatively contributing factor to self-esteem (R<sup>2</sup>=.06, p<.05). Conversely, parental acceptance is a significant negative contributing factor in aggression ( $\beta$ =-.11, p<.01), depressive mood ( $\beta$ =-.16, p<.01), stress ( $\beta$ =-.21, p<.01) and a positive contributing factor to self-esteem ( $\beta$ =.20, p<.01).

## 2.6.2. PEERS AND FRIENDS

Affiliation to a group is salient aspect during early adolescence. To be accepted into a group and to have a sense of belonging influences the development of future social relationships. To facilitate the group identity process, primary caregivers must cultivate an environment where integration of adolescents into a peer group is encouraged and managed, with a balance between being over restrictive and being over permissive (Carr 1999). Within the group, it is important that the adolescent does not lose their own sense of direction and their own goals and identity. Rew (2005) contends that the optimum identity for an adolescent is one which is created by them rather than one which is bestowed on them by others. Furthermore, the opinions of others on the self are of great importance to the adolescent during this phase. Harter (1999) refers to the 'new role-related selves' (p. 76) which is the different roles adolescents find that they have with different people and they become aware that they perform differently with different people. This phenomenon gives rise to much questioning of the individual as to who they really are.

Friends play a very influential role during adolescence and young adulthood. Social supports may be defined as the perceived or real support, both instrumental and expressive, given by community, social networks, and close friends (Lin, Dean and Ensell 1986). Having friends is linked to the individual having good psychological health throughout adulthood, in comparison to individuals without friends (Gupta and Korte 1994; Hartup and Stevens 1997). Conversely, having problematic relationships with peers, contributes significantly, to depressive feeling in young adults (Costello, Swendsen, Rose and Dierker 2008). Peers are a very influential source of social support during adolescence. A study by del Valle, Bravo and Lopez (2010) has investigated the

adolescents' social supports, from a developmental perspective. Included in this study are the role and type of social support provider and the type of support perceived i.e. emotional or instrumental. With a sample of 884 adolescents, the study found firstly that emotional support for those aged between 12- 13 is provided by parents. Between the ages of 13 and 14 years of age, there is a significant change, whereby there is an increase in perceived support from peers (p<.05) with a corresponding decrease in support from parents, especially fathers (Lin et al., 2010). In a study carried out by the World Health Organisation, namely 'Health Behaviour in School-Aged Children' to be accepted by peers was a very salient aspect in the lives of young people (WHO 2001). Furthermore, in a qualitative exploratory study with adolescents (n=31), it was found that to be happy consisted of both doing things, and being with friends and family (O'Higgins, Sixsmith and NicGabhainn 2010).

While friends are very important, linking ones self-esteem to friendship has some negative correlations. Cambron, Acitelli and Steinberg (2010), in a study with university students (n=287), have found that there was a predictive link between individuals with high friendship contingent self-esteem, and, depressive symptoms (t (268) = 2.99, p< .004). A qualitative study on the perceptions of adolescents (n=31), on factors which influence quality of life, have found that friendship is one of the factors which is very important to feeling good. To be without friends is a significant factor in threatening the quality of life of these individuals. What is also interesting in this study is that the majority of adolescents in this study refer to the importance of being one's own friend in positively influencing their quality of life. If one is happy and content with oneself it is in turn easier to get friends (Helseth and Misvær 2010).

From the stage of late adolescence to early adulthood, the individual is becoming less concerned with what others think. Being a member of a peer group begins to become less important during late adolescence and interpersonal relationships gain more relevance (Rice and Mulkeen 1995). The young adults are beginning to have sense of owning their own viewpoints. The individual is gaining a sense of being able to rationalise matters. The levels of self-esteem improve in later adolescence and young adulthood (Simmons and Rosenberg 1973; Rosenberg 1986). There is less of a difference between the ideal self and the real self (Harter 1999). A major development during emerging adulthood is the development of autonomy. Instrumentality and separateness are important dimensions within autonomy (Kağitçibasi 1996). A failure to develop autonomy is linked to decreased motivation and low self-esteem (Ryan and Deci 2000).

# 2.7. CONCLUSION

This chapter has discussed the stages and some of the influencing factors which mould and enhance the self-concept. From infancy to young adulthood, the nature of the self-concept is steered and manipulated by the many relationships one encounters through life, and, in particular, those relationships with significant others. The interpretation of these experiences, in turn, influences future relationships, including the relationship with self, and with others. It is evident from the literature that a lack of consensus exists, in relation to defining the self-concept. However, there is agreement in relation to the complexity and uniqueness of its nature. The 'self' always finds a way of protecting itself. Behaviours such as anxiety, excessive seeking of reassurance or avoidance provides signals, both to the individual and others, that something is not right. Unless the meanings of these behaviours are investigated, it is very difficult to make progress on how they may

be resolved, so that they do not affect the well-being of self or others (Humphreys and Ruddle 2010).

The following chapter looks specifically at the evaluative component of the self, namely self-esteem. It provides a critique of the different perspectives and views regarding self-esteem. Furthermore, self-esteem through the trajectory of age is discussed. Additionally self-esteem and gender are examined. The current study has examined the relationship between global self-esteem and the coping processes of university students. Consequently, the chapter focuses on studies relating to global self-esteem, particularly within the context of university students.

# Chapter3. SELF-ESTEEM

#### 3.1. Introduction

Kernis (2003) portrays self-esteem as being an important psychological construct that exists in every person's daily life. Not only does it affect the individual's interactions with the environment but also the people they encounter. Much research has focused on the effects of self-esteem on several psychological and behavioural factors (Gentile, Twenge and Campbell 2010). For example, the positive correlation between high self-esteem and psychological well-being and academic performance has been well documented (Heyman, Martyna and Bhatia 2002; Crocker and Luhtanen 2003; Crombie, Pyke, Silverthorn, Jones and Piccinin 2003; Pullman and Allik 2008; Ruthig, Perry, Hladkyj, Hall, Pekrun and Chipperfield 2008; Wang and Castaneda-Sound 2008). Furthermore, research has investigated the negative association, for example, between self-esteem and alcohol and illicit drug use (Connor, Poyrazli, Ferrer-Wreder and Grahame, 2004; Kavas 2009) and, orientation towards making social comparisons (Rosenberg 1965), and the use of maladaptive coping (Park, Heppner and Lee 2010).

There is a wealth of information, articles and research in the area of self-esteem, so much so that there is lack of consensus in relation to its definition, foundation or origin. According to Mruk (1999; 2006) there are as many definitions of self-esteem in existence, as there are people who are trying to define the concept. The distinctions within self-esteem, viz, domain specific versus global self-esteem; high versus low self-esteem, leads to further debate in both its definition and value as a predictor of behaviours and affective outcomes. The previous chapter highlighted some of the factors that played an influential

role in the ongoing development of the self. The main emphasis in this chapter is on the evaluative component of the self, namely, self-esteem.

The main aim of this particular study concentrated on establishing the associations and predictive relationship between self-esteem and the coping strategies of a stratified randomly selected sample of university students (n=479), using an explanatory sequential mixed method design. This methodological approach, using both quantitative and qualitative methodologies, endeavoured to capture both the positivistic nature of the subject area and the realists' philosophical approach of understanding students' inferences on the significant quantitative findings from the study. The combination of both, the quantitative variance-based method for the investigation of causality, and, a process theory of causation, added to the richness of the findings. The overall philosophical framework for the study was based on critical realism (Bhaskar 1998; 2008).

Global self-esteem, which Rosenberg (1965) posited influenced psychological well-being, was the defining element within self-esteem which was investigated in the study. As there is an immense array of literature and research relating to self-esteem, the focus of this chapter is limited to certain areas, which relate specifically to the nature of this study. Therefore, the following chapter will firstly endeavour to provide a synopsis of the various theoretical perspectives in relation to defining self-esteem and tracking its chronological changes. Furthermore, an outline of the disparities within self-esteem namely domain specific and global self-esteem is addressed. Thirdly, the theme of self-esteem across the age trajectory and also gender and its relationship with self-esteem is debated. The

chapter concludes with an overview of research pertaining to the self-esteem, stress and coping.

#### 3.2. DEFINING SELF-ESTEEM

The varied and sometimes confusing terminology used in association with self-esteem has created much misunderstanding in determining the true nature and meaning of such concepts. To provide some clarity the following terms used by researchers in the area have been collated. Blascovich and Tomaka (1991) and Butler and Green (1998) refer to self-esteem as the evaluative component of the self-concept. Furthermore, it is sometimes referred to as self-worth, self-regard or self-estimation (Harter, 1982; 1993; 1999; 2006), general self-concept (Marsh 1986) and Rosenberg (1979) uses the term self-esteem. The following sections address the different perspectives on defining self-esteem.

# 3.2.1. Self-Esteem and Competencies

An important influencing element relating to self-esteem, evidenced from the literature, is the relationship between competence and self-worth (Gecas 1971; 1972; Gecas and Schwalbe 1983; Harter 1990). Under the competency model of self-esteem, an individual's self-esteem is based on one's ability to be successful in areas that are important to one. Theorists supporting this perspective refer to the difference between one's ideal self and one's real self. Even though there has been an increased interest in the subject of self-esteem in the last thirty years, the literature on this subject goes back as far as the late eighteen hundreds. Many renowned researchers in the area of psychology continuously refer to the seminal writings of James (1890). James is believed to be one of the first persons to write and comment on the area of self-esteem. Guindon (2002) making

reference to the theoretical perspective of James (1890) outlines that according to James; self-esteem is the ratio of one's pretensions divided by the number of one's successes. In this case, self-esteem may be seen as a motivating factor whereby individuals work to achieve success (Maxwell and Bachkirova 2010). According to this assertion, the closer the gap between the real self and the ideal self, the higher the level of self-esteem. Furthermore, James (1890) highlights that a person's total self-evaluation is estimated according to specific self-evaluations, which are integrated according to their importance and their relation to the individual's self-ideals and aspirations. In other words, James (1890) believes that one's self-esteem is contingent on the ratio between ones successes and failures in domains held in importance for that individual. Therefore, if one is successful in an area they aspire to then their self-esteem is increased. Conversely, if they are unsuccessful in this area then their self-esteem is negatively affected. James's view on self-esteem is continually referred to into today's literature.

In childhood, self-ideals about competence are furthermore influenced and modelled on the hopes, aspirations, and behaviours of parents (Higgins 1991; Harter 1999). Ramsdal (2008) likens the James's definition of self-esteem to that of Bandura's (1977) self-efficacy concept whereby a sense of proficiency and power is experienced when one achieves the goals which one has aspired to and this leads to the maintenance of high self-competence. James's view of self-esteem may come under the theoretical auspices of the competencies model (Gentile, Grabe, Dolan-Pascoe, Twenge, Wells and Maitino 2009). Furthermore, Harter (1999, 2006) in her writing regarding the development of self-esteem, refers to James's (1890) concept of the 'I self' and the 'Me self' and describes the 'I self' as the subject, actor or knower. The 'Me Self' is the object and is comprised of many

categories such as the social self, the spiritual self and the material self. It is this author's belief that James (1890) description of the self-concept aptly described the complex nature of its existence and highlights the interrelatedness within the self-concept and how the development of the evaluative component namely the 'Me-self' influences the 'I-self'. Harter (2006) views self-esteem as a global evaluation of an individual's worth as a person. This global self-worth is based on how the individual evaluates their competence in areas or domains, which are of high value to them (Harter 1986). Similar to James's views on self-esteem, Harter believes that the foundations of self-esteem are competency More recently, Crocker and Wolfe (2001) have extended James's theoretical based. perspective on self-esteem and see contingent self-esteem in terms of being not only a trait but also a state. They propose a model of global self-esteem and believe that, over time, people develop certain contingencies e.g. basing one's self-esteem on being good at singing or being popular, which facilitate feelings of worth, and high self-esteem. If they are able to generally satisfy these, then their self-esteem could be described as trait selfesteem, which is usually stable, by nature. However, they also add that state self-esteem (how a person feels in a particular time) might fluctuate around the trait self-esteem, depending on the success or failures experienced on the particular areas or domains on which their self-esteem is based (Crocker and Wolfe 2001). For example, Park and Crocker (2008) carried out a study on a cohort of young adults (n=90) to evaluate the effects of receiving negative interpersonal feedback, on their state self-esteem level. The findings highlight that those individuals whose self-esteem had been strongly based on others approval, on receipt of negative feedback, had a resultant low state self-esteem (B=-.35. p<.01) compared to those whose self-esteem had been less contingent on the approval of others. The study also has found that higher trait self-esteem relates to higher state selfesteem (B.50. p<.001) (Park and Crocker 2008). However, with a sample of university students (n=700) Croker and Wolfe (2001) have found significant associations between trait self-esteem and contingencies of self-worth. Lower levels of trait self-esteem were significantly associated with appearance (r=-.27, p<.01), competition (r=-.14, p<.01), and approval from others (r=-.20, p<.01). All of these contingency factors were outside of the student's control. Virtue was associated with higher levels of self-esteem (r=.12, p<.01). Furthermore, Cheng and Kwan (2008) in their research with a sample of university students (n=154) have found that basing ones self-esteem on the approval of others predicts attachment anxiety (r=.36, p<.001) and basing ones self-esteem on social support is significantly and negatively related to attachment avoidance (r=-.48, p<=.001). Having ones self-worth contingent on particular domains predicts depressive symptoms (Crocker, Karpinski, Quinn and Chase 2003). Furthermore, basing ones self-esteem on external contingencies such as appearance is associated with depression and low levels of self-esteem (Sanchez and Crocker 2005). In addition, Sargent, Crocker and Luhtanen (2006), in a study of college students have found that appearance contingency of self-worth predicts increased symptoms of depression amongst student in their first semester.

If self-esteem is totally contingent on success in particular domains then self-esteem could be seen as a liability as well as an asset-giving rise to one constantly striving for success in fear of failure. Mruk (2008), in a critique of contingent self-esteem, claims that even though competence and success affect self-esteem, on their own they are not sufficient in maintaining a healthy self-esteem. If one feels good within and has unconditional love towards the self,- a love which is not based on what one accomplishes or ones social standing, then the love of self is non-contingent. According to Humphreys and Ruddle (2010) "the self is, indeed, marvellously creative, but the self is not its creativity" (Humphreys and Ruddle, p. 58).

# 3.2.2. SELF-ESTEEM AND THE 'LOOKING GLASS THEORY'

Another theoretical perspective on self-esteem is the 'Looking-Glass' self theory or the reflected appraisal model which refers to the development of an individual's self-esteem as being the result of other people's views and opinions (Cooley 1902; 1908). According to this viewpoint, the self is socially constructed, and the opinions of others play a significant role, in the development of one's level of self-esteem. Influential others are used as a social mirror through which an individual views themselves (Harter and Stocker 1996). Mead (1964; 1967) extends this view by saying that it is not only other individual's appraisals that influenced self-esteem but also the wider social environment, which may include schools, government or media. Therefore, self-esteem is how one measures up to the internalised social values (Cooley 1908, Mead 1964; 1967).

He belongs to a society of all rational beings, and the rationality that he identifies with himself involves a continued social interchange. The widest community in which the individual finds himself, that which is everywhere, through and for everybody, is the thought world. He is a member of such a community, and he is what he is because he is a member.

(Mead, 1967, p.234).

However, Mead (1964; 1967) purports that the essence of the self is cognitive. As will be seen in the following sections, the self is indeed multifaceted and dynamic and not simply cognitively based. Self-esteem is reflective of the quality and quantity of an individual's social relationships (Baumeister and Leary 1995; Leary and Baumeister 2000). The 'Looking-Glass' theory of self-esteem which Cooley and Mead introduced, has more recently been referred to as the sociometer model (Leary and Downs 1995; Leary, Tambor, Terdal and Downs 1995; Leary, Haupt, Strausser and Chokel 1998; Leary and Baumeister 2000). Performing as a sociometer, self-esteem monitors the social environment for cues indicating disapproval and rejection and consequently, the individual, is alerted by negative affective reactions (Leary and Downs 1995). Self-esteem is affected by relational evaluation, which is the degree with which an individual

feels valued and respected by another. If low relational evaluation exists then an individual's self-esteem is reduced. In the converse situation where high relational evaluation exists, the individual's self-esteem is enhanced (Gailliot and Baumeister 2007; Leary 2008). Beach and Tesser (2000), unlike Mead, believe that self-esteem as a sociometer is more sensitive to the social exclusion from those who are close to the individual, as opposed to those who are distant. Self-esteem which tends to fluctuate according to relational evaluation is deemed to be state self-esteem and trait self-esteem is seen to be more healthy whereby the individual's self-esteem level is less affected by people's non-acceptance or rejection (Leary and Baumeister 2000; Leary and McDonald 2003). Also in line with the sociometer model of self-esteem, is the contingency of having ones worldview accepted by others (Crocker and Wolfe 2001; Pyszczynski, Greenberg, Solomon, Arndt and Schimel 2004; Gailliot and Baumeister, 2007). The 'Looking-Glass' theory of self-esteem shares the contingency property with the competency model of self-esteem. However, the foundation for self-esteem according to the 'Looking-Glass' theory, is outside the control of the individual.

## 3.2.3. SELF-ESTEEM AND HUMANISM

Another school of thought, relating to self-esteem, is that of the humanistic and person centred approach to psychology. Self-esteem, according to the humanistic approach, is not solely based on feelings of worthiness or competence but a combination of both. Within this approach, self-esteem is deemed a basic human need, which is enhanced if an adult experiences unconditional positive regard towards themselves, within their own holding world. It is seen as driving behaviour, which helps sustain a perceived sense of self, and it is seen as the foundation for psychological progression (Baumeister 1999;

Rogers 2000; 1951; Baumeister, Campbell, Krueger and Vohs 2003; Mruk 2006). Crocker and Park (2004) refer to this approach to self-esteem as a 'within person' approach to self-esteem. Mruk (2008) refers to Rosenberg's views on self-esteem and remarks that his definition of self-esteem is stable, as it is not based on the continuous proving of one's abilities. However, basing it on a sense of worth alone may lead to problems. For example, it may become difficult to differentiate between high self-esteem and excessive pride, narcissism etc. Rosenberg's (1965) viewpoint on self-esteem is discussed later in section 3.2.4.

However, Mruk (2008) agrees with the definition of self-esteem put forward by Branden (1969). This definition refers to self-esteem as being the result of the relationship between both competence and self-worth. Branden (1992; 2009; 2010) highlights that self-esteem is a powerful human need that has a survival value, and furthermore, positive self-esteem may be referred to as the immune system of the consciousness, which helps provide resistance, strength, and a capacity for regeneration. In addition, self-esteem is the disposition to experience oneself as competent to cope with the challenges of life as deserving of happiness (Branden 1992). Branden (1994, p.110) includes both confidence and self-respect in his definition of self-esteem and argues that self-esteem"... is the conviction that one is competent to live and worthy of living". The psychotherapeutic viewpoints of Branden (1994; 2010) highlights that there are six practices essential for self-esteem (i), living consciously which relates to being present, open to knowledge and facts that have an effect on our values and goals and also being self-aware, (ii), selfacceptance - to own and take responsibility for our feelings and actions, (iii), selfresponsibility, (iv), self assertiveness – being authentic in our dealings with others, (v), living purposefully and (vi), personal integrity – telling the truth and honouring our commitments. Mruk (2008) contends that authentic self-esteem is based on the relationship between competence and a sense of worthiness. According to Mruk (2008) the competence which contributes to feeling good about oneself should relate to acting competently in a manner which is respectful to individuals.

Similarly, Kernis (2003) who differentiates between two types of high self-esteem provides an elaboration on the definition of self-esteem. He outlines that high self-esteem may be either fragile or secure. Fragile high self-esteem is where an individual has positive feelings of self worth; however, the existence of these feelings may be threatened, defensive, contingent and vulnerable. Furthermore, he refers to the explicit nature of fragile high self-esteem. This is linked to the cognitive, rational and conscious dimension to ones existence and feeling of acceptance and worthiness are driven by the conscious as opposed to the unconscious. The belief that self-esteem was cognitively based was also held by Mead. Kernis, Lakey and Heppner (2008) refer to further literature, which claims that this type of high self-esteem is associated with self-protective strategies used by the individual, which in turn may undermine one's ability to deal with future adversities and may affect personal relationships (Tennen and Affleck 1993; Baumeister and Smart 1996; Paradise and Kernis 2002). Kernis (2003) contends that a narcissistic type of personality may be linked to this type of self-esteem. Kernis, Lakey and Heppner (2008) argue in favour of the existence of what they refer to as optimal self-esteem, which is secure high self-esteem and is derived from the unconscious. In referring to Rosenberg (1965), Kernis (2003), highlights that people who have secure high self-esteem do not estimate their worthiness by being better than anyone else but rather are so secure within themselves that they are at ease to be on "an equal plane as others" (p.4). If failure is experience by such people, it does not negate or take away from the overall feelings of worthiness and

acceptance. The nature of secure high self-esteem is derived from the unconscious and is referred to as being implicit (Kernis 2003). It is also referred to as being true in that it develops as a result of when ones actions are self determined and congruent with the core self, as opposed to being contingent or dependant on external criteria. This is a different viewpoint on self-esteem in comparison to view of those who support both the competency and sociometer models of self-esteem. Secure high self-esteem is distinguishable by the fact that the individual demonstrates self-acceptance and very importantly, this approval is inclusive of the individual's imperfections and flaws. As a result, secure high self-esteem is stable and remains similar across time and within different contexts. When ascertaining the influence of self-esteem on psychological functioning, Kernis (2005) outlines that a number of aspects of self-esteem require to be considered; aspects such as stability, level of and, the implicit nature of, self-esteem. Kernis et al. (2008) contend that high implicit self-esteem is normally stable over time as it is not based solely on contingencies. This type of self-esteem is linked with lower levels of verbal defensiveness in contrast to high self-esteem which is unstable and contingent or paired with low implicit self-esteem.

Like James (1890), Carl Rogers (1951; 1959) uses the analogy of the real self and the ideal self. However, unlike James (1890), Rogers does not believe that the value one places on the self is solely based on ones competencies. He asserts that the true feelings within the self are innately positive and that the self is both conscious and unconscious (Rogers 2000). However, due to lifelong conditional constraints, which may have been placed on an individual by significant others, the true self is damaged and replaced with a self that learns to conform to others and rebel against their true sense of their individual being. This self, he refers to as the real self. The ideal self is the self, which one aspires

to. When the discrepancy between both is great, the self-esteem is lowered. This is similar to Harter's conception of real and ideal selves. However, in order to enhance the self, Rogers believes, that certain core principles are required within the relationship of self and between self and others, both from a therapeutic and non-therapeutic perspective. These principles are unconditional positive regard, empathy and congruence (Raskin and Rogers 2005). Humphreys and Ruddle (2010) similar to Rogers believe the self is innately good and has vast potential to grow once it is nurtured within an unconditional relationship. The self is the core of our being and the seat of love, where ones loving potential is expressed physically, emotionally and spiritually. He believes that the self is very creative and that it finds substitute ways (derived from the unconscious) of dealing with the unsafe conditional worlds that one may have grown up in; a world which may not have facilitated the true self-expression. Humphreys and Ruddle (2010) purport that:

The primary project of being human is about returning to a place of unconditional love – working our way through the shadow world of substitute responses that have necessarily been created because of our dependence in the early years of our lives on parents and significant adults who, in turn, were working their own shadow worlds.

(Humphreys and Ruddle 2010, p. 27)

## 3.2.4. Self-Esteem and Rosenberg

Rosenberg (1965) refers to the theoretical views of James (1890), Cooley (1908) and Mead (1964; 1967) in his analysis of self-esteem and focuses on the uni-dimensional or global aspect of self-esteem. At this stage, it is important to point out a distinction, which is made between the uni-dimensional or global self-esteem and the domain specific or multidimensional nature of self-esteem. Domain specific self-esteem refers to self-worth which is experienced within different areas or domains e.g. academic, sport appearance. (O'Brien and Epstein 1974; 1988). In this situation the self-esteem level is influenced by

whether an individual is successful or not in areas, which play a salient part in his or hers life. On the other hand, global self-esteem is defined by the overall feelings of self-worth.

Wylie (1974) Rosenberg (1965; 1979) and Coppersmith (1967) established, from empirical evidence, that self-esteem is a one-dimensional global phenomenon expressed by an attitude towards the self. The global nature of self-esteem is explained by Rosenberg (1979) as the entirety... "...of the individual's thoughts and feelings having reference to himself as an object" (Rosenberg 1979, p.7). He refers to self-esteem as "...a positive or negative attitude toward a particular object, namely, the self" (Rosenberg 1979, p.30). Rosenberg (1979) asserts that attitudes have two qualities, firstly a specific attitude and secondly, a global attitude. These are not the same and are not interchangeable. An attitude has both a cognitive and an affective attribute attached to it. Cognitive attitude is having thoughts regarding an object and the affective component is the direction and intensity of that thought (positive or negative orientation towards the object). A person can have an attitude towards an object and, in the case of self-esteem, the object and the holder of the attitude are the same things (Rosenberg 1979). An individual can evaluate every characteristic of the self and this in turn leads to the self-estimation of that individual. This estimate is gauged against the value we place on ourselves since we were children and adolescents. It is a likeability and value towards oneself.

Making a similar comment Tafarodi and Ho (2006) maintain that self-esteem is a reflexive occurrence in which a person estimates their value based on their personal identity. This self-understanding is based on where one has come from and where one is going or would like to go. Feedback from significant others is very important (Coopersmith 1967; Fitts

1972 and Rosenberg 1979). Mead (1964; 1967) highlights that self-esteem is an interactive process whereby ones self-esteem is how one experiences him or herself in relation to how others behave towards them. The self-beliefs of the individual are linked to their self-esteem (Showers and Zeigler-Hill 2006). Similarly, White (1963) highlights that there are two sources of self-esteem; internal (sense of accomplishment) and external (affirmation from others). This is almost akin to combining both the competency and sociometer models of self-esteem. Coopersmith (1967) further elaborates on the subject of defining self-esteem, whilst working with pre high school children, and highlights that self-esteem is a complex phenomenon and is the self-evaluation of the individual based on the judgements and evaluations of three elements, performance, capacity and attributes (Coopersmith 1967; 1981). Coopersmith (1967; 1981) maintains that self-esteem is the evaluation, which an individual makes and maintains regarding him or herself. The resulting attitude which is expressed is either one of approval or disapproval and is an indicator as to how one believes themselves to be worthy, capable, significant and successful (Coopersmith 1967; 1981).

Much of Rosenberg's research is in relation to adolescents and young adults. As indicated in the previous chapter it is not until middle childhood that children are in a position to formulate a global sense of self-esteem (Harter 1990a). According to Rosenberg, Schooler, Schoenbach and Rosenberg (1995), global self-esteem is the positive or negative attitude towards oneself; the self refers to the total self rather than to a single dimension. In reference to the global aspect of self-esteem, Rosenberg (1979) claims that self-esteem is an organisation of parts rather that a collection of components, which are organised, in a hierarchical and interrelated way. People with high self-esteem display a congruent sense

of self-worth, self-respect and self-acceptance (Rosenberg 1985). He believes that in having a high level of self-esteem:

The individual simply feels that he is a person of worth; he respects himself for what he is, but he does not stand in awe of him.

(Rosenberg 1965, p.31).

Adding to this view, Baumeister (1999) believes that the self-enhancement motive is very salient for people with high self-esteem. This involves the motivation to look for information, which paints a positive picture of the individual and the ignoring of information, which may be to the contrary (Baumeister 1999). Conversely, people displaying low self-esteem tend to display a sense of unworthiness and incompetence:

The individual lacks respect for the self he observes. The self-picture is disagreeable, and he wishes it were otherwise.

(Rosenberg 1965, p.31).

In relation to people displaying low self-esteem, Baumeister, Tice and Hutton (1989), in contrast to Rosenberg, purport that people with low self-esteem tend to be confused and have neutral self-feelings rather than having an overall sense of unworthiness. In addition, Baumeister (1999) asserts that those individuals who exhibit low self-esteem tend to display self-consistency motives whereby they tend to hold onto negative messages about themselves and will ignore positive information.

## 3.2.5. GLOBAL AND DOMAIN SPECIFIC SELF-ESTEEM

Similar to Rosenberg, Harter (1999) argues that global self-esteem is not the sum total of self-evaluations across a range of domains or categories but the overall evaluation of one's worth or value as a person. Furthermore, according to Rosenberg et al. (1995) domain specific self-esteem is a good predictor of behaviour and global self-esteem a good indicator of psychological well-being. This hypothesis is based on and supported by the

research of Jones (1973), Kaplan (1975); Greenwald (1980); Baumeister (1982) and Swann (1987). They maintain that self-esteem is a fundamental human motive and that there is a universal desire to maintain protect and enhance feelings of self-worth. This process leads to a variety of coping strategies, self-protective and self-enhancement processes, in order to protect the self. Similarly, Robins and Hendin (2001) claim that global self-esteem has great implications for interpersonal and intrapsychic functioning. Global self-esteem is concerned more with self-acceptance and self-respect. Pyszczynski et al. (2004) purports that global self-esteem buffers the impact of anxiety producing Furthermore, it can be unconditional, that is high or low, irrespective of stimuli. accomplishments (Rosenberg 1985). Competence is only one of many factors, which contribute to these feelings; therefore, one of the reasons as to why global self-esteem is not the best predictor of behaviour (Rosenberg et al. 1995). However, Krueger, Vohs and Baumeister (2008) highlight that the use of global self-esteem measures do not take cognisance of domains and cognitions which are often very relevant for self-regulation and behaviour.

Mruk (2008) asserts that Rosenberg's views on self-esteem are primarily based on worthiness rather than competence whilst this definition of self-esteem is stable it leads to problems whereby feeling good without evidence of one deserving it may lead to an inaccurate or flawed result. He maintains that Rosenberg's (1965) definition of self-esteem leads to difficulty in differentiating self-esteem from example excessive pride or narcissism (Mruk 2008).

However, Rosenberg (1965) argues that having high self-esteem is not only about feeling good about oneself but also involves the acknowledgement of weaknesses and imperfections and working on overcoming them:

They respect the self that they observe, but they note imperfections and inadequacies, and hope, usually with confident anticipation of success, that they will overcome these deficiencies. One might also consider applying the term self-satisfaction to describe these people, were this term not too loaded with the connotation of smugness.

(Rosenberg, 1965. p. 31).

Rosenberg et al. (1995) are adamant that domain specific and global self-esteem are not interchangeable. The multi-dimensional nature of self-esteem namely domain specific self-esteem refers to an individual's sense of competency across a wide range of areas such as, for example, within social and academic spectrums (Harter 1999). Harter (1999) contends that global self-esteem disguises the differential nature in relation to the adequacy experienced by an individual across a variety of domains. Some researchers believe that establishing an estimation of the self across different areas ensures a richer and more comprehensive profile of the self and helps to create a better understanding of how self-esteem relates to other areas of development and how these areas of development affect self-esteem (DuBois and Hirsch 2000). Some researchers and theorists have incorporated both global and domain specific self-esteem into a hierarchical models. Shavelson and Hubner (1976) were the first to theorise that self-esteem was multi dimensional in nature. They placed global self-esteem at the apex and underneath they placed academic and non-academic self-esteem. Both academic and non academic are further subdivided and the belief is that domain specific self-esteem at lower levels have an impact on the next level and in turn on the overall or global self-esteem (Byrne 1996). Therefore purporting that those different domains of self-esteem exist and influences the overall global self-esteem.

The above sections have outlined the many different views on the origins and definitions of self-esteem. James's (1890) believes that self-esteem is based on how a person evaluates their abilities and accomplishments in relation to their aspirations. Conversely, Cooley (1902) and Mead (1964; 1967) observe that one's self-esteem is influenced by how one perceives they are viewed by others. The humanistic approach to self-esteem ranges from Branden's (1992; 2009; 2010) belief that self-esteem is based on both competence and self-respect, to Kernis's (2003) description of secure self-esteem, which is believed to arise from the unconscious and is regarded as being the ability to accept oneself based on the values of the core self and is not contingent on external criteria.

Harter (1990) and Rosenberg (1965) consider that global self-esteem is a combination of how one evaluates their accomplishments in areas that are important to them combined with how they accept themselves in relation to how they both view themselves and how they are viewed by others. The current study has adopted Rosenberg's (1965) definition of global self-esteem. Rosenberg believes that an individual with high self-esteem has a congruent sense of self-worth, and self-respect, and self-acceptance whilst acknowledging their weakness and imperfections and recognises the need to overcome them. Furthermore, Rosenberg (1965) recognises the importance of respect to self and others.

### 3.3. THE ROSENBERG SELF-ESTEEM SCALE

Rosenberg (1965) devised a Guttman scale to ascertain levels of global self-esteem referring to it as the Rosenberg Self-Esteem Scale (RSES). It is the most widely used self-esteem scale. It is a ten-item scale and is comprised of five positively worded and five negatively worded statements. Using both negatively and positively worded statements

can reduce the occurrence of response bias. Response bias is the result of acquiescence or agreement (Cronbach 1950; DeVellis 1991). It was originally designed as a one-factor scale (Rosenberg 1965). The RSES provides an overall result of the positive or negative attitude towards the self. There has been much questioning regarding whether the Rosenberg Self-Esteem Scale measures two components, i.e., positive and negative selfesteem, or simply global self-esteem. Using varying component analysis some studies have found two factors (Kohn and Schooler 1969; Carmines and Zeller 1979; Kaufman, Rasinski, Lee and West 1991) others one factor (Hensley and Roberts 1976; Blascovich and Tomaka 1991; Hagborg 1993; Gray-Little and Carels 1997; Dunbar, Ford, Hunt and Der 2000; Aluja, Rolland, Garcia and Rossier 2007). Greenberger, Chen, Dmitriera and Farruggia (2003) whilst testing the RSES have found a two-factor structure but contend that this is an artefact of the item wording. Similarly, some of the researchers highlight that the two factors structure may be because of response sets to both the negatively and positively worded statements (Hensley and Roberts 1976) or because of methodological artefact (Carmines and Zeller 1979). Robins and Hendin (2001) research provides increased support for the construct validity of the Rosenberg Self-Esteem Scale.

The RSES (1965) has been linked to the Five Factor Theory of personality (McCrae and Costa 1999; Allik and McCrae 2002). Using the NEO-Personality Inventory (NEO-PI-R; Costa and McCrae 1992) some studies have shown that the scale relates very well to the dimensions of neuroticism (depression, self-consciousness, and vulnerability), and extraversion (assertiveness, warmth and positive emotions) (Costa, McCrae and Dye 1991; Pullmann and Allik 2000; Judge, Erez, Bono and Thoresen 2002). These findings contend that self-esteem may originate in personality traits, which are genetically defined.

However, self-esteem, as highlighted in this chapter and the previous chapter, is also influenced greatly by environmental factors.

Some researchers refute the notion of global self-esteem as being one-dimensional (Tafarodi and Swann 1995; Ramsdal 2008). For example, Ramsdal (2008) asserts that self-esteem has two dimensions namely self-liking and self-competence. In using, the Self-liking/Self-competence Scale (SLCS) (Tafarodi and Swann 1995) and the Big Five Inventory scale (John and Srivastava 1999), with a cohort of Norwegian college students (n=128), Ramsdal (2008) has found that there are significant differential correlations between the two dimensions of self-esteem and separate dimensions of the Big Five. Self-liking is significantly correlated to agreeableness (r=0.20, p< 0.05), conscientiousness (r=0.22, p<0.05) and neuroticism (r=-0.35, p<0.01). Self-competence is significantly correlated to extraversion (r=0.21, p<0.05) and openness (r=0.20, p<0.05).

The RSES (Rosenberg 1965) is one of the questionnaires used in this study. In light of the above findings, this current study has used Principle Component Analysis to establish the factor component within the scale. The RSES (1965) will be discussed in more detail in the research design chapter.

## 3.4. LEVELS OF SELF-ESTEEM THROUGH THE YEARS

Many distinct variations in self-esteem levels are evidenced across the trajectory of age from the young child to the older person. These variations are influenced by developmental, social and emotional changes, which occur across the ages. Many results from studies in relation to changes in self-esteem across the ages are varied and sometimes

results are inconsistent (Twenge and Campbell 2001; Twenge and Campbell 2008; Huang 2010; Pullmann, Allik and Realo 2009; Gentile et al. 2010).

As very young children lack the ability to integrate their attributes, emotions and abilities into an overall evaluation they are unable to have a global sense of self-esteem, which is not to say that they do not experience self-esteem. It is not until middle childhood that children develop global self-esteem (Harter 1999). Generally speaking, higher levels of self-esteem are experienced by younger children and as the child gets older it decreases (Robins et al. 2002; Robins and Trzesniewski 2005). According to Meece and Daniels (2008), children's self-esteem usually increases as they advance in areas that are important to them including success in their peer relationships. This is similar to James's (1890) concept of the relationship between the importance one places on particular activities or relationships and the affect on the level of self-esteem. Self-esteem reaches stability in the latter years in primary school, and according to Harter (1983), for example if a child has high self-esteem at age eight it is likely it will remain high at age ten especially when there is stability in their environment. Huang's (2010) meta-analysis highlights that self-esteem increases significantly during the childhood years (age<12) (d=.0354), the college years (d=.2252) and the first decade of young adulthood (d=.2108). However, the effect size is small for these increases except for the increase during the college years. Furthermore, Baldwin and Hoffman (2002) in a longitudinal study observe that age has a cubic effect on self-esteem. Firstly, they have established that self-esteem increases with age (up to 12-14 years of age) (Age:  $\beta = 1.23$ , p < 0.01), secondly there is evidence of decrease in selfesteem until age 17 years (Age<sup>2</sup>:  $\beta$  =-0.28, p < 0.01), (slightly different to Huang, 2010), and finally, a second increase in self-esteem at age 16 or 17 years of age (Age<sup>3</sup>:  $\beta$  =-0.02, p < 0.01).

Similarly, in Twenge and Campbell's (2001) cross-temporal meta-analysis, a curvilinear trend using the Cooppersmith (1967; 1981) Self-Esteem Inventory, is evident. However, it must be noted that the Coopersmith SEI and Rosenberg's SES are the only self-esteem scales reviewed in the study. The self-esteem level drops from elementary school to junior high and then increases from high school to college (Twenge and Campbell 2001). They note, however, that the changes are small in effect size. In a more recent crosstemporal analysis (from 1988 -2008), Gentile, Twenge and Campbell (2010) assert that the largest increase in self-esteem is in middle/junior high school. Conversely, this cohort is recorded with the lowest score in the meta-analysis of Twenge and Campbell (2001). However, from a general perspective there is an overall increase in self-esteem levels in middle school, high school and college students, over a twenty year period (Gentile et al. 2010). They have confined their meta-analyses from the year 1988 to mid 2008. They indicate that the increase in self-esteem level during this period may be due in part to a cultural increased emphasis on self-esteem and also increases in perceived competencies. Pullmann et al. (2009) study challenges the general age/self-esteem trajectory findings of most research studies and contend that self-esteem does not follow the normal curvilinear trajectory as outlined in previous studies. They use five different samples in the study. The first sample comprises of a random selection of Estonians from the National Census (n = 1395) the second sample is from a larger study, namely, the European Social Survey in which Estonia participated in the second round of the study. This particular sample is comprised of a strictly random selection of all persons over the age of 16 (n=1469) in residence in private households in Estonia, irrespective of nationality. The third sample is made up of 655 adults who had already participated in a wider study regarding the integration processes in Estonia. The fourth sample is a representative sample of Estonian adolescents drawn from 27 socially and geographically representative schools and finally

the fifth sample is a self-recruited internet sample of Estonian speaking individuals (n = 23,248). The overall results from all the different samples indicate that the age/self-esteem trajectories are different for all samples (Pullmann et al. 2009). This study highlights that the sampling type and the self-esteem scales used have a bearing on the results.

Self-esteem plays an influential role during adolescence (Harter 1983). Late childhood and early adolescence is often a time where there is a drop in self-esteem (Blyth 1987; Jane, Simmons, Maxine and Weinman 1991; Harter 1998; Twenge and Campbell 2001; Robins et al. 2002; Trzesniewski, Donnellan and Robins 2003). Simmons and Rosenberg (1975), Allgood-Merten and Stockard (1991) and Brown, McMahon, Biro, Crawford, Schreiber, Similo, Waclawiw and Striegel-Moore (1998) maintain that self-esteem is lower in adolescence than in children. Some of the contributing factors may be firstly, change in environment i.e. new school secondly change in social status from being the oldest students in their previous school to being the youngest in their new school and the physical changes which occur during puberty. However, O'Malley and Bachman (1983) in a longitudinal study purports that there is a small increase in global self-esteem between 13 and 23 years of age. Chiam (1987) and Cairns, McWhirter, Duffy and Barry (1990) establishes comparable findings. Similarly, Huang (2010) has found an increase in selfesteem levels during college years of 18 to 22 (d = .2252). However, the effect size is small. This is in line with Twenge and Campbell's (2001) 'birth cohort meta analysis' in which the Rosenberg Self-Esteem Scale and Coopersmith Self-Esteem Inventory are used. They have found a marked increase in the self-esteem levels of college students between the years 1968 and 1994. These changes reflect changes in society where there is an increased interest in self-esteem. However, this study only uses two self-esteem scales, which may have an effect on the results. It may be concluded that generally speaking there tends to be a decrease in self-esteem levels during adolescence with a slight increase during the college years.

During adolescence, there is a greater emphasis on inner feelings and thoughts and as a result self-esteem becomes more salient during this time (Rosenberg 1986: Harter 1990). Blos (1979) points out that the process of individuation in the adolescent relates to the ending of the domination of the repressive superego, an end to the dependency on the parental introjects for approval, self-esteem, and standards of behaviour. In mastering the superego, de-idealization of the parents occurs. The reorganization of the ego-superego balance results in an ascendant ego that internally regulates self-esteem based on realistic content and not on the idealized content of the superego. More emphasis is placed on thinking and the analysis of who they really are. Harter (1999) purports, that during adolescence, satisfaction with one's physical appearance, is the personal variable most linked to global self-esteem. Seidah and Bouffard (2007) in their study with adolescents (n=1362), have found that 35% of adolescents recognise that satisfaction with their physical appearance predetermines their self-esteem. Furthermore, the adolescents with this view, report lower self-esteem and lower satisfaction with their physical appearance. There is a higher incidence of girls within this cohort, to have this view and also a need to belong to a group (Seidah and Bouffard 2007). Adolescents with higher levels of selfesteem tend to use more problem-focused coping processes (F(1, 347) = 4.09, p < 0.03) and less emotion-focused coping (F(1, 347) = 8.25, p < 0.001) than adolescents with lower levels of self-esteem (Mullis and Chapman 2000).

Self-esteem is relatively stable during young adulthood (Trzesniewski et al. 2003). A longitudinal study on self-esteem development from young adulthood to old age argues that self esteem levels show a gradual increase during young and middle adulthood, reaching a peak in the 60's and then declining in old age (Orth, Trzesniewski and Robins 2010). In the older person, a decline begins in self-esteem and it is believed that, even though they may have a strong sense of self, the self-esteem scores reflect a willingness of the individual to provide a more realistic overview of their limitations (Robins et al. 2002; Robins and Trzesniewski 2005). However, Huang (2010) has carried out a meta-analysis on longitudinal studies to estimate the mean level changes, which occur in self-esteem from childhood through to adulthood and finds that whilst self-esteem increases up to thirty years of age there is no great change after this age. However, the data points beyond college years within the meta-analyses are not very large (Huang 2010). Research on self-esteem levels in the older person can be somewhat inconsistent. Some studies find no significant age differences in self-esteem in older cohorts (Erdwins, Mellinger and Tyer 1981; Ryff 1989).

Even though there is disparity amongst the findings of some of the above studies in terms of the relationship between self-esteem levels and age, generally speaking the following may be deduced – the younger the child the higher the self-esteem, a decrease in self-esteem is evidenced at late childhood and early adolescence with an increase at late adolescence/young adulthood.

As there is evidence of self-esteem changes across the lifespan so too is there evidence of variation between self-esteem levels in males and females.

### 3.5. GLOBAL AND DOMAIN SPECIFIC SELF-ESTEEM LEVELS AND GENDER

It is well reported in the media and indeed articles pertaining to self-esteem that girls largely tend to have lower self-esteem levels in comparison to boys across the age trajectory (Gentile et al. 2009). As in age and self-esteem changes, the findings outlined below must be viewed by considering the sample type and size, the self-esteem scale used and the effect size of the results. However, in reviewing the literature, there is almost a general consensus that boys' self-esteem is higher than females across the age continuum.

Young boys and girls (9-12 year olds) have almost identical self-esteem levels (Major, Barr, Zubek and Babey 1999; Robins et al. 2002). However, in Kling and Hyde (1999) meta-analysis, there is evidence of gender differences in this age group with boys having higher levels of self-esteem.

Baldwin and Hoffman (2002) in a longitudinal study using growth-curve analysis in a cohort of 762 subjects aged between 11 and 16 years, observes a curvilinear effect between age and mean level of self-esteem, using the RSES (Rosenberg 1965). Furthermore, fluctuations in self-esteem are very evident in the female cohorts in comparison to males. In the study, females' self-esteem decreases substantially between 12 and 17 years of age, whereas boys' self-esteem level increases up to 14 years old and then decreases until 16 years of age and increases once again in early adulthood (Baldwin and Hoffman 2002). In addition, Israel and Ivanova (2002) asserts that boys have higher levels of global self-esteem to girls. Muldoon and Trew (2000) argue that there is evidence of gender differences in both domain specific and global self-esteem at children at aged 10 and 11 years old. In relation to the domains of physical appearance, [F (1,639) = 24.3, P< .001], athletic ability, [F (1,639) = 24.9, P< .001] and scholastic competence, [F (1,639) = 9.2, P< .01], boys score significantly higher than their female counterparts do

and they have higher global self-esteem levels [F (1,639) = 5.5, P< .01]. Muldoon and Trew (2000) however note that the findings may reflect the chosen cohort in the study rather than developmental changes in self-esteem. In a longitudinal study with a randomly selected sample of school children (n=2400), Alsaker and Olweus (1992) establishes that females experience a slightly faster decline than boys in the stability of global self-esteem. Byrne (2000), similarly in a study with students aged between 7 and 12 years of age (n=224), maintains that girls have consistently lower self-esteem to boys.

Likewise, many studies have established that during adolescence, self-esteem is lower in girls than in boys (Block and Robins 1993; Kling and Hyde 1999; Hergovich, Sirsch and Felinger 2004). Block and Robins (1993), in their longitudinal study on developmental self-esteem changes from early adolescence to young adulthood in a sample of boys (n=44) and girls (n=47) used the Q-sort procedure to measure global self-esteem. They find no age related changes in the mean level of self-esteem within the combined sample. The study reports that those individuals who have relatively high or low self-esteem at 14 years of age tend to have the same level between the ages of 18 - 23. However, they purport that there are significant gender differences, with the boys having significantly higher self-esteem over time in comparison to the girls (Block and Robins 1993; Simmons and Rosenberg 1975). The mean self-esteem level (standard deviations in brackets) for the boys are as follows age 14, .M=56 (.20), age 18, M=.59 (.15) and age 23, M=.60 (.19). For the girls at the same age as above, the results are as follows; M=.53 (.26), M=.52 (.26) and M=.48 (.26). The simple effects of gender and self-esteem favouring boys at age 14 are small. At age 18 the effect increases (p<.07). However, very interestingly, they argue that girls with high self-esteem highlight the importance of interpersonal connectedness for them and the girls are said to be warm, giving, concerned about others and talkative. While in contrast, boys with high self-esteem appear unemotional, uninvolved and their independence is displayed in a distancing way (Block and Robins 1993). There is a statistically significant difference at age 23 years (p<005). The sample size in this study is relatively small (boys, n=44; girls, n=47).

In a more recent longitudinal study, Birndorf, Ryan, Auinger and Aten (2005) argue that the boys are generally more inclined to have higher level of self-esteem (using the RSES) across all grades in comparison to their female counterparts. From grade 8 to 12 (age 13 to 17 approx.), the percentage of males with high levels of self-esteem is as follows. Grade 8, 39.2% of boys present with higher levels of self-esteem in comparison to 27.4% of girls (relative risk = 1.4; 95% confidence interval [CI] = 1.3-1.5, p < .001); grade 10, 36.8 of boys compared to 30.3% of girls (relative risk = 1.2; 95% confidence interval [CI] = 1.1-1.3, p < .001) and finally in grade 12, 37.4% of boys present with higher levels of self-esteem compared to 30.6% of girls (relative risk = 1.2; 95% confidence interval [CI] = 1.1-1.3, p < .001). This study followed up on a group of  $8^{th}$  grade adolescents (n = 26,432) over a five-year period. Correspondingly, Sung, Puskar and Sereika (2006), using Rosenberg Self-Esteem Scale, reports significantly higher levels of self-esteem for males compared to female adolescents (mean age = 16 years). The self-esteem of the boys in the study is as follows; (M=29.6, SD=4.4) compared to the girls (M=26.8, SD=5.0) with a t value of 2.35 (p<05). Puskar, Bernardo, Ren, Haley, Tark, Switala and Siemon (2010) study establishes that males have significantly higher self-esteem (m=21.98, p<.001) to females (m=19.13). However, both of these studies use relatively small convenience sample of rural adolescents (n=72) and (n=193) respectively which may limit the generalisation of the findings. Bagley, Bolitho and Bertrand (1997) and Bagley, Bertrand, Bolitho and Mallick (2001) have established the norms, using Rosenberg Self-Esteem

Scale, of Canadian high school pupils both males (n=1084) and females (n=1024). The findings show a significant lower self esteem level for females compared to males. Between the ages of 18-19 years, girl's self-esteem level is 19 and male's self-esteem level at the same age is 22. Within a British sample of male and female pupils, aged 12-to 19 years of age, Bagley and Mallick (2001) have established normative data for global self-esteem. Using the Rosenberg Self-Esteem Scale, the study highlights that males score higher self-esteem scores compared to females across all age groups. In the age group 18-19 the males have a mean score of 22 and the females 19 (Bagley and Mallick 2001). Similarly, a study of self-esteem norms for Irish children (n=7706) found statistical significant differences between males and females (NicGabhainn and Mullan 2003).

Twenge and Campbell (2001) contend that girls show a slight decrease in self-esteem levels from elementary school to high school (-.03, SDs), whereas the boy's self-esteem levels show a moderate increase (.38). Whilst the self-esteem level of both males and females are lower during adolescence, the boys show an increase during high school whereas the girls' level of self-esteem takes until the college years to recover (Twenge and Campbell 2001). In studies with cohorts of college students, the findings show similar trends. Tiggemann and Rothblum (1997) for example have found in two convenience samples of psychology college students, 193 from an Australian college (Mean age=24.99), and 220 (Mean age=18.93) from an American college (n=413) that the male students have significantly higher self-esteem in comparison to the girls, (F (1,386) = 4.74, P<.05). They used the Bachman and O'Malley (1977) version of Rosenberg's (1965) Self-Esteem Scale. Likewise, Corbin and McNair (1996), with a sample of college students (n=260), have established that females have lower self-esteem to males. Conversely, in a meta-analysis carried out by Trzesniewski et al. (2003) whilst self-esteem

demonstrates stability over time, there are no significant associations between self-esteem and gender. Additionally, Armstrong and Oomen-Early (2009) have found no gender difference in self-esteem levels. Similarly, using the Rosenberg Self-Esteem Scale (1965), Clifton, Perry, Roberts and Peter (2008) find no significant statistical difference between male and female students (n=854).

Knightley and Whitelock (2007) use triangulation to ascertain the best method of evaluating female undergraduates' (n=31) levels of self-esteem. Using three self-esteem scales and individual interviews, the findings indicate that the students' self-esteem increases during the course of the programme. Even though both quantitative and qualitative methods are used in this study, the sample is a convenience sample. It is biased on females and is very small to make general assumptions from a quantitative perspective. Using the RSES, a study using a convenience sample of Icelandic couples (n=424) with a mean age of 33 years, has found that the females have significantly lower self-esteem to the males (Gudjonsson and Sigurdsson 2003).

In estimating the relationship between self-esteem levels and gender in a cohort of seniors (n=106; Males=31; Females=75) with a mean age of 70, Šmídová, Hatlova and Stochl (2008) find that the self-esteem level of men is significantly higher in comparison to women (p < .01). These findings are not in line with normal trends in research relating to the older person and self-esteem and gender. For example, Pullmann and Allick (2009) have found no inter gender difference within this age cohort. Likewise, Robins et al. (2002) have found no gender/self-esteem differences (d = .08) in person's aged in their 70s. However, women in their 80s have slightly higher self-esteem levels than males (d= -

.08). The convergence of gender and self-esteem levels in older cohorts is also evidenced in Kling and Hyde (1999) meta-analysis. The cohort of seniors researched in Šmídová et al. (2008) study had been involved in an active life style programme. Accordingly, the results may not be reflective of the general population of this age cohort.

As there are gender differences in global self-esteem, there is also much evidence of gender discrepancies in various domains of self-esteem. Sondhaus, Kurtz and Strube (2001) compare two groups of college students; one group comprises of 140 recruited participants from three American universities and the other group was comprised of 169college students in Kurtz's 1966 study. The Marsh's Self Description Questionnaire-111 (Marsh and O'Neill 1984) is the self-esteem scale used (measuring various self-esteem domains) and the results indicate that many gender differences exist in the various domains examined. Men have a more positive attitude toward their physical appearance in comparison to the women, t(138) = 2.16, p < .05, and their physical abilities, t(138) =3.85, p < .0. The women on the other hand had a more positive attitude towards academic performance than their male counterparts, t(138) = 3.13, p < .01, and also the honesty facet, t (138) = 4.55, p, .01. Similar findings are evident in the meta-analysis on gender differences in domain specific self-esteem which have been carried out by Gentile et al. (2009). Men score higher than women in the following domains of self-esteem, physical appearance,  $(Q\tau = 288.07, d=.35, k=76, p<.001)$ , athletic self-esteem,  $(Q\tau = 322.33, d=.41,$ k=68, p<.001), personal self, ( $Q\tau = 23.82$ , d=.28, k=9, p<.01) and self-satisfaction ( $Q\tau =$ 58.78, d=.33, k=10, p<.001) (k=10, k=10) (k=10) (k=1following domains, behavioural conduct ( $Q\tau = 88.85$ , d=-.17, k=56, p<.01) and moralethical self-esteem,  $(Q\tau = 59.47, d=-.38, k=15, p<.001)$ .

Pilafova, Angelone and Bledsoe (2007) argue that males have both higher global self-esteem, (M=1.93, SD = 0.43), F (1, 151) = 6.80, P = .01, and higher body self-esteem in comparison to women (M= 2.17, SD =0.64), F (1, 151) = 23.55, P < .01. The study uses the Rosenberg Self-Esteem Scale (Rosenberg 1965), and, the Body–Esteem Scale for Adolescents and Adults (Mendelson, White and Mendelson 1997) with a cohort of college students (n=153). Jones, Polman and Peters (2009) have similar findings in relation to males having higher body appearance self-esteem to women.

The above studies indicate that gender differences in self-esteem levels may not be evidenced so much in the very young child or the older adult. However, generally speaking boys present with higher global self-esteem levels in comparison to their female counterparts. In relation to domain specific self-esteem, boys tend to have higher self-esteem relating to appearance and body satisfaction, in comparison to girls. Interestingly, the areas in which girls rate higher than boys are in the domains of moral and ethical self-esteem.

The following section focuses on research, which addresses the relationship between selfesteem and coping processes within the population of college students.

# 3.6. THE RELATIONSHIP BETWEEN STRESS, COPING AND SELF-ESTEEM AMONGST UNIVERSITY STUDENTS

Even though the literature identifies that many psychosocial dispositions such as coping and self-esteem are stable by the time an individual reaches college, (Gottfried, Fleming and Gottfried 2001), much of the research outlined in this chapter highlights the many variations, which exists between these dispositions, within and between different cohorts.

Hojat, Gonnella, Erdmann and Vogel (2003) report a significant relationship between selfesteem and a 'Resilient' group of medical students (n = 406) (students who had experienced a stressor and reported not being strongly influenced by the event) (F = 13.9,p<0.01). College students, who have well developed coping processes and higher levels of self-esteem, tend to achieve high academic success (Heyman et al. 2002; Crombie et al. 2003; Ruthig et al. 2008). Likewise, Pullman and Allik (2008) have found a significant relationship between global self-esteem and academic self-esteem (r = .50, p<0.001), within a group of students (n=969) who were applying for a university programme. However, whilst academic self-esteem strongly predicts school achievement, it is the lower levels of global self-esteem that are associated with school performance. Academically successful students have a more critical view of themselves and utilise two compensatory mechanisms. namely defensive pessimism, and self-protective enhancement, to protect them from the consequences of failure (Pullmann and Allik 2008). However, Crocker and Luhtanen (2003) have evaluated the effects of self-esteem and contingencies of self-worth on academic, social and financial problems with a cohort of freshmen students (n=631) throughout their first year. They have found that basing self-worth on academic performance predicts academic problems ( $\beta = .16$ , p<0.01) and financial problems ( $\beta = .10$ , p< 0.05). This study highlights that students, who base their self-worth on academics, may be anxious and stressed leading to deleterious effects on their performance (Covington 2000; Ryan and Deci 2000).

Wilburn and Smith (2005) establishes a link between levels of self-esteem and stress amongst a sample of college students (n=88). As self-esteem increases, stress and suicidal thoughts decrease (r = -.35, p < .001). However, the sample in this study is comprised of 90% females and is not randomly selected. Furthermore, Hayman, Kurpius, Befort, Nicpon, Hull-Blanks, Sollenberger and Huser (2007), in a study with a convenience sample of college freshmen (n=204), have found that self-esteem is negatively related to stress (r=.30, p=.001). Likewise, Edwards, Burnard, Bennett and Hebden (2010) have found, in a cohort of students undertaking a nursing course, that as stress increases over time, levels of self-esteem decrease ([T1] r = -0.16, p < 0.05; [T3] r = -0.27, p < 0.05; [T4] r =-0.27, p<0.05). In a study investigating the effects of self-esteem, academic self-efficacy and perceived social support on first generation college students, Wang and Castaneda-Sound (2008) contend that self-esteem is the most important predictor of the student's psychological well-being. Mimura, Murrells and Griffiths (2009) find a negative relationship, between stress and self-esteem (r = -0.54 to -0.70), in a cohort of nursing and pharmacy students from both a university in Japan and in the UK. Interestingly, these cohorts of students score lower in self-esteem (the RSES was used) in comparison to selfesteem levels found in other populations. They also report higher levels of stress in comparison to the general student population.

Alluding to the conflicting evidence in existence in relation to whether coping is predictive of self-esteem or vice versa, Park et al. (2010) examines the mediation effects of maladaptive coping and self-esteem on evaluative concerns perfectionism (self-critical perfectionists) and distress with a group of Korean college students (n=508). The study establishes that self-esteem is a mediator between maladaptive coping and distress. In other words evaluative concerns perfectionists are more likely to engage in mal-adaptive

coping which lowered their self-esteem and in turn leads to distress ( $\beta$  =-.56, p<0.001;  $\beta$  = -.21, p<0.001). The current study has also carried out statistical tests to establish the predictive links between self-esteem and coping.

A longitudinal study by Pritchard, Wilson and Yamnitz (2007), to evaluate factors which predict adjustment to college in a cohort of undergraduate freshmen (n =242), have found that students who have lower levels of self-esteem, have more health problems (r = -.21, p<0.01) and report more negative moods (r = -.34, p<0.001). Similarly, Cash, Santos and Williams (2005) have found that students (n=603), both male and female, who engage in avoidant coping techniques report lower levels of self-esteem, aberrant eating concerns and less social support from friends and family. Aspinwall and Taylor (1992) assert that higher levels of self-esteem predict lower use of avoidant coping processes. Thoits (1995) has found a significant association between individuals with high levels of self-esteem and the use of active coping processes, whereas individuals with lower levels of self-esteem tend to use passive avoidant coping processes. Equally, in a longitudinal study with undergraduate nursing students, Lo (2002) finds a significant correlation (p < 0.01) between positive self-esteem and adaptive coping behaviour. Furthermore, there is a significant correlation (p < 0.01) between transient and chronic stress and avoidance coping and negative self-esteem (Lo 2002). In relation to types of coping processes used by students Heiman (2004) argues that women use more emotional (F = 3.93, p< 0.05) and avoidance coping (F = 8.91, p < 0.01) in contrast to men. Furthermore, younger students use more emotional coping processes (F = 8.80, P < 0.001) in comparison to older students who use more task orientated coping (F = 7.12, P< 0.001). The sample comprised of 261 undergraduate students who were studying social sciences. It would be interesting to obtain a random sample of students and to identify any variations between science-based programmes and humanities programmes. Ni Liu Hua Lv Wang and Yan (2010) identifies that undergraduate nursing students who have lower scores levels on the Symptoms-Checklist 90R (SCL-90) (indicating that they have no mental health issues) have significantly higher scores of using active coping processes (t = 2.144, p<0.05) and higher levels of self-esteem (t = 10.405, p<0.01). The students who have higher scores on the SCL-90 (which indicated that they have poor mental health) have a significantly higher use of passive coping processes. This sample was comprised of all female nursing students.

# 3.7. CONCLUSION

Self-esteem is fraught with differences in its definition, origin, and affects. Self-esteem may be described as the value or worth the individuals feel towards themselves (Rosenberg 1965). This sense of worth may be based on the discrepancy between the success and failures experienced in activities of high importance to the individual (James 1890) or indeed based on the judgements of others (Cooley 1902; 1908) or the wider social community (Mead 1964; 1967). On the other hand, Kernis (2003) refers to self-esteem, in terms of secure high self-esteem, which is derived from the unconscious. Secure high self-esteem is evident by the fact, that the individual has great value and acceptance towards themselves, and this acceptance is inclusive of the individual's imperfections and flaws. Alternatively, the psychotherapeutic definition of self-esteem put forward by Branden (1992; 1994; 2009; 2010) defines self-esteem as being the disposition to experience oneself as competent to cope with the challenges of life and deserving of happiness.

Even though Kernis (2003) agrees with the fundamental premise behind the Rosenberg scale, he believed it did not clarify whether the self-esteem was fragile or secure. However, the RSES is the most widely used self-esteem scale and according to Rosenberg et al. (1995) global self-esteem is a good indicator of psychological well-being. This study identified with the theoretical perspective that self-esteem is the affective evaluation one makes on their sense of worthiness. This evaluation is a result of a developmental process which includes the integration of feedback from significant others and on ones perceived self-competence and achievement and is continually being worked on (Rosenberg 1965).

It is therefore mediating in that, it is not only influenced by feedback but it also influences how feedback is interpreted. Rosenberg (1965) considers both the affective and self evaluative components to self-esteem. Furthermore, from his definition on self-esteem it is apparent that Rosenberg reflects on the true nature of self-esteem in that it is based not solely on successes but in the recognition of one's failures and the ability to work through them. The Rosenberg Self-Esteem Scale (Rosenberg 1965) is utilised in the current study, as the study focuses on global self-esteem as opposed to domain specific self-esteem. The literature has highlighted that there are conflicting views in relation to the whether the scale has one or two factors, therefore the current study has carried out Principal Component Analysis and the findings will add to the existing body of knowledge.

The literature has highlighted that the psychosocial dispositions of self-esteem and coping strategies are relatively stable by the time students are in college (Gottfried et al. 2001). However, it has also been suggested that the college environment could pose many

challenges to the individual from academic, social and emotional perspectives (Heyman et al. 2002; Crombie et al. 2003). Therefore, this particular study focuses on the associations and the predictive nature between global self-esteem and coping processes within a random selected group of university students. A stratified random sample of university students across an array of university programmes has been chosen as the best sampling method. Many of the samples used in the stress, coping and self-esteem literature tend to be with vocational groups of students such as nurses, psychologists and medical students. Consequently, there is a greater propensity towards convenience samples.

From a methodological perspective, there is a paucity of studies, which have used a mixed method approach. As self-esteem and coping are personal experiences, the explanatory sequential mixed method approach, using both quantitative and qualitative methodologies, has endeavoured to capture both the positivistic nature of the subject area and the realists' philosophical approach of understanding students' inferences on the significant quantitative findings from the study.

The combination of both, the quantitative variance-based method for the investigation of causality, and, a process theory of causation, has added to the richness of the findings. The following chapter will highlight the theories of stress and coping with a focus on the Transactional Model of Coping (Lazarus and Folkman 1984) which was used as the theoretical framework for the study.

# Chapter4. STRESS AND COPING

### 4.1. Introduction

Life brings with it many stressful events, which place varying demands on individuals. Some people are more readily able to deal with stress than others. People may view a similar event, in many different ways. One person may experience it as being, a threat or harm, another as a challenge, and some may even see it as being benign. How can these discrepancies be accounted for? Many researchers have investigated these inconsistencies, in relation to psychological stress and coping, in a quest to seek answers and elucidation. Entering a third level college can be a very vulnerable time for students. Whilst college life brings many positive experiences it can also pose certain trials for students, especially first year students, such as financial problems, relationship problems, problems related to studying and difficulties in being away from home for the first time. The previous chapter has highlighted some of the salient features of self-esteem in relation to how it may be defined. It has, also evaluated its changes through the age trajectory, its variance with gender and has introduced some research on its influencing relationship with both stress and coping, with a particular focus on college students.

The overall aim of the current study is to investigate the relationship and predictive nature of self-esteem with coping, in a randomly selected cohort of university students (n=479). As outlined in the previous chapter, an explanatory sequential mixed method design has been selected as being the most advantageous method to explore the dynamic relationship between self-esteem and coping. The philosophical underpinnings of the study have been based on critical realism (Bhaskar 2002; 2008). The premise behind critical realism is that entities exist irrespective of how they are theorised and perceived. Beliefs, values,

feelings and emotions are important constituents in the causal explanations within social sciences (Maxwell and Mittapalli 2010). There is more than one scientifically correct way of viewing phenomena (Lakoff 1987). This mixed method study, using the philosophical framework of critical realism, provides a conduit to explore and present prolific information regarding the experiences of stress, coping and self-esteem for students.

The following chapter will address the theories of stress and the models of coping. Furthermore, the transactional model of coping and the Ways of Coping Questionnaire (Folkman and Lazarus 1988) will be reviewed. Finally, factors such as age and gender, and their relationship with stress and coping, focusing on research relating to college students and coping will be explored.

#### 4.2. THEORIES OF STRESS

It is beyond the remit of this chapter to analyse all the different theories on stress. However, the most accepted and well-documented research and theories will be explored. All the theories on stress and coping relate to a variety of reactions, interactions or transactions in some form or another between an individual, a specific situation and the eliciting coping processes. There is relevancy in all theories put forward, but some are more comprehensive and dynamic in nature than others. A succinct definition of stress may read something like this - stress arises when a discrepancy exists between an individual's perception of the demands of a situation and their ability to cope (Quine and Pahl 1991). This definition sounds simple but its more elaborate nature will be explained in the following paragraphs. For example, in the first place what dictates an individual to perceive an event as being demanding? Elements such as, the cognitions and emotions

which occur during the different phases of stress will be outlined. The environment, personality, physiological, sociocultural aspects and coping processes, will be discussed in relation to the theories and models of coping, within the following sections. The first approach, namely, the reductionist approach, defines stress in terms of two factors, (i) an event or stimulus leading to a stressful reaction in a person and (ii) the terms in which the individual's responds to an event.

#### 4.3. RESPONSE THEORY

The premise behind this theory is that stress happens and the body responds in different ways to combat the effects. The American physiologist Walter Bradford Cannon (1929; 1939) is the person renowned for coining the phrase 'fight or flight' reaction. The process behind this theory involves the preparation of the body for action against the stressor by mediating through the endocrine and nervous system (Rana and Upton 2009). When the body is under stress, a set of physiological responses initiated from the hypothalamus stimulates the pituitary gland to release hormones, which in turn stimulates the adrenal glands to release adrenaline and noradrenalin. These hormones stimulate the sympathetic nervous system, which initiates the body to react by increasing the heart rate, blood pressure, respirations etc. When the threat is resolved a state of, what Canon refers to as, 'homeostasis' occurs. During this stage, the parasympathetic nervous system is activated and the vital signs return to normal (Nolen-Hoeksema, Fredrickson, Loftus and Wagenaar 2009). Notwithstanding that, Canon's theory is based very much on physiology; he believes that mental processing occur before the physiological reaction takes place (Aldwin 2007). As much as Lazarus and Folkman (1984) theory on stress and coping, differs very much from Canons; both theories share the principle of cognitive initiation. However, Canon's theory does not consider social affiliations in responding to stress. For example, Aldwin (2007) in referring to Canon's theory on stress has claimed that the social response to stress such as seeking social support is very salient within the stress reaction. As a result, a third dimension has been proposed to supplement the 'fight and flight' response, namely, to affiliate.

Following on from Cannon, is the work of Hans Seyle (1975; 1956), who has described stress in terms of the mechanisms that the body develops in order to deal with threats. Hans Seyle, who as a medical doctor and a Professor of Biochemistry, has carried out much of his research in Montreal focusing on animals' reactions to noxious stressors. Viner (1999), in his article on Hans Seyle, has referred to Seyle's (1956) definition of stress as:

The sum of all non-specifically induced changes in a biologic system – that was to say the non-specific physiological adaptation that was the basis of life itself.

(Viner 1999, p.392).

This response definition of stress indicates that stress is a non-specific response of the body to any demand. Lazarus and Folkman (1984) have asserted that this definition is very open, as it is difficult to distinguish stress, from all other aspects in life, which gives rise to a disturbance in homeostasis. Stress according to Seyle, is the wear and tear of the body when demands are placed upon it. He has referred to the effects on the body as General Adaptation Syndrome (GAS) (Santrock 2007). Hans Seyle has maintained that no matter what stress a person goes through the body reacts in a similar fashion. The three distinct phases in the syndrome are (i), alarm phase, (ii) resistance phase and (iii) exhaustion phase. A comparison can be made between Seyle's alarm phase and Canon's 'fight and flight' phase. When fatigue occurs, the next phase transpires. The resistance phase comes about when the body tries to adapt to the stressor. Whilst the physiological arousal has reduced, it has continued to remain higher than normal. Vulnerability to

illness may occur due to an affected immune system and if this phase goes on for too long the exhaustion phase takes place. During this phase, the body is no longer capable of maintaining its response and recovery or resistance is no longer possible (Rana and Upton 2009).

Hans Seyle, however, has failed to convince his colleagues in the field of biology of the validity of his findings and even Walter Cannon has failed to accept his findings (Viner 1999). Moreover, one can infer that like Walter Canon, Hans Selye has referred to stress as a response and the response is physiological by nature. There is an absence of an individual's input in the process of stress. Furthermore, Seyle's work has concentrated mainly on physiological stress. In contrast, Lazarus and Folkman (1984) have focused on psychological stress.

## 4.4. STIMULUS THEORY

The stimulus definition of stress, has focused mainly on environmental events such as cataclysmic events which affect a large number of people, major changes which may affect only one person, and also 'daily hassles' which may cause a great deal of distress in people's lives.

Using Hans Seyle's concepts, Holmes and Rahe (1967) devised the Social Readjustment Rating Scale (Viner 1999). This scale has become one of the most famous rating scales used to measure the effects of specific life events on individuals and it continues to be utilised in research today (Potagas, Mitsonis, Watier, Dellatolas, Retziou, Mitropoulos, Sfagos and Vassllopoulos 2008; Abedinia, Ramezanzadeh and Noorbala 2009; Guarneri, Nastri, Assennato, LiPuma, Landi, Bonanno, Maggi, Annino, Bono and LaBarbera 2009;

Manolache, Petrescu-Seceleanu and Benea 2010). The scale comprises of one hundred events, which are all weighted from 100 down depending on how stressful they are deemed. Death of a spouse, for example, is rated at 100, and trouble with the boss is rated at 23 (Holmes and Rahe 1967). They have claimed that change whether it is positive or negative resultes in a stressful reaction (Gross 2010). The theory behind this scale sees stress in terms of being a stimulus. Holmes and Rahe (1967) asserts that stress is any environmental, social, or internal demand, which causes an individual to adjust their normal behavioural pattern. The degree of stress experienced is dependent on the number and the enormity of the event (Rana and Upton 2009). However, this scale does not take into consideration why some people view a life event as being stressful and others do not. Variations within individuals, in how they appraise a situation to be stressful, and how they later cope with it, are absent from the theory. Furthermore, as subsequently outlined by Lazarus (1999), events do not necessarily have to be major life events to cause stress, the daily hassles such as getting a puncture, being late for work, trying to balance work and home, or being lonely, can equally be deemed stressful to individuals.

As the Holmes and Rahe's scale was objective (the frequency) in nature, there is an increased interest in questionnaires which evaluate daily hassles as they differentiate between the objective and the subjective (intensity of the stressful event) nature of the event (Dumont and Provost 1999). In addition, Lazarus (1999) asserts that stressful events do not simply happen to individuals, the person may have played a part in its contribution. Furthermore, Lazarus (1999) claimes that, in this theory, the fact that an individual maybe coping successfully, or not, with the situation, is not considered. The retrospective nature of the scale is also queried. The time covered by the scale is from six to eighteen months, which poses the question of how accurate the responses of the individuals can be (Aldwin

2007). Lazarus and Folkman (1984) refer to the importance of using a theoretical framework when researching the area of stress. The framework they propose refers to the antecedents, the processes and the outcomes, which relate to the stress phenomena in question.

### 4.5. TRANSACTIONAL MODEL OF STRESS AND COPING

Both stress and coping are incorporated into Lazarus and Folkman (1984) transactional model. They assert that the response definitions of stress, such as those of Walter B Cannon and Hans Seyle, which have indicated that stress is a non-specific response of the body to any demand, are far too expansive. Consequently, it is difficult to distinguish stress from all other aspects in life, which causes a disturbance in the homeostasis of an individual. Additionally, in referring to the stimulus definition of stress, which refers to major cataclysmic events and major changes, Lazarus and Folkman (1984) contend that daily hassles can equally cause a great deal of distress in people's lives. The response and stimulus definitions of stress do not take into consideration the individual's unique input into how they appraise or react to events. Lazarus (1966) highlights that stress is not a variable in its own right but is composed of many variables and processes.

Consequently, Lazarus and Folkman (1984) purport, that whilst stress may be defined in terms of a response or a stimulus, this is too simple an analogy to explain all stresses. They highlight that people differ in their interpretation, sensitivity and reactions to particular events and they define stress as a process and they use the transactional model to explain its relational properties. It is both the variables within the environment and the individual, and, the interaction between the individual and the environment, which gives

rise to an individual appraising a situation as being stressful. They maintain that what is stressful for one person may not be considered stressful for another (Lazarus and Folkman 1984). Their theory on stress and coping identify two different processes namely cognitive appraisal and coping, which play a salient part in mediating between the stressful person-environment relations and the outcome (Folkman, Lazarus, Dunkel-Schetter, Delongis and Gruen 1986).

Lazarus and Folkman (1984) refer specifically to psychological stress and define it as:

.. A particular relationship between the person and the environment that was appraised by the person as taxing or exceeding his or her resources and endangering his or her well-being.

(Lazarus and Folkman 1984, p.19)

They refer to the 'formal' properties, which affect the stressfulness of the events such as the demands being acute or chronic; the scale of the event, the control the person has over the event, the ability to predict, or the negative or positive importance of the event to the individual. Stress, and how we cope with it, is not an easy phenomenon to explain and difficulties and questions occur in its prediction. Stress according to Lazarus (1966), is a subjective experience during which individuals appraise stressful events within the context of themselves and the environment, in many different ways and hence they have proposed the transactional model of stress, in order to explain the varying facets associated with it. This model refers to the dynamic interaction between the individuals' characteristics, appraisal of the event, the stressor in the environment, the individual resources readily available to them, and finally the individuals' emotional and behavioural responses. The transactional approach refers to a mutual interaction between the personality, the environment, the stress and the coping process — a process which evolves over time (Aldwin 2007).

A very central part to Lazarus and Folkman (1984) theory has been the process of appraisal in which active negotiation takes place, between the constraints and assets within the environment and the individuals' goal hierarchy, and personal beliefs. Cognitive appraisal is believed to be very influential within the stress reaction (Lazarus 1993). Lazarus and Folkman (1984) define cognitive appraisal as:

...an evaluative process that determines why and to what extent a particular transaction or series of transactions between the person and environment was stressful.

(Lazarus and Folkman 1984, p.19).

Even though, Arnold (1960) and Mandler (1975) are believed to have initially debated the subject of cognitive appraisal and coping, it is Lazarus and Folkman (1984), who are renowned for their contribution to this area. They introduced the transactional framework of stress, coping and appraisal, which was a different way of interpreting stress. Lazarus and Folkman (1984) argue that cognitive appraisal is a process of categorizing an encounter in relation to its significance for the well-being of an individual. Conversely, Mandler (1975) defines appraisal more in terms of information processing. (1997) and Spector and Fox (2002) define cognitive appraisal as the way in which an individual interprets a potential stressor. However, Lazarus and Folkman (1984) definition of cognitive appraisal is more elaborate. Their definition highlights, that the cognitive processes which take place during appraisal, are accessible from both a conscious and unconscious level. Furthermore, Aldwin (2007) contends that appraisal processes are more applicable to social manifestations of stress as opposed to physical forms of stress. For example, Aldwin (2007) highlights, that when individuals are confronted with an imminent physical danger, they may initially react without thinking of or appraising the situation. Primary and secondary appraisal within Folkman and Lazarus theory are together referred to as cognitive appraisal (Folkman and Lazarus 1985).

### 4.5.1. PRIMARY APPRAISAL

During the primary appraisal stage, an individual evaluates, whether an encounter with the environment is going to affect their well-being or not. The encounter, is considered by the individual, as being irrelevant, benign-positive or stressful (Lazarus and Folkman 1984; Lazarus 1985). If it is judged as being irrelevant, than it will have no significance in relation to an outcome for the individual. According to Lazarus and Folkman (1984), it is the cognitive processes that occur in order to reach this conclusion, which are important. If however, it is considered to be, benign-positive, then a good outcome is signalled. Lazarus and Folkman (1984) emphasise, that depending on the situational context of the event, and the personal factors, the individual may experience a variety of emotions during this stage. For most of the time, if an event is regarded as being benign-positive, then the emotions experienced are, for example, joy, happiness and exhilaration. However, occasionally an individual may believe that the benign-positive event might go wrong, or that they would have to pay later for feeling so good. In these cases, the individual may experience feelings of anxiety and guilt. This is similar to the psychoanalytical view on coping.

If the event is assessed as being stressful (perceived demand), then the appraisal of the stimulus event or the stressor, is considered to include harm, threat or challenge. The cognitive appraisal, which occurs during this stage, refers to the differentiation between the three different kinds of psychological stress. To begin with, there is harm, which is the psychological damage, which had been done. According to Lazarus and Folkman (1984), the most damaging life events are those factors, which play a very significant part in one's life and are now gone. Threat refers to the anticipation of harm. Challenge refers to the difficult demands, which may be experienced by an individual. However, with a

challenge, one may believe that they are capable of successfully overcoming the demands by utilising their coping resources (Lazarus 1993). Threat and challenge share similarities and can occur simultaneously. Furthermore, Smith and Lazarus (1993) maintain that during this stage, the person assesses the motivational relevance of the situation in relation to their personal goals and objectives. Furthermore, the assessment of motivational congruence occurs whereby the event is assessed in terms of how congruent it is to their current goals.

#### 4.5.2. SECONDARY APPRAISAL

During the next stage, which Lazarus (1966) has referred to as the secondary stage or secondary appraisal (perceived coping), an individual carries out an evaluation to determine what resources they have to deal with the encounter. A second evaluation is carried out to estimate the potential of the individual's coping resources in dealing with the stressor. This stage is regarded as being a complex evaluative process and not just an intellectual exercise. Furthermore, Lazarus and Folkman (1984) have likened the processes, within the secondary appraisal stage, to Bandura's (1977; 1982; 1992) concept of outcome expectancy and efficacy expectation. The former concept is an evaluation, which takes place to examine whether certain behaviours may lead to a particular outcome or not. The latter refers to the person's belief that they can successfully carry out the behaviour in order to reach the outcome.

Many assessments take place during the secondary appraisal stage; (i) internal/external accountability i.e. who is to blame for the event and the emotions attached to each explanation; (ii) problem-focused coping potential i.e. whether this problem can be dealt

with practically or not. If, it cannot be changed, than fear and anxiety may be the result. The third assessment is emotion-focused coping potential i.e. how the individual is going to deal emotionally with the problem. If the individual is unable to deal with the problem at an emotional level then the cost is the expression of emotions such as fear and anxiety. Lazarus (1993) refers to the previous two stages as the 'coping potential'. Smith and Lazarus (1993) highlight, that stressful events may evoke different emotions. How an individual appraises a stressful encounter results in the display of a variety of emotions (Folkman and Lazarus 1985). These emotions are very important in the assessment of an individual's management of a stressful situation. They indicate how well a person is in managing a particular situation. Lazarus and Folkman (1984) define coping as the:

...Constantly changing cognitive and behavioural efforts to manage specific external and/or internal demands that are appraised as taxing or exceeding the resources of the person.

(Lazarus and Folkman 1984, p.141)

According to Folkman and Lazarus (1985) coping has two main functions. The first task relates to the management of distressing emotions, which they refer to as emotion-focused coping. The focus of attention here is not in the management of the problem but in dealing with the emotions evoked during the event (Croker et al. 1998). The second task of coping is doing something that could change for the better the situation. Both cognitive and behavioural efforts, such as, planning and solving, may be utilised to change the situation, leading to the development of problem-focused processes, in which the main aim is the successful completion of the task (Holt, Hoar and Fraser 2005). This type of coping is referred to as problem-focused coping. Lazarus and Folkman (1984) argue that it is important to view coping as a means to manage stressful demands irrespective of the outcome. Therefore, to consider the coping strategies used by an individual, as being better or worse than others is incorrect. It is important to consider the coping processes within a context (Figure 4.1). Smith and Lazarus (1993) have highlighted that stressful

events may evoke different emotions. How an individual appraises a stressful encounter results in the display of a variety of emotions (Folkman and Lazarus 1985). These emotions are very important in the assessment of an individual's management of a stressful situation. They indicate how well a person is in managing a particular situation. Lazarus (1966), whilst indicating that these stages are best described in a linear fashion, purports that they may not always occur in this sequential fashion. Oftentimes, the response to the threat, or the secondary appraisal process, as outlined above may lead to a reappraisal of the nature and extent of the identified threat, otherwise known as the primary appraisal stage. This stage, is known as reappraisal, and refers to whether a situation is appraised differently, or not, based on new information, which has been received (Smith and Lazarus 1993).

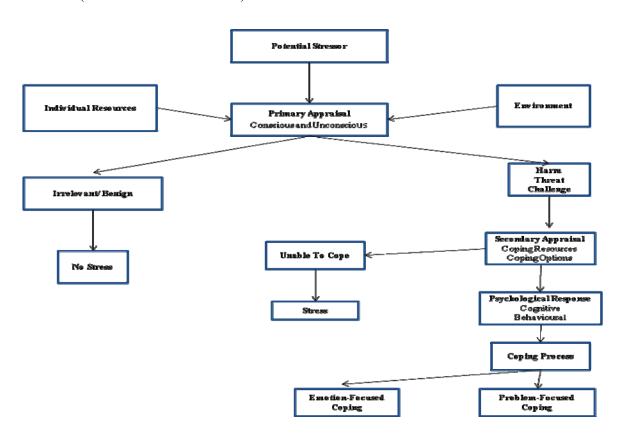


Figure 4.1. Transactional Model of Stress and Coping (Folkman and Lazarus 1984).

As evidenced from the above section, Lazarus and Folkman's (1984) definition on coping emphasises the transactional nature of psychological stress and coping. Furthermore, it refers to the changing aspect of the coping process and this will be discussed later in the chapter.

#### 4.6. STRESS AND UNIVERSITY STUDENTS

More so now than ever, with the worldwide economic crisis, the subject of stress and well-being is becoming a very prevalent area of research, within the psychological and medical sciences (Cooper 2009). Whilst university life is generally deemed to be a very positive experience, it is regarded by many students, as being very stressful (Heiman 2004; Kariv and Heiman 2005). There is a new environment to be accustomed to, as well, as the engagement in new relationships and experiences (Tao and Dong 2000). Hudd et al. (2000) have identified that the transition to college can be a very stressful process for many students and that individuals who experience high levels of stress are more likely to engage in unhealthy behaviours. Helping adolescents to advance their ways of adapting to stress, facilitates in the prevention of problems occurring in the future (Compas et al. 1989). Petersen et al. (2009) establishes that adjustment to university life, in first year students, is a significant predictor of academic performance. In a follow up study, it has been found that once students adjust into university life, academic performance is a significant predictor of academic success at completion phase of programme (Petersen 2010).

Seyle's (1937; 1975) widely used stimulus response definition of stress, refers to stress as the response the body made to any stimulus, which interferes with the homeostatic status of the individual. How one cognitively appraises a situation may determine whether a situation is experienced as being stressful or not (Lazarus 1993). The degree of control an individual has over a stressful encounter is related to the coping process that is used. Academic stress is deemed to be more controllable than interpersonal stress. As a result there is a greater propensity for students to utilise problem-focused coping when they are encounter an academic stress (Compas et al. 1988). According to Robotham and Julian (2006), very few studies have adopted a qualitative approach to investigating stress. This current study uses an explanatory sequential mixed method design to ascertain the relationship between self-esteem and coping. In the second phase of the study, using a descriptive qualitative design with a purposive nesting sample of students (n=8), one of the areas which is investigated are the aspects of university life which students find stressful.

A study carried out to ascertain 'stress related growth', following the instigation of a resilience intervention programme, has found that college students (n=64) indentify three different categories of stress. Stress related growth is only a recently used term and it relates to programmes which help people to develop higher levels of adaptive functioning which are present in the individual prior to the stressor occurring. In the study Dolbier, Jaggars and Steinhardt (2010), have grouped the stressors identified by the students as, (i) relationship issues, (ii) uncertainty about how events would unfold in the future e.g. failing an exam or losing a job and (iii) traumatic events such as death of a loved one or serious illness (Abouserie 1994; Shafer 1996; Aherne 2001). Self-esteem is positively correlated to stress related growth (r = 0.52, p <0.01). The sample size in this study was relatively small to make general assumptions on the findings. Darling, McWey, Howard and Olmstead (2007) in a study of college students (n=596) have found that the rank order of stress experienced by all students is firstly related to academic grades, secondly lack of

money and finally uncertainty of their professional futures. In the study females experience higher level of stress compared to male students. Looking at the gender breakdown of the sample, there are 427 females compared to 159 males, which may have affected the result above. Similarly, Heiman (2004) in a sample of 261 undergraduate students has found that girls report greater academic stress (F = 4.26, P < 0.05) compared to boys. Conversely, Amr, El-Gilany and El-Hawary (2008) have found no gender differences in the perceived stress of a cohort of medical students. Silverstein and Silverstein (2010) have found that female students had higher stress at baseline evaluation but there were no gender differences after one year.

Rotham and Julian (2006), in their critical review of the literature relating to stress and third level education, contend that stress experienced by students, are grouped under the following headings: examination stress, (Abouserie 1994; Gadzella, Masten and Stacks 1998; Plunkett, Radmacher and Moll-Phanara 2000; Baglin 2003; Cabanach, Cervantes, Doniz and Rodriguez 2010); financial pressures, (Coxon 2002; Schafer 1996; Foster 1995); transition to university, (Fisher 1994; Ross, Niebling and Heckert 1999; Bojuwye 2002); and study-related stressors, (Nonis, Hudson, Logan and Ford 1998; Misra, McKean, West and Russo 2000; Hardy 2003).

Bahri Yusoff, Abdul-Rahim and Yaacob (2010) in a cross-sectional study with medical students (n=761) have found that there is a high level of stress amongst all the students. This finding is similar to other studies using cohorts of students from the vocational sectors (Elzubeir, Elzubeir and Magzoub 2010; Walsh, Feeney, Hussey and Donnellan 2010; Jiunn-Horng, Sheng-Hwang, Hsing-Yi, Ren-Hau, Cheng and Cheng-Joo 2010;

Silverstein and Silverstein, 2010; and Jimenez, Navia-Osorio and Diaz 2010). Unlike other studies, the stressors identified in this study, which have caused most stress, are related to academic areas (Bahri Yusoff et al. 2010). Again, even though this study is a large scale study, having the sole focus on medical students, may have skewed the results. Year of programme is the only significant factor affecting stress. First years have lower levels of stress, ( $x^2 = 10.16$ , p < 0.038), compared to other groups. The authors' contend that this may have been due to the fact that first year students had only been in the course for two months (Bahri Yusoff et al. 2010). Conversely, Seyedfatemi, Tafreshi and Hagani (2007) have found that first year undergraduate nursing students experience significantly greater interpersonal and environmental sources of stress compared to fourth year students. There are no gender differences in the perceived stress amongst the students in this study. Dissatisfaction and concerns with physical appearance are experienced by students as perceived sources of stress (Wilson and Pritchard 2005; Calogero et al. 2010; Liao et al. 2010). Conflict with a boyfriend/girlfriend or family is also a prevalent source of stress for students (Wilson and Pritchard 2005). The Irish national study namely, College and Lifestyle and Attitudinal National (CLAN) survey, using a cohort of college students (n=3259), has found, similar to other studies, that academic studies, in general, are the greatest source of stress for students. A higher proportion of girls, (65%, p < .01)to boys (51%), report studies as a form of stress. The other sources of stress which had been reported by the students are finance, relationships, work outside of college and their living situation. Competition within the university had also been reported by students as a source of stress (Hope, Ding and Ding 2005).

Putwain (2007) refers to the large number of quantitative studies, in the area of stress and university students, and the importance of using questionnaires in capturing information

from a large number of people. However, in reference to the paucity of qualitative studies in this area, they assert that qualitative studies should also be considered. Johnson et al. (2008) in a qualitative study with graduate students (n = 12) has identified three sources of stress. The first source is academic responsibilities, which includes interactions with professors, course work, and examinations. The second source is personal responsibilities, some of which are, maintaining relationships with friends, family and significant others. Finally, the third source of stress is balancing responsibilities between academic life and personal life (Johnson et al. 2008). Interestingly, Dahan and Bedos (2010), in a qualitative study, have found that it is mainly academic factors which causes the most stress amongst a cohort of dental students (n=12). Some of the stressors identified were, fear of failing, heavy workload, difficulty in dealing with curriculum transitions and difficult relationships with academics (Dahan and Bedos 2010). Redhwan, Sami, Karim, Chan and Zaleha (2009) in a qualitative study with medical science and biomedical students (n=39) outlines that the students deemed that finance, lack of sleep and family problems were the greatest sources of stress for the students. Very few studies have used a mixed methods approach and some of the studies, which have, tend to be within cohorts of students involved in vocational programmes (Mattinat, Spegman and Herrin 2007; Redmond, Guerin and Devitt 2008).

## 4.7. COPING THEORIES

Coping as outlined by Lazarus and Folkman (1984) is the utilisation of behavioural and emotional strategies to help an individual to tolerate or minimize the effects of stress. Their definition on coping includes efforts to manage demands irrespective of the outcome. In other words, no one strategy is considered better than any other (Lazarus and Folkman 1984). Lazarus identifies appraisal as being a salient feature in how one copes.

However, the explanation to the background, as to why different people cope in different ways to the same stressful occurrence, lies perhaps in the different theories of coping. Theories relating to coping range from unconscious defence mechanisms to coping being a component or trait within ones personality. The following sections will discuss some of the well know theories which endeavour to explain the rationale and process behind coping strategies.

#### 4.7.1. THE PSYCHOANALYTIC THEORIES ON COPING

The premise behind the psychoanalytic explanation of coping lay in the use of defence mechanisms, with the aim of maintaining ego integrity. Sigmund Freud and his daughter Anna are regarded as the people responsible for coining this supposition. Freud (1921) has contended that the personality has three structures namely, the id, the ego and the superego. Conflict between the three occurs frequently. Therefore, the ego, which plays the 'executive' role and abides by the reality principle, is required to resolve the conflict, between the wishes of the id, the demands of reality and the constraints of the superego by calling upon strategies known as defence mechanisms (Nolen-Hoeksema, Fredrickson, Loftus and Wagenaar 2009). Anna Freud (1966 - 1980) has identified many defence mechanisms whose aim is to distort reality, regulate emotions and reduce anxiety. Some of these are denial, suppression, hysteria obsessive-compulsive behaviour and sublimation. Sigmund Freud believes that many of the problems, which present during adolescence and adulthood stem from the early experiences in childhood (Gross 2010). Freud proposes five stages in the psychosexual development of the child, and during each of these stages, pleasure is experienced in one part of the body more than in others. As a result, conflict arises in the ego in trying to maintain a balance between the impulses, which occur during each stage, and the social mores, and the characteristics of the child (Santrock 2007). Lazarus (1999) believes that Freud's theory is more of a conceptual ideal rather than a clinical reality as it is very difficult to support these views from a research perspective. Aldwin (2007) purports that the problem with the understanding of coping, simply, by the use of defence mechanisms leads to a negative connotation, as by definition the defence mechanisms are negative as they distort reality. However, defence mechanisms continue to be referred to in much of today's coping research and literature, in a positive as well as in a negative way.

#### 4.7.2. COPING AND HIERARCHICAL STYLES

George E Vaillant (1977) has argued in favour of seeing defence mechanisms in a positive way. He has contended that defence mechanisms are not essentially pathological but rather a means of maintaining ego integrity under difficult circumstances. Furthermore, Vaillant defends their unconscious nature (Aldwin 2007). In devising the hierarchy of defensive mechanisms, Vaillant (1977) used data from the Grant Study, which was a longitudinal study of college men, who were deemed mentally healthy, to trace the development of adaptive mechanisms and their related outcomes. The study began in the Harvard University Health Services in 1938. He identifies four levels of defence mechanisms, outlining, that some were more adaptive then others. Vaillant (2000) has referred to them, as involuntary mental mechanisms which are now included in the Diagnostic Statistical Manual of Mental Disorders, American Psychiatric Association (1994). The hierarchy of defensive mechanisms comprises of four levels. Level (I) is referred to as projective mechanisms and includes denial, distortion and delusional projection. Level (II) is named immature mechanisms and comprises of fantasy, projection, hypochondriasis, passiveaggressive behaviour and acting out. Neurotic mechanisms are at level (III) and contain neurotic mechanisms namely, intellectualization, repression, reaction formation,

displacement and dissociation. The final level, level (IV), consists of mature mechanisms such as, sublimation, altruism, suppression, anticipation and humour (Vaillant 1977). In 1970, the sample from the Grant study was expanded to include urban young men (n=456) and women (n=40), as well as, the original sample of Harvard college boys. The study became the study of adult development. Vaillant (1999) has deduced from the study that altruism and humour are among the most important predictors of psychological health, for the Harvard College sample men. Vaillant (2008) continues to defend the power of positive emotions such as joy, faith love and compassion, on the lives of self and others and within the practice of psychiatry. Lazarus and Folkman (1984) comment on the limited use of the coping styles as presented from the work of Vaillant (1977). They argue that the coping styles are based on case studies in which the findings are unable to be generalised. Furthermore, they contend that coping should be viewed as a dynamic ego process rather than as a style or trait.

Haan (1977) has proposed another theoretical approach to coping. Unlike Vaillant she sees defence mechanisms as inherently pathological. Similar to Vaillant, Lazarus (1983) asserts that defences mechanisms are not completely pathological as they provide an individual with a reprieve from the stressful event. Ten ego processes are identified by Haan, which may be expressed in three different ways. The first mode of expression is coping which is purposive by nature. The second mode is defensive which is rigid and directed towards anxiety and the third mode is termed fragmentary processes, which are an irrational use of the coping process. Haan (1977) maintains that when an event is perceived as not being too stressful then the ego may cope. If on the other hand, the situation is very stressful, then the ego maintains its integrity by using defensive strategies or in extreme cases fragmentation processes which are irrational and distorted reality

(Aldwin 2007). If this is the case then no one is in a position to cope in extremely stressful situations, a fact, which is untrue (Aldwin 2007).

#### 4.7.3. COPING AS A TRAIT

The trait theory on coping asserts that irrespective of environment, people have a propensity to cope in a consistent fashion across a variety of situations (Roth and Cohen 1986). In line with this view, Carver, Weintraub and Scheier (1989) have developed an instrument namely, COPE, to assess peoples' coping styles and have found associations between dispositional coping styles and comparable coping processes in a specific situation. They argue that coping is dispositional, in which individuals cope in a consistent manner across an array of different time points. This portrayal is in contrast to the view that coping is a process, in which case, coping is believed to be a dynamic process, which changes from situation to situation (Folkman and Lazarus 1980; 1985; Folkman et al. 1986).

One's personality also plays a part in coping with stress. The personality of an individual is moulded in an interactive way by one's genetic makeup and one's environment. The personality of the individual influences how one interprets a similar event, which may also be experienced by others, in many different ways. In addition an individual's personality induces different reactions and responses from the environment. Certain personalities have been found to influence the manner in which individuals cope during stressful situations (Carver and Connor-Smith 2010). Using self-determination theory (SDT) Weinstein and Ryan (2011) explains that both personality and motivation play a big part in the coping processes used and the way stress is perceived. Autonomy orientated

individuals tend to self regulate their behaviours based on their own personal goals and values rather than the goals of others. These types of individuals tend to perceive situations as challenging rather than as stressful. Furthermore, they respond to stressful situations by using proactive coping processes (Weinstein and Ryan 2011). Similarly, Carver and Connor-Smith (2010) in their review, argue the experiences of stress are associated with the pursuit of goals and the avoidance of harm. Conversely, type D personalities, which are personalities associated with lower subjective well-being and self-esteem, tend to use passive and maladaptive, avoidance coping processes (Polman, Borkoles and Nicholls 2010).

The coping traits model argues that coping is influenced by certain personality dispositions. Vollrath (2001) defines coping in terms of being a personality process. A great deal of research has established associations between personality disposition and Studies with twins have found evidence, which indicates that coping and coping. personality have a shared genetic basis (Kato and Pedersen 2005; Kozak, Strelau and Miles 2005; Jang, Thordarson, Stein, Cohan and Taylor 2007). Ortega, Brenner and Leather (2007) maintain that neuroticism is associated with the use of escape and denial (y = 0.22, p < 0.05) and conscientiousness is related to the use of developing a plan of action ( $\gamma = 0.24$ , p < 0.05). Similarly, Connor-Smith and Flachsbart (2007), in using a metaanalysis from 165 samples with 33094 participants, have found that all of the Big Five Personality traits predicts specific coping strategies. Carver et al. (1989) have found some modest association between dispositional coping styles and coping acts. Weiling and Miao (2009) in using a cohort of medical students (n=300) have found a direct positive effect between extraversion and mature coping styles and a similar positive effect between neuroticism/psychoticism and immature coping styles. However, Cohen and Lazarus (1973) have found no evidence that the personality dimensions of repression versus sensitization would predict the course of recovery from surgery.

Lazarus (1999) refutes the notion of coping as trait for many reasons. The research relating to trait coping has over simplified coping. Unlike the process approach to coping, which proposes that individuals when under stress use different kinds of coping thoughts, and actions. Secondly, the coping styles approach ignores the goal-oriented intentions, which people use when confronted with a threat, harm or challenge. Finally, the predictive power of coping styles is based on a small minority of subjects at either end of the distribution and therefore the group in the middle did not contribute to the outcome variance (Lazarus 1999).

### 4.7.4. THE COGNITIVE MODEL OF COPING

Some researchers view coping as a cognitive process and believe that the adaption to a stressful event is a conscious process (Lazarus and Folkman 1984; Plexico, Manning and Levitt 2009; Qiwei, Anshel and Kim 2009). Individuals appraise a situation, and make a decision based on the severity of the problem, their own resources, and prior experience, in the coping strategy to be employed (Aldwin 2007). Furthermore, how one appraises the stressor influences the type of coping process, which are to be used (Lazarus 1993; Ebata and Moos 1994; Klein-Hebling and Lohaus 2002).

Lazarus (1993) has referred to some of his previous writings and maintains that differences exists in how an individual experiences stressful conditions. Some people find some stressful conditions major, whilst others experience the same conditions in a minor

way. Lazarus, Deese and Osler (1952) have highlighted that when considering the discrepancy between individuals' experiences of a stressful condition, consideration need to be placed on the individual differences, in both motivational and cognitive variables, that mediates between the stressor and the reaction. Some of the personality traits, which prohibit the negative effects of a stressor on an individual, are learned resourcefulness (Rosenbaum 1990), hardiness, (Maddi and Kobasa 1984), constructive thinking (Epstein and Meier 1989) self-efficacy (Bandura 1982; 1992) and sense of coherence (Andtonovsky 1987).

Folkman and Lazarus (1980; 1985; 1988) asserts that coping has two main functions. The first function is the regulation of distressing emotions (emotion-focused coping) and the second function is doing something which could change the situation which is causing the stress (problem-focused coping). Emotion-focused coping is used in order to deal with the emotions which surface as a result of the stressful situation. They can be used either to deny the occurrence of the situation or to maintain hope (Lazarus and Folkman 1984). The function of problem-focused coping is to establish what the problem is and to find ways of managing the situation. The central principle within the transactional model of stress and coping is that any potentially stressful situation may trigger the primary appraisal stage in which an individual cognitively assesses the degree of the threat to their wellbeing. If the event is viewed as a threat then the secondary appraisal process is instigated whereby the individual assesses their coping resources to manage the event (Folkman and Lazarus 1985). The cognitive model of coping asserts, that the coping processes employed by the individual, are not consistent, and rather, are based on the specificity of the situation. Furthermore, even though it is generally assumed, that the appraisal of a potential stressful situation occurs in a linear fashion, this is not always the

case, thus indicating the dynamic nature of coping (Folkman and Lazarus 1984). Understanding coping from a process perspective is a very salient feature of the transactional model of stress and coping.

# 4.8. COPING AS A PROCESS

It is important to highlight that Folkman and Lazarus (1980; 1985) and Folkman et al. (1986) have reiterated on numerous occasions that coping is a dynamic unfolding process whereby changes may occur during the course of each stressful transaction as opposed to people approaching each stressful event with a particular 'coping style'. To be effective, coping is contextual and changes overtime and across an array of circumstances (Folkman and Lazarus 1985; Goh et al. 2010).

In a study carried out by Folkman and Lazarus (1985) to estimate the coping processes of college students undertaking a psychology course (n=108), during different stages of an examination, they found that the college students showed significant changes in the type of coping strategies used throughout the three identified stages. The Ways of Coping Checklist had been utilised to estimate the coping processes used by the students in this study (Folkman and Lazarus 1980). The three different stages where the anticipatory stage, which was when the student was studying for the exam, the second stage, was the waiting stage, which occurred after the exam and before the results, were obtained and the third stage was the outcome stage, which was marked by the students receiving the results. What was interesting was that it was found that individuals sometimes used contradictory emotions during the same stage and furthermore, used a combination of both problem-focused and emotion-focused coping processes during each stage of the examination

(Folkman and Lazarus 1985). Threat and challenge emotions are associated with the anticipatory stage and the study has found that there are a significant difference between the display of these emotions and the different stages. Both threat and challenge are more intense during stage one and dropped significantly during stage three (t = 9.34, p = <0.001; t = 4.54. p = < 0.001) respectively. During the waiting stage (stage two), there is substantial and some statistically significant use of the emotions associated with both threat and challenge (t = 4.54, p < 0.001) and harm and benefit (t = -9.41, p < 0.001). Emotions indicating harm and benefit are normally associated with the evaluation of an event and as predicted were higher at stage three then they were at stage one. Furthermore, in relation to coping processes the 94% of the students used both problemfocused and emotion-focused coping at each of the three stages. In particular, during stage one, the students tended to use, largely, problem-focused and emotion-focused coping (emphasizing the positives of the situation and seeking social support). There was a large decrease between stage one and two in the use of problem-focused coping (t = -2.00, p < .001). This may have been because students realised that they were unable to change anything once the exam was completed. There was however a large increase in the use of distancing during stage two (t = -9.28, p < 0.001). Distancing as a coping process is normally used during the waiting stage. According to Folkman and Lazarus (1985) the coping processes used during stage three had been influenced by the grades which the students had achieved, for example, emotion-focused coping processes were utilised more by students who received poorer grades (Folkman and Lazarus 1985).

This research has highlighted the dynamic coping process, which occurs because of the transactional relationship between the student and the exam process/environment. Limitation to the study are, as self report had been used, it is not possible to out rule the

possibility that the findings in the study may be based on the implicit theories that the students have on coping and emotions from their own studies of psychology, as opposed to the actual psychological process involved in emotion and coping. Secondly, again as observations had been based on the use of self-reports, a blurred distinction may have existed between appraisal, coping and the various emotion variables within the study (Folkman and Lazarus 1985).

Similarly, Gaudreau, Nicholls and Levy (2010) with a cohort of golfers (n=54) have examined the link between coping and sports achievement. Coping had been assessed during six consecutive rounds of golf, using the Coping Inventory for Competitive Sport (CICS) (Gaudreau and Blondin 2002), and have identified, that the participants used a variety of coping strategies across the various games of golf. Furthermore, in evaluating adolescents (n=399) coping processes, which are used in dealing with peer stress across different times scales, a variety of processes had been found to be used (Feagans-Gould, Hussong and Keeley 2008).

To try an elicit and determine the coping processes which individuals use during a stressful event and to carry out further research in this whole phenomenon, Folkman and Lazarus (1980) developed a coping skills inventory.

# 4.9. WAYS OF COPING QUESTIONNAIRE

Using the cognitive approach to coping, Folkman and Lazarus (1980) developed the Ways of Coping Checklist, (WCCL), which contained 68 items, to evaluate coping from a process perspective. This scale takes into consideration what the individual thinks, feels

and does within the context of the event. Within the 68 items, 24 are problem-focused and 40 are within the emotion-focused scale, four remain unscored (Parker, Endler and Bagby 1993). The WCCL had been was revised in 1985 and became known as The Ways of Coping Questionnaire (Folkman and Lazarus 1988). The revised questionnaire containes 66 items. These items are outlined as predicates, in which coping thoughts or actions, frequently used by individuals during stressful situations, are described. It is the most widely used instrument in the evaluation of coping (Parker et al. 1993). In the original inventory a yes/no response had been required and this has changed to a four point Likert scale (0 = does not apply or not used, 1 = used somewhat, 2 = used quite a bit and 3 = used a great deal).

Folkman et al. (1986) has carried out factor analyses on three different occasions, which yielded similar results i.e. an eight-factor model with internal reliability coefficients, ranging from .61 to .79. There are eight different coping dimensions within the scale namely, confronting, planful problem solving, distancing, self-control, accepting responsibility, escape avoidance, positive reappraisal and seeking social support. Originally, within the measure two distinct types of coping arose namely, problem-focused coping and emotion-focused coping. Problem-focused coping is used more frequently in situations where stressful events are appraised as being changeable. Emotion-focused coping is used more frequently in stressful situations, which are deemed unchangeable. In 1985, by using common factor analysis with oblique rotation, a third type namely seeking social support is also identified as being a mixed coping style since it may encompass features from both problem-focused coping and emotion-focused coping (Folkman and Lazarus 1985). The eight scales comprise of one problem-focused scale,

six emotion-focused scales, one mixed problem and emotion-focused scale (Folkman and Lazarus 1985).

Even though the Ways of Coping Questionnaire, when used elicites two main factors, Carver et al. (1989), highlights that this is a far too simple deduction to make. They believe that these factors require further scrutiny. Within their coping instrument, they refer to three types of coping, one problem-focused strategy, and two emotion-focused strategies one of which is effective and the other is ineffective and dysfunctional. The latter strategy refers to avoidance-oriented coping, which is where an individual disengages from the stressful task, and engages in either denial, or uses drugs or alcohol. Furthermore, in the development of their instrument to evaluate coping styles, namely COPE, they have distinguished between several aspects within active coping (problemfocused coping) different items such as planning, suppression of attention to competing activities and exercise of restraint are identified and are included in their inventory. In addition, they measure items, which may interfere with active coping e.g. the use of alcohol or drugs, behavioural and mental disengagement. The items in the inventory are derived from the consideration given to motivated actions (renewed efforts versus giving up) as a result of their belief that coping is similar in ways to other motivating actions. Similarly, Connor-Smith, Wadsworth, Thomsen and Saltzman (2000) classify coping strategies into three categories (i) task-orientated, (b) distraction orientated and (c) disengagement-orientated coping.

Many researchers have criticised the instability of the factor structure within the WOCQ and the weak internal reliability on the subscales (Parker et al. 1993; Somerfield and

McCrae 2000). Parker et al. (1993) challenges the theoretical integrity of the WOCQ. They have found, by using factor analysis that, the eight dimensions within the questionnaire have not shown reliability. They have advised that factor analysis should be employed to all research using this questionnaire.

Similar to Folkman and Lazarus (1985), Gencoz, Gencoz and Bozo (2006) have subjected the Turkish version of the Ways of Coping to factor analysis, by using varimax rotation. Three factors are revealed namely problem-focused coping, emotion-focused coping and seeking social support which are referred to as indirect coping styles. Lundqvist and Ahlstrom (2006) in their research have found some support for the eight-factor model of the Ways of Coping Questionnaire. In another study, where cohabiting couples (n=506) were asked to complete the Ways of Coping Questionnaire, Bouchard, Sabourin, Lussier, Wright and Richer (1997) have found four factors by using oblique rotational factor analysis. These are distancing/avoidance, confrontation/seeking social support, problem-focused coping and denial (Bouchard et al. 1997). However, depending on the research sample, factor analysis of coping styles in this inventory has uncovered different factors within it.

The current study uses both parametric principle component analysis and nonparametric detrended correspondence analysis to determine the factors within the scale which are valid for the cohort of university students (n=479) in the study. The results are discussed in the data analysis chapter.

#### 4.10. AGE DIFFERENCES AND COPING

In children, coping tends to be linked to their developmental outcomes. For example, children with higher levels of self-esteem, intrinsic motivation to learn and a high standard of academic achievement tend to utilise action oriented coping processes (Fahs 1987; Mantzicopoulos 1990). In a study which had been carried out by Mantzicopoulos (1997) children in fourth and fifth grades (n=187) had their coping evaluated in relation to how they coped with the experience of an academic failure experience. A number of differences are evident, between the positive coping group and the denial projection and self-blame group. Those in the group who had exercised positive coping processes also had an intrinsic orientation towards success in schools and enjoyed doing well in school. It has also been found that these children tend to attribute their academic failure to unstable rather than stable factors (they believed that things could change for the better) in comparison to the other group (Mantzicopoulos 1997). He has found no gender differences in the coping process used in males and females. This finding is consistent with previous research (Tero and Connell 1984; Mantzicopoulos, Morrison, Hinshaw and Carte 1989). Furthermore, Knapp, Stark, Kurkjian and Spirito (1991) using the Ways of Coping Questionnaire (Folkman and Lazarus 1988) have observed that children's coping processes change as they develop. For example, young children utilise more problemfocused and behavioural strategies whereas older children and adolescents use more emotional and cognitive strategies.

Compas, Connor-Smith, Saltzman, Thomsen and Wadsworth (2001) assert that adolescence is a very stressful time in which many developmental changes occur. It has been found that the coping processes change during the course of adolescence. This might be due to the occurrence of changes in adolescents' social, cognitive and behavioural

abilities as well as how their views on stressors change (Frydenberg 1997). Plancherel, Bolognini and Halfon (1998) have found that during mid-adolescence girls use more social relationships as a form of coping as well as venting emotions. Boys use leisure activities as way of coping. Compas, Malcarne and Fondacaro (1988) have established that older adolescents use more emotion-focused coping processes. Similarly, Gelhaar, Seiffge-Krenke, Borge, Cicognani, Cunha, Loncaric, Macek, Steinhausen and Winkler-Metzke (2007) have found that early stage adolescents used more active coping, older adolescents used internal coping, and, withdrawal is used frequently during mid adolescence. Emotion-focused coping such as relaxing and social support tend to increase with age (Williams and McGillicuddy-De Lisi 1999). Conversely, Gamble (1994) and Groer, Thomas and Shoffner (1992) contend that young adolescents use more emotion-focused and older adolescents use more problem-focused coping.

A study to investigate the coping strategies used by adolescents (n=3031) across Europe, using the Coping across Situations Questionnaire, has found that there is evidence of the use of more functional (active and internal coping) than dysfunctional (withdrawal) coping processes. Within the realm of functional coping strategies, it is established, that German adolescents have a greater preference for active coping strategies as opposed to adolescents in Portugal who show a preference to internal functional coping (Gelhaar et al. 2007). Seiffge-Krenke (1995) purport, that adolescents engage in active coping processes when dealing with peer related stressors, and, they tend to use more dysfunctional coping processes when engaged with stressors of a school or parent related nature. They also have found that cognitive-reflective coping strategies are employed when dealing with problems, which may occur in the future (Seiffge-Krenke 1995).

As people become older, they tend to use more primitive or mature coping, because of innate stress related changes, occurring (Folkman, Lazarus, Pimley and Novacek 1987). Conversely, the changes, which occur in coping due to age, may be because of how the individual deals with changes in the sources of stress. However, Folkman et al. (1987) have found that younger people use more problem-focused coping in comparison to the older person who tend to use more emotion-focused coping. They believe that both are effective strategies, as they relate to the different assessments of the changing stresses that both young and old encounter (Folkman et al. 1987).

With age differences and coping, there remains the question with much of the research as to whether the differences are due to developmental changes or contextual changes.

### 4.11. GENDER DIFFERENCES AND COPING

Gender differences in the use of different coping process have been found in some studies but not all. Compas et al. (2001) maintain that problem-focused coping predict better physical and mental health; whereas, emotion-focused coping predict outcomes which are not beneficial to the individual. Groer et al. (1992) highlight that adolescent girls tend to report more stresses than boys do and these stresses mainly relate to family and interpersonal relationships. In relation to active coping processes, males tend to use active recreational processes, in comparison to females who use more social support methods. With regard to negative coping processes males tend to use ignoring the problem or use more emotional outlets compared to females who use more wishful thinking and withdrawal (Frydenberg and Lewis 1993; Copeland and Hess 1995; Seiffge-Krenke 1995). Both adolescent and adult girls use more social support coping mechanisms than boys

(Billings and Moos 1984; Vitaliano, Russo, Carr, Maiuro and Becker 1985; Folkman and Lazarus 1985; Carver et al. 1989; Seigffge-Krenge 1995)

Furthermore, Gelhaar et al. (2007) findings have shown that girls tend to cope more actively than boys, who have a propensity to use withdrawal coping more. Nicholls, Polman, Morley and Taylor (2009), in a study with adolescents (n=527), have evaluated the relationship between the coping strategies used and the different stages of puberty. The gender break down of the sample are males (n=322) and girls (n=205). They have found that male adolescents have significantly high coping effectiveness scores (F1,499= 50.66, P<0.001) for venting emotions. Whereas the girls have significantly high effectiveness scores (F<sub>1,499</sub>= 5.17, P<0.02) on mental distraction (Nicholls et al. 2009). Renk and Creasey (2003) and Ptacek, Smith and Dodge (1994) identify that males use more problem-focused coping and females used more emotion-focused coping. Gender is predictive of emotion-focused coping in girls (Renk and Creasey 2003). Males tend to view stress as a challenge and resort to the use of problem-focused coping and girls have a propensity to view stress as a threat or harmful and are prone to using emotion-focused coping (Ptacek, Smith and Zanas 1992). However, 'seeking social support' and 'distancing' coping increases the effectiveness of dealing with psychological distress (Shimazu and Kosugi 2003).

Piko (2001) using the WOCQ (Folkman and Lazarus 1988), with secondary school children (n=1039), have found a significant link between females and the use of passive coping (t = 0.27, p < 0.001) and support coping (t = 0.07, p < 0.01). Similarly, Gonzalez-Morales, Peiro, Rodriguez and Greenglass (2006) have found an association between

females and the use of social supports. A gender difference is also confirmed by Tarakeshwar, Hansen, Kochman and Sikkema (2005), in a cohort of bereaved HIV positive individuals (n=252), who have found that women report a greater use of spiritual coping. Peterson, Newton, Rosen and Skaggs (2006) have also found gender differences in the use of coping strategies in people dealing with stress associated with infertility. Women in the study use to a proportionately greater degree, the following coping processes confrontive coping, accepting responsibility, seeking social support, and escape avoidance. Men in the study use distancing, self-controlling and planful problem solving. For men and women, seeking social support, planful problem solving and distancing are negatively related to stress (Peterson et al. 2006). The WOCQ (Folkman and Lazarus 1988) is used in Tarakeshwar et al. (2005) and Peterson et al. (2006) studies.

Within a cohort of university students (n=462), Cecen (2008) claims that, male students use more self-confident, optimistic and hopeless coping styles compared to female students who use social support-seeking and submissive strategies, supporting the socialization theory. Lawrence, Ashford and Dent (2006) similarly, have found a gender difference (F = 3.11, p < 0.01) amongst a cohort of first year university students (n = 160). Male students have a significantly greater propensity in the use of detaching themselves from the situation and bottling up their emotions. Young adult males have a proclivity to use distraction as a coping process more than females (Fromme and Rivet 1994). The College Lifestyle and Attitudinal National (CLAN) survey also highlights that male college students are more likely to cope with stress by ignoring the problem, using drink, drugs or sorting the problem out alone (Hope, Ding and Ding 2005). The positive coping processes which had been identified in the study were talking to someone (69%), gaining information about the situation (24%), and praying (21%).

Dyson and Renk (2006) have found little difference between male and female students (n=74) and the types of coping strategies that they use. In addition, in a cohort of community inhabitants (n=153), aged between 22 years and 88 years of age, Trouillet, Gana, Lourel and Fort (2009), have found no predictive link between gender and either problem-focused or emotion-focused emotions. This is in contrast to previous research, which indicates that males tend to use more problem-focused coping strategies as opposed to females who use emotion-focused strategies (Lazarus and Folkman 1984; Ptacek 1994). Similarly, many studies, which have used the Ways of Coping Questionnaire (WOCQ) Folkman and Lazarus 1988) did not find any gender differences in the coping strategies used (Vitaliano, Maiuro, Russo and Becker, 1987; Conway and Terry 1992; Zakowski, Hall, Klein and Baum 2001).

#### 4.11.1. SOCIAL SUPPORT

In chapter 2 and 3 the importance of social supports with the enhancement of self-esteem and well-being was discussed. Social support equally influences the levels of perceived stress and the types of coping processes that an individual uses. It buffers the effects of stress and enhances coping ability (Turner, Grindstaff and Phillips 1990). Social support has also been found to be a significant moderator between stress and depression (Lin, Probst and Hsu 2009). Poor social support is associated with the use of ineffective coping processes and depression (Bigatti, Wagner, Lydon-Lam, Steiner and Miller 2011). For university students dealing with the everyday stresses associated with university lives can be enhanced by the support they receive from friends and family. In a qualitative study with graduate students (n=12), it was reported that on first entering university, the students' previous social supports had changed, which resulted in they not being able to use these supports to cope with the stresses they were now encountering on entering

university (Johnson et al. 2008). Social supports help to regulate the coping process (Aldwin 2007).

Girls use more social supports as a form of coping in comparison to boys. Much research exists which supports the positive effect that social supports have on individuals' proactive way of coping with stress. It is therefore important to further investigate this topic, where the findings may help in the understanding and support university students in the areas of self-esteem and coping with stress.

There are many differences within the studies outlined above, in relation to the samples used, and the methodologies employed, which need to be taken into consideration when making general assumptions on the relationship between coping and gender. This current study explores the relationship between self-esteem and coping within a cohort of university students (n=479).

#### 4.12. COPING AND UNIVERSITY STUDENTS

University life can bring an array of new experiences and a series of different situations for students, especially for those in their first year. Coping has been found to influence students' exam preparation (Moneta and Spada 2009) and adjustment to college (Aspinwall and Taylor 1992). According to Arnett (2000), emerging adulthood, is the period between late adolescence and early adulthood, and, it is within this age period that most students belong within the third level setting. It is important that universities see the salience in the nature, in which, students cope, and the factors, which may play a part in the mediation toward the use of adaptive coping strategies. There appears to be much evidence, of an increased interest within current research, in the area of third level students

and stress and coping. These studies add new information to the already existing body of knowledge; however, there appears to be a paucity of research using a mixed methods approach to investigate this area.

Weiling and Miao (2009) have established, that there is a significant use of rationalization as a coping process (p < 0.01), by male students, in comparison to female students within the study. There are also significant associations between personality traits and coping. Students who use the more mature types of coping have significantly higher scores for extraversion (F = 13.60, p < 0.01) and students that use more immature coping have significantly higher scores for psychoticism (F = 14.91, p < 0.01) and neuroticism (F = 51.62, p < 0.01). The sample in this study was a convenience sample of medical students (n = 300). Similarly, a study has been carried out by Halamandaris and Power (1999) on first year college student (n=183) and reports a positive correlation between emotionfocused coping skills and neuroticism and a positive correlation between problem-focused coping and achievement motivation. Bouteyre, Maurel and Bernaud (2007) in a study with first year students have found that 41% of the students present with clinically significant levels of depressive symptoms. In the study, task centred and social supports are negatively correlated with depression, with emotion-focused coping, positively correlated with depression. In relation to coping and self-esteem, Lawrence et al. (2006), have found that males have significantly higher levels of self-esteem and they utilise more detachment coping. However, the students in the study (n = 160) are first year sport science students. Wei, Ku, Russell, Mallinckrody and Liao (2008) has found a significant association between higher levels of self-esteem and reflective coping and lower levels of self-esteem and suppressive and reactive coping. Dorohn, Stephan, Boiche and LeScanff (2009) assert that a significant relationship exists between the incremental belief that

students have about their ability and the use of adaptive coping strategies. The study examines sports and exercise student's (n = 410) approach to exams, and have found significant positive links between incremental belief and active coping ( $\beta$  = 0.17, p < 0.001), planning ( $\beta$  = 0.21, p < 0.001), social support for instrumental reasons ( $\beta$  = 0.16, p < 0.001) and social support for emotional reasons ( $\beta$  = 0.17, p < 0.001). Avoidance coping is found to predict burnout amongst a convenience sample (n = 280) of final year nursing students (Gibbons 2010).

The current study uses the Lazarus and Folkman (1984) Transactional Model of Stress and Coping as the theoretical framework. This model was chosen as coping is seen as a process, with the individual playing a significant role, in mediating between the stress, the environment and other factors. This model in adopting the process approach to coping, endorses change and change is positive.

## 4.13. SELF-ESTEEM, COPING AND STRESS

There are many contributing factors, including psychosocial resources, which influence the manner in the way individuals perceive and cope with stress. Some of these factors include self-esteem (Greenberg, Solomon, Pyszczynski, Rosenblatt, Burling, Lyon, Simon and Pinel 1992; Greenberg 2008), self-efficacy (Bandura 1982; 1992; 1997), environmental supports and the previous experiences of the individual (Lazarus 1999). The current study investigates the relationship between and individual's self-esteem level and the coping processes used when confronted with a stressful situation.

Self-esteem is well documented as being an important prerequisite in helping an individual cope with stress (Lazarus and Folkman 1984). There is much research which highlights the negative relationship between self-esteem and stress; when self-esteem is low perceived stress is high (Abel 1996). In addition, self-esteem is positively correlated with successful coping (Pyszczynski et al. 2004). Many studies have found that selfesteem acts as a buffer to stress, whilst more deem it to act as a mediator. Mruk (1999; 2006) indicates that higher levels of self-esteem act as a buffer against the negative impacts of stress. The buffering effects of self-esteem, against stress, are also supported by the research of Fernandez et al. (1998), Abela (2002) and Sassaroli and Ruggiero (2005). However, using data from three longitudinal studies of adolescents and young adults, Orth, Robins and Meier (2009), has found a conflicting outcome. The results do not support the self-esteem buffering hypothesis. The study shows that both self-esteem and stress act independently in predicting depression. If the buffering hypothesis were true then both stress and self-esteem would have interactively affected the outcome of depression (Orth et al. 2009). Furthermore, this outcome is supported by, Abela, Webb, Wagner, Ho and Adams (2006), and Abela and Skitch (2007). Antonovsky (1987) refers to 'generalised resistance resources' including self-esteem and coping which help to buffer or protect an individual from stress. Lazarus and Folkmans' (1984) view on this is different. They do not see coping or self-esteem as resistance resources against stress. Rather, they believe that all the resources outlined by Antonovsky (1987) are factors which influence the way in which an individual copes and consequently help to mediate stress. Individuals with high levels of self-esteem and individuals with low levels of selfesteem all experience stress, however, they react to it in different ways. Similarly, Zautra (2003) argues that individuals who express and experience more positive emotions in comparison to individuals who experience more negative emotions appear to cope better

with stress. The stress is felt by both types of individuals but is perceived and appraised differently which consequently leads to different reactions (Zautra 2003).

#### 4.14. CONCLUSION

Psychological stress and coping are complex phenomena to describe. Stress is defined in terms of being a stimulus, a reaction and as a transaction. Folkman and Lazarus (1985) transactional model of stress, comprehensively acknowledges the array of factors, which interplay, when an event is appraised as being stressful. Factors such as personality, and features within the environment are considered, and the individual is deemed to play a very influential role in the entire stress/coping process. Lazarus and Folkman (1985) refer to the dynamic nature of coping, whilst some researchers have conversely stated that individuals approach each stressful event with a set of fixed coping styles or traits (Carver, Weintraub and Scheier 1989). The current study adopts the transactional model of stress and coping. In particular, it hypothesises that self-esteem is one of the factors that predicts the ways of coping.

The Ways of Coping Questionnaire (Folkman and Lazarus 1988) is identified as the most widely used self-report coping questionnaire (Parker, Endler and Bagby 1993; Kieffer and MacDonald 2011). However, it is recommended to employ factor analysis on the questionnaire with each sample being researched (Parker, Endler and Bagby 1993). Many different sources of stress and coping processes experienced by university students have been identified within the research arena. However, there is a paucity of qualitative or mixed methods approach, studies in the area. This study deals with the deficit by using an explanatory sequential mixed method design. Eight students are interviewed regarding their views on what they have found stressful within the university setting.

Many of the studies reviewed identified findings from samples, which were generally non-probability in nature. Furthermore, the salience of certain factors such as age and gender, personality disposition, are evident within research. However, factors such as university programme, year of programme and their relationship with coping and self-esteem requires further investigation to learn more about the subjective nature of psychological stress and coping and its relationship with self-esteem.

The following chapter outlines the details of the overall research design viz. an explanatory sequential mixed method study (Creswell and Plano Clark 2007).

# Chapter 5. EXPLANATORY SEQUENTIAL MIXED METHOD DESIGN

#### 5.1. Introduction

The current study sets out to identify associations between coping processes, utilised by students when dealing with stress relating to academic life, and factors viz. levels of self-esteem, age, gender, university programme and the year of programme, from an Irish perspective. Many of the studies, which have investigated self-esteem levels and coping, within the university setting, have generally used quantitative methods with non-probability samples. Whilst quantitative research designs aim to obtain a large quantity of information regarding a particular research question, so as to derive statistical inferences, they fail to clarify participants' views regarding the significant findings. Following an extensive literature search, no mixed method study was found which investigated this study's research questions. The following chapter discusses the rationale for approaching this study by means of an explanatory sequential mixed methods design (Creswell and Plano Clark 2007).

# 5.2. RESEARCH AIMS

The overall aim of the current study was to investigate the relationship between global self-esteem and coping processes, within a stratified random sample of university students (n=479). Moreover, the study aimed to explore associations between self-esteem and coping, and the variables gender, age, year of programme and programme type. Furthermore, the study aimed to seek enlightenment, clarification, and further elaboration, on the significant findings, which arose from the quantitative component of the study. Consequently, the study aimed to seek the views of students (n=8) in relation to their inferences on the area of stress, self-esteem and coping processes, with particular

reference to the significant quantitative findings. In addition, the views of the students were sought on the factors within university life, which they considered to be sources of stress and to understand the meaning of stress and coping processes from the vantage point of the respondents.

## 5.3. PHILOSOPHICAL FRAMEWORK

The philosophical framework that guided this study was that of critical realism. Critical realism exists within the paradigm of post positivism. This philosophy accepts both the use of quantitative and qualitative research, in that it supports both the scientific rigour of the former and the richness found within the contextual nature of the latter (Bisman 2010). In relation to ontology, critical realism sees reality as existing within three domains viz. the real domain, the actual domain, and the empirical domain (Bhaskar 1998). All events and experiences may be explained within these three domains. The real domain encompasses everything which exists, whether an individual experiences it or not. When the real domain is activated, the resultant occurrences, within reality, are referred to as the actual domain. Everything that an individual experiences constitutes the empirical domain (Sayer 2004). Research, using critical realism as a guiding philosophy, looks beyond the empirical reality and looks to the real reality and endeavours so as to establish what happens when an interaction occurs. Consequently, critical realism focuses on the association between phenomena and structure and endeavours to identify the factors which give rise to events and experiences within the empirical domain (Tsang and Kwan 1999). The current study has firstly investigated the statistical associations between the variables self-esteem, coping, gender, age, year of programme and programme title within the university setting. It is not always possible to understand fully the true nature of the cause

and effect between phenomena. Therefore, the second phase of the study, the qualitative phase, has endeavoured to capture a deeper understanding of the relationship between the variables from the perspective of the student.

Collier (1994) has commented that not every event is experienced. Within the current study, cognisance was taken, not only, of this fact, but also the importance of conscious awareness. Individuals may experience events but may not be consciously aware of their reasons for doing so.

#### 5.4. THEORETICAL FRAMEWORK

The Lazarus and Folkman (1984) Transactional Model of Stress and Coping was the chosen theoretical framework for both phases of the current study. This model refers to the dynamic interactions between the characteristics of the individual, their available resources, the environment, their appraisal mechanism and their emotional and behavioural responses to a potentially stressful situation. As discussed in the previous chapter, Lazarus and Folkman (1984) contend that a central tenet, within stress and coping, is the individuals' appraisal of a situation. The cognitive processes, which occur during appraisal, are accessible from both a conscious and unconscious level. With reference to this study, the main research aim was to establish the associations between the levels of self-esteem of university students and the coping processes that they use, when confronted with a stressful situation. Furthermore, the study investigated the links between coping and self-esteem and the variables gender, age, year of programme and programme type. These variables encompass the individual resources of the student viz. self-esteem, gender and experience and the environmental factors of the university setting

viz. year of programme and programme title. In phase two of the study, the associations, identified from the quantitative study, were further investigated, guided by the transactional model of stress and coping (Figure 4.1). The findings from the study have added to the existing body of knowledge in this area.

## 5.5. EXPLANATORY SEQUENTIAL MIXED METHOD DESIGN

An explanatory sequential mixed methods approach was selected as the best means to address the overall research aim of the study (Creswell and Plano Clark 2007). The study involved a quantitative and qualitative component. The mixed method design of the current study facilitated both the acquisition of significant data from a large sample of students. It also provided an opportunity for clarification and exploration of the significant findings, from the viewpoint of the students. Whilst the major emphasis has been on the quantitative component of the study, the qualitative study provided an opportunity to further elaborate and establish reasons for the occurrence of the significant findings from phase one of the study. Tashakkorri and Teddlie (2010) refer to mixed methods research as a process rather than a method, because there are continuous links between all stages. Furthermore, philosophical underpinnings and a theoretical framework have guided the entire study.

This study comprised two-phases. Phase one was a quantitative study followed by phase two a qualitative study. Figure 5.1, displays a visual model of the design adapted from the model created by Ivankova, Creswell and Stick (2006). The study intersected/mixed at two stages, firstly during the development of the qualitative component, and secondly in the discussion. The quantitative study was a cross-sectional correlational design. Two

published questionnaires namely the Rosenberg Self-Esteem Scale (Rosenberg 1965) and the Ways of Coping Questionnaire (Folkman and Lazarus 1988) as well as a demographic questionaire were posted to the selected University students viz. a total of 1200 students, with 300 chosen randomly from each annual cohort of undergraduate students. The data obtained was analysed using Statistical Package for Social Sciences (SPSS) for Windows (version 15) (SPSS 2006) and the CANOCO program (TerBraak and Smilauer 2002). Phase two of the study, the qualitative study used a descriptive qualitative design, whereby the interview questions evolved from the significant findings resulting from phase one of the study. Further details of the designs, used, are given in chapters six and eight. In phase two of the study a descriptive qualitative design, using semi-structured interviews with eight students, was used to augment and explain further the quantitative findings arising from phase one of the study.

To enhance and explain the significant findings from the quantitative phase of the study, the mixed method approach, used in this study, has aimed to maximise the interpretation of the findings (Leech and Onwuegbuzie 2007; 2010). Mixed methods research affords the researcher the opportunity to obtain data, which is more enriching and holistic. The explanation and further elucidation on the findings can only be addressed by obtaining the subjective inferences from a sample of the participants who engaged in phase one of the study. Whilst the quantitative facts have provided prolific information, regarding the self-esteem and coping strategies of the subjects in question, it failed to enlighten the researcher of the students own perspective on what they felt influenced the quantitative findings. Carl Rogers (1951; 1959) once remarked that the best way to understand human behaviour is from the internal vantage point of the individuals themselves. The quantitative phase of the study established patterns of association between self-esteem and

coping across the population of university students. The qualitative phase of the study provided a rich description of students' views and their explanations on the findings from phase one of study. Furthermore, phase two provided an account of the sources of stress for students within the university setting. The adoption of the mixed methods approach has provided a means of obtaining a deeper understanding of the complexities of the subject areas in question, when neither qualitative nor quantitative can capture, in full, the trends or details of these areas.

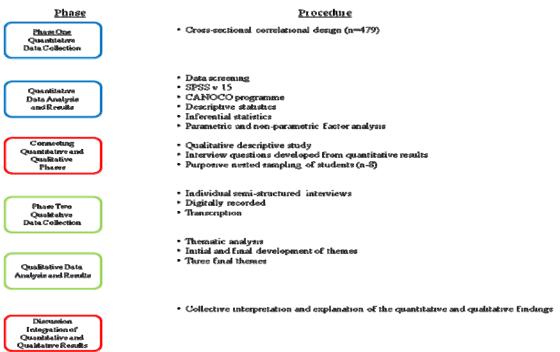


Figure 5.1. Visual model for the current explanatory sequential muted method study

### 5.6. CONCLUSION

The current explanatory sequential mixed methods study has endeavoured to capture both the quantitative and qualitative elements of the research question. In accordance with Lazarus and Folkman (1984) Transactional Model of Stress and Coping, coping is a process in which the cognitive processes, which take place during appraisal, are accessible from both a conscious and unconscious level. Phase one of the study has endeavoured to

calculate the statistical association between the variables viz. self-esteem, coping, gender, age, year of programme and programme title, whilst the qualitative phase of the study has tried to capture the students, views on the findings from phase one. The philosophy of critical realism, whilst accepting the existence of reality, also contends that reality may not always be fully comprehended (Guba 1990). However, the mixed method design used in the current study captured an expansive understanding of the variables in question. The next chapter discusses the research design and methodology of phase one of the study.

# Chapter 6. QUANTITATIVE RESEARCH DESIGN AND

# **METHODOLOGY**

#### 6.1. Introduction

The previous chapter has highlighted the overall aims of this mixed method sequential explanatory study (Creswell and Plano Clark 2007). The design is comprised of two distinct phases; a quantitative study followed by a qualitative study. The quantitative aspect of the overall study forms the main component of the study.

This chapter explains the research aims and hypotheses and the methodological processes applied to the quantitative constituent of the study. It explains the data collection method which was utilised in the study. It provides details of the pilot study and the sampling process which was undertaken. Ethical principles and their application to the study are discussed in this chapter.

#### 6.2. RESEARCH AIMS

The aim of the quantitative component of the study is to investigate the associations between global self-esteem and coping processes within a stratified random sample of university students (n = 479). Furthermore, the associations between both self-esteem and coping, with gender, age, year of programme and programme title are explored. Additionally, the predictive links between self-esteem and coping are analysed. In a manner which recognises gaps in existing research, the quantitative component of the study has five main objectives in addressing the main aim namely to:

1. Formulate the hypotheses for the study.

- 2. Complete a correlational study to test the hypotheses.
- Carry out hierarchical multiple regression with self-esteem as the outcome and coping processes as the predictors.
- Perform comparative parametric and non-parametric factor analysis on the Ways
  of Coping Questionnaire (Folkman and Lazarus 1988) and the Rosenberg SelfEsteem Scale (Rosenberg 1965).
- 5. Seek relevant evidence from the data analysis process that will help to inform the qualitative component of the overall study.

#### 6.3. RESEARCH HYPOTHESES

Many studies have outlined that lower levels of self-esteem are significantly associated with avoidant coping techniques (Aspinwall and Taylor 1992; Lo 2002; Cash et al. 2005) and higher levels of self-esteem are associated with the use of active coping processes(Thoits 1995; Lo 2002; Ni et al. 2010). However, the literature reveals that many studies in the areas of coping and self-esteem tend to utilise convenience sampling processes. Therefore, this particular study focuses on the associations and the predictive nature between global self-esteem and coping processes within a stratified randomly selected group of university students. Park et al. (2010) alludes to the conflicting evidence in relation to the direction of the relationship between coping and self-esteem. The current study examines this relationship. Many studies have found significant associations between gender and levels of self-esteem (Bagley et al. 1997; Bagley et al. 2001; Bagley and Mallick 2001; Birndorf et al. 2005; Sung et al. 2006; Puskar et al. 2010). However, other studies have found no significant associations between self-esteem and gender (Trzesniewski et al. 2003; Clifton et al. 2008; Armstrong and Oomen-Early 2009). The

current study investigates this relationship with the view of adding to the existing body of knowledge on the area. Furthermore, coping is contextual and changes over time and across an array of circumstances (Folkman and Lazarus 1985; Petersen 2009; 2010; Goh et al. 2010). Factors such as year of programme and the type of programme in which a student is enrolled, may play a part in the type of coping processes used by students and also their level of self-esteem (Clifton et al. 2008). Furthermore, the results of the pilot study influenced the development of the hypotheses 4 and 8. Within the findings of the pilot study, the university programme of the student was significantly associated with the coping processes that they used. Therefore, it was decided to look at this association in more detail within the main study (Subsection 6.5.4).

With these findings in mind, it was hypothesised that there is an association between:

- 1. Gender and self-esteem
- 2. Age and self-esteem.
- 3. Year of programme and self-esteem.
- 4. Programme title and self-esteem.
- 5. Gender and coping processes.
- 6. Age and coping processes.
- 7. Year of programme and coping processes.
- 8. Programme title and coping processes.
- 9. Higher levels of self-esteem and adaptive coping processes.
- 10. Lower levels of self-esteem and avoidance/emotion-focused coping processes.

#### **6.4. ETHICAL CONSIDERATIONS**

To safeguard and protect the students involved in this study, many ethical considerations have been applied. The area of self-esteem and coping are sensitive and very personal subjects and may raise issues for students. The principles, which have been applied to the study, are the principle of beneficence, which includes freedom from risk and harm; the principle of respect for human dignity which includes the rights to autonomy/self-determination and to full disclosure and finally the principle of justice which includes the rights to confidentiality and anonymity and informed consent (Polit and Beck 2006; 2009; Streubert-Speziale and Carpenter 2007).

The first ethical principle of beneficence, which outlines that no human subject is harmed, has been firstly addressed by the completion of the rigorous ethical approval process from the research site. Ethical approval and access was obtained from the University of Limerick Research Ethics Committee in July 6<sup>th</sup> 2006 (ULREC 06/55). The pilot study was carried out in February 2007. The main study commenced in July 2007. The initial ethical approval expired in July 2009. As a result, a reapplication was made and approval granted for a further year in order to complete the qualitative component of the study (Appendix A). Included in the questionnaire package sent to the selected students were details and contact numbers of counsellors within the student counselling service of the university. The researcher's name, email address, and mobile phone number was also included in the event of a student requiring assistance and/or clarification.

The principle of respect has been upheld in the study by allowing the students the freedom of voluntary participation in the study. A cover letter was enclosed with the

questionnaires, outlining the purpose and aims of the study and stating that any queries were welcomed. No obligations were placed on the students to complete and return the forms. However, in order to increase the participation in the study, each student on return of questionnaires, was given the choice of supplying their mobile telephone number and first name so as to be included in a raffle for a €200 bank draft. There were four €200 bank drafts, one for each year of programme. Details of the incentive were outlined in the ethical approval form. The raffle took place on December 14<sup>th</sup> 2007, where a member of faculty with two witnesses, drew out the names of four students.

In keeping with the principle of justice all participants were informed that, on receipt of questionnaires, any means of identification would be removed (Appendix A). An identification number was assigned to all returned questionnaires for statistical purposes. All prospective participants were informed that their privacy would be upheld at all times. Questionnaires have been kept in a locked filing cabinet with access only by the researcher. One supervisor had access to the inputted data file which was coded, leaving no means for student identification.

#### 6.5. RESEARCH DESIGN

As part of a mixed method sequential explanatory study, the quantitative component of the study has used a cross-sectional correlational or ex post facto design (Bowling 2009; Field 2009; Restall and Borton 2010; Greer and Mulhern 2011). There is much evidence in the social sciences literature that this type of design is commonly used, especially within the subject areas of self-esteem and coping (Cash et al. 2005; Preechawong, Zauszniewski, Heinzer, Musil, Kercsmar and Aswinanonh 2007; Wang and Castaneda-Sound 2008;

Cecen 2008; Moneta and Spada 2009; Trouillet et al. 2009; Alvarez and Juang 2010; Park et al. 2010). A cross-sectional correlational design is beneficial in describing features and relationships within a population or sub-set of a population at a fixed point in time. Furthermore, this design approach is useful in measuring phenomena at a single point across different years of a programme, for example in this study, students from the four years of the university programme (Polit and Beck 2006; 2009).

This chosen method best suited the testing of this study's hypotheses, which have arisen from a review of the literature, in the area of self-esteem and coping. In line with the philosophical and theoretical framework of the study, the cross-sectional correlational design attempts to provide an understanding of the associations between the dependent and independent variables as they have naturally occurred without any interventions applied (Polit and Beck 2006; 2009; Bowling 2009; Field 2009; Greer and Mulhern 2011). Correlational research has been described as being strong in realism and is therefore beneficial in solving practical problems within a large amount of data (Polit and Beck 2006; 2009).

However, correlational studies do have limitations, specifically in relation to revealing causal relationships (Frazier, Tix and Barron 2004; Polit and Beck 2006; 2009; Bowling 2009). Behaviours, attitudes, and characteristics of individuals are all interrelated in a variety of ways, making it difficult in ways to interpret causal relationships. However, the qualitative component of this study has helped in the clarification of significant findings, which have arisen, from the quantitative part of the study. As the phenomena of self-esteem and coping are naturally occurring, the cross-sectional correlational design of the

current study, made possible the collection of large amount of data from a stratified randomly selected group of university students.

The three questionnaires which have been used in the current study are a demographic questionnaire; the Ways of Coping Questionnaire (Folkman and Lazarus 1988) and the Rosenberg Self-Esteem Scale (Rosenberg 1965) (Appendix A). The demographic questionnaire was devised by the author and included questions relating to the age, gender, nationality, year of programme and programme title, of the participants. Permission was sought to use the Ways of Coping Questionnaire (Folkman and Lazarus 1988). There was a cost in receiving permission to photocopy and use the questionnaire. The publishing company, who hold the copyright of the questionnaire, is Mind Garden Inc. Menlo Park, California, USA. A fax was sent on the 28<sup>th</sup> September 2006 to seek bulk permission to reproduce 2000 copies of the Ways of Coping Questionnaire (Folkman and Lazarus 1988). Permission was granted in October 2006 at the cost of \$814 (Appendix A).

The Self-Esteem Scale (Rosenberg 1965) is available online and may be used without explicit permission. However, Morris Rosenberg's (deceased) family would like to be informed regarding its use. A letter outlining the researcher's use of the RSES was sent by registered post to The Morris Rosenberg Foundation in Maryland, U.S.A. An acknowledgment of receipt of letter was sent to the researcher which outlined that the foundation was granting permission to what they deemed 'an interesting' study and asked for the results to be sent to them on completion of study (Appendix A).

Preparatory work for the main study commenced in May 2007. A Freepost Licence was purchased from An Post and specially printed envelopes ordered from a printing company. As soon as the sample was selected, all materials for the postal survey were prepared. Each envelope contained a cover letter containing succinct details of the study's overall aim, the researcher's contact details, and a cut off section to be returned, with details of the student's first name and a contact number, should they wish to be included in the raffle. The second letter included in the package was a declaration for permission to be contacted for an interview if necessary. The demographic questionnaire and the Self-Esteem Scale (Rosenberg 1965) were included on the one page. The Ways of Coping Questionnaire (Folkman and Lazarus 1988) contains five pages which were photocopied back to back to reduce the number of pages. The package was composed of six pages in total.

The first batch of questionnaires was posted on Tuesday September 17<sup>th</sup> 2007 and posting was completed on Friday September 21<sup>st</sup> 2007. Within the first month, 370 completed questionnaires were returned. A reminder letter was sent on October 19<sup>th</sup> 2007 and, as a result, 70 more questionnaires were returned. A further reminder letter was posted in November and once again as a result a further 39 completed questionnaires were returned. It was indicated in the accompanying letter sent to the students that the raffle for the €200 was taking place in December 14<sup>th</sup> 2007. A final reminder was sent on December 3<sup>rd</sup> prior to raffle but no more questionnaires were returned. The raffle took place on December 14<sup>th</sup> where a member of faculty with two witnesses drew out the names of four students. The researcher contacted the selected students personally and a bank draft to the value of €200 was posted by registered mail to the winners.

The response rate to the questionnaires was 40%. All returned questionnaires had been sorted into the four different years. Returned questionnaires were coded and any means of identification was removed on receipt of questionnaires. In relation to interviews all subjects had been informed that no names would be used and that all transcripts would also be coded. The inputting of the data into the statistical program Statistical Package for the Social Sciences (SPSS), Version 15.0 (SPSS 2006) commenced in January 2008.

The following sections will discuss the questionnaires which have been used in the main study.

## 6.5.1. Demographic Questionnaire

Arising from the literature and to address the testing of some of the hypotheses outlined in the beginning of the chapter, the demographic questionnaire contained six questions regarding age, gender, nationality, year of programme and programme title (Appendix A).

## 6.5.2. Ways of Coping Questionnaire

The Ways of Coping Questionnaire is the most widely used measure of coping as a process (Parker et al. 1993; Kieffer and MacDonald 2011). Lazarus and Folkman (1984) contend that stress is not simply an external event but a transaction between the uniqueness of the individual, the environment and the identification or awareness that an event may be seen as a harm, a threat, a loss, a challenge, or something benign. They view coping as a process. A central tenet of the Lazarus and Folkman (1984) transactional model of stress and coping is the concept of cognitive appraisal. The way in which an

individual cognitively appraises a situation, as being a threat, harm or something benign, is a critical component of the transactional model. Many factors, both personal and situational, affect the appraisal process. In relation to personal factors, Lazarus and Folkman (1984) purports that commitment and beliefs influence how one appraises a situation. The stronger the commitment or motivation to an area, the more likely that an individual is going to experience psychological stress in that area (Lazarus and Folkman 1984). Commitments are linked to the primary appraisal stage of the transactional model of stress. Beliefs, such as people having confidence and mastery over a situation or conversely feeling vulnerability towards a situation, will influence their appraisal process. Furthermore, referring to Bandura's (1977) view on efficacy expectancy, Lazarus and Folkman (1984) likens this phenomenon to the secondary appraisal stage of their transactional model of stress and coping. Appraisal of a situation is influenced by one's effectiveness and whether an incentive is present or not. Furthermore, the characteristics of the encounter also influence appraisal. Firstly, a novel situation will affect its appraisal based on previous experience. For example, a situation is deemed as a threat if it has previously been associated with harm. Secondly, predictability influences appraisal e.g. if a situation has not been predicted and then it is linked to high levels of stress. Thirdly, the more imminent or urgent a situation, is the more likely that the appraisal is powerful. Finally, the duration of an event influences the appraisal mechanism (Lazarus and Folkman 1984). As a result Lazarus and Folkman (1984, p141) defines coping as:

...constantly changing cognitive and behavioural efforts to manage specific external and/or internal demands that are appraised as taxing or exceeding the resources of the person.

(Lazarus and Folkman 1984, p.141)

Change, according to Folkman and Lazarus (1985), is a strong characteristic of coping and, similar to their views on stress, coping is seen as a process rather than a trait. The

transactional model of stress and coping, used in the current study, views coping processes in two ways, namely, problem-focused and emotion-focused (Lazarus and Folkman 1984).

Folkman and Lazarus (1980) have developed a measure to evaluate the coping processes of individuals, by ascertaining from one hundred adults their preferred coping processes in dealing with stressful life events, over a seven-month period. The original Ways of Coping Checklist (Folkman and Lazarus 1980) contained 24 items relating to 'problem-focused' and 40 items relating to the 'emotion-focused' scale. In the original inventory a yes/no response was required to answer the items. In 1988 the questionnaire was revised and named the Ways of Coping Questionnaire. In their revision of the scale, Folkman and Lazarus (1988) have changed the checklist to a four point Likert scale; 0 = does not apply or not used, 1 = used somewhat, 2 = used quite a bit and 3 = used a great deal. Some items have been removed and more added, creating a 66 item scale with eight factors. The items are outlined as predicates, describing coping thoughts or actions, which are frequently used by individuals during stressful situations. The questionnaire may be completed in approximately ten minutes and may be used as both a self-administered assessment and an interview guide (Folkman and Lazarus 1988).

Using principal factor analysis, Folkman and Lazarus (1988) identified eight scales of coping processes. There are eight different coping dimensions within the scale, which is comprised of 50 of the 66, items (Table 6.1). Within the measure, two distinct types of coping arise viz. problem-focused coping and emotion-focused coping. By using common factor analysis with oblique rotation, a third type viz. seeking social support was also

identified in 1985 as being a mixed coping style since it may encompass features from both problem-focused coping and emotion-focused coping (Folkman and Lazarus 1985).

**Table 6.1.** Description of the coping scales of the Ways of Coping Questionnaire (Folkman and Lazarus 1984).

Coping Scale	Description of Scale	Number of Items	Cronbach's Alpha Scores
<b>Confrontive Coping</b>	Describes aggressive efforts to change a situation which may include some degree of hostility and risk taking.	6	.70
Distancing	Describes cognitive efforts to detach oneself and to minimize the significance of the situation	6	.61
Self-Controlling	Describes efforts to regulate one's feelings and actions.	7	.70
Seeking Social Support	Describes efforts to seek informational support, tangible support and emotional support.	6	.76
Accepting Responsibility	Acknowledges one's own role in the problem with concomitant theme of trying to put things right.	4	.66
Escape-Avoidance	Describes wishful thinking and behavioural efforts to escape or avoid the problem. Items on this scale contrast with those on the Distancing scale, which suggest detachment.	8	.72
Planful Problem Solving	Describes deliberate problem-focused efforts to alter the situation, coupled with an analytic approach to solving problems.	6	.68
Positive Reappraisal	Describes efforts to create positive meaning by focusing on personal growth. It also has a religious dimension.	7	.79

Aldwin (2007) refers to the criticisms expressed by researchers, who favour the trait approach measures of coping, that process measures such as the WOCQ are psychometrically flawed due to the instability of the factor structure. Aldwin (2007) highlights that the reason for factor instability in process measures is that they are purposely developed to measure the variations experienced by individuals when confronted by a stressful event. As a result, depending on the cohort and situations studied variations in the clustering of the factors may exist. Therefore, it may be said that this is due to an accurate reflection of the process of coping as expressed by the

individuals rather than a flawed instrument (Aldwin 2007). As will be seen in the data analysis chapter, factor analysis, both parametric and non-parametric, was performed on the WOCQ within the current study.

Similar to Folkman and Lazarus (1985), Gencoz, Gencoz and Bozo (2006) have subjected the Turkish version of the Ways of Coping to factor analysis by using varimax rotation. Three factors were revealed viz. problem-focused coping, emotion-focused coping and seeking social support. Lundqvist and Ahlstrom (2006) in their research have found some support for the eight factor model of the Ways of Coping Questionnaire in describing clinical samples as opposed to non clinical samples, even though the questionnaire was originally developed for a non clinical sample. The total sample used by Lundqvist and Ahlstrom (2006) was 510 subjects comprising patients with chronic neurological diseases (n=219), next of kin (n=77), and students (n=214). Lundqvist and Ahlsrtom (2006) maintain that psychometric data relating to WOCO is limited as many of the published research relates to the initial version of the scale, which is no longer in existence. In another study, where cohabiting couples (n=506) were asked to complete the Ways of Coping Questionnaire, Bouchard et al. (1997) have found four factors by using oblique rotational factor analysis. These are distancing/avoidance, confrontation/seeking social support, problem-focused coping and denial. However, depending on the research sample, factor analysis of coping styles in this inventory has uncovered different factors within it. Parker et al. (1993) have challenged the theoretical integrity of the WOCQ and have found that the eight factors within the questionnaire did not show reliability. They have advised that factor analysis should be employed in all research using this questionnaire. Many different factors of the WOCQ have been confirmed by various researchers. A three factor model (Bouchard, Sabourin, Lussier, Richer and Wright 1995; Bouchard and

Theriault 2003; Elfstrom, Kreuter, Persson and Sullivan 2005; Gencoz et al. 2006; Trouillet, Gana, Lourel and Fort 2009) and a four factor model have been verified (Bouchard, Sabourin, Lussier, Wright and Richer 1997; Hunter and Boyle 2004). Furthermore, a five factor model has been recognised by Tarakeshwar, Hansen, Kochman and Sikkema (2005) and Lundqvist and Ahlstrom (2006) have created an eight factor model.

According to Folkman and Lazarus (1988), there are two ways of scoring the questionnaire either raw scores or relative scores. The raw scores are the sum of the responses to each scale within the questionnaire and describe the coping effort of each type of coping. This is the method utilised by Folkman and Lazarus (1988) in most of their research. The relative scores provide an overview of the proportion of effort represented by each type of coping. Relative scores are computed by firstly, calculating the average item score by totalling the scores for each scale and dividing by the number of items in the scale, secondly, calculate the sum of all average scores in all scales and finally, divide the average item score for a scale by the sum of the average scores across all scales. Folkman and Lazarus (1988) comment that relative scores control for unequal numbers of items within each scale and for individual differences in responses. Raw sores were used by Lundqvist and Ahlstrom (2006). In this particular study, both raw and relative scores are computed, with the relative scores used in the final analysis. Comparatively speaking both results have presented very similar significant findings.

This particular study endeavours to add to the transactional model of stress and coping by studying a stratified random sample of university students from across a diversity of

programmes (n=479) and to identify the coping processes they have utilised in dealing with a stressful event. Students have been asked to consider a stressful experience, which had occurred during the previous week, which related to university life. The other variables which have been considered in the study are age, gender, nationality, year of study, programme title and level of self-esteem. The study utilises both parametric and nonparametric testing factors analysis on the Ways of Coping Questionnaire. Using SPSS Version 15, principal component factor analysis was performed on the questionnaire. Furthermore, the WOCQ was subjected to non parametric factor analysis using the biometric program namely, CANOCO (Ter Braak and Smilauer 2002). This program is normally used in the area of life and earth sciences. It performs many multivariate statistical analyses one of which is Partial Detrended Canonical Analysis. A search of the literature has revealed that this program has never been used on the Ways of Coping Questionnaire. As the items in the questionnaire are not continuous, non-parametric methods are predominantly used in analysing the data and testing the hypotheses. The author identified that a comparison between both methods would be a very interesting statistical pursuit. The results are outlined in chapters 7 and 8.

As the questionnaire measures coping as a process, Folkman and Lazarus (1988) indicate that the best method of testing reliability is Cronbach's coefficient  $\alpha$ . Cronbach's coefficient  $\alpha$  have been applied to all of the items on the scale. In the current study, as different factors have been identified from both parametric and non-parametric factor analysis, reliability testing has been performed on all factors. These results are outlined in the following chapter. Many studies using the WOCQ have carried out reliability tests on the scale. Gencoz et al. (2006) established a Cronbach's alpha of .90 with a sample of university students (n=194). Bouchard, Guillemette and Landry-Leger (2004) on a sample

of Canadian university students (n=233) found alpha scores of between .71 - .90 on the scales. Alpha results of .80 to .93 were calculated by Tarakeshwar et al. (2005) with a sample of individuals with HIV (n=268). Kappas were found in the range of .68 and .72 with a sample of adolescents (n=1039) (Piko 2001). Ahlstrom and Wenneberg (2002) estimated alpha levels of  $\geq$  .70 with the WOCQ.

#### 6.5.3. ROSENBERG SELF-ESTEEM SCALE

The Rosenberg Self-Esteem Scale measures the global evaluation of the positive or negative attitudes towards the self (Rosenberg 1979). The scale (Rosenberg 1965) was originally designed as a 6 point Guttmann uni-dimensional scale to assess the global selfesteem scores of high school students (Rosenberg 1979). It had been initially developed for middle to late adolescents and is widely used in research with cohorts of college students (Bagley et al. 1997; Bagley et al. 2001; Bagley and Mallick 2001; Twenge and Campbell 2001; Lo 2002; NicGabhainn and Mullan 2003; Gudjonsson and Sigurdsson 2003; Birndorf et al. 2005; Cash et al. 2005; Sung et al. 2006; Pilafova et al. 2007; Pritchard et al. 2007; Clifton et al. 2008; Wang and Castaneda-Sound 2008; Wu 2008; Halama 2008; Mimura et al. 2009; Park et al. 2010; Koutra, Katsiadrami and Diakogiannis 2010; Ni et al. 2010). The RSES is the most widely used measure of global self-esteem (Tafarodi and Swann 1995; Gray-Little et al. 1997; Pullmann and Allik 2000; Utesy, Ponterotto, Reynolds and Cancelli 2000; Richardson, Ratner and Zumbo 2009; Marsh et al. 2010). Furthermore, according to Blascovich and Tomaka (1991), it has been used in a quarter of all self-esteem studies published since 1967. It is also deemed to be the referenced standard for newly developed self-esteem scales (Guindon 2002). The scale was changed to a 4 four point Likert scale and consists of ten items which evaluate the self-acceptance aspect of self-esteem (Crandall 1972) (Appendix A). To reduce response

bias, which has been reported with the use of self-report measures, five of the items are positively worded e.g., 'I feel that I have a number of good qualities' and five items are negatively worded e.g., 'At times, I think that I am no good at all' (Cronbach 1950; DeVellis 1991; Billet and McClendon 2000). Items 1, 3, 4, 7, and 10 are positively worded. Items 2, 5, 6, 8, and 9 are negatively worded. As a result of the positive and negative wording of the items, reverse scoring must be carried out before adding. According to Rosenberg (1965), the higher the score obtained the higher the level of selfesteem. Rosenberg, Schooler and Schoenbach (1989) purport that the scale does not deal with specific attributes and highlight that self-esteem, as measured with this scale, reflects feelings of self acceptance and self respect rather than feelings of superiority or perfection. The items in the RSES are self-referent which measure the individuals personal views of themselves as opposed to others views about them (Twenge and Campbell 2001). It takes approximately five minutes to complete the scale (Byrne 1996). The language used in the scale is akin to being at a fifth-grade reading level (Gray-Little, Williams and Hancock 1997). However, Marsh (1986; 1996) has found, in a study of responses of preadolescent students, that young people have difficulty in responding appropriately to negatively worded items within the scale. Therefore it is advised that negatively worded items should not be used with young children. The scale also presents with high reliability and construct validity scores (Keppel and Crowe 2000).

Much research has been carried out on this scale and some researchers have found that it is a one factor scale reflecting the original uni dimensional nature of self-esteem (Rosenberg 1965; Hagborg 1993). However others have found two factors i.e. positive and negative items contradicting the uni-dimensionality of the scale (Barber 1990; Shahani, Dipboye and Phillips 1990; Owens 1993; Martin, Thompson and Chan 2006; Halama 2008; Marsh,

Scalas and Nagengast 2010). Bachman and O'Malley (1986) and Marsh (1992) have found that, when factor analysis is used on positively and negatively worded items within a scale, the results frequently show two different factors reflecting both positive and negative items.

Furthermore, Marsh et al. (2010) have found, by using longitudinal tests on the factor structure of the RSES that a model, which includes both positive and negative latent method factors, is the best one to use. They advise that large sample sizes must be used for studies using this scale (Marsh et al. 2010). Halama (2008), using confirmatory factor analysis with a sample of students (n=920), suggests that the RSES may be used alternatively as a one, two or three dimensional measure. Richardson et al. (2009), using nested confirmatory factor analyses on a six item version of the RSES, confirms two correlated dimensions viz. self-competence and self-liking. Using a clinical sample, Martin et al. (2006) reports two distinct, but related factors of the RSES, i.e. both positive and negative factors. Some researchers refer to the two factor dimension of the scale as a 'methodological artefact', which relates to the wording of the items (Carmines and Zeller 1979; Wang et al. 2001). Goldsmith (1986) purports that the factor structure of the RSES depends on the age, and the varying characteristics of the sample. The current study performed factor analyses on the RSES and the results are outlined in the data analysis chapters.

Many reliability testes have been carried out on this scale. For example Shea and Pritchard (2006), with a sample of 459 undergraduates have established an acceptable level of  $\alpha = .87$ . Byrne (2000), with a sample of 224 post primary students, has confirmed

a coefficient alpha of .71. Martin et al. (2006), with a clinical sample of patients with acute coronary syndrome, have confirmed a Cronbach's alpha of .70. Clifton et al. (2008) and Wang and Castaneda-Sound (2008) both have established a Cronbach's alpha of .90. Park et al. (2010) have verified an alpha level of .82 and Ni et al. (2010) an alpha level of .77. Utesy, Ponterotto, Reynolds and Cancelli (2000) have established a Cronbach's alpha of .83 for the scale with a sample of 213 college students. Rosenberg (1965) has calculated a coefficient alpha of .77 when the scale had been tested on a group of high school students (n=5000). Blascovich and Tomaka (1991) have reported an internal consistency of .77 and .88 studies using cohorts of college students.

There are limitations with using the scale. As the RSES is used mainly with adolescents and adults, there may be a possibility that they will want to portray themselves as having high self-esteem (Gergen 1973; Twenge and Campbell 2001). Furthermore, Gentile et al. (2010) have highlighted from their meta-analysis that the RSES has nearly reached a ceiling with self-esteem levels and have purported that research psychologists should consider modifying the scale so as to limit the ceiling effects and skewed distributions. The many advantages of the scale, which were referred to in this section, outweigh the limitations of the RSES.

The following subsection briefly outlines the aims, objectives and results of the pilot study which had been undertaken prior to the commencement of the main study.

### 6.5.4. PILOT STUDY

The main aim of the pilot study was to highlight any problems, which might occur in the main study. If any inadequacies are to be identified or detected, it is necessary to carry out

the pilot study with the same care as the main research project itself (Polit and Beck 2006; 2009). Specifically, the current pilot study aimed to identify any problems which might occur in the comprehension and completion of the three research questionnaires administered. In the main study it was envisaged that the questionnaires would be posted to the students and the researcher would not be in a position to clarify any difficulties, if they arose, in the comprehension of the questionnaires. The pilot study aimed to highlight the competence of the students in the completion of the questionnaires (Bryman 2008). Furthermore, the pilot study aimed to establish any significant findings in relation to the hypotheses put forward by the researcher. Ethical approval had been granted for the main study in July 2006. The ethical approval covered both the pilot study and the main study.

A convenience sample of undergraduate students (n=111) from various academic programmes was used in the study. The students were registered in the following undergraduate programmes; nursing (n=15), business studies (n=14), arts in public administration (n=3), applied languages (n=5), pharmaceutical and industrial chemistry (n=10), environmental science (n=40) and equine science (n=24). The students in the nursing, pharmaceutical and industrial chemistry, environmental science and equine science were all taught in the laboratories and lecture rooms of the building in which the researcher worked. The remaining, twenty-two students were known to the researcher. The researcher stayed in the room while the students completed the questionnaires. No problems were reported by the participants in relation to ambiguities relating to the statements or questions within the questionnaires.

**Table 6.1.** Demographics in relation to the gender and year of programme of the convenience sample used in the pilot study.

	Male	Female	Year 1	Year 2	Year 3	Year 4
Number	14	97	53	37	19	2

Using Mann-Whitney U tests and Spearman's Rank Correlation, the findings suggested some significant associations between the variables. The most widely used coping process was 'planful problem solving'. There was a very weak association between total self-esteem and the coping process of 'escape avoidance' p <0.2 (Spearman's Rank Correlation). Furthermore, the average 'escape-avoidance' score was significantly different between the groups with the median score being 1.69 for the low self-esteem group (0–15), and 1.13 for the high self-esteem group (16-30). Finally, the 'average confrontive coping' score was significantly different between programmes with the highest mean 1.92 for public administration and the lowest 0.83 for mental health nursing. Using a stratified random sample, in the main study, it was decided to look in more detail, at the relationship between the programme title of the student and the variables, coping and self-esteem.

As the sampling method used was non-probability and the sample size was relatively small it was difficult to test all of the hypotheses. The data analysis for the pilot study was executed by the Statistical Consulting Unit in the University of Limerick. The researcher carried out all statistical analysis for the main study.

# 6.6. RESEARCH SAMPLE

The participants in this study (n=479) were recruited by means of a stratified random sample from the general population of all undergraduate students in the University of Limerick. The two homogenous strata were determined by means of year of programme and by gender. Year of programme, as a stratum, was chosen as very few studies have addressed the association between the student's year of programme and self-esteem and

coping. Many studies have utilised first year university students as the research sample (Aspinwall and Taylor 1992; Halamandaris 1999; Crocker and Luthanen 2003; Dyson and Renk 2006; Lawrence et al. 2006; Hayman et al. 2007; Bouteyre et al. 2007; Seyedfatemi et al. 2007; Sinha and Watson 2007; Pritchard et al. 2007; Petersen et al. 2009). Whilst other studies have used samples from the four years of study, the method of sampling employed has been mainly non-probability (Lo 2002; Heiman 2004; Cash et al. 2005; Cecen 2008; Wei et al. 2008; Dorohn et al. 2009; Gibbons 2009; Weiling and Miao 2009; Mimura et al. 2009; Park et al. 2010; Bahri Yusoff et al. 2010; Edwards et al. 2010; Ni et al. 2010). Furthermore, there is conflicting evidence within this research arena regarding the associations between gender and self-esteem and coping. For example, Clifton et al. (2008) and Armstrong and Oomen-Early (2009) have found no significant difference between gender and self-esteem. Furthermore, as outlined in the literature review, there is much evidence which highlights the association between gender and coping (Lazarus and Folkman 1984; Ptacek 1994; Piko 2001; Tarakeshwar et al. 2005; Lawrence et al. 2006; Peterson et al. 2006; Cecen 2008). However, contrary to this, there is evidence of no significant link between gender and coping (Vitaliano et al. 1987; Conway and Terry 1992; Dyson and Renk 2006; Zakowski et al. 2001; Trouillet et al. 2009). Therefore it was decided to devise the stratified random sample by means of both year of programme and gender.

Permission was sought and granted to access the student names and addresses and the prospective participants were sourced from the computerised database in the Student Academic Administration Office in the University of Limerick. Each year selection took approximately six hours as the names in the database also contained names of students from an affiliated college. It was therefore necessary to ensure that these student names

were excluded from the selection process as the ethical approval applied only to students within the University of Limerick itself.

**Table 6.2.** Breakdown of undergraduate student numbers in the University of Limerick.

Year		Total	Year		Total	Year		Total	Year		Total	Overall
One			Two			Three			Four			Total
Male	Female		Male	Female		Male	Female		Male	Female		
1071	1020	2091	901	843	1744	796	782	1578	842	819	1661	7074

Three hundred students, comprising of one hundred and fifty males and one hundred and fifty females, were randomly selected from each of the four years of study. This procedure was carried out manually. The three hundred students were selected in proportion to the total number of students in that year. Consequently, for year one, every 7<sup>th</sup> name was chosen, year two, every 6<sup>th</sup> name, and for year three and four, every 5<sup>th</sup> name was chosen. For all years, a male student and a female student was selected every second time from the database. Using statistical power analysis the recommended number of participants for a two-tailed hypotheses correlational study is eighty two (Onwuegbuzie, Jiao and Bostick 2004).

Within the context of university student national demographic statistics, the overall male/female ratio breakdown for 2006/2007 was 41% and 59% respectively (Higher Education Authority 2008). In contrast the overall University of Limerick male/female ratio was approximately 50:50 (Table 6.2). However, in the current study the male/female percentage of returned questionnaires was 35% and 65% which is closer to the national average. The age demographic profile of the University of Limerick students overall was similar to the national figures of undergraduate students for Universities, Colleges of Education, NCAD and RCSI (Higher Education Authority 2008). Nationally, students

enrolled in HSS programmes accounted for 52.5% of all undergraduate students who enrolled in Universities, Colleges of Education, NCAD and RCSI (Higher Education Authority 2008). For 2006/2007 the overall number of University of Limerick students enrolled in HSS programmes was 48% and 52% in SET programmes. In the current study, the research sample comprised of 43% enrolled in HSS and 57% enrolled in SET programmes. Overall, within the research sample, there were a higher percentage of students enrolled in SET programmes, compared to the national average.

As the current study has adopted a mixed method sequential explanatory approach, the sample method for the qualitative section had been decided on during the initial stage of the study. Included within the questionnaire package, which had been posted to the randomly selected students, was a form asking the student's permission to be contacted if they agreed to be take part in an interview subsequent to the quantitative study. All students, who had agreed to be interviewed (n=142), gave their contact details i.e. mobile telephone number and their first name and returned the permission form with the questionnaires. This sampling method, referred to as nested sampling, outlines that participants for one phase of the study are a subset of the sample used in the other phase (Collins 2010). Eight students who had agreed to be interviewed, were purposefully selected from the students selected in the first phase. Details of the nature of this selection are provided in chapter 9.

#### 6.7. CONCLUSION

This mixed method sequential explanatory study endeavours to capture the essence and nature of a cohort of university students' self-esteem levels and their coping engagement

with academic stress. The cross-sectional correlational component of the overall study has proposed ten hypotheses to address the exploration of the statistically significant relationships between the dependent and independent variables within the study, using the theoretical framework of transactional stress and coping, as proposed by Folkman and Lazarus (1988). With the philosophy of critical realism guiding the study, in conjunction with the researcher's own philosophical worldview guided by humanism, great care was taken in ensuring the ethical rights of the students were always maintained. A demographic questionnaire, the Ways of Coping Questionnaire, and the Rosenberg Self-Esteem Scale, were used to explore the relationship between self-esteem, coping and demographic variables amongst stratified randomly selected cohort of university students (n=479).

The following chapter explores the data analysis of phase one of the study, with particular reference to the psychometric tests performed on the Ways of Coping Questionnaire and the Rosenberg Self-Esteem Scale. The descriptive and inferential statistics are explained and conclusions are reached in relation to their significance level.

# Chapter 7. QUANTITATIVE DATA ANALYSIS: 1. PSYCHOMETRICS

#### 7.1. Introduction

The quantitative component of the current mixed method sequential explanatory study utilised a cross-sectional correlational design to explore the statistical relationships between many independent variables and the dependent variables of self-esteem and coping (Creswell and Plano Clark 2007; Creswell 2010). The previous chapter outlined the ten hypotheses which were created as a result of the identified gaps within the current empirical knowledge relating to this area. Using a stratified random sample of university undergraduate students (n=479), the quantitative component of the study identified many associations between the variables, with many significant findings. Both univariate and multivariate statistical procedures were used in the current study.

The following chapter will explain the different data analysis processes which were used within this study. Firstly, it will highlight the descriptive statistics relating to the independent and dependent variables. Secondly, the inferential statistics relating to the independent and dependent variables namely, age, gender, year of programme, programme, self-esteem and coping. The parametric and non-parametric factor analyses, performed on the Rosenberg Self-Esteem Scale (Rosenberg 1965) and the Ways of Coping Questionnaire (Folkman and Lazarus 1988) are examined.

# 7.2. DEMOGRAPHIC STATISTICS

The variables examined in the demographic questionnaire were age, gender, nationality, year of programme and programme title (see Table 7.1). The following paragraphs outline

the descriptive statistics relating to this questionnaire. See appendix B, for the data coding system.

#### 7.2.1. AGE

Figure 7.1 (a) illustrates a summary of the age profile (in seven groups) of the students partaking in this study. The majority of students, i.e., 358 were in the age bracket of 17-20 with 57 students between the ages of 21-24, followed by 25 students in the age bracket 25-28, 13 students in the age bracket 29-32, 9 students in the age bracket 33-36, .4 students in the age bracket 37-40 and finally there were 12 students in the 40 or over age bracket.

In order to determine whether to use parametric or non-parametric statistics, all variables from the demographic questionnaire were tested for normality. As an example, the following paragraph outlines the tests carried out on the variable age in seven groups. Figure 7.1 (c) demonstrates that the mean age group was 1.57 (corresponding to age 22.7 years approximately), the mode is 1, and the standard deviation was 1.289. The cumulative percentage indicates that 86.8% of student ages were between 17 and 24, with 92.1% of the student ages between the ages of 17 and 28 years of age. From this figure, it can be seen that the data was positively skewed with the mean of 1.57 > than the median of 1.00. As the data were non-symmetrical, the percentile readings gave a better indication as to where the observations lay. The Interquartile Range i.e. Q3 - Q1 = 1. The Box Plot displayed the skewness of the observations (Figure 7.1.d). The outliers were

**Table 7.1.** Demographic frequencies of age, sex, nationality, programme year and programme title in the study.

	N	%	Missing %	
Age			0.2	
17 -20	358	75		
21 – 24	57	12		
25 - 28	25	5		
29 - 32	13	3		
33 – 36	9	2		
37 – 40	4	1		
40 or over	12	2		
Sex			0.2	
Female	309	65		
Male	169	35		
Nationality			0.2	
Irish	447	93		
Others	32	7		
Programme Year			0.2	
First Year				
Second Year	184	38		
Third Year	128	27		
Fourth Year	93	19		
	73	15		
Programme Title				
SET	271	57	0.2	
HSS	208	43		

checked to ensure that they were authentic and that no mistakes had been made during the input of data. As a result of establishing that 86.8% of students were in the age category of between 17-24 years of age, it was decided to form a new variable which combined the ages into two groups i.e. group 1 (17-20) (n=358) and group 2 (21+) (n=120) (see Figure 7.1 (b)). The observations remained positively skewed with the mean 1.25 > median1.00.

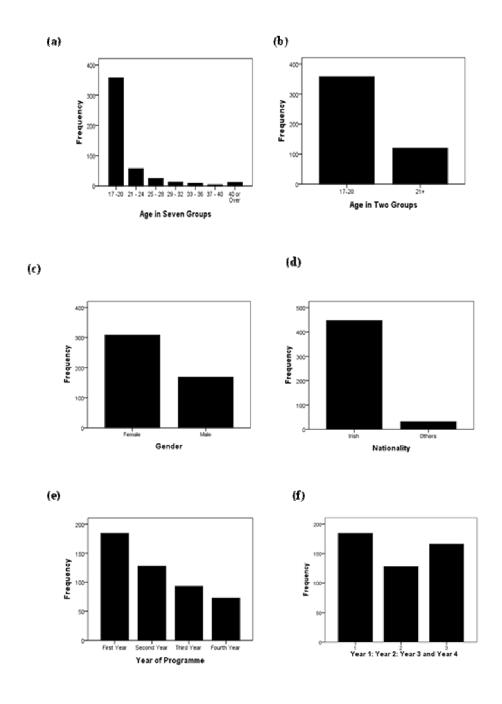


Figure ".1. Frequencies of (a) age in seven groups, (b) age combined into two groups, (c) (d) nationality, (e) year of programme, (f) year of programme combined into three groups in the study sample.

#### 7.2.2. GENDER

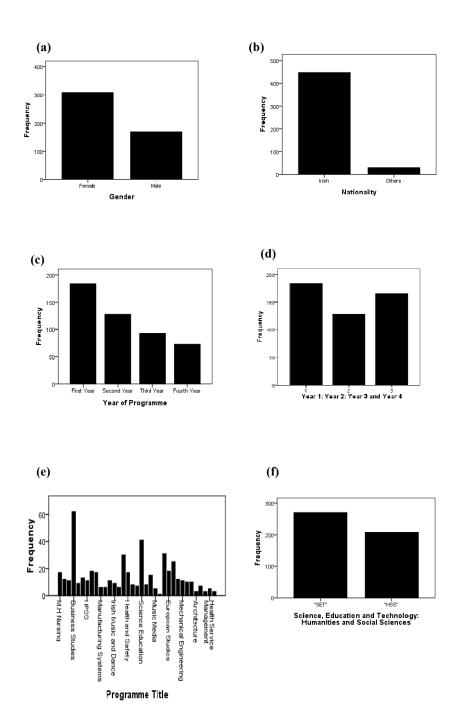
As a probability sampling frame was used in the study, there was an equal likelihood that males and females students would be selected. The frequency chart seen in Figure 7.2 (a) indicated that the selected sample was composed of 309 females and 169 males. See table 6.2 in previous chapter for breakdown of undergraduate students in the university.

#### 7.2.3. NATIONALITY

In relation to nationality, 447 of the students were Irish and the remaining 32 students were divided out amongst other countries. As a result, it was decided to collapse the variable into two, i.e., one representing those students who indicated they were Irish and the remaining 32 students into other nationalities (see Figure 7.2 (b)).

#### 7.2.4. YEAR OF PROGRAMME

When selecting the sample, 300 students were randomly selected from each of the four years of university (Chapter 6, section 6.6). The following is a breakdown of the student number from each year who completed the questionnaires. One hundred and eight-four were students in first year, 128 were students in second year, 93 were students in third year and finally 73 were students in fourth year. As there were fewer students in year three and four, it was decided to collapse the variable into year one, year two and combine years three and four (Figure 7.2 (c) and 7.2 (d)).



**Figure 7.2.** Frequencies of (a) gender, (b) nationality, (c) year of programme, (d) year of programme combined into three groups, (e) programme types, (f) programme types combined into two groups, in the study sample.

#### 7.2.5. PROGRAMME TITLE

The last question in the demographic questionnaire related to the university programme for which each student was registered. The programme, with the highest percentage of students enrolled, was Business Studies with 62 students, followed by Science Education with 41 students, followed by Law & Accounting with 31 students. As 36 different programmes were identified in the returned questionnaires, these were collapsed into two variables viz. Science Engineering and Technology programmes (SET; 56.6%) and Humanities and Social Sciences programme (HSS; 43.4%). (Figure 7.2 (e) and 7.2 (f)). The following sections provide the descriptive statistics for the Rosenberg's Self-Esteem Scale (Rosenberg 1965).

#### 7.3. THE ROSENBERG SELF-ESTEEM SCALE

The Rosenberg's self-esteem scale (Rosenberg 1965) measures the overall self-evaluation of an individual, often referred to as global self-esteem. It is comprised of ten statements, five of which are positively worded and five which are negatively worded. Items 1, 3, 4, 7, and 10 are positively worded. Items 2, 5, 6, 8, and 9 are negatively worded. It was originally designed as a Guttman scale, but is more frequently administered as a four, five, or seven point Likert scale (Gray-Little 1997). In this study, the statements were rated by means of a four point Likert scale, and the responses used were; strongly agree, agree, disagree and strongly disagree (see Table 7.3 and 7.4). According to Rosenberg (1965), the Rosenberg Self-Esteem Scale has a good internal consistency, with a Cronbach's alpha coefficient reported of .77. In the current study, the Cronbach's alpha coefficient was .87. The range should normally be between .70 and .90 (Streiner and Norman 2003; Bryman

2008; Field 2009). The following section provides a report of the descriptive statistics relating to each statement of the scale.

The first statement on the scale was:

## 1. On the whole, I am satisfied with myself.

In relation to this, statement 62.5% agreed and 22.7% strongly agreed. 0.6% strongly disagreed and 14.1% disagreed. (= 85.2% cumulative agreed). (Figure 7.3. a).

## 2. At times, I think I am no good at all.

This was the first of the negatively worded statements. The bar chart in Figure 7.3 (b) highlights the percentage of students who agreed or disagreed with this statement. When responding to the statement 6.5% of students strongly agreed, 35.4% agreed, 38.1% disagreed and 20% strongly disagreed. What was interesting with this statement was that the cumulative percent indicated that 41.9% either agreed or strongly agreed with the statement.

## 3. I feel that I have a number of good qualities.

The bar chart in Figure 7.3 (c) highlights the findings from the third statement, which was positively phrased. In the response to this statement, what was significant was that there were no strongly disagree used as a response. Only 4% disagreed with this statement and 61.9% agreed and 34.1% strongly agreed. (= 96% cumulative agreed).

## 4. I am able to do things as well as most other people

In this positively worded statement, 60.3% of students agreed with the statement and 27.1% strongly agreed. Only 9.8% disagreed and 1.9% strongly disagreed. (= 87.4% cumulative agreed). (Figure 7.3 (d).

# 5. I feel I do not have much to be proud of.

As is demonstrated in Figure 7.3 (e), a large percentage of students either disagreed or strongly disagreed with this negatively worded statement i.e. 50.5% and 34.4% respectively. Twelve point five percent agreed with the statement and only 1.7% of students strongly agreed. (= 14.2% cumulative agreed).

## 6. I certainly feel useless at times.

In this statement, an almost 50:50 ratio existed between the results. The cumulative percentage indicated that 46.1% of the students who responded to this statement either agreed or strongly agreed to this statement. Thirty-four point three percent of students disagreed and 19.6% of students strongly disagreed (Figure 7.4 (a)).

# 7 I feel that I am a person of worth, at least on an equal plane with others.

A large percentage of the students, 92.5% either agreed or strongly agreed to this statement. Only 7.6% of students disagreed or strongly disagreed with the statement (Figure 7.4 (b)).

#### 8 I wish I could have more respect for myself.

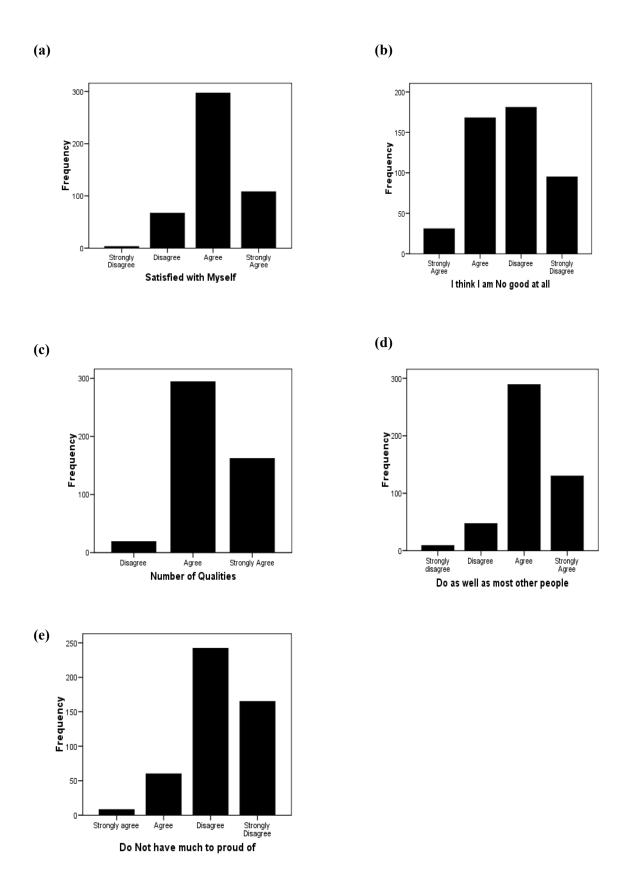
The percentage of students who either agreed or strongly agreed to this statement was relatively high at 41.7%. Forty-one point nine percent of students disagreed and 16.4% strongly disagreed (Figure 7.4 (c)).

## 9 All in all, I am inclined to feel that I am a failure.

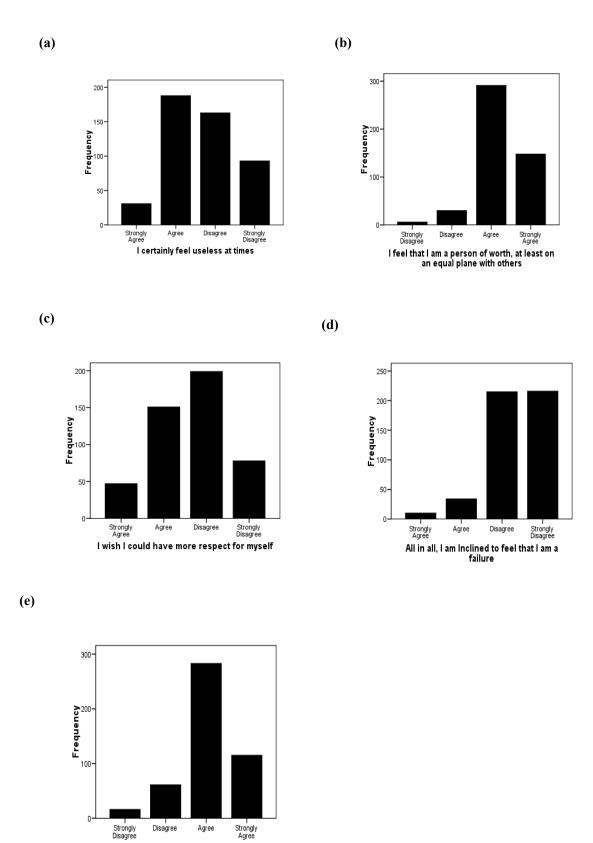
There was a clear difference in the student's responses to this statement. The cumulative percentage highlighted that 91.8% either disagreed or strongly disagreed. Only 2.1% of students strongly agreed and 7.2% agreed. (= 9.3% cumulative agreed) (Figure 7.4 (d)).

# 10 I take a positive attitude towards myself.

Once again there was a clear difference in the students' responses to the last statement on the Rosenberg Self-Esteem Scale (Rosenberg 1965). Eighty-two point eight percent of students either agreed or strongly agreed to this statement, whilst 16.2% of students either disagreed or strongly disagreed with the statement (Figure 7.4 (e)).



**Figure 7.3.** Frequency of responses to statements 1 to 5 of the Rosenberg Self-Esteem Scale (Rosenberg 1965).



**Figure 7.4.** Frequency of responses to statements 6 to 10 of the Rosenberg Self-Esteem Scale (Rosenberg 1965).

I take a positive attitude toward myself

**Table 7.2.** Frequency of responses to the ten statements of the Rosenberg Self-Esteem Scale (Rosenberg 1965).

Rosenberg Self-Esteem Scale	Strongly Agree	Agree	Disagree	Strongly	Missing
				Disagree	
	Frequency	Frequency	Frequency	Frequency	Frequency
	%	%	%	%	%
On the whole, I am satisfied with	108	297	67	3	4
nyself	22.5	62	14	.6	.8
At times, I think I am no good at	31	168	181	95	4
all	6.5	35	37.8	19.8	.8
I feel that I have a number of	162	294	19	0	4
good qualities	33.8	61.4	4	0	.8
I am able to do things as well as	130	289	47	9	4
most other people	27.1	60.3	9.8	1.9	.8
I feel I do not have much to be	8	60	242	165	4
proud of	1.7	12.5	50.5	34.4	.8
I certainly feel useless at times	31	188	163	93	4
	6.5	39.2	34	19.4	.8
I feel that I am a person of worth,	148	291	30	6	4
at least on equal plane with others	30.9	60.8	6.3	1.3	.8
I wish I could have more respect	47	151	199	78	4
for myself	9.8	31.5	41.5	16.3	.8
All in all, I am inclined to feel that I am a failure	10	34	215	216	4
that I am a famure	2.1	7.1	44.9	45.1	.8
I take a positive attitude toward myself	115	283	61	16	4
шуэсп	24	59.1	12.7	3.3	.8

**Table 7.3.** The mean, median, and standard deviations of the Rosenberg Self-Esteem Scale (Rosenberg 1965).

Rosenberg Self-Esteem Scale	Mean	SD	Median
On the whole, I am satisfied with myself	2.1	.62	2.0
At times, I think I am no good at all	1.7	.86	2.0
I feel that I have a number of good qualities	2.3	.54	2.0
I am able to do things as well as most other people	2.1	.66	2.0
I feel I do not have much to be proud of	2.2	.71	2.0
I certainly feel useless at times	1.7	.86	2.0
I feel that I am a person of worth, at least on equal plane with others	2.2	.61	2.0
I wish I could have more respect for myself	1.7	.87	2.0
All in all, I am inclined to feel that I am a failure	2.3	.70	2.0
I take a positive attitude toward myself	2.0	.71	2.0

#### 7.3.1. TESTS OF NORMALITY ON THE ROSENBERG SELF-ESTEEM SCALE

To establish whether to use parametric or non-parametric statistics all items on the scale were tested for normality of distribution. As can be seen from Table 7.4, the 5% trimmed mean was very similar to the original mean values. This indicated that the extreme scores were not having a great influence on the mean value. Furthermore, the skewness values of seven of the statements were negatively scored, indicating a negative symmetry of the distribution to the right hand side of the graph. For statements three and six, the values were positively scored, indicating a positive symmetry of the distribution to the left side of the graph. The kurtosis values for statements, two, three, six and eight, was below 0. This suggested that the distribution was relatively flat. Five of the statements had kurtosis values which were positively scored. This indicated that the distribution was clustered in The Kolmogorov-Smirmov statistic was p < .001 for all the statements implying that the distributions of the values were not normally distributed. The Normal Q-Q Plot, which plotted the observed values for each statement against the expected value from the normal distribution, showed a relatively straight line. Boxplot graphs were produced in SPSS to highlight any outliers. These were then checked for authenticity and accuracy.

Table 7.4. Results of tests of Normality on the Rosenberg Self-Esteem Scale (Rosenberg 1965).

RosenbergSelf- Esteem Scale	Mean	5% Trimmed Mean	Skewness	Kurtosis	Kolmogorov- Smirnov
On the whole, I am satisfied with myself	2.07	2.09	21	.14	<.001
At times, I think I am no good at all	1.72	1.74	04	76	<.001
I feel that I have a number of good qualities	2.30	2.32	.07	61	<.001
I am able to do things as well as most other people	2.14	2.17	56	.88	<.001
I feel I do not have much to be proud of	2.19	2.23	57	.10	<.001

I certainly feel useless at times	1.67	1.69	.08	82	<.001
I feel that I am a person of worth, at least on equal plane with others	2.22	2.26	50	1.03	<.001
I wish I could have more respect for myself	1.65	1.66	16	64	<.001
All in all, I am inclined to feel that I am a failure	2.34	2.40	96	.94	<.001
I take a positive attitude toward myself	2.05	2.09	64	.75	<.001

## 7.3.2. DESCRIPTIVE STATISTICS ON THE VARIABLE TOTAL SELF-ESTEEM

The Rosenberg Self-Esteem Scale was computed by totalling the responses for all the items in the scale. According to Rosenberg (1965), the higher the score obtained the higher the level of self-esteem. To reduce response bias, which has been reported with the use of self-report measures, five of the items were positively worded and five negatively worded (Cronbach 1950; DeVellis 1991; Billet and McClendon 2000). As a result of the positive and negative wording of the items, reverse scoring was carried out before calculating the scores. In the current study, for items 1, 3, 4, 7, and 10 the following scores were applied: Strongly Agree = 3, Agree = 2, Disagree = 1 and Strongly Disagree = 0. For items, 2, 5, 6, 8, and 9, the following scoring method was used: Strongly Agree = 0, Agree = 1, Disagree = 2 and Strongly Disagree = 3.

The variable namely Total Self-Esteem (TSE) had a mean of 20.34 (SD = 4.885). A decision needed to be made on whether to use parametric or non-parametric analysis. The use of parametric statistics requires that the data adheres to certain assumptions. The assumptions include the following, the variables are interval/ratio; the dependent variable is normally distributed; homogeneity of variance and finally each observation is independent of the other (Field 2009; Onwuegbuzie and Combs 2010). In the current

to study, the dependent variable was ordinal. Consequently, the variable Total Self-esteem (TSE) was tested to establish if the data was normally distributed or not. This would facilitate in the decision on whether parametric or non-parametric statistics would be utilised in the study. The results indicated that the 5% Trimmed Mean of 20.44 was very similar to the original mean of 20.34. This demonstrated that the extreme scores were not having a great influence on the mean. Furthermore, the skewness value was -.24 which was indicative of a negative symmetry of the distribution to the right hand side of the graph. The kurtosis value was .25 illustrating that the distribution was rather peaked in the centre. The Kolmogorov-Smirmov statistic was p < .001 indicating that the distribution of the values was not normal. Furthermore, the normal probabilities plot i.e. Normal Q-Q Plot, which plots the observed value for each score against the expected value from the normal distribution, showed a relatively straight line. Boxplot graphs were produced in SPSS 15 to highlight any outliers. These were then checked for authenticity and accuracy. There was no error identified during the inputting of the data.

In an effort to normalise the data, TSE was transformed into the new variable namely, 'sqtse'. The following formula was used, Square Root (K - old variable) where K = largest possible value + 0.5 (Pallant 2007). Tests of normality were carried out on the new variable to observe if the distribution were normally distributed. In the 5% Trimmed Mean where the top and bottom 5% were removed from the data, a new mean of 4.56 was calculated which was very similar to the original mean of 4.53. This indicated that the extreme scores were not having a great influence on the mean. The skewness value was -.75, which demonstrated a negative symmetry of the distribution to the right hand side of the graph, more than prior to transformation. The kurtosis value was 1.43, which indicated that the distribution was very peaked in the centre. The Kolmogorov-Smirmov

statistic was p <.001 which signified that the distribution of the values was not normal. The distribution of the values appeared to show no great difference from their appearance before transformation. Consequently, a non-parametric approach was preferred for this analysis. Some parametric analyses were carried out to allow comparisons with other studies.

# 7.3.3. PRINCIPAL COMPONENT ANALYSIS AND DETRENDED CORRESPONDENCE ANALYSIS AND THE ROSENBERG SELF-ESTEEM SCALE

Principal component analysis, with orthogonal rotation (varimax), was conducted on the RSES. All of the ten items of the scale were tested. For analysis purposes the questionnaires, which had missing data, were removed. As a result, the sample size was 474. The Kaiser Meyer Olkin (KMO) measure of sampling adequacy yielded a measure of .90. This according to Kaiser (1974) is a 'great' value. All KMO values for individual items of the scale were > .86, which was in excess of the acceptable limit of .5 (Field, 2009). Bartlett's test of sphericity was  $\chi^2$  (45) = 1749.1, p < .001. This result indicated that there was a relationship between the variables and it was therefore appropriate to carry out factor analysis on the data set. An initial analysis was computed to obtain eigenvalues for each component in the data set. Two components had eigenvalues over Kaiser's criterion of 1 and in combination explained 57.35% of the variance. The scree plot showed inflexions at 2 and 3. The rotated component matrix table highlighted the factor loading for each component. According to the criteria put forward by Stevens (2002), a loading of 0.40 was chosen. Eight items loaded on one component. As it contained both negatively and positively worded items, it was decided to use the RSES as a unidimensional scale. The scale was subjected to non parametric factor analysis using the biometric program viz. CANOCO (Ter Braak and Smilauer 2002). The ten items were inputted to the program and 'Partial Detrended Canonical Analysis' was carried out on the scale. The program produced a plot of eigenvalues on axis I and axis 2. However, on examination of this plot the items did not form anymore than one group. This finding concurred with PCA finding, which identified the RSES to be used as a uni-dimensional scale.

#### 7.3.4. TOTAL SELF-ESTEEM AND GENDER

Parametric and non-parametric statistics were computed on the dependent variable Total Self-Esteem and the independent variable gender to establish if there were any disparities in the results, which were obtained from both methods. Table 7.5 outlines the findings.

**Table 7.5.** The results of the parametric and non-parametric tests carried out on both the transformed and non-transformed variable viz. Total Self-Esteem (TSE).

	N	TSE	TSE	TSE	Transformed	Transformed	Transformed
		Non-	Non-	and	TSE	TSE	TSE
		Transformed	Transformed	Gender	Male	Female	and Gender
		Male	Female				
Mean	475	21.85	19.53	20.34	4.7	4.44	4.53
SD	475	4.71	4.79	4.89	.52	.56	.56
95% Confidence Interval	475	21.13 to 22.57	18.99 to 20.06	19.90 to 20.78	4.62 to 4.78	4.38 to 4.50	4.48 to 4.58
t	475	5.	08	<.001***	4.	92	<.001***
		5.	08		4.	92	
Median	475	22.00	19.00	20.00	4.74	4.42	
z	475	-5.13	-5.13	<.001***	-5.13*	-5.13*	<.001***

<sup>\*\*\*.</sup>p < .001 level

Similar significant results were computed for both the non-transformed and transformed variable. Furthermore, there were no differences between the use of parametric and non-parametric statistics. The Independent-Samples T-test and the Mann-Whitney U tests both resulted in very similar findings. The male students had significantly higher levels of self-

esteem in comparison to the female students. The overall mean value for the self-esteem levels amongst all the students was 20.34 (M = 20.34; SD = 4.86). However the effect size for the result, using the Independent-Samples Test, was .05. According to Cohen's (1988) guidelines this eta squared result relates to a small to moderate effect. Similarly the effect size for the Mann Whitney U test was r = .24. This is considered a small to moderate effect, using Cohen's guidelines.

#### 7.3.5. SELF-ESTEEM LEVELS IN TWO GROUPS AND SELF-ESTEEM IN THREE GROUPS

In line with the hypotheses of this study, the dependent variable was collapsed into lower levels of self-esteem (0-15) and average to higher levels of self-esteem (16-30). Whilst there are no definitive cut off points for the lower and higher levels of self-esteem in the RSES, according to the Rosenberg foundation, values below 15 signifies lower levels of self-esteem. Many researchers use the median levels as the cut off points for defining the lower and higher levels of self-esteem (De Man and Gutiérrez 2002; Lane, Jones and Stevens 2002; Hughes 2003; Baldwin, Baccus and Milyavskaya 2010). In the current study the median for self-esteem variable was 20. Using the median level as a cut off for the levels of self-esteem in the current study meant that values between 15 and 20 were regarded as low. Therefore it was decided to use 15 as the cut off point. However it should be borne in mind that as there was only 68 students with values of 15 and under and 407 students with values above 15, the strength of the results may be compromised. Rosenberg (1965) occasionally split self-esteem in three groups. The use of three groups ensures that the middle self-esteem scores of the students are considered. Hence, to allow comparisons, a third variable was computed namely, Self-Esteem in three groups (SEgrp3). Self-esteem was split into three groups which comprised of lower levels of selfesteem (0-19), middle levels of self-esteem (20-22) and higher levels of self-esteem (2330). The cut off points for this variable were based on the third percentile values of the data. Having a cut off point at the 0-19 for the lower levels of self-esteem is in line with recent research. By using the two types of splitting it is possible to compare the results obtained using these two approaches.

Table 7.6 provides the descriptive statistics for both variables.

**Table 7.6**. The mean, standard deviation, median and mode for the variables viz. Self-Esteem in Two Groups (SEgrp2) and Self-Esteem in Three Groups (SEgrp3).

	SEgrp2 (0-15)	SEgrp2 (16-30)	SEgrp3 (0-19)	SEgrp3 (20-22)	SEgrp3 (23+)
n	68	407	200	119	156
Mean	12.40	21.67	15.94	20.75	25.68
Std. Deviation	2.83	3.77	3.17	.836	2.40
Min	4	16	4	20	23
Max	15	30	19	22	30

The associations between the RSES and the variables from the demographic questionnaire are tested later on in the chapter (see section 7.5.1).

## 7.4. WAYS OF COPING QUESTIONNAIRE

As previously discussed in this study, factor analysis of the coping processes within the Ways of Coping Questionnaire has uncovered different factors, depending on the research sample. It has been advised that factor analysis should be employed to all research using this questionnaire. Many different scales within the WOCQ have been confirmed by various researchers. Furthermore, tests of normality have been performed on the questionnaire. In the current study, both parametric and non-parametric factor analysis were performed on the inventory, the findings of which will be outlined in the following sections. The following section summarises the descriptive statistical results of the original eight factor model as devised by Folkman and Lazarus (1988).

## 7.4.1. ORIGINAL EIGHT FACTOR MODEL OF WOCQ

The eight subscales or components describe coping strategies which individuals may use when confronted with a stressful situation. When using the WOCQ's original scales, only 50 of the 66 items are included for scoring purposes. The subscales may be computed in two ways to obtain either raw or relative scores. The raw scores are the sum of the individual's responses to the items that comprise a particular scale. The relative scores provide an overview of the proportion of effort represented by each type of coping. Relative scores are computed by (i), calculating the average item score by totalling the scores for each scale and dividing by the number of items in the scale, (ii), calculating the sum of all average scores in all scales and (iii), dividing the average item score for a scale by the sum of the average scores across all scales. Folkman and Lazarus (1988) comment that relative scores control for unequal numbers of items within each scale and for individual differences in responses. In this particular study, both raw and relative scores were computed, with the relative scores used in the final analysis. Comparatively speaking, both results presented very similar significant findings.

**Table 7.7.** Descriptive statistics on the original eight factors of the Ways of Coping Questionnaire (WOCQ) (Folkman and Lazarus 1988).

No of Items	Component	Relative Score Mean	Median	Std. Deviation	Min	Max	Cronbach's Alpha
6	Confronting Coping	.11	.11	.06	.00	.42	.60
6	Distancing	.13	.13	.05	.00	.32	.53
7	Self- Controlling	.15	.14	.05	.00	.29	.51
6	Seeking Social Support	.13	.13	.07	.00	.47	.73
4	Accepting Responsibility	.13	.13	.07	.00	.31	.61
8	Escape- Avoidance	.11	.11	.06	.00	.32	.75
6	Planful Problem Solving	.15	.14	.06	.00	.40	.69
7	Positive Reappraisal	.11	.10	.05	.00	.28	.73

Evidenced from Table 7.7, 'Planful Problem Solving' was the largest relative coping process used by the students in the study, followed by 'Self-Controlling', Accepting Responsibility', 'Seeking Social Support', 'Distancing', 'Confronting Coping', 'Escape Avoidance' and 'Positive Reappraisal'. Furthermore, the reliability of each of the subscales was tested and the results highlighted that, in comparison to the original co efficient alpha results established by Lazarus and Folkman (1986), they were slightly smaller (Chapter 6 section 6.1). However, Folkman and Lazarus (1988) have indicated that internal consistency of coping measures are generally below the traditionally acceptable level. This may be due to the variable nature of the coping processes being measured. Similarly, Field (2009) refers to Kline (1999) who argues that when dealing with psychological constructs, the Cronbach's alpha results may be below 0.7. He highlights that this may be due the range of the construct being measured. Within the current study all subscales were checked using the 'item if deleted' function in SPSS, which resulted in no change to the scales.

## 7.4.2. TESTS OF NORMALITY ON THE ORIGINAL EIGHT SCALES OF THE WOCQ

All of the original eight scales of the WOCQ were tested for normality of distribution. As can be seen from the table 7.8, the 5% trimmed mean was very similar to the original mean values. This indicated that the extreme scores were not having a great influence on the mean value. Furthermore, the skewness values of the eight scales were positively scored, indicating a positive symmetry of the distribution to the left side of the graph. The kurtosis values for one of the scales were below 0. This suggested that the distribution was relatively flat. Seven of the scales had kurtosis values which were positively scored. This indicated that the distribution was clustered in the centre. The Kolmogorov-Smirmov statistic was p<.05 for four of the scales implying that the distributions of the values were

not normally distributed. The Normal Q-Q Plot, which plotted the observed values for each scale against the expected value from the normal distribution, showed a relatively straight line. All outliers presented in the Boxplot were checked for authenticity and accuracy. Considering the above findings, it was assumed that the scales violated the assumptions of normality. Consequently, non-parametric analyses were the preferred approach. However, some parametric analyses were carried out to allow comparisons with other studies.

Table 7.8. Tests of normality on the original eight scales of the WOCQ (Folkman and Lazarus 1988).

Ways of Coping Questionnaire	Mean	5% Trimmed Mean	Skewness	Kurtosis	Kolmogorov- Smirnov
Confronting Coping	.11	.11	1.00	2.90	<.001
Distancing	.13	.12	.25	.19	.164
Self-Controlling	.15	.14	.20	.43	.008
Seeking Social Support	.13	.13	.59	1.57	.003
Accepting Responsibility	.13	.13	.16	12	.200
Escape-Avoidance	.11	.11	.39	.07	.200
Planful Problem Solving	.15	.15	.59	.94	<.001
Positive Reappraisal	.11	.10	.38	.08	.200

# 7.4.3. SEVEN FACTOR MODEL OF WOCQ DEVELOPED FROM PRINCIPAL COMPONENT ANALYSIS

Prior to conducting principal component analysis on the WOCQ, the data was screened for any missing data. There were missing data in fourteen of the data sets. In order to include them in the overall analysis, the median value was used to replace the missing responses. Furthermore, five forms were removed from the data, as there were too many missing responses. Principal component analysis was conducted on the questionnaire. All 66 items were included in the analysis. The sample size was 474. The Kaiser Meyer Olkin (KMO) measure of sampling adequacy yielded a measure of .84, which according to Kaiser (1974) was a 'great' value. All KMO values which were > .55 were in excess of

the acceptable limit of .5 (Field 2009). Bartlett's test of sphericity was  $\chi^2$  (2145) = 8634.7, p < .001. This indicated that there were relationships between the variables therefore it was appropriate to carry out factor analysis on the data set. An initial analysis was computed to obtain eigenvalues for each component in the data. Eighteen components had eigenvalues over Kaiser's criterion of 1 and in combination explained 58% of the variance. However, the scree plot showed inflexions at 7. It was decided to use the Monte Carlo parallel analysis to further estimate how many factors were to be retained (Watkins 2000). According to this test, the original eigenvalues values were compared to the Monte Carlo random eigenvalues and even though eight components were extracted, the eight component was arbitrary as Monte Carlo eigenvalue was only .01 less than the actual eigenvalue (Table 7.9).

**Table7.9**. The original eigenvalues and the Monte Carlo random eigenvalues for the WOCQ (Folkman and Lazarus 1988).

Component Number	Actual Eigenvalue from PCA	Criterion Value from Monte Carlo PCA for PA	Decision	
1	8.61	1.82	Accept	
2	5.42	1.75	Accept	
3	2.83	1.70	Accept	
4	2.16	1.70	Accept	
5	2.04	1.61	Accept	
6	1.97	1.58	Accept	
7	1.67	1.55	Accept	
8	1.53	1.52	Accept	
9	1.45	1.48	Reject	

As a result, the principal component analysis test was rerun; specifying SPSS to extract eight components, and it found that the eight factor model did not load well. The data was tested again to extract seven components. The Rotated Component Matrix table (see Table 7.10) highlights the factor loadings for each component. For each variable, the component for which the variable had the highest loading was noted. Furthermore, for each component it was noted which variable had a loading higher than 0.40. According to the criteria of Stevens (2002), the loading of 0.40 was chosen. There were two exceptions

made and two items were included viz. LAZ031 (I talked to someone who could do something concrete about the problem) with an eigenvalue of .37 and LAZ044 (I made light of the situation; I refused to get too serious about it) with an eigenvalue of .40. A judgement was made to include these items under component five viz. Social Engagement and component six viz. Denial, respectively. Fifty-one items from the WOCQ loaded.

Table 7.10. Rotated Component Matrix for the WOCQ (Folkman and Lazarus 1988).

WOCQ Items	Component						
	1	2	3	4	5	6	7
56. I tried to change something about myself	.55						
23. I changed or grew as a person	.55						
36. I found new faith	.54						
63. I thought about how a person I admire would handle this situation and used that as a model	.53						
30. I came out of the experience better than when I went in	.50						
38.I rediscovered what is important in life	.49						
60. I prayed	.43						
59.I had fantasies or wishes about how things might turn out		.67					
58.I wish that the situation would go away or somehow be over with		.66					
9.I criticized or lectured myself		.63					
57.I daydreamed or imagined a better time or place than the one I was in		.62					
55.I wish that I could change what had happened or how I feel		.60					
51.I promised myself that things would be different next time		.54					
11.I hoped for a miracle		.52					
29.I realized that I had brought the problem on myself		.51					
62.I went over in my mind what I would say or do		.50					
61.I prepared myself for the worst		.49					
47.I took it out on other people			.62				
33.I tried to make myself feel better by eating drinking, smoking using drugs or medications etc			.51				
16.I slept more than usual			.50				
32.I tried to get away from it for a while by resting or taking a vacation			.46				
34.I took a big chance or did something very risky to solve the problem			.45				
40.1 generally avoided being with people			.436				

EO I refused to believe that it had	1	1 44	T		F	1
50.I refused to believe that it had happened		.44				
49.I knew what had to be done so I doubled my efforts to make things work			.68			
26.I made a plan of action and followed it			.55			
52.I came up with a couple of different solutions to the problem			.55			
20.I was inspired to do something creative about the problem			.47			
39.I changed something so things would turn out alright			.44			
1.I just concentrated on what I had to do next			.44			
48.I drew on my past experiences; I was in a similar situation before			.41			
2.I tried to analyse the problem in order to understand it better			.41			
45.I talked to someone about how I was feelings				.77		
42.I asked advice from a relative or friend I respected				.70		
28.I let my feelings out somehow				.56		
18.I accepted sympathy and understanding from someone				.51		
8.I talked to someone to find out more about the situation				.47		
31.I talked to someone who could do something concrete about the problem				.37		
41.I didn't let it get to me; I refused to think too much about it					.55	
13.I went on as nothing had happened					.52	
54.I tried to keep my feeling about the problem from interfering with other things					.49	
53.I accepted the situation since nothing could be done					.47	
21.I tried to forget the whole thing					.43	
15.I looked for the silver lining so to speak; I tried to look on the bright side of things					.42	
44.I made light of the situation; I refused to get too serious about it					.40	
7.1 tried to get the person responsible to change his or her mind						.70
25.I apologised or did something to make up						.53
17.I expressed anger to the person(s) who caused the problem						.52
46.I stood my ground and fought for what I wanted						.50
5.1 bargained or compromised to get something positive from the situation						.44
64.I tried to see things from the other persons point of view						.43

The seven components were very similar to the eight original scales outlined in the WOCQ manual (Folkman and Lazarus 1988) except that the items in the scale 'Accepting Responsibility' did not load as an individual scale but were subsumed in with another scale. The seven scales comprised of one problem-focused coping process and six emotion-focused coping processes.

The seven components/scales, which were extracted from the WOCQ, are described in the following paragraphs. The researcher assigned the titles of the scales. The first scale was named 'Positive Self Reflection' and was very similar to Folkman and Lazarus (1988) scale viz. 'Positive Reappraisal'. It was comprised of the following seven items.

## **Positive Self Reflection (PCA)**

- 56 I tried to change something about myself
- 23 I changed or grew as a person
- 36 I found new faith
- 63 I thought about how a person I admire would handle this situation and used that as a model
- 30 I came out of the experience better than when I went in
- 38 I rediscovered what is important in life
- 60 I prayed

The second component was 'Wishful Criticism and Escape' and was similar to Folkman and Lazarus (1988) two scales 'Accepting Responsibility' and 'Escape Avoidance'. The scale was comprised of the following ten items.

## Wishful Criticism and Escape (PCA)

- 59 I had fantasies or wishes about how things might turn out
- 58 I wish that the situation would go away or somehow be over with
- 9 I criticized or lectured myself
- 57 I daydreamed or imagined a better time or place than the one I was in

- 55 I wish that I could change what had happened or how I felt
- 51 I promised myself that things would be different next time
- 11 I hoped for a miracle
- 29 I realized that I had brought the problem on myself
- 62 I went over in my mind what I would say or do
- 61 I prepared myself for the worst

The third scale was named 'Disengagement' and it contained some of the same items included in Folkman and Lazarus (1988) scale viz. 'Escape-Avoidance'. It comprised of the following seven items.

#### **Disengagement (PCA)**

- 47 I took it out on other people
- 33 I tried to make myself feel better by eating drinking, smoking using drugs or medications etc
- 16 I slept more than usual
- 32 I tried to get away from it for a while by resting or taking a vacation
- 34 I took a big chance or did something very risky to solve the problem
- 40 I generally avoided being with people
- 50 I refused to believe that it had happened

Scale number four was 'Positive Planning' and was comprised of many of the items in Folkman and Lazarus (1988) scale viz. 'Planful Problem Solving'. It included the following eight items.

#### **Positive Planning (PCA)**

- 49 I knew what had to be done so I doubled my efforts to make things work
- 26 I made a plan of action and followed it
- 52 I came up with a couple of different solutions to the problem
- 20 I was inspired to do something creative about the problem
- 39 I changed something so things would turn out alright
- 1 I just concentrated on what I had to do next
- 48 I drew on my past experiences; I was in a similar situation before
- 2 I tried to analyse the problem in order to understand it better

Component five was referred to as 'Social Engagement' and in composition; it was very similar to Folkman and Lazarus (1988) scale viz. 'Seeking Social Support'. It consisted of six items.

## **Social Engagement (PCA)**

- 45 I talked to someone about how I was feelings
- 42 I asked advice from a relative or friend I respected
- 28 I let my feelings out somehow
- 18 I accepted sympathy and understanding from someone
- 8 I talked to someone to find out more about the situation
- 31 I talked to someone who could do something concrete about the problem
   Component six was named 'Distancing' and consisted of many of the items included in

Folkman and Lazarus (1988) scale also title 'Distancing'. Component six comprised of seven items

## **Distancing (PCA)**

- 41 I didn't let it get to me; I refused to think too much about it
- 13 I went on as nothing had happened
- 54 I tried to keep my feeling about the problem from interfering with other things
- 53 I accepted the situation since nothing could be done
- 21 I tried to forget the whole thing
- 15 I looked for the silver lining so to speak; I tried to look on the bright side of things
- 44 I made light of the situation; I refused to get too serious about it

Finally, Component seven was labelled 'Confronting' and the scale was composed of six items.

## **Confronting (PCA)**

- 7 I tried to get the person responsible to change his or her mind
- 25 I apologised or did something to make up
- 17 I expressed anger to the person(s) who caused the problem
- 46 I stood my ground and fought for what I wanted
- 5 I bargained or compromised to get something positive from the situation
- 64 I tried to see things from the other person's point of view

One of the scales described problem-focused coping processes namely 'Positive Planning' and the remaining six scales described emotion-focused coping processes. From Table 7.11 it is evident that relative 'Wishful Criticism and Escape' was the largest relative process used by the students in the current study, followed by 'Positive Planning', 'Social Engagement', 'Distancing', 'Confronting', Positive Self Reflection' and 'Disengagement'. Furthermore, the reliability of each of the subscales was tested and the results highlighted that, in comparison to the co efficient alpha results of the original eight factor model, the alpha results were greater. The highest Cronbach's Alpha was 0.81 with the lowest at 0.58. As already outlined the low result of 0.58 may be attributed to the variable nature of the coping processes being measured (Folkman and Lazarus 1988; Field 2009). All subscales were checked using the 'item if deleted' function in SPSS, which resulted in no change to the scales.

**Table 7.11.** Descriptive Statistics on the seven factors of the WOCQ derived from principal component analysis.

No of Items	Component	Relative Score Mean	Median	Std. Deviation	Min	Max	Cronbach's Alpha
7	Positive Self Reflection(PCA)	.12	.18	.05	.00	.27	.74
10	Wishful Criticism and Escape(PCA)	.18	.17	.07	.02	.42	.81
7	Disengagement(PCA)	.08	.08	.06	.00	.28	.71
8	Positive Planning(PCA)	.17	.16	.06	.00	.39	.74
6	Social Engagement(PCA)	.17	.16	.07	.00	.43	.75
7	Distancing(PCA)	.15	.15	.06	.00	.40	.58
6	Confronting(PCA)	.14	.14	.07	.00	.50	.65

# 7.4.4. TESTS OF NORMALITY ON THE SEVEN FACTOR MODEL OF WOCQ DEVELOPED FROM PRINCIPAL COMPONENT ANALYSIS

All seven scales, which had arisen from the principal component analysis performed on the WOCQ, were tested for normality of distribution. As can be seen from Table 7.12, the 5% trimmed mean was very similar to the original mean values. This indicated that the extreme scores were not having a great influence on the mean value. Furthermore, the skewness values of the seven scales were positively scored, which indicated a positive symmetry of the distribution to the left hand side of the graph. The kurtosis values for two of the scales were below 0. This suggested that the distribution was relatively flat. Five of the scales had kurtosis values which were positively scored. This indicated that the distribution was clustered in the centre. The Kolmogorov-Smirmov statistic was <.05 for five of the scales which implied that the distributions of the values were not normally distributed. Very few of the Normal Q-Q Plots, which plotted the observed values for each scale against the expected value from the normal distribution, had shown a straight line. All outliers were checked for authenticity and accuracy. Considering the above findings, it was inferred that the scales violated the assumptions of normality. Consequently, non-parametric analyses were used.

**Table 7.12**. Tests of normality on the seven factor model of the WOCQ derived from principal component analysis.

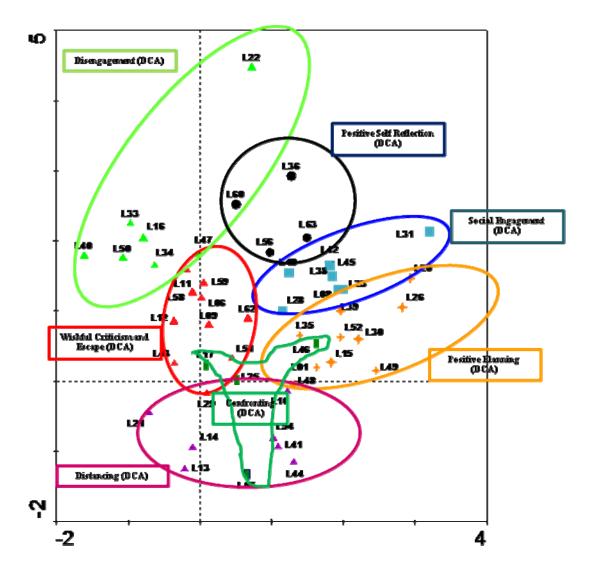
Ways of Coping Questionnaire	Mean	5% Trimmed Mean	Skewness	Kurtosis	Kolmogorov- Smirnov
Positive Self Reflection(PCA)	.12	.12	.05	19	.200
Wishful Criticism and Escape(PCA)	.12	.18	.46	.40	.007
Disengagement(PCA)	.08	.08	.54	16	<.001
Positive Planning(PCA)	.17	.17	.46	.79	.025
Social Engagement(DCA)	.17	.16	.26	.2	.200
Distancing(PCA)	.15	.15	.57	.93	.015
Confronting(PCA)	.14	.14	.59	2.13	<.001

## 7.4.5. SEVEN FACTOR MODEL OF WOCQ DEVELOPED FROM DETRENDED

#### CORRESPONDENCE ANALYSIS

Following the principal component analysis, the WOCQ was subjected to non-parametric factor analysis using the biometric program viz. CANOCO (Ter Braak and Smilauer 2002). This program is used in the area of life and earth sciences. It performs many multivariate statistical analyses one of which is 'Partial Detrended Canonical Analysis'. There was no evidence from the literature that that this method of non-parametric factor analysis had previously been performed on the WOCQ. The 66 items were input to CANOCO which produced a plot of eigenvalues on axis 1 and axis 2 (Figure 8.1). Forty-eight items from the WOCQ were loaded.

On examination of this plot, seven groups of items were identified based on their proximity in the plot and these were coloured differently. Based on the items included within the different groups, it was possible to propose an interpretation of each group. In turn, these groups were compared to the very similar factors/components, which were derived separately from the PCA analysis. The following paragraphs summarises the items, which constituted each of the seven factors.



Fig

**ure 7.5**. DCA ordination of the WOCQ variables.

The items, which constituted the first scale, were also contained in the 'Positive Self-Reflection' (PCA) scale identified through principal component analysis.

## **Positive Self Reflection (DCA)**

- 36 I found new faith
- 56 I tried to change something about myself
- 60 I prayed
- 63 I thought about how a person I admire would handle this situation and used that as a model

The second scale was comprised of nine items, six of which were included in 'Wishful Criticism and Escape' (PCA).

## Wishful Criticism and Escape (DCA)

- 9 I criticized or lectured myself
- 59 I had fantasies or wishes about how things might turn out
- 51 I promised myself that things would be different next time
- 58 I wish that the situation would go away or somehow be over with
- 11 I hoped for a miracle
- 62 I went over in my mind what I would say or do
- 29 I realized that I had brought the problem on myself
- 6 I did something which I didn't think would work, but at least I was doing something
- 12 I went along with fate; sometimes I just have bad luck

The third scale comprised of seven items, six of which were included in the scale 'Disengagement' (PCA).

## Disengagement (DCA)

- 22 I got professional help
- 33 I tried to make myself feel better by eating drinking, smoking using drugs or medications etc
- 47 I took it out on other people
- 40 I generally avoided being with people
- 16 I slept more than usual
- 50 I refused to believe that it had happened
- 34 I took a big chance or did something very risky to solve the problem

The fourth scale consisted of nine items, seven of which were included in the scale 'Positive Planning' (PCA).

## **Positive Planning (DCA)**

- 26 I made a plan of action and followed it
- 52 I came up with a couple of different solutions to the problem

- 48 I drew on my past experiences; I was in a similar situation before
- 20 I was inspired to do something creative about the problem
- 39 I changed something so things would turn out alright
- 49 I knew what had to be done so I doubled my efforts to make things work
- 30 I came out of the experience better than when I went in
- 35 I tried not to act too hastily or follow my first hunch
- 1 I just concentrated on what I had to do next the next step
- 15 I looked for the silver lining, so to speak; I tried to look on the bright side of things

Eight items were included in the fifth scale, six of which were included in the scale 'Social Engagement' (PCA).

## **Social Engagement (DCA)**

- 45 (I talked to someone about how I was feelings)
- 42 (I asked advice from a relative or friend I respected)
- 18. (I accepted sympathy and understanding from someone)
- 8. (I talked to someone to find out more about the situation
- 28. (I let my feelings out somehow)
- 31. (I talked to someone who could do something concrete about the problem)
- 23. (I changed or grew as a person)
- 38. (I rediscovered what is important in life)

The sixth scale consisted of six items, four of which constituted 'Distancing' (PCA).

## **Distancing (DCA)**

- 13 I went on as nothing had happened
- 41 I didn't let it get to me; I refused to think too much about it
- 14 I tried to keep my feelings to myself
- 21 I tried to forget the whole thing
- 44 I made light of the situation; I refused to get too serious about it
- 10 I tried not to burn my bridges, but leave things open somewhat

The last scale consisted of four items all of which are included in 'Confronting' (PCA).

## **Confronting (DCA)**

- 46 I stood my ground and fought for what I wanted
- 7 I tried to get the person responsible to change his or her mind
- 25 I apologised or did something to make up
- 17 I expressed anger to the person(s) who caused the problem

Table 7.13 demonstrates that 'Wishful Criticism and Escape' was the largest relative coping process used by the students, followed by 'Social Engagement', 'Positive Planning', 'Denial', 'Confronting', 'Positive Self Reflection' and 'Disengagement'. These scores were almost identical to the relative scores obtained for the seven scales derived from principal component factor analysis. The only difference being, that 'Positive Planning' was second in PCA scale in comparison to being third in the DCA scales. The highest Cronbach's Alpha was 0.76 with the lowest at 0.52. The low result of 0.52 may be attributed to the variable nature of the coping processes being measured (Folkman and Lazarus 1988; Field 2009). All subscales were checked using the 'item if deleted' function in SPSS, which resulted in no change to the scales.

**Table 7.13.** Descriptive statistics on the seven factors of the WOCQ derived from detrended correspondence analysis.

No of Items	Component	Relative Score Mean	Median	Std. Deviation	Min	Max	Cronbach's Alpha
4	Positive Self Reflection(DCA)	.86	.75	.72	.00	3.00	.65
9	Wishful Criticism and Escape(DCA)	1.48	1.44	.65	.11	3.00	.75
7	Disengagement(DCA)	.714	.57	.59	.00	2.86	.69
10	Positive Planning(DCA)	1.42	1.40	.57	.10	3.00	.76
8	Social Engagement(DCA)	1.46	1.50	.66	.00	3.00	.76
6	Distancing (DCA)	1.30	1.17	.61	.00	5.17	.52
4	Confronting(DCA)	1.19	1.25	.72	.00	3.00	.58

Using both parametric and non-parametric factor analysis on the WOCQ has resulted in very similar scales. Multivariate statistics were performed on both the PCA and DCA scales. However the reliability tests revealed that the Cronbach's alpha scores were higher

for the scales derived from the principal component analysis varimax rotation. Consequently, the results of the PCA scales are reported in this chapter and the results of the DCA scale are included for comparative purposes.

7.4.6. TESTS OF NORMALITY ON THE SEVEN FACTOR MODEL OF WOCQ DEVELOPED FROM DETRENDED CORRESPONDENCE ANALYSIS

All seven scales, which had arisen from the detrended correspondence analysis performed on the WOCQ, were tested for normality of distribution. As can be seen from Table 7.14, the 5% trimmed mean was very similar to the original mean values. This indicated that the extreme scores were not having a great influence on the mean value. Furthermore, the skewness values of six of the scales were positively scored, indicating a positive symmetry of the distribution to the left hand side of the graph. The kurtosis values for four of the scales were below 0. This suggested that the distribution was relatively flat. Three of the scales had kurtosis values which were positively scored. This indicated that the distribution was clustered in the centre. The Kolmogorov-Smirmov statistic was <.05 for all seven scales implying that the distributions of the values was not normally distributed.

Very few of the ten Normal Q-Q Plots, which had plotted the observed values for each scale against the expected values from the normal distribution; had shown a straight line. All outliers, presented in the Boxplot, were checked for authenticity. Considering the above findings, it was deduced that the scales violated the assumptions of normality.

**Table 7.14**. Tests of normality on the seven factor model of the WOCQ derived detrended correspondence analysis.

Ways of Coping Questionnaire	Mean	5% Trimmed Mean	Skewness	Kurtosis	Kolmogorov- Smirnov
Positive Self Reflection(DCA)	.85	.80	.82	.09	<.001
Wishful Criticism and Escape(DCA)	1.48	1.48	04	77	<.001
Disengagement(DCA)	.70	.66	.95	.62	<.001
Positive Planning(DCA)	1.41	1.41	.04	36	.011
Social Engagement(DCA)	1.46	1.45	.05	69	<.001
Distancing(DCA)	1.30	1.30	.82	2.94	<.001
Confronting(DCA)	1.18	1.17	.20	66	<.001

#### 7.5. INFERENTIAL STATISTICS

Chi square tests were performed between each statement of the Rosenberg Self-Esteem Scale and the categorical variables of the demographic questionnaire. The only categorical variable, tested with the RSES, which had displayed some level of significance, was gender. As can be seen from Table 7.15, there were seven significant findings between gender and the items on the RSE scale. A significant number of male students agreed with the negatively phrased statement viz. 'At times, I think I am no good at all'. However, a significant number of male students agreed with three of the positively phrased statements. Whilst the female students agreed with one of the positively phrased statements, a significant number of them agreed with two of the negatively phrased statements. These results highlighted that the differences between males and females in their responses were significant. However the results must be considered in relation to effect size of the significance. However, the effect size test using Cramer's V resulted in values ranging from .169 to .207, which indicates a small effect.

Table 7.15. Results of chi-square tests performed between each statement of the RSES and the variable gender.

Rosenberg Self- Esteem Scale	Female	Male	χ²	V	P value
On the whole, I am satisfied with myself	17.2% (Agreed)	32.9% (Agreed)	18.43	.20	<.001***
At times, I think I am no good at all	51% (Agreed)	72% (Agreed)	20.30	.21	<.001***
I feel that I have a number of good qualities	66.9% (Agreed)	52.7% (Agreed)	19.46	.20	<.001***
I am able to do things as well as most other people	85% (Agreed)	94% (Agreed)	14.78	.18	.002**
I feel I do not have much to be proud of	16.6% (Agreed)	9.6% (Agreed)	7.25		.064
I certainly feel useless at times	52% (Agreed)	35.3% (Agreed)	13.11	.17	.004**
I feel that I am a person of worth, at least on equal plane with others	91% (Agreed)	95% (Agreed)	13.56	.17	.004**
I wish I could have more respect for myself	48.1% (Agreed)	29.9% (Agreed)	16.78	.19	<.001***
All in all, I am inclined to feel that I am a failure	10.4% (Agreed)	7.2% (Agreed)	5.70	.11	.127
I take a positive attitude toward myself	82% (Agreed)	87% (Agreed)	6.307		.098

<sup>\*\*.</sup> p < .01 level; \*\*\*. p < .001 level

## 7.6. CONCLUSION

Many findings arising from the analyses in this chapter were statistically significant. However, they must be considered within the context of the effect sizes which for many were small to medium. Whilst boys had significantly higher self-esteem in comparison to girls, the self-esteem of the girls was also relatively high. The psychometric testing of the Rosenberg Self-Esteem Scale (Rosenberg 1965) and the Ways of Coping Questionnaire (Folkman and Lazarus 1988) using both parametric and non-parametric analyses revealed a one factor model and a seven factor model, respectively. In the next chapter, the ten hypotheses will be tested and the findings discussed in relation to phase two of the study.

## Chapter8. QUANTITATIVE DATA ANALYSIS: 2. TESTING

## **HYPOTHESES**

#### 8.1. Introduction

The development of the ten hypotheses was introduced in Chapter 6. In this chapter, these hypotheses are tested using a range of both parametric and non-parametric statistics.

## 8.2. HYPOTHESES TESTING (1-4)

The first four hypotheses was tested viz. there is an association between;

- 1) Gender and self-esteem
- 2) Age and self-esteem
- 3) Year of programme and self-esteem
- 4) Programme type and self-esteem.

These hypotheses related to the association between global self-esteem levels and the four variables arising from the demographic questionnaire. The fifth variable viz. nationality was not been tested as 93% of the students (n=447) were Irish. The nationality of the remaining 7% of the students (n=32) arose from 11 countries. Using SPSS version 15, chi square tests were computed between the categorical variables from the demographic questionnaire and self-esteem levels. The only significant relationship, which was identified, was the highly significant relationship, which existed between gender and self-esteem. All three derivatives of the variable self-esteem viz. total self-esteem; self-esteem in two groups (0-15; 16–30); and self-esteem in three groups (0-19; 20-22; 23-30), displayed a highly significant relationship with gender (Table 8.1). Furthermore, both

parametric and non-parametric analyses were computed on the variables viz. total self-esteem and gender, to establish actual male and female self esteem levels and to confirm significance. Both methods were employed to ascertain if similarities existed within the results from both tests (Table 8.2). Both the Independent Sample T-test and the Mann-Whitney U test resulted in a highly significant difference between gender and self-esteem (p < .001). The overall self-esteem mean for both male and female students was 20.34 and was very similar to the median value of 20.00. Furthermore, the findings asserted that male students had significantly higher levels of self-esteem (M =22; Md = 22; p < .001), in comparison to the self-esteem level of female students (M= 20; Md = 19; p < .001). However, the results must be considered in relation to the effect size of the significance. The effect size for TSE and gender using Cramer's V was .351, indicating a medium effect. The effect size of the significant result for Self-esteem (2groups) was .161, indicating a small to medium result. The Cramer's V result for gender and self-esteem (3groups) was .24, indicating a small to medium effect.

The self-esteem levels obtained in the current study are very similar to the Canadian normative scores established by Bagley et al. (1997) who had similarly found that boys had significantly higher levels of self-esteem (M = 22), in comparison to the self-esteem levels of girls (M = 19). The British normative scores for the same age group were also similar (Bagley and Mallick 2001; Bagley et al. 2001).

Whilst results from all three derivatives of self-esteem are referred to in the chapter, the variable, viz. self-esteem in three groups, was the preferred variable because it accounted for self-esteem levels not just at the two extremes at higher and lower levels, but also for

self-esteem levels which fell within the mid ranges. Rosenberg (1965) refers to the three ranges of self-esteem levels within his research writings. In relation to this study, 50.6% of students with lower levels of self-esteem were female students as opposed to 26.3% male students. 20.8% of female students had medium levels of self-esteem in comparison to male students who account for 32.9% of the total. In relation to the higher levels of self-esteem, 28.6% were female students as opposed to 40.7% male students. The statistical analyses, outlined in the above section, confirmed the acceptance of the hypothesis viz. there is an association between self-esteem and gender. The hypothesis relating to the association between self-esteem and; age, year of programme and programme title were rejected.

**Table 8.1.** Results of chi-square tests between self-esteem variables and demographic variables.

	<b>Total Self-Esteem</b>		Self-Est	eem (2groups)	Self-Esteem (3 groups)		
	$\chi^2$	P value	$\chi^2$	P value	$\chi^2$	P value	
Age	116.83	.99	.301	.690	1.53	.465	
Gender	58.59	<.001***	12.19	<.001***	26.44	<.001***	
Year Of Programme	33.11	.159	3.27	.352	3.03	.220	
Programme Title	31.81	.199	3.10	.078	.29	.864	

<sup>\*\*\*.</sup> p < .001

**Table 8.2.** Parametric and non-parametric description of the variable Total Self-Esteem (both genders) and broken down according for males and females.

	N	TSE	TSE	TSE
		Males and	Male	Female
		Females Combined		
Mean	475	20.34	21.85	19.53
SD	475	4.89	4.71	4.79
95% Confidence Interval	475	19.90 to 20.78	21.13 to 22.57	18.99 to 20.06
t	475	-<.001***	-5	.08
			-5	.08
Median	475	20.00	22.00	19.00
z	475	<.001***	-5	.13
			-5:	.13

<sup>\*\*\*.</sup> p < .001

## 8.3. Hypotheses Testing (5-8)

Outlined in the following section are the statistical tests of the four hypotheses relating to the significant differences between;

- 1) Gender and coping processes.
- 2) Age and coping processes.
- 3) Year of programme and coping processes.
- 4) Programme and coping processes.

The testing of the seven factor WOCQ model, computed from principal component analysis, is reported in the body of the current study. This particular model of the WOCQ, reported slightly higher Cronbach's alpha scores in comparison to the alpha scores from the other two models. However, the statistical tests and findings, from the original eightfactor WOCQ model are reported on in Appendix B. For the purpose of comparing parametric and non parametric results both WOCQ models derived from principal component analysis and detrended correspondence analysis are referred to.

Mann-Whitney U tests were computed on the variables age, gender and programme title as all of these variables were divided into two independent groups. A Kruskal Wallis test was used with the variable year of programme as this variable was comprised of three independent groups. The results outlined in Table 7.18 highlight that there were many significant differences between the variables in question. In relation to the association between the variable age and coping processes, university students who are aged 21 and over, significantly used the coping processes of 'Positive Self-Reflection' (z=-2.19, Md=.13, p<.05) and 'Positive Planning' (z=-2.78, Md=.18, p<.01). Female university students had a highly significant association with the use of the coping process of 'Social Engagement' (z=-5.83, Md =.18, p<.001, r = .3). Conversely male students presented

with a highly significant association in the use of the coping process of 'Distancing' (z=-3.68, Md =.17, p<.001, r = .2). The only significant difference between year of programme and coping was for first year students and the use of 'Confronting' coping ( $\chi=6.47$ , Md =.14, p<.05). Finally, students enrolled in science, engineering and technology programmes (SET) used 'Confronting' coping in dealing with a stressful encounters relating to academic life (z=-3.68, Md =.17, p<.001, r = .1).

Table 8.3. The associations between the demographic variables and the WOCQ derived from principal component

analysis.

		ive Self ection		ishful cism and	Disen	gagement	Positi	ve Planning	Social	Engagement	Di	stancing	Co	nfronting	
		CA)		pe (PCA)	(	PCA)		(PCA)		(PCA)		(PCA)		(PCA)	
	z	p value	z	p value	z	p value	z	p value	z	p value	z	p value	z	p value	
Age	-2.19 .	029*	-1.69	.092	-1.64	.101	-2.78	.005**	15	.879	-1.15	.250	03	.976	
17-20	Md = .1	12					Md =	.16							
21+	Md = .1	13					Md =	.18							
Gender	25	.804	59	.553	84	.399	-1.3	.182	-5.82	<.001***	-3.68 <	.001***	-1.57	.117	
Females									Md=	.18	Md = .	14			
Males									Md=	.14	Md = .	17			
Year of Programme	$\chi^2 = 3.66$	.161	1.16.	560	3.39	.184	4.53	.104	1.78	.410	1.30	.522	6.47.0	39*	
Year 1													Md =	14	
Year 2													Md =		
Years 3 & 4													Md =		
Programme Title	01.99	6	-1.21	.227	-1.52	.129	573	.567	04	.972	238	.812	-2.13		
SET													Md =	14	
HSS													Md =		

\*\*\*. p < .001; \*\*. p < .01; \*. p < .05

The statistical analyses outlined in the above section confirmed the acceptance of the hypothesis that there were significant differences between the coping processes used by students and

- 1) Gender
- 2) Age
- 3) Year of Programme and
- 4) Programme

## **8.4.** Hypothesis Testing (9)

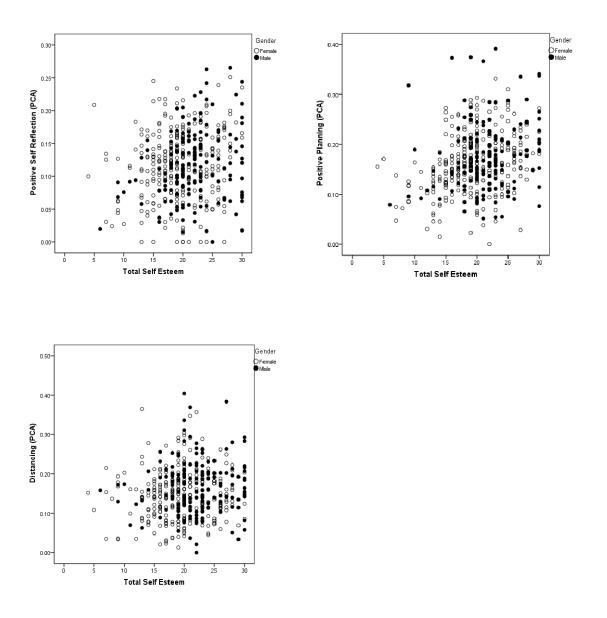
The hypothesis, that there is an association between higher levels of self-esteem and adaptive coping processes, was confirmed by significant findings. The independent variable 'self-esteem' was tested in its three forms viz. Total Self-Esteem, Self-Esteem (2 groups) and Self-Esteem (3 groups), with the seven component model of the WOCQ (PCA). For statistical comparative purposes, the results from the seven component model of the WOCO derived from the non-parametric detrended correspondence analysis are also presented in this section. Spearman's rank correlation tests were computed between the variable total self-esteem and the seven factors of the WOCQ (PCA). The results suggested that there was a highly significant association between students with higher levels of self-esteem and the use of 'Positive Self Reflection' coping (r=.15, p<.001) and 'Positive Planning' coping (r=.27, p<.001) (Table 8.4). An interesting result demonstrated an association between higher levels of self-esteem and the use of 'Distancing' coping (r=.09, p<.05). In the previous section it has been highlighted that the use of 'Distancing' as a coping process was highly significantly associated with male students. There was no significant association between self-esteem and the use of 'Social Engagement' as a coping method. The scatter diagrams of the significant correlations illustrate the positive direction of the associations (Figure 8.1).

**Table 8.4.** Spearman's Rank Correlation coefficients between Total Self-Esteem and the PCA components of the WOCQ (Adaptive Coping).

Total Self- Esteem	D @ 4'		Distancing (PCA)	Social Engagement (PCA)		
r	.15	.27	.09	.05		
P value	<.001***	<.001***	.045*	.302		

<sup>\*\*\*.</sup> Correlation is significant at the .001 level (2-tailed).

<sup>\*</sup> Correlation is significant at the .05 level (2-tailed).



**Figure 8.1.** Scatter diagrams of the positive correlations between Total Self-Esteem and gender and the PCA components of the WOCQ (Folkman and Lazarus 1988).

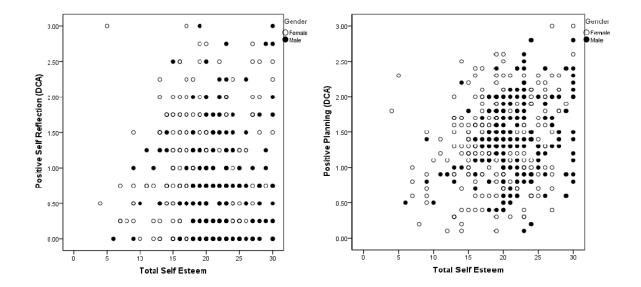
For comparative purposes Spearman's rank correlation tests were computed on the associations between the variables total self-esteem and the seven factor WOCQ (DCA) model (Table 8.5). Similar to the finding in the previous paragraph, there was a highly significant relationship between students with higher levels of self-esteem and the use of 'Positive Planning' coping (r=.29, p<.001). Different to the findings from WOCQ (PCA) both 'Positive Self-Reflection' and 'Distancing' coping did not show any significant association with self-esteem. However, the coping process of 'Social Engagement'

resulted in a very significant association with higher levels of self-esteem (r=.13, p<.01). The scatter diagrams of the significant associations highlighted the positive direction of the associations (Figure 8.2).

**Table 8.5.** Spearman's Rank Correlation coefficients between Total Self-Esteem and the DCA Components of the WOCQ (Adaptive Coping).

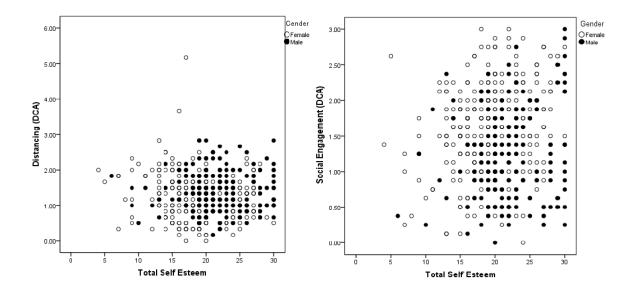
Total Self- Esteem	Positive Self Reflection (DCA)	Positive Planning (DCA)	Distancing (DCA)	Social Engagement (DCA)
r	.02	.29	03	.13
P value	.614	<.001***	.513	.007**

<sup>\*\*\*.</sup> Correlation is significant at the .001 level (2-tailed).



<sup>\*\*</sup>Correlation is significant at the .01 level (2-tailed).

<sup>\*</sup> Correlation is significant at the .05 level (2-tailed).



**Figure 8.2.** Scatter diagrams of the positive correlations between Total Self-Esteem and gender and the DCA components of the WOCQ (Folkman and Lazarus 1988).

The values (or magnitude) of the seven components of the WOCQ derived from PCA and DCA were investigated using the Mann-Whitney U test between the independent variable of Self-Esteem (2groups). The following paragraph discusses the results from the testing of the variables 'Self-Esteem (2groups)' specifically the higher levels of self-esteem (16 – 30) and the seven factor model of WOCQ (PCA). The results show significant differences between the medians of the components of the WOCQ for the variable of self-esteem (16-30) and the use of the coping processes with regard to 'Positive Planning' (z=-6.23, p<-001, r = .30), 'Positive Self-Reflection' (z=-2.81, p<-01, r = .13) and 'Distancing' (z=-2.01, p<-05, r = .10) (Table 8.6). The results from the non-parametrically derived components of the WOCQ (DCA), similarly show a highly significant association between higher levels of self-esteem and the use of 'Positive Planning' coping (z=-4.30, p<-001, r = .20) (Table 8.7). The effect sizes of all significant values were within the range of small to medium effect.

**Table 8.6.** Results of the Mann-Whitney U tests between Self-Esteem (16-30) and the components of the WOCQ derived from PCA (Adaptive Coping).

Self-Esteem	Positive Self	Positive Planning	Distancing	Social Engagement
(16 - 30)	Reflection (PCA)	(PCA)	(PCA)	(PCA)
Median	.12	.17	.15	.16
Z	-2.81	-6.23	-2.01	-1.07
R	.13	.30	.10	
P value	.005**	<.001***	.045*	.1630

<sup>\*\*\*.</sup> p < .001; \*\*. p < .01; \* p < .05

**Table 8.7.** Results of Mann-Whitney U tests between Self-Esteem (16-30) and the components of the WOCQ derived from DCA (Adaptive Coping).

Self-Esteem	Positive Self Reflection	Positive Planning	Distancing	Social Engagement
(16-30)		(DCA)	(DCA)	(DCA)
Median	.75	1.50	1.17	1.50
Z	36	-4.30	-1.30	1.3
R		.20		
P value	0.716	<.001***	0.195	0.189

<sup>\*\*\*.</sup> p < .001

As previously discussed, the variable 'Self-Esteem (3groups) was the preferred variable to self-esteem (2groups) as it accounted for self-esteem levels not just at the two extremes at higher and lower levels, but it also took cognisance of students whose self-esteem levels fell within the mid ranges of 19 to 22. Within the parametrically derived factors of the WOCQ, the coping process of 'Distancing' was significantly associated in use with students who presented with self-esteem at the mid levels of 19 to 22 ( $\chi^2$ =6.84, p<.05). At the higher levels of self-esteem i.e. 23 to 30, there was a significant association with the use of 'Positive Self Reflection' coping ( $\chi^2$ =6.79, p<.05) and a highly significant association with the use of 'Positive Planning' ( $\chi^2$ =16.78, p<.001) (Table 8.8). The significant differences in the values (or magnitude) of the non-parametrically derived seven components of the WOCQ, were for higher levels of self-esteem and 'Positive Planning' ( $\chi^2$ =22.75, p<.001) and 'Social Engagement' ( $\chi^2$ =7.56, p<.050) (Table 8.9).

**Table 8.8.** Results of Kruskal-Wallis tests between Self-Esteem (3 groups) and the components of the WOCQ derived from PCA (Adaptive Coping).

Self-Esteem (19 – 22)	Distancing (PCA)	Self-Esteem (23 – 30)	Positive Reflection (PCA)	Self	Positive Planning (PCA)	Social Engagement (PCA)
Median	.13	Median	.13		.18	.16
$\chi^2$	6.84	$\chi^2$	6.79		16.78	2.70
P value	.033*	P value	.034*		<.001***	.259

<sup>\*\*\*.</sup> p < .001; \*\*. p < .01; \* p < .05

**Table 8.9.** Results of Kruskal-Wallis tests between Self-Esteem (3 groups) and the components of the WOCQ derived from DCA (Adaptive Coping).

Self-Esteem (19 – 22)	Distancing (DCA)	Self-Esteem (23 – 30)	Positive Reflection (DCA)	Self	Positive Planning (DCA)	Social Engagement (DCA)
Median	1.33	Median	.75		1.60	1.63
$\chi^2$	.17	$\chi^2$	2.34		22.75	7.56
P value	0.920	P value	0.310		<.001***	.023*

<sup>\*\*\*.</sup> p < .001 level; \*\*. p < .01; \* p < .05

The statistical analyses outlined in the above section confirmed the acceptance of the hypothesis viz. that there is an association between higher levels of self-esteem and adaptive coping processes.

# 8.5. Hypothesis Testing (10)

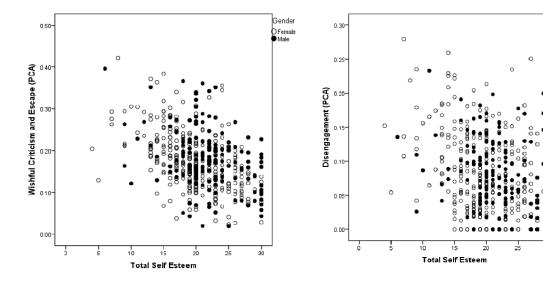
The final hypothesis, that was tested, was viz. there is an association between lower levels of self-esteem and avoidance/emotion-focused coping processes. As before, the independent variable 'self-esteem' was tested in its three forms viz. Total Self-Esteem, Self-Esteem (2 groups) and Self-Esteem (3 groups), with the seven component model of the WOCQ (PCA). For statistical comparative purposes, the results from the seven component model of the WOCQ, derived from the non-parametric detrended correspondence analysis, are also presented in this section.

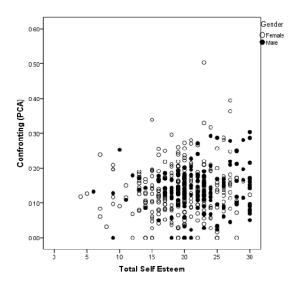
Spearman's rank correlation tests were computed between the variable total self-esteem and the seven factors of the WOCQ (PCA). The results suggested that there was a highly significant association between students with lower levels of self-esteem and the use of 'Wishful Criticism and Escape' coping (r=-.42, p<.001) and 'Disengagement' coping (r=-.22, p<.001) (Table 8.10). The scatter diagrams of the significant correlations highlighted the negative direction of the associations (Figure 8.3).

**Table 8.10.** Spearman's Rank Correlation coefficients between Total Self-Esteem and the PCA Components of the WOCQ (Avoidance/Emotion-focused Coping).

Total Self-Esteem	Wishful Criticism	Disengagement	Confronting
	and Escape (PCA)	(PCA)	(PCA)
r	42	22	.09
P value	<.001***	<.001***	.060

<sup>\*\*\*.</sup> Correlation is significant at the .001 level (2-tailed).





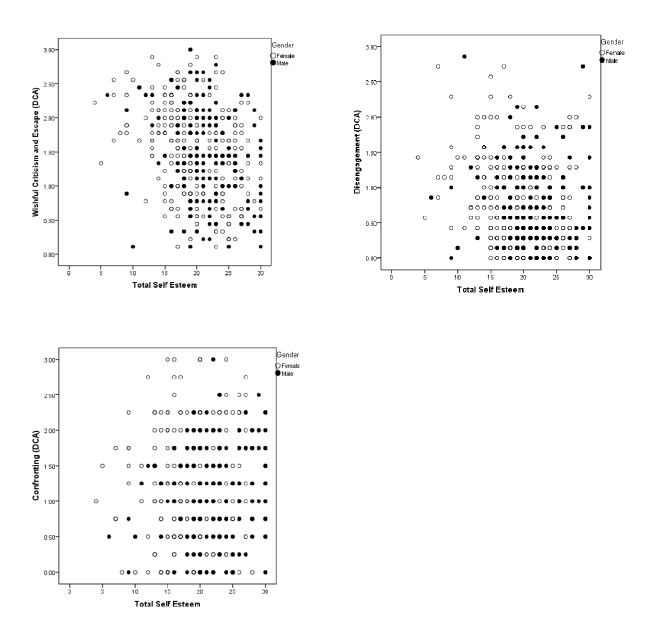
**Figure 8.3.** Scatter diagrams of the negative correlations between Total Self-Esteem and gender and the PCA components of the WOCQ (Folkman and Lazarus 1988).

For comparative purposes Spearman's rank correlation tests were computed on the associations between the variables total self-esteem and the seven factor WOCQ (DCA) model. Similar to the findings in the previous paragraph, there was a highly significant relationship between students with lower levels of self-esteem and the use of 'Wishful Criticism and Escape' coping (r=-.33, p<.001) and 'Disengagement' coping (r=-.20, p<.001) (Table 8.11). The scatter diagrams of the significant correlations highlight the negative direction of the associations (Figure 8.4).

**Table 8.11.** Spearman's rank correlation coefficients between Total Self-Esteem and the DCA Components of the WOCQ (Avoidance/Emotion-focused Coping).

Total Self-Esteem	Wishful Criticism and Escape (DCA)	Disengagement	Confronting
	and Escape (DCA)	(DCA)	(DCA)
r	33	20	.07
P value	<.001***	<.001***	.106

<sup>\*\*\*.</sup> Correlation is significant at the .001 level (2-tailed).



**Figure 8.4.** Scatter diagrams of the negative correlations between Total Self-Esteem and gender and the DCA components of the WOCQ (Folkman and Lazarus 1988).

The values (or magnitude) of the seven components of the WOCQ derived from PCA and DCA were investigated, using the Mann-Whitney U test between the groups defined by the independent variable of Self-Esteem (2groups). The following paragraph discusses the results from the testing of the variables 'Self-Esteem (2groups)', specifically the lower levels of self-esteem (0–15) and the seven factor model of WOCQ (PCA).

The results show significant differences between the medians of the components of the WOCQ for the variable of self-esteem (0-15) and the use of the coping processes viz. 'Wishful Criticism and Escape' (z=-6.75, p<.001, r=.30) and 'Disengagement' (z=-5.44, p<.05, r=.25) (Table 8.12). Furthermore, the results show highly significant differences between the medians of the components of the non-parametrically derived WOCQ (DCA) for lower levels of self-esteem and the use of 'Wishful Criticism and Escape' coping (z=-5.44, p<.001, r=.25) and 'Disengagement' (z=-5.29, p<.001, r=.24) (Table 8.13).

**Table 8.12.** Results of the Mann-Whitney U tests between Self-Esteem (0-15) and the components of the WOCQ derived from PCA (Avoidance/Emotion-focused Coping).

Self-Esteem	Wishful Criticism	Disengagement	Confronting	
(0 - 15)	and Escape (PCA)	(PCA)	(PCA)	
Median	.22	.12	.14	
$\mathbf{z}$	-6.75	-5.44	1.63	
R	.30	.25		
P value	<.001***	<.001***	.103	

<sup>\*\*\*.</sup> p < .001 level

**Table 8.13.** Results of the Mann-Whitney U tests between Self-Esteem (0-15) and the components of the WOCQ derived from DCA (Avoidance/Emotion-focused Coping).

Self-Esteem	Wishful Criticism	Disengagement	Confronting
(0 - 15)	and Escape DCA)	(DCA)	(DCA)
Median	1.89	1.00	1.25
Z	-5.44	-5.29	54
R	.25	.24	
P value	<.001***	<.001***	.588

<sup>\*\*\*.</sup> p < .001 level

Considering the variable 'Self-Esteem in three groups, was the preferred variable to self-esteem in two groups, as it accounted for self-esteem levels, not just at the two extremes of higher and lower levels, but also self-esteem levels which fell within the mid ranges of 19 to 22. Within the parametrically derived factors of the WOCQ, the coping processes of 'Wishful Criticism and Escape' and 'Disengagement' were highly significantly associated in use with students who presented with self-esteem at the lower levels of 0 to 19

( $\chi^2$ =57.40, p<.001) and ( $\chi^2$ =13.66, p<.001) respectively (Table 8.14). The effect sizes of all significant values were within the range of small to medium effect.

From statistical analysis performed on the non-parametrically derived seven components of the WOCQ, there was also a highly significant association with students who presented with self-esteem at the lower levels of 0 to 19 and the coping processes of 'Wishful Criticism and Escape' ( $\chi^2=33.59$ , p<.001) and 'Disengagement' ( $\chi^2=11.15$ , p<.01) (Table 8.15). No significant associations were found between the mid range of self-esteem (19-22) and coping processes.

**Table 8.14.** Results of the Kruskal Wallis tests between Self-Esteem (0-19) and the components of the WOCQ derived from PCA (Avoidance/Emotion-focused Coping).

Wishful Criticism	Disengagement	Confronting
and Escape (PCA)	(PCA)	(PCA)
.20	.09	.14
57.40	13.66	3.05
<.001***	<.001***	.218
	.20 57.40	.20 .09 57.40 13.66

<sup>\*\*\*.</sup> p < .001 level

**Table 8.15.** Results of the Kruskal Wallis tests between Self-Esteem (0-19) and the components of the WOCQ derived from DCA (Avoidance/Emotion-focused Coping).

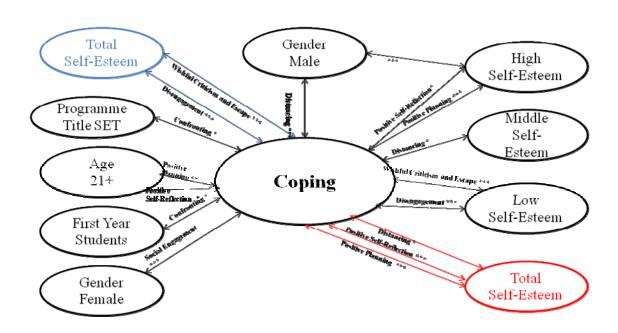
Self-Esteem	Wishful Criticism	Disengagement	Confronting
(0 - 19)	and Escape (DCA)	(DCA)	(DCA)
Median	1.78	.714	1.25
$\chi^2$	33.59	11.15	1.37
P value	<.001***	.004**	.505

<sup>\*\*\*.</sup> p < .001 level; \*\*. p < .01

The statistical analyses outlined in the above section confirmed the acceptance of the hypothesis viz. that there is an association between lower levels of self-esteem and avoidance/emotion-focused coping processes. Refer to Figure 8.5 for the graphical summation of the quantitative significant findings of the study. In this figure, probabilities

are denoted as follows; positive probabilities are in red and negative probabilities are in blue.

#### SIGNIFICANTFINDINGS



- \*\*\*. Correlation is significant at the 0.001 level (2-tailed)
- \*\*. Correlation is significant at the 0.01 level (2-tailed).

**Figure 8.5** Diagram summarising the significant results in the current study. Positive relationships (Spearman's Rank Correlation) are coloured in red and negative relations in blue. Results based on Mann Whitney U or Kruskal-Wallis tests are in black (from O'Reilly et al. 2010).

# 8.6. HIERARCHICAL MULTIPLE REGRESSION

Hierarchical multiple regression was used to develop a predictive model between total self-esteem as the outcome and the seven components of the WOCQ as the predictors. The seven components of the WOCQ, derived from principal component analysis, were entered into a stepwise multiple regression. Using the default criteria of SPSS, the probability of F to enter a variable was 0.05 and the probability of F to remove it was 0.10. Three of the predictors were highly significant, and they were entered into the model in the following sequence. These were 'wishful criticism and escape', 'disengagement' and 'social engagement' (Table 8.16). The sequence in which they were entered gives the

sequence of importance in terms of predicting self-esteem. None of the other WOCQ predictors were entered into a model based on these criteria.

Table 8.16. Significant multiple linear regression models with Total Self-Esteem as the outcome and the three coping processes from the WOCQ as the predictors.

Model	Predictors	Regression Model	F	R <sup>2</sup>
1	Wishful Criticism & Escape (WC&E)	TSE $(y) = 25.7 - 30.3 \text{ (WC&E)}$	105.50***	0.187
2	Disengagement (D)	TSE (y) = $26.2 - 27.3$ (WC&E) $- 12.5$ (D)	59.76***	0.207
3	Social Engagement (SE)	TSE (y) = 27.9 - 29.2 (WC&E) - 14.7 (D) - 7.5 (SE)	42.37***	0.218

<sup>\*\*\*.</sup> p < 0.001

## 8.7. CONCLUSION

The theoretical framework, used in the study, was the Lazarus and Folkman (1984) Transactional Model of Coping. Within this model, coping is viewed as a process, in which its outcome is influenced by the appraisal process which is initiated when an individual encounters a potentially stressful episode. The model highlights the dynamic interaction between the individuals' characteristics, appraisal of the event, the stressor in the environment, the individual resources readily available to them, and the individuals' emotional and behavioural responses (Aldwin 2007). Utilising a cross-sectional correlational design, with a stratified randomly selected cohort of university students (n=479), the quantitative component of the current mixed method sequential explanatory study, has established the acceptance of seven out of the ten hypotheses which were formulated as a result of gaps in the existing research a propos this topic. Associations were established between self-esteem and gender, with male university students having

significantly higher self-esteem levels in comparison to female university students. However, the self-esteem level of the female students was within the mid to high level of self-esteem. When confronted with a stressful situation relating to university life, male students had a highly significant association with the use of 'Distancing' as a coping process. Conversely, female university students used 'Social Engagement' coping in similar circumstances. The study also found that older university students (21 years of age and over) utilised 'Positive Self-Reflection' and 'Positive Planning' as coping strategies, with first year students presenting with a significant association with the use of Students enrolled in Science, Engineering and Technology 'Confronting' coping. university programmes were significantly associated with the use of 'Confronting' coping. Higher levels of self-esteem were significantly correlated with the use of 'Positive Self-Reflection' 'Positive Planning' and 'Distancing' coping processes. In contrast students with lower levels of self-esteem were significantly linked with the use of 'Disengagement' and 'Wishful Criticism and Escape' as coping processes. Using hierarchical multiple regression, three coping processes were identified as predictors of self-esteem. They were 'Wishful Criticism and Escape', 'Disengagement' and 'Social Engagement'.

Whilst these results provide prolific information regarding university students' global selfesteem and the ways in which they cope with stressful situations related to university life, it was decided at the initial stage of the study to conduct interviews with students so as to obtain a more comprehensive understanding of the expansive subject areas of self-esteem and coping from the subjective perspective of university students.

The significant findings generated from the quantitative component of the current study guided the qualitative aspect of the study which is discussed in the following chapter.

# Chapter 9. QUALITATIVE INVESTIGATIONS

## 9.1. Introduction – Research Design and Methodology

Using a stratified randomly selected cohort of university students (n=479), the quantitative element of the current study identified many significant relationships between global selfesteem and coping. Global self-esteem is linked with psychological well-being (Rosenberg, 1976). Whilst the global self-esteem level amongst all the students was 20.34 (M = 20.34; SD = 4.855), the current study established that the male students have significantly higher levels of self-esteem (M =22; Md = 22; p <.001), in comparison to the self-esteem level of female students (M= 20; Md = 19; p < .001). Furthermore, there were associations between higher levels of self-esteem and adaptive coping processes amongst the students. Conversely, lower levels of self-esteem were significantly associated with more avoidance/emotion-focused coping processes. The central tenets of the Lazarus and Folkman (1984) transactional model of coping are that the relationship between the demands of the environment, the individual's personal resources and their cognitive processes influence the way in which an individual appraises a potential stressful situation. The current study has established that the coping processes of university students were significantly associated with age, gender, the year of study and the programmes for which they are registered. Whilst recognising the extensive significant findings from phase one of the current mixed method study, phase two of the study has provided an opportunity for further exploration and clarification of these findings from the perspective of the student.

This chapter explains the research aims and the methodological processes applied to the qualitative element of the study. It provides details of the research design and the data collection method which were utilised. It presents details of the sampling process which were

undertaken. Furthermore, the ethical principles and their application to the study are discussed in this chapter. The development of the initial and final themes is discussed and the results of phase two are presented.

The following section will address the research aims of phase two of the study.

## 9.2. RESEARCH AIMS

The identification of the overall research rationale, in mixed methods research, is decidedly important in identifying the concomitant aims to both phases of the study (Leech and Onwuegbuzie 2010). The overall aim of the current study was to investigate the relationships between global self-esteem and coping processes, within a stratified random sample of university students (n = 479). Moreover, the study aimed to explore the associations between both self-esteem and coping, with the variables viz. gender, age, year of programme and programme title. Furthermore, the study aimed to seek the views of students in relation to their inferences on the significant findings found in the initial phase of the study and to elucidate the factors, within university life, which were sources of stress to students.

The aim of the qualitative component of the current study was to seek enlightenment, clarification, and further elaboration, on the significant findings that arose from the quantitative section of the study. The quantitative findings revealed important patterns in the self-esteem and coping strategies of university students. To further, understand the dynamics of self-esteem and coping it was decided to explore the students' own perspective on what influenced their self-esteem and coping processes through qualitative

methods that would allow for exploration of students' meaning and interpretations. Furthermore, it was decided to explore sources of stress for students through qualitative interviewing, as this would allow for exploration. The guiding questions for the interviews were developed to elaborate on the findings of the quantitative research.

# 9.3. QUALITATIVE RESEARCH AIMS AND QUANTITATIVE HYPOTHESES

Within the quantitative component of the study, ten hypotheses were tested and the significant findings are outlined in the following paragraph. Seven from the ten hypotheses were accepted namely:

- 1. There is a highly significant relationship between global self-esteem and gender.
  - a. Male university students have significantly higher global self-esteem compared to female university students.
- 2. There is a very significant relationship between the age of the student and coping.
  - a. Students aged 21 years and over present with a very significant use of 'Positive Planning' and 'Positive Self-Reflection' as coping processes.
- 3. There is a highly significant relationship between gender and coping.
  - a. Male university students present with a highly significant use of 'Distancing' as a coping process.
  - Female university students present with a highly significant use of 'Social Engagement' as a coping process.
- 4. There is a significant relationship between the year of programme and coping

- a. First year students present with a significant use of 'Confronting' as a coping process.
- 5. There is a significant relationship between programme title and coping.
  - a. University students enrolled in Science, Engineering and Technology programmes (SET) present with a significant use of 'Confronting' coping.
- 6. There is an association between higher levels of self-esteem and adaptive coping.
  - University students with higher levels of self-esteem present with the significant use of 'Positive Self-Reflection' coping.
  - University students with higher levels of self-esteem present with the highly significant use of 'Positive Planning' coping.
  - c. University students with middle levels of self-esteem present with the significant use of 'Distancing' coping.
- 7. There is an association between lower levels of self-esteem and avoidance/emotion-focused coping.
  - a. University students with lower levels of self-esteem present with the highly significant use of both 'Wishful Criticism and Escape' and 'Disengagement' coping processes.

In order to further explore these results, the qualitative component of the current study has three objectives, namely, to

- 1. Ascertain university students' views and explanations, on the quantitative significant findings, which have been established during, phase one of the study.
- 2. Determine university students' views on factors which are found to be sources of stress for university students.

3. Establish the students' views on factors that they consider may be of benefit in enhancing students' self-esteem levels and coping abilities, which would then inform recommendations that may influence educational and health policy.

## 9.4. ETHICAL CONSIDERATIONS

The ethical principles, which were applied to the quantitative element of the study, were also applied to the qualitative phase of the study (refer to chapter 6). A Universalist ethical stance was adopted throughout the entire study (Bryman 2008). All data, which had been obtained during the current study, are subject to the Data Protection (Amendment) Act, 2003. Additional ethical safe guards, which were used in this section of the study, are outlined in the following paragraphs. The three principles utilised throughout the study were the principle of beneficence, respect and the principle of justice (Polit and Beck 2006; 2009; Streubert-Speziale and Carpenter 2007).

Supporting the principle of beneficence, ethical approval was sought from the University of Limerick's Research Ethics Committee in September 2009. The process ensures that robust criteria are considered and applied to all potential research studies. Ethical approval and access were granted by the Committee in 2006, for a period of three years. The quantitative component of the study was completed in September 2009. In order to carry out the interviews, a reapplication for an extension was made to the Committee. Ethical approval was granted for a further year. The researcher was aware that interviewing students on the subject of self-esteem and coping might pose the possibility of raising issues. Contact was made with the head of counselling, in the University, regarding this matter. As a result, flyers were included in the questionnaire package,

outlining the services available from the University Counselling Service. Furthermore, the researcher's name, email address, and telephone number were included, in the event of a student requiring clarification on any aspect of the study. In the event of the questionnaires raising any personal issues for the students, contact details of the University Student Counselling department were provided in the cover letter.

The principle of justice was upheld by ensuring that the students had the freedom to participate or not in the interviews. In mixed method research, it is advised that participants should be asked to provide contact details at the end of the questionnaire if they agree to a follow up interview (Tashakkori and Teddlie 2010). These considerations were made before conducting the first phase of the current mixed method explanatory sequential study (Creswell and Plano Clark 2007). In the initial questionnaire package, which the students had received during the quantitative stage of the study, the students who agreed to be interviewed returned a signed consent form with their first name and mobile telephone number. Information, regarding the research aims and objectives, were also included with the questionnaires. The eight students, who were selected for interview, were contacted individually to arrange an interview time and date, which suited all parties. Whilst organising the interviews, the researcher asked the students to choose the location of their interviews. Some students decided on specific areas within the University. Where students had indicated no preference, the researcher ensured that the interview took place in a room that was private and free from interruption. The students were made feel at ease and refreshments were offered. During the interview process, they were verbally briefed on the rationale for the study. Furthermore, an additional consent form was given to them to be signed, if they agreed to be interviewed and to have the

interview digitally recorded (Appendix C). All eight students agreed. Students were assured that they could withdraw at any stage during the interview, if they so wished.

With regard to the principle of justice, both confidentiality and anonymity were upheld throughout the study. All names and other means of identification were removed from the interview transcripts. Furthermore, the students were briefed on the researcher's teaching role within the University. The digital recorder was kept in a locked filing cabinet by the researcher. The interviews were saved as audio files on the researcher's computer and have since been removed, once interviews had been transcribed.

#### 9.5. RESEARCH SAMPLE

The sampling process, which was used in the qualitative component of the current study, was a form of purposive sampling, specifically referred to as a nested sample (Onwuegbuzie and Collins 2007). The sampling typology applied in the qualitative study was based on two dimensions, that is, the time orientation of the study, and the prominence placed by the researcher on each phase of the study (Onwuegbuzie and Collins 2007). This method of sampling stipulates that research participants of one phase are representative of a subset in the other phase. The time orientation of the current study was sequential and the quantitative component had the dominant status. The method of sampling adopted, in the initial phase of the study, was by means of a probability stratified random sample. During this phase of the study, a letter seeking the student's consent to partake in an interview at a later stage was included with the questionnaire. Of the 479 students who had participated in the quantitative study, 142 (30%) agreed to the proposition. Of these, 63 were from year one of their programme, 35 was from year two,

27 were from year three and 17 were from year four. Selecting students from the initial study was beneficial as they had completed the research questionnaires viz. demographic, WOCQ and the RSES and were, therefore, aware of the aims of the study. In qualitative research, it is necessary to have subjects who have an understanding of the social phenomenon in question (Bryman 2008).

Another criterion for inclusion in the study was that the students would have at least two years experience of university life. Phase one of the study commenced in 2007 and was completed in 2009. Therefore students, who had been in year one and year two at phase one of the study, were in year three and four respectively when phase two commenced. Being in third or fourth year would provide the students with the experience of having spent a good deal of time within the university system (Table 9.1). Their perception of what it was like being a first year student would provide useful information to the study. Furthermore, when choosing the student sample, it was considered important to have both male and female students involved in the interviews. Students were contacted during the interview process. Data saturation was reached after interviewing eight students. The sample size of phase two of the study concurs with the recommended sample sizes for qualitative research (Morse 1994; Creswell 1998; Creswell 2005).

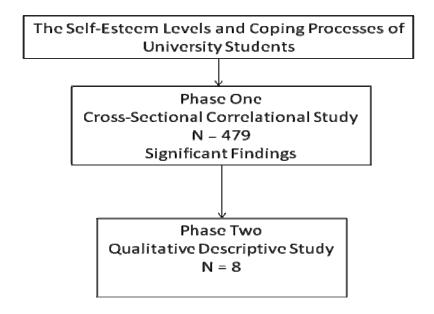
**Table 9.1.** Demographic details of age, sex, nationality, year of programme and programme of the eight students interviewed in phase two of the study.

Student Code	Age	Sex	Nationality	Year of Programme	Programme
0139	20	Male	Irish	Third Year	HSS
0031	21	Male	Irish	Fourth Year	HSS
0098	21	Female	Irish	Third Year	SET
0022	21	Male	Irish	Third Year	SET
053	20	Female	Irish	Third Year	SET
0071	21	Female	Irish	Fourth Year	SET
0037	25	Female	Irish	Third Year	HSS
049	21	Female	Irish	Third Year	HSS

## 9.6. RESEARCH DESIGN

Phase one of the study provided valuable and prolific information regarding the associations between the variables within the research study. Figure 8.5 in the previous chapter outlined the significant findings from the quantitative study. Seven of the ten hypotheses were accepted (Section 9.3). The focus of the qualitative component of the current study was to establish explanations and answers relating to gaps that had arisen from the quantitative findings (Carr 2009). For example, it was important to establish answers to questions such as the following: What are the causes of stress for university students? What is it like being a first year university student? What are the reasons for male university students using 'Distancing' as a coping process when dealing with stress? What does self-esteem mean to students? In line with the philosophical framework of critical realism, a qualitative descriptive research design investigated the answers to questions which go beyond those which are solely determined, by quantitative means (McEvoy and Richards 2006; 2007; Lipscomb 2008; Prowse 2010). Figure 9.1 outlines the sequence of the study. The qualitative descriptive design involved semi-structured interviews with a purposive nested sample of students (n=8) (Onwuegbuzie and Collins 2007). Qualitative research tends to focus on the individual aspects of the human experience and tries to capture them in their entirety, within the context of those who are experiencing them (Polit and Beck 2009). Leininger (1998) contends that qualitative research is a means of discovering phenomena and documenting unknown features of aspects of people's lives or life events. The qualitative method used in this study was a descriptive qualitative design. It is a design, which is described as being a very productive means of obtaining straight answers to questions that relates to practice and policy (Sandelowski 2000; 2007; 2010). Sandelowski (2000; 2010) contends that the qualitative descriptive approach ensures that the researcher remains close to the data and obtains

straight and minimally theorised answers to questions relevant to the study. Studies, using this qualitative approach, tend to derive information from the guidelines used within naturalistic inquiry (Sandelowski 2000; Hannan, Happ and Charron-Prochownik 2009). The findings from the qualitative data, which were analysed by means of thematic analysis, provided, in tandem with the quantitative findings, a greater insight into the reality of university students' self-esteem levels and their coping processes within the university setting. The findings from phase two have helped maximise the interpretation of the results from the quantitative component of the current study (Leech and Onwuegbuzie 2007). The findings have helped to construct a version of reality, as expressed by the students themselves (Yardley 2000).



**Figure 9.1.** Sequence of the explanatory sequential mixed method design study.

The results of the qualitative study, which are outlined later on in the chapter, have been integrated with the findings from the quantitative study in the discussion chapter.

# 9.7. DATA COLLECTION TECHNIQUE

Whilst prolific information was obtained in phase one of the study, by means of questionnaires, phase two of the study, utilised semi-structured interviews to clarify the findings in the quantitative study. The objective of using interviewing as a research technique was to obtain data relevant to the research topics in question and to allow the interviewees to outline their personal views and opinions on the areas under discussion (Streubert-Speziale and Carpenter 2007). Several types of interviews exist, namely, structured, unstructured, focus group, and semi-structured interviews. The type of interview, which is used during the research process, depends on the overall aims and objectives of the research study. If the research aims to receive comparable data then the structured interviews is the best approach to use. With structured interviews, the questions are standardized and the sequence of asking the question is determined in advance (Cohen, Manion and Morrison 2000). It is anticipated that with standardised interviews the degree of error is minimised (Moule and Goodman, 2009). In contrast, unstructured or informal conversational interviews allow the questions to emerge from the context of the interview. Focus group interviews make it possible for the researcher to obtain opinions and views of five to ten people concurrently (Moule and Goodman 2009). Semi-structured interviews were the chosen method for the current study because specific questions were required to be asked and it was also important that the interviewees had the latitude to offer their own examples and explanations to the questions posed (Polit and Beck 2009).

As the topics of self-esteem and coping are very personal topics, it was decided to use individual interviews. Furthermore, it was felt that respondents would be more forthcoming in individual interviews.

Interviews have many advantages and disadvantages and it is important, as a researcher, to be aware of these, in particular the disadvantages, so that they may be overcome where possible. The main advantages of interviews are a better response rate, and validity is enhanced as clarification and elaboration of questions are possible which result in more indepth information being provided by the interviewees (Cohen et al. 2000). The main disadvantages of interviewing relate to reliability issues such as interviewer bias and interviewee being asked different questions. The manner, in which these matters were addressed in the current study, is outlined in the following two sections.

## 9.7.1. Interview Process in the Current Study

Semi-structured individual interviews were the chosen data collection method used in phase two of the study (Carr 2009; Eley, Boyes, Young and Heagney 2009). This type of interview is the most popular method for collecting unstructured self-report data. Semi-structured interviews tend to be conversational and interactive in nature (Polit and Beck 2009). They were deemed suitable for this study as they permitted the researcher to ask questions from the interview guide, whilst providing a degree of latitude to ask other questions arising from the cues given by the students (Figure 9.2 and Appendix C). The second phase of the study had a clear focus, in that, it endeavoured to ascertain the students' views on the quantitative findings from phase one of the current study. However, it was also important that the interviewer and interviewee had the latitude to ask and provide information, which may not have been directly asked for, but yet relevant to the study. The interview guide allowed the student the autonomy to reply (Bryman 2008). To ensure consistency and control for reliability, all of the interviews were conducted by the researcher and similar wording used with all interviews (Cohen et al. 2000). It was of paramount importance to the researcher that a culture of respect, care and congruence

existed within the interviewing process. A private room was used for all of the interviews. The researcher ensured that mobile phones were placed on silent mode. Every effort was made to make the students feel at ease and an 'icebreaker question' was asked regarding how they were getting on with their study of choice. Refreshments were offered to the students. The overall aims of the study were outlined and the students were invited to sign the consent form for participation permission. The student's permission regarding the digital recording of the interviews was sought and the digital recorder was placed out of sight. The researcher was aware that the topic of self-esteem and coping had the possibility of raising issues for students. Information, regarding the university's counselling services, was offered to all students. The researcher's mobile telephone number was given to the students in the event of any problems arising or if they felt they wanted to add to, or remove, any material from the interview.

Silences and pauses during the interview occurred occasionally and the interview pace was determined by the student (Polit and Beck 2009). The interviewees were able to stop the interview at any time, if they chose to do so. All interviews ended on a positive note and the student was asked if they wished to add anything further to the interview. The interviews lasted between 45 and 60 minutes or until the core topics had been explored. The interviews were transcribed verbatim by a professional transcriber and were then transferred and saved onto the researcher's personal computer. A code was assigned to the transcripts. Furthermore, all traces of any means of identification were removed during transcription.

#### **Interview Guide**

Can you describe what you would consider to cause stress within the University setting?

How would you cope with that situation?

What would help you the most?

What does the university do to help students cope with stressful situation?

What could the university do to help students cope?

What is like to be a first year student?

What is your understanding of self-esteem?

How does self-esteem affect your life? What influences its development?

Male students have a higher level of self-esteem in comparison to females. Is this an accurate finding based on your experience? Why do you think this is the situation?

Each finding, from phase one, of the study was outlined and the student was asked was this an accurate finding based on their experience? Why did you think this is the situation?

**Figure 9.2.** The interview guide used in phase two of the study.

## 9.7.2. RIGOUR

Ensuring rigour, before during and after the interview, was very important. The previous section has addressed some ways in which methods of rigour were addressed during the interview process. This section will outline additional factors which had been taken into consideration.

In qualitative research, the researcher interacts with the interviewees to get close to what they think and experience, in terms of the subject of interest. Implicit in this type of research is the researcher's subjectivity. It was important for the researcher to be aware of her influence on the interview (Streubert-Speziale and Carpenter 2007). The researcher was aware of her own personal biases, and how they may influence the student responses (Cohen et al. 2000). The researcher had her own opinions on the findings from the quantitative study. It was important that these did not influence the responses of the interviewees. The researcher's biases were bracketed during the interview. To be in a 'grounded' and 'connected' state within oneself and to be in the 'here and now' by deep

breathing, was an important state to be in for the researcher. This allowed for good rapport with student and enhanced the researcher's listening skills. Being 'present' with the student helped both the researcher and interviewee to feel at ease which, in turn, facilitated a good interview (Polit and Beck 2009).

The digital recorder was checked before each interview for battery level and audibility. At least three days lapsed between each interview. This gave the researcher an opportunity to listen to the interview and to make notes and address any changes before the next interview. Being reflexive is a salient feature in ensuring rigour in qualitative research (Tashakkori and Teddlie 2010). Reflexive notes, which aided the analysis stage, were made immediately after each interview (Côté-Arsenault and Morrison-Beedy 2005). In the event of requiring clarification, the students were asked if they did not mind should the researcher need to contact them post interview. The transcripts were checked against the tapes for accuracy (Braun and Clarke 2006). Furthermore, a research colleague checked the transcripts for quality. All data were coded and inter coder reliability was independently checked on three occasions by a researcher colleague. Consequently, the coding process was thorough, inclusive, and comprehensive (Braun and Clarke 2006).

## 9.7.3. OVERVIEW OF THE DATA ANALYSIS PROCESS

The chosen method of analysing the transcripts in this study was thematic analysis. Many qualitative studies have engaged this method, solely or in combination with other methods, at the analysis stage (Lambert and O'Halloran 2008; Malik and Coulson 2008; Drysdale, Jahoda and Campbell 2009; Yu-Chang, Yu-Hu,i Matthews and Carr-Chellman 2009; Weatherhead and Daiches 2010; Baker and Krout 2011; Morgan and Thompson 2011). Braun and Clarke (2006)

describe thematic analysis as a process whereby repeated patterns and themes within the data are identified, analysed and reported. They argue that themes do not simply emerge, but are derived by the researcher who plays a very active part in deciding upon the themes of the experiences, meanings and reality of the subjects. Braun and Clarke (2006) contend that thematic analysis is independent of theory and epistemology. The current study used the philosophy of critical realism. The philosophy of critical realism, which is the philosophy of 'being', embraces establishing, not simply the cause and effect but, the reality of the experience. Critical realism purports that the context of our being has a great influence on one's beliefs and perspectives and these aspects are seen as real phenomena (Bhaskar 2002; Bhaskar and Danermark 2006). This philosophy was considered when the themes from the study were being developed.

With thematic analysis, the researcher must decide whether or not that the theme reflects the salient features within the overall research question. It is a very transparent process of analysis. According to Braun and Clarke (2006) there are six phases to the process viz. becoming familiar with the data, generating initial codes, searching for themes, reviewing themes, defining and naming the themes, and finally, producing the report. In the discussion chapter of the current study, the themes were combined with the findings of the quantitative study to outline a cohesive story. They were also combined with the overall research questions, and theoretical, and philosophical underpinnings of the study (Attride-Stirling 2001).

In the current study, all transcripts were read and reread in detail, and, comments and ideas documented. Each data set was given equal and in-depth consideration. As a result of this process, the researcher was very familiar with the data. Considering the overall research aims,

elements were extracted from the data sets and the resultant codes were subsequently linked into provisional or initial themes (Braun and Clarke 2006). The coding process was thorough and the themes were connected across all data sets. The codes were 'theory-driven' as the research questions had been guided, mainly, by the significant findings from phase one of the study. All data, which were related to each theme, were grouped together. The five original themes were revised and reduced into three themes. The revised themes were checked to ensure their relevance across the entire data set. Checking the three final themes across all data sets ensured that the themes met the criteria of being coherent, distinctive and consistent (Braun and Clarke 2006). The themes were validated by discussing them with the research supervisor and with a colleague with research experience. The thematic maps of the themes and codes are addressed in the following sections. An example of the thematic coding of an interview is provided in Appendix C.

#### 9.8. Data Analysis - Introduction

The qualitative element of the study involved interviews with eight of the respondents. During the interviews, the interviewees articulated their views on stress within the university setting. Additionally, they outlined some ideas, which may be of benefit to university students in dealing with stress, coping with stress and managing self-esteem issues. This phase of the study provided an opportunity to ascertain university students' views and explanations on the significant findings from the quantitative phase of the study.

The thematic analysis process, which had been briefly addressed in the previous sections, will be discussed in more detail in the following paragraphs, by initially outlining the two

thematic maps which evolved from the data sets of the study (Braun and Clarke 2006). Three main themes evolved namely, (1) The experiences of stress, (2) Social supports and coping and (3) Explaining self-esteem and gender. The following sections are organised around these themes and will firstly discuss the progression of the thematic maps.

#### 9.9. DEVELOPMENT OF THEMES

To become familiar with the data and to make sense of what the students were saying within in the context of the study, the data sets were examined in detail. There were five stages to the development of the themes process. Table 9.2 identifies these stages. Initially, so as to recognise any transcription errors, the researcher compared the written transcripts of the interviews to the audio-taped versions. To attain familiarity with the data, the transcripts were read for the second time, word by word, and reflexive notes were made by the researcher. The third phase of the coding process was the rereading of the data sets and the identification of features within the data (Tuckett 2005). Key words and statements were highlighted on the transcripts by the researcher. These keywords were documented, as initial codes, at the side of the transcripts. Repeated patterns of meaning were identified and these patterns or themes were recorded in a separate document (Braun and Clarke 2006). The codes were collated and tentative themes generated. A sample of the codes and data extracts may be viewed in Appendix C. The focus of the qualitative descriptive design used in the current study was to remain close to the data in order to obtain straight and minimally theorised answers to the questions relevant to phase two of the study (Sandelowski 2000; 2010).

A research colleague reviewed the themes within the context of the datasets. All data relating to each theme were collated and checked to ensure that the themes were linked to the codes and that they made sense. The initial thematic map was comprised of six themes, (1) Causes of stress, (2) Difficulties in first year, (3) Experience, age, and, coping, (4) Dealing with stress, (5) Boys and girls and self-esteem, and (6) Influences on self-esteem development (Figure 9.3). Each one of the themes had many interrelated or shared codes (Table 9.3).

The initial themes were reviewed and some of these themes formed a coherent pattern (Braun and Clarke 2006). The initial themes viz. (1) 'Causes of Stress' and (2) 'Difficulties in First Year' shared similar codes and, as a result, the final theme 'The Experiences of Stress' was created. All of the codes used for the initial codes of (1) and (2) were included in the final theme. The initial theme of (3) 'Experience, Age and Coping' shared codes with the initial theme (4) 'Dealing with Stress'. Consequently, these sub themes were combined into the final theme of 'Social Supports and Coping'. This final theme contained all of the codes which formed the initial themes of (3) and (4). Finally the initial theme of (5) 'Boys and Girls and Self-Esteem' shared codes with the initial theme (6) 'Influences on Self-Esteem Development'. The subsequent final theme, which evolved, was 'Explaining Self-Esteem and Gender'. All of the codes which formed the initial themes of (5) and (6) were included in the final theme (see Figure 9.4). The final themes were reviewed within the context of the datasets and the essence of the final themes was identified. Consequently, three final themes arose which related to the psychological concepts of stress, coping and self-esteem.

**Table 9.2.** Phases of the development of the themes using Thematic Analysis.

Phase	Description of the Process			
1.	Compare written transcripts of interviews with audio-taped interviews.			
2.	Read transcripts and make reflexive notes.			
3.	Reread transcripts and identify features within the data (codes).			
4.	Interpretative analysis of codes and the development of the initial themes (units o analysis). Initial thematic map developed.			
5.	Themes reviewed within the context of the datasets and the essence of the final themes identified. Final thematic map developed.			

Table 9.3. Initial themes with codes and final themes with codes.

Initial Themes	Codes	Final Themes	Codes
1. Causes of Stress	a.Balancing	The Experiences of	Examination- Process
	b.Body Image	Stress	Comparisons
	c.Assignments		Balancing Life
	d.Dress Code		First Year-Experiences
	e.Finance		
	f.Social Life		
	g.Deadlines		
	h.Exams		
	i.Comparisons &	ķ	
	j. Media		
2.Difficulties in First	a.Exams		
Year	b.Finance		
	c.Social Life		
	d.Deadlines		Personal- Development
			Friends
3.Experience, Age &	a.Experience	Social Supports	Distraction
Coping	b.Expressing-Oneself	&Coping	
	c.Counselling		
	d.Planning		
	e.Taking a Break		
	f.Manage		
4.Dealing with Stress			
4.Deaning with Stress	a.Boys and Friends		
	b.Distraction		
	c.Macho Image		
	d.Compartmentalise		

e.Girls and Friends

f.Feelings

g.Expressing- Oneself

h.Planning

i.Taking a Break

j.Manage

5.Boys & Girls and Self-

Esteem

a.Girls Critical

**Explaining** 

Self-

Media Society

Esteem

Confidence

c. Comparisonsd.Macho Image

e.Worth

b.Friends

6.Influences on Self-**Esteem Development**  a.In Yourself

b.Family

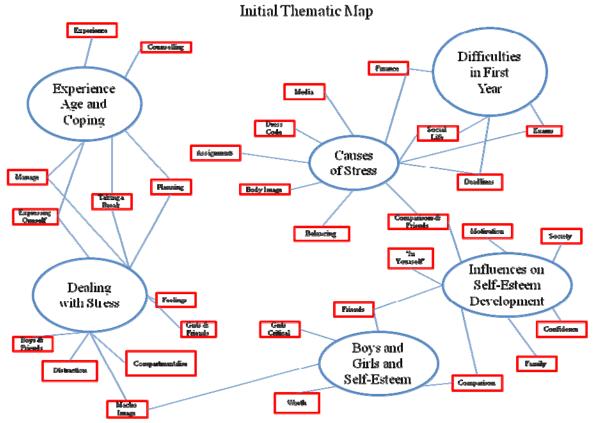
c.Confidence

e.Society

f.Motivation

g.Friends

h.Comparisons



Figur e 9.3. Initial thematic map, showing six main themes

# Final Thematic Map

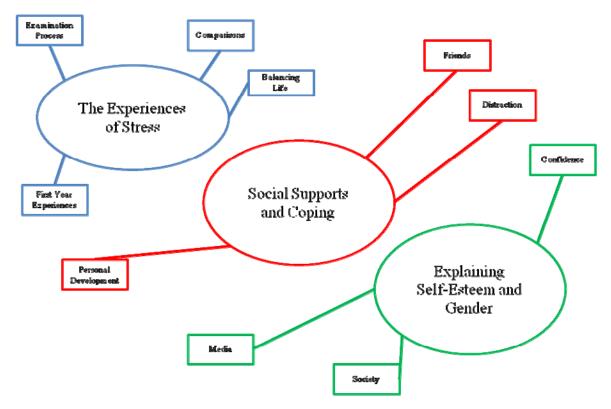


Figure 9.4. Final thematic map, showing three main themes

The following section outlines the codes and issues discussed under the first theme viz. 'The Experiences of Stress'.

#### 9.10. THEME ONE-THE EXPERIENCES OF STRESS

It is inevitable that students experience some degree of stress while attending a university programme. The majority of students interviewed expressed very similar sources of stress. However, there was some degree of variance between what boys had experienced, as a source of stress, in comparison to girls. Five distinct sources of stress were expressed by the students i.e., exams, deadlines for assignments, academic comparisons, appearance comparisons and balancing social life with university life. A very common source of stress to all the students interviewed was the whole examination process ranging from doing exams, meeting deadlines to worrying about the results. The majority of students mentioned exams as a cause of stress:

"Exams and assignments". (053) Another student, in a similar vein, said:

"...probably just exam time really. You know the week maybe just before exams you would kind of get stressed out or trying to psych yourself up for exams". (0031)

However, students considered the meeting of deadlines for assignments to be a greater source of stress.

"It's usually the deadlines. Basically, there's not enough time given to complete them and then you're kind of cramming down the hours till you have to hand it up and stuff". (0139)

In addition:

"Deadlines and projects. Deadlines, it is so different from secondary school". (0022) Some students reported that many of the assignments are required to be submitted within a very similar time span:

"The majority of them have to all be completed, either on the same week or on the same day". (0098)

## In addition:

"I'm not good at written assignments...So the majority of lecturers go for assignments ... I do them but they're tough and it can be very, very stressful if you were to have two or three of them in the same day then. Even though I am in third year now it is still hard to get used to not really knowing what exactly a lecturer wants". (053)

The girls, interviewed, noted the pressure they experienced through the making of comparisons with other students, from an academic perspective. One student remarked:

"I suppose it freaks me out a bit as well if I see everybody flying through things and I can't do it. That would make you think yourself that maybe you should not be in this course... it is not good like, you panic". (0071)

Similarly, girls spoke about the high expectation students place on themselves:

"It would be the, I suppose, the level of expectation and probably even within the class that there would be people who just do so well and I'm just thinking, you know God, I'm only trying to make it. The pressure of the peer pressure of the class is great..." (0037)

Concurring with this another student commented:

"Like you'll find it a lot more stressful if you're sitting there and you go okay I haven't my assignment started yet and someone is beside you going I've mine nearly finished and then you're going oh ......!". (0098)

Another female student expressed her upset in her observations of other students" progress:

"What bugs me is that you could put hours and hours and hours into study and then someone else then, one of your friends could be smart and they don't have to study at all and they're still getting by, they still do well, that's what, that's what really upsets me yeah." (0071)

As well as comparisons existing within the academic aspect of university life, the area of body image and dress was also seen as a source of stress to the girls interviewed. Implicit within the interviews was the interdependent relationships girls had with each other.

## One student noted:

"So girls, especially friends, they will always compare assignments, your assignments do you know? They will also compare what you are wearing on a night out. A lot of comparison yeah." (0071)

In a similar note, a student observed that:

"Even between friends we would look and say doesn't she look really good today I wish I was like that — even though they are harmless comments it's a lot of pressure". (049)

Another student's perspective was expressed as:

"Body images as well because everyone kind of tends to dress up and look their best and you feel huge pressure to kind of look good all the time". (053)

Similarly:

"I mean you open up magazines and there's girls there going look at Cheryl Cole's weight loss or something like that, that the whole society is run around comparisons". (0098)

One girl remarked that one's appearance did not appear to be an issue for the boys within the class:

"When you're coming into class, you know, for girls there's makeup and hair, your dress whatever. It's easier for a fella you know what I mean to come in and feel comfortable". (0037)

The last source of stress expressed by most of the students interviewed was the difficulties they experienced in trying to balance relationships, social life, finance with the academic aspect of university life.

"The social aspect as well because there can be a lot of pressure to do things and go places and you mightn't feel ready for it but you kind of feel like you have to do it because everyone is doing it. Trying to get money, having to work that is kind of stressful as well trying to do exams and all". (053)

Another student remarked:

"...and I suppose again planning my workload and my college life and as well as my social life is very stressful". (0037)

One student said that academic stress was the least important aspect within her life:

"Definitely I get stressed out with the likes of parents, boyfriends. College would only be the icing on the cake. When you've got all of these things going on in your life and then you have to go to College you just really are like (expletive) this college." (0071)

Similarly, another student said:

"Outside life feeds into everything like, do you know? Like if you're stressed in your outside life you're going to be stressed in college". (0098)

In a similar vein, another student highlighted the stress of balancing the different components of

life:

"Boyfriends. I tend to bring it into college work and I cannot focus and do you know if one thing, if one small thing happens I make it a big thing. Managing everything, social life, and I'm the Treasurer of the ...club as well so trying to get down to training everyday juggling it all is so stressful." (0049)

The first year in university, was expressed by the students, as being a time of great stress. Students indicated that there was a difference between how first year students coped with stress in comparison to students in third or fourth year. Many of the students, interviewed, provided some suggestions which could be of assistance to prospective first year students who may experience difficulties when they are first exposed to a third level institution.

When reflecting on being a first year university student, many of the interviewees noted that it was a difficult time. When asked to describe first year one student simply said:

"*First year – chaos*". (0022)

Another student said:

"A lot more expected of you compared to secondary school". (0031) Similarly:

"Daunting, really daunting, because it was so huge and there were so many people and so many buildings and trying to figure it all out and you know it was hard." (053)

The interviewees commented that secondary schools do not prepare students sufficiently for university life, for example:

"In secondary school you're given a deadline, you're told exactly what to do and you have to have it done and the teacher will be constantly looking at it ....in college you're given a project and a deadline in three months and you're not told anything you just have to do it." (053)

It was highlighted by one interviewee that students, who are in first year, only have the experience of dealing with the Leaving Certificate examination process.

"So like in first year it was all new to us, like we were only used to the Leaving Cert exams, like we were always going towards that exam, here you're, it's kind of four

months to kind of get through these exams and four months for another set of exams". (0139)

Furthermore, another student remarked:

"The goals are changing all the time, like in first year for the previous two to three years we had been working towards just Leaving cert, leaving cert, leaving cert and we didn't know how to deal with having big exams every year".(0031)

When asked to elaborate on the reasons why first year students may experience difficulties, they highlighted two factors which led to this anomaly, lack of experience and being away from home for the first time. The students, interviewed in this study, were third year students and they indicated that they had learnt from their experiences within the university in how to deal with stresses they now encounter. They remarked that, with hindsight and experience, they cope more adaptively with stressful situations than they did in first year.

### One student remarked:

"Like honestly I did not plan ahead in first year, I stressed more probably coming up to the exams, I probably did not care at all then. It all built up towards the end. Whereas now it's constant like I keep on top of it kind of". (053)

Similarly:

"Yeah well I'm starting my assignments now like - in first year I probably didn't, I didn't print off stuff and I was getting up late and not going in, well now I kind of print off my stuff before I go out or I plan everything in advance kind of or I try to anyway". (0139)

In relation to lack of experience of dealing with university life in first year, one student noted:

"Oh definitely down to experience yeah definitely down to experience but there's no other way to it but you have to plan for things I feel myself anyway, yeah." (0037)

For example, one student said:

"When you are in third year you are older and you have a bit more sense about you, you know that you can't put things on the long finger and you have to kind of tackle things" (0022)

## Another highlighted:

"I plan more and I am probably more responsible as well in the sense that I start earlier, and I make sure that I don't leave everything till the last minute". (0098)

Some students indicated that, in first year, they coped with the pressure and stress of university life by, for example, avoiding the situation or getting angry with someone:

"Yeah well in first year I probably would drink to cover, like to cover the anxiety I was under due to tests and things like that so yeah". (0139)

Another:

"I remember first year because it was all so new and you kind of just, you got angry at the whole thing and you just think oh I'll leave this bit out – it won't come up. I am now in third year and I can see that I am doing everything now, planning, it has to be done". (053)

In a similar vein:

"When I was in first year I often left assignments to the last minute and do you know it was fairly stressful trying to get them done and you're putting yourself under an awful lot of pressure so taking it bit by bit is a lot better in the long run. Now in third year you have a bit more sense you don't start shouting at people because something does not go your way". (0098)

The students' remarked that they learned to plan through trial and error, and, the experience gained from being in university. During the first year in university, students noted that being away from home for the first time influenced their lack of attending to academic issues and their engagement with more risky behaviours such as drinking. As one student commented:

"I would say it might be because we were in a new place without our parents, without supervision .....you are willing to take more risks". (0031)

Furthermore, one girl noted:

"Maybe I had too much freedom as well...living out from home, you can do what you want, there are no controlling parents, and they're out of the picture like". (0071)

During the interviews, students were asked about the advice they would give to first year students in relation to coping with difficulties that they may encounter during their first year in university. The advice ranged from engaging in better time management to attending counselling sessions. In relation to better planning, one student said:

"Take one step at a time that's all you can do, don't leave your assignments to the last minute, get over this oh it's only my first week back, it doesn't matter..... Otherwise you're going to be falling slowly, slowly behind". (0098)

Another student remarked:

"Deal with stuff when it happens and do not leave it, that is huge, just handle everything instead of avoiding it". (0049)

In a similar vein:

"Do your work early and don't kind of leave everything on the long finger, kind of procrastination, get it done and out of the way and just plan your time well and kind of make friends and kind of be happy as well, it's not all work like". (0022)

The importance of talking to friends was also emphasised. One student highlighted the importance of talking to someone, especially when things are getting you down:

"I suppose someone to talk to if things were getting you under the weather". Having good social networks when you're first time in college like because if you're on your own and down it's kind of hard in first year". (0022)

Another expressed their positive influence of having friends:

"Having a core group of friends is very important. I had a good group of friends so I was comfortable with them". (0071)

More students talked about the importance of taking time out and relaxing:

"Just take some time out and do what you want to do, do something like go to the cinema or go out or just go for a walk and clear your mind and just know that everything will work out eventually, it may be bad now but you know things do get better and easier". (0031)

Moreover:

"Joining societies is good". (0022)

Some mentioned the importance of the counselling services:

"I would say go to counselling here because it is really good and just try and relax really". (0053)

Another noted that:

"More emphasis on kind of social and personal development rather than just academic. It's not part of peoples studies but it's important for being a person like to have good self-esteem and for later life like to prepare you for outside of college".(0049)

In relation to self-development, one student remarked that it was important that personal development classes take place in small groups rather than a large group. As this area involves self-disclosure, the students felt that it would be a futile exercise if such self-development

programmes, were to be carried out in a large group setting. Having confidence was seen to be a very important factor in helping one deal with life. One student highlighted that there is stigma attached to attending counselling:

"Yeah you have to be careful who you tell if you are going to a counsellor for some people go oh she is depressed and she's on tablets. Do you know Irish people tend to think like this whereas if you are talking to an American they see a lot of merit for attending.... so definite difference in opinion". (0049)

Whilst most students expressed similar experiences of academic stress, only the girls remarked that they experienced both social and academic comparisons, between friends and from other sources such as media, as a source of stress.

The following paragraph discusses some of the exemplars, which led to the development of the third theme viz. social supports and coping. Whilst many studies found that females tend to use more emotion-focused coping such as seeking social support (Carver et al. 1989), as opposed to males using problem-focused (Lazarus and Folkman 1984), the following sections highlight that both male and females also shared some coping processes.

#### 9.11. THEME TWO-SOCIAL SUPPORT AND COPING

From the interviews, there was a distinctive difference between the coping processes which were used by male and female students, when confronted with stressful situations. Whilst there was evidence of commonality in some coping strategies, there was, in some cases, a different rationale for its use. If people are confronted with similar problems, it has been found that there is no gender difference in the coping process used. In the previous section it was seen that friends, whilst playing a positive role in girls' lives, are also a source of stress, through the

process of comparisons. However, female students clearly indicated that social supports were very important in helping them cope with stressful situations. For example, one girl remarked:

"Girls you know, tend to express themselves more about everything to other females". (0037)

Likewise:

"When I'm stressed I suppose I talk to one of the girls in my course because it's reassuring to hear that they're in the same shoes". (0071)

In addition:

"Well we'd all study together all of our friends and we'd all kind of panic a bit but we kind of support each other I suppose and just we take breaks when we can and try and cope that way but it does get too much at times and you find it hard to cope". (053)

Alternatively:

"Probably friends and family mainly like you know, take me away and just go look you've done enough, it would be worse if you've done nothing at all and you've done something so just leave it a while and go back to it later if you want and sometimes you just need someone to say that to you, you can say it to yourself but you'll feel guilty..".(0098)

When stressed the boys tended to use friends more for distraction purposes as opposed to seeking help or advice or venting emotions. One student remarked:

"Well friends and stuff would help you, like if you're stressed ring a friend at home or go out and meet them for lunch or something like that and that can change the topic of conversation, get your mind off it (stress)". (0139)

Another male student said:

"Yeah, yeah friends are good, like they'd relax me; they'd be a distraction as well like so that's good as well". (0031)

The question was put to all students as to why girls tend to find social supports more beneficial in dealing with stress in comparison to boys. Both male and female students made very similar points.

One girl remarked:

"Yeah I just feel maybe I suppose down to the whole thing like girls you know tend to express themselves more about everything like to other females and whatever and boys don't".(0037)

One female student noted that there is an expectation on boys to behave in a certain way. It is ok for girls to talk to their friends and get upset but the same is not ok for boys.

"like the whole masculinity thing that they're on top of their emotions and all that crack whereas girls, sure girls can cry and people think nothing of it do you know whereas if you see a boy crying it could destroy him, even with his friends, he could be destroyed so they don't want to risk that". (0071)

On a similar note, another female student said:

"I think girls tend to like to talk to someone they know more than someone they don't know whereas guys would rather talk to someone they don't know —talking to someone they know may be seen as a sign of weakness if you're, upset....... do you know you can't be crying if you're a fella like". (0049)

Some of female students indicated that their male friends could almost compartmentalise different aspects of their lives and that the expression of feelings was not the 'done thing'.

"Well like I just know from my own experience like, I have a close group circle of boys and a close group circle of girls, when girls meet together they talk about college, they talk about the jobs they're in, when the fellas meet they talk about the football that's on or the soccer that's on.......Yeah they kind of like leave college at college whereas girls bring it home with them. There is no expression of feelings with fellas". (0098)

A number of male students indicated that boys find it difficult to tell their friends that they are under stress.

"Girls find it easier to talk amongst themselves like girly chat kind of way and fellas might seem like stupid basically if they talk to their friends about like being stressed or about not being able to cope with things and stuff like that".(0139)

Another male student added:

"Because I don't know, girls are always very close knit and friends and I suppose they find it easier to talk about feelings then men anyway". (0022)

When asked how they normally cope with stress some male students, interviewed, referred to going out and forgetting about things:

"I'd just take time out; go for a walk or something like that, especially if you're very stressed. Just take a break, watch TV or something for half an hour just get your mind off it and go back to it then. Leave it, go to sleep and get up the next morning early. Taking a break, getting away from the actual factor that's making you stressed". (0139)

#### Another male student said:

"I suppose kind of getting distracted away from it, yeah playing hurling and stuff that would be another side of it as well I play a lot of hurling and football and stuff like that so. Just takes your mind off it and helps, a bit of release from it and maybe from everything". (0031)

## One male student highlighted that:

"Yeah I may be reluctant to but you know you have to deal with it because it won't go away by itself". (0139)

Some of the female students mentioned counselling as an option and said that they could not see boys seeing counselling as an option.

## One girl expressed that:

"I know there's counselling, I went for a few months last semester 'because everything got on top of me ...so I went for a while and that was good". (053)

## Another student highlighted:

"I can't see any guy I know going to a counsellor". (0049)

Both male and female students reflected that they try to plan things in relation to the management and completion of assignments so that they do not allow things to get too stressful.

"I like to get the projects done early". (0022)

## In addition:

"Yeah plan it out well in advance like do you know days to go to college and stuff to get the projects done and just try and get them in early before I get stressed out". (0037)

Likewise:

"I plan it out yeah, it might not go according to plan but I plan it out you know I try to". (0031)

The third and final theme is addressed in the following section.

### 9.12. THEME THREE-EXPLAINING GENDER AND SELF-ESTEEM

The three main areas, addressed under this theme were the students' understanding of self-esteem, secondly, gender differences in self-esteem and finally influences on the development of self-esteem. A question was posed during the interview, as to what the participant understands of the term self-esteem. The majority of students, both male and female, responded in a very similar way. Their overview of self-esteem was described in terms of words like, 'confidence', 'motivation' and 'happy with oneself'. All students agreed, with the findings from phase one of the study, that individuals who had higher levels of self-esteem used more adaptive coping processes and vice versa.

Some male and female students referred to appearance when defining self-esteem. Even though global self-esteem was not mentioned, the definitions given by the students were very akin to Rosenberg's definition of global self-esteem. One girl remarked:

"I suppose the way you look at yourself, the way you think you are, what you think you're worth really". (053)

The above exemplar outlines the reflexive nature of the self as outlined by Rosenberg (1965). Similarly, another girl highlighted:

"Self-esteem I suppose would be how one pictures themselves, one's perspective of them self". (0071)

Confidence was a word that was a common theme, evident in many of the students' portrayal of self-esteem. For example:

"Confidence probably, do you know feeling capable of getting up in the morning and going out and being able to sit up in your lectures and pay attention in your lectures and do your work confidently without kind of going oh God I hate this." (0098)

Being your own person, and being "in yourself," was also expressed as being a component within self-esteem:

"I don't know being able to walk into a room and not feel like everyone's looking at you and going and judging you, just being able to go you know so what". (0031)

Another student described it as:

"I suppose how confident and how you feel in your own skin and I suppose how happy you are with yourself yeah and your confidence in your own ability and stuff like that". (0022)

Being motivated was a characteristic outlined as a central tenet of self-esteem:

"Your personal drive behind you, motivation, personal motivation kind of...." (0139)

Moreover:

"How motivated you are, what kind of a person you are I suppose" (0071)

Some female students linked appearance and looks with self-esteem. Dress and the importance of how girls look were mentioned on many occasions throughout the interviews:

"I always thought it was looks". (0037)

One girl remarked that appearance is not an important issue for boys but a confident image is:

"Guys even average looking, not the best looking fellas can have the biggest confidence because they know that if they appear confident then girls are like oh what am I missing? And they'll still. Do you know guys I think uglier guys can get girls better...? I know it is one aspect of it but that's how I would see the self-esteem thing". (0049)

One girl defined self-esteem in terms of what not having good self-esteem was like:

"If you don't have good self-esteem I suppose you won't have confidence, you won't be able to, I've always had like poor self-esteem so I've struggled like, I was like, I'm a lot better now but I used to be very, very shy and any kind of closed, you could close off a bit let's say you know to making new friends and things like that.". (053)

Even though both male and female students' understanding of self-esteem were similar, generally they believed that there was a difference between the levels of self-esteem experienced by boys and girls. One female student indicated:

"...all of the men within the class would be very confident, able to put their point across and they are like oh just very big personalities...they can steer the class.....they would have higher self-esteem. They would be no shrinking violets...yeah they are confident men yeah." (0037)

One male student agreed that males might appear to have higher self-esteem compared to girls but that:

"...fellas probably compete with each other ...they might not have a high self-esteem but they probably portray that they do better than the way girls do". (0139)

The rationale for some male students appearing to have a high self-esteem, when in fact they may not have, was that there is a pressure on them to be seen as being strong. As one male student put it:

"Just to keep on top like you know on top of the game kind of like to come across better than other people where girls don't really care about that you know..." (0139)

Some female students highlighted that a social image exists, whereby boys have to appear to be strong and thus they portray that their self-esteem is high:

"They might be afraid if someone found out they might feel weak or something like that. I suppose they do have pressure on them to feel that they have to be strong and there is nothing wrong with them I think there is that". (0049)

Similarly:

"It is the macho image yeah but then again sometimes it's a cover up because they just need to fit in.....it's very important to keep that masculine, macho image" (0071)

In relation to girls having lower self-esteem to boys, one male student remarked that girls are tougher in the way they judge themselves and for many reasons:

"They have more of a tendency to kind of judge themselves a lot more maybe ...like they feel more judged as well. They are more judged in this world. I mean all those shows like Americas Next Top Model and all saying how they should be and all that. They judge themselves more than actually they have to". (0031)

Another male student reiterated this point:

"...women would be kind of very critical of their appearance and a lot of women might be like that and very critical of themselves whereas I don't think men would be as tough on themselves".(0022)

One girl remarked that boys are more relaxed about life and, as a result, their self-esteem is higher:

"Fellas brush things off a lot more easily than girls... Like you could be fretting over an outfit for Saturday night whereas a fella is sitting down going I am going to put on a pair of jeans and a top like do you know who cares? You know even from your day life to college life men just are more relaxed like". (0098)

In relation to the factors that impact on the development of self-esteem, the majority of students referred to the influence of family and friends. One student remarked:

"Well I suppose first off your family how they support you and how they might see you and what they tell you as you grow you up. If they say you know oh don't do this because God knows what the neighbours will think or else they'll say you know do what you want as long as it makes you feel good but just respect others. So well, that is what my parents taught me like yeah be yourself but do not disrespect others." (0031)

## Alternatively:

"I think it's a lot to do with your family when you grow up and stuff." (0139)

One student highlighted that children introject and absorb every message they receive from their parents and friends:

"I used to be quite overweight as a child and I used to remember when I was very young like other kids saying things and they'd build up and then you know my parents might say things but in a kind way but I would still keep it all in and I would remember them and I still remember them, so I suppose I kind of just, it stays with you". (053)

Throughout the interviews, the importance of friends was a very strong message, put across by many students:

"I suppose friends as well like if you've got a good network of friends who kind of support you ...." (0031)

The students have provided the study with many suggestions and opinions, as to why boys present with higher levels of self-esteem to girls. It is evident that students have identified the important role that one's self-esteem has in one's life.

### 9.13. CONCLUSION

The research design, outlined in this chapter, provided a rigorous framework in obtaining a more enlightened perspective from university students (n=8) on the associations between, self-esteem levels and coping, within the context of the overall study. The significant findings, arising from phase one of the study, provided a vast amount of information regarding the topics in question, semi-structured interviews provided an account of the students' inferences on these complex areas. The quantitative component of the study was the major phase of the current study and guided phase two. Thematic analysis was conducted on the interview transcripts and the emerging story from the qualitative study was outlined in the chapter. The main themes and their development were mapped and explained, with exemplars from the students providing support for the findings.

The exemplars provided by the students, interviewed in the current study, would suggest that life might be tough for many students within a university. All aspects of their lives are interwoven and if there are problems, for example, in their personal relationships, then it has a ripple effect on other areas of their lives. Explanations for the significant findings, from phase one of the study, have been enlightening (Chapter 8, Figure 8.5). Whilst the students have agreed with the findings, the picture that they have presented has provided more clarity to the overall study.

In phase one of the study there was very significant association between female students and the use of 'Social Engagement' as a coping process. In phase two of the current study, exploring the area of friendship and students revealed the importance of having

friends, in particular for female students. What was interesting was that, whilst friends helped girls in coping with stress, friends were also a source of stress for girls. The interdependence the female students had with their friends by, for example, comparing their lives with them was very evident. Conversely, the boys, in the study, found that their friends were a great source of distraction from stressful encounters. The quantitative study found a very significant association between male students and the use of 'Distancing' as a coping method.

Furthermore, the findings from phase one of the study, found that male students had significantly higher levels of self-esteem (M =22; Md = 22; p <.001), in comparison to the self-esteem level of female students (M= 20; Md = 19; p < .001). In the qualitative phase of the study, it was no surprise to all students, that boys had higher levels of self-esteem compared to girls. The portrayal, of boys to be strong and competitive and girls to be critical and judgemental of themselves, was apparent from the interviews. All the students agreed with the association between higher levels of self-esteem and the use of adaptive coping processes. Furthermore, they agreed that students with lower levels of self-esteem tend to use more avoidance/emotion-focused coping.

A significant association between first year students and the use of 'Confronting' as a coping method arose from the quantitative study. In the qualitative phase of the study, the students agreed with this finding. Furthermore, they provided explanations for this finding and gave advice to first year students, in relation to dealing with stressful matters, within the university setting. Students aged twenty-one years of age and over presented with a significant use of 'Positive Planning' and 'Positive Self-Reflection' coping processes, in phase one of the study. The students explained, in the qualitative study, that

with experience and help from friends and other sources, that one's coping processes become more adaptive.

The one significant finding from the quantitative study, which the students were unable to explain, was the link between the use of 'Confronting' coping processes and students who are enrolled in SET programmes. The findings from both phases of the mixed method explanatory sequential study are discussed collectively in the following chapter (Creswell and Plano Clark 2007).

# Chapter 10. **DISCUSSION**

#### 10.1. Introduction

Behind the facade of image and distraction, each person is an artist in this primal and inescapable sense. Each one of us is doomed and privileged to be an inner artist who carries and shapes a unique world.

(O'Donohue 1997, p. 15).

This study has looked at the relationships between both self-esteem and coping with the variables gender, age, year of programme and university programme using a stratified randomly selected cohort of university students (n=479). Furthermore, it has investigated the predictive nature of self-esteem with coping. As very few studies have used mixed method approaches in this area of research, an explanatory sequential mixed method design has been used to provide a comprehensive understanding of the expansive subject areas of self-esteem and coping. Furthermore, one of the strengths of the current study is the use of a stratified random sample of university students, from an Irish perspective. Whilst the questionnaires used in the study provided a considerable degree of objective information regarding the subject area, the interviews (n = 8) augmented the findings by providing an in-depth logical explanation, from the subjective perspective of university students, to some of the statistically significant findings generated within the quantitative component of the study. The theoretical framework used in the study is the Lazarus and Folkman (1984) Transactional Model of Coping. The fundamental principle driving this model is that coping is a process, and its outcome is influenced by the appraisal process, which is initiated when an individual encounters a potentially stressful episode. The model highlights the dynamic interaction between the individuals' characteristics, appraisal of the event, the stressor in the environment, the individual resources readily available to them, and the individuals' emotional and behavioural responses (Aldwin 2007)

In line with the author's world view, which is guided by the principles of humanism, it was decided that critical realism was the most apt philosophical paradigm to underpin the entire study. Attitudes, beliefs and ideas exist behind the causal and statistical relationships within the study. The essential perspective of critical realism guides the study, and elucidates the significant findings and the beliefs and views of both the participants and the researcher, integrates them into a broad understanding of self-esteem and coping within the milieu of a university.

From a quantitative perspective, the study has found a significant association between self-esteem and gender, specifically, a strong association between higher levels of self-esteem and males. However, the effect size of the significance ranged between small to moderate effect. Eventhough the male students had significantly higher levels of self-esteem in comparison to the female students, the level of self-esteem for the females was within the mid to high range of self-esteem. Furthermore, significant relationships exist between higher levels of self-esteem and the use of both problem-focused coping and the more adaptive emotion-focused coping processes. Lower levels of self-esteem are significantly associated with the use of emotion-focused coping namely, disengagement and wishful criticism. In relation to the year of programme and the use of confronting coping processes. Students aged over 21 years of age have reported a significant use of both positive planning and positive self-reflection coping. The study highlights a significant relationship between the students who are enrolled in Science, Engineering and Technology programmes, and the use of 'Confronting' coping processes.

Finally, in relation to the predictive nature of self-esteem and coping strategies the statistics has revealed a significant link. The hierarchical multiple regression statistics reveals that self-esteem may be predicted by the following coping processes, 'Wishful Criticism and Escape', 'Disengagement' and 'Social Engagement'.

The above significant findings from the quantitative component of the study guided the qualitative element of the research. In phase two of the study, the students express their views on the many forms of stress which students experience, within the academic environment. The first year in university has been identified as a particularly stressful time for students. In addition, even though exams and assessments are an obvious source of stress for students, balancing all aspects of their lives has been acknowledged by the students as being very demanding. Gender differences in coping processes and the students' explanations as to why these differences exist, has also provided prolific insights. Self-esteem has been explained in relation to what it means to students and they have outlined their views as to why male students have higher self-esteem in comparison to girls.

The following chapter will discuss the findings from both the quantitative and qualitative components of the study in a collective approach, relating the findings to previous research and theoretical perspectives. The first section discusses the findings in relation to the students' (n=8) perceived experiences of stress.

### 10.2. EXPERIENCES OF STRESS

Whether we like it or not stress is a part of life. Sometimes we have little control over certain factors that do give rise to stress, but what we do have is a wonderful capacity and strength within ourselves to learn to deal with stress and evolve and change our ways of coping if necessary. This power and strength lies within the self. What is important, whether it is within, homes, schools, or universities, is to cultivate a philosophy and ethos in which people are unconditionally valued and not labelled, and, where they are encouraged to reach their full potential.

Stress for university students takes on many forms. Different individuals perceive different things as being stressful. In line with the theoretical framework used in this study, Folkman and Lazarus (1985), assert that the appraisal process is central in establishing a situation or event as being stressful or not to the individual. Environmental and person related factors interact in the appraisal of a potential stressor. To add to this framework, the current study has looked at the influence of self-esteem levels, age, gender, year of programme and, university programme on the coping processes of university students. The controllability of a stressful event is inclined to be linked to how one copes with a situation and academic stresses are deemed more controllable than interpersonal stresses. With academic stress there is a tendency for students to use more problem-focused coping (Compas et al. 1988). Academic stress tends to be experienced by all students in some form or another (Heiman 2004; Hope et al. 2005; Kariv and Similar to other studies, the cohort of students in the qualitative Heiman 2005). component of this study, all refer to academic stress as the main source of stress within the university setting (Hope et al. 2005; Darling et al. 2007; Cabanach et al. 2010; Dahan and Bedos 2010). However, it is not just simply the doing of exams which tend to cause the

students stress; it is also aspects such as too many assignment deadlines coming together, and also stress as a result of procrastination. Students believe that whilst it is difficult for faculty to adhere to everyone's desires in relation to assessments, it is important for faculty to remember that all forms of assessment whether summative or continuous pose some degree of difficulties to most students. Students indicate that when there are many assignments the submission dates may all be very similar, a factor which causes stress. The students refer to receiving a variety of assignments where there appears to be no coherent planning by the faculty involved. However consistent with the literature, many students in the current study believe that as they gain more experience with their years in university, they tend to use more adaptive coping, such as planning ahead and starting assignments earlier (Hamarat, Thompson, Steele, Matheny and Simons 2002; Kariv and Heiman 2005).

Balancing social life, financial matters and academic life is stressful for students (Hope et al. 2005; Johnson 2008). Students indicate that university is only one aspect of their life. Relationships problems are a source of stress and affect concentration within and outside the classroom. In the current study, the girls specifically, refer to the way in which problems within their personal lives interferes with their academic life. More so now than ever, students are trying to balance so many aspects of their lives in order to maintain a status quo. Financial worries and difficult relationships with parents and girl/boyfriends are mentioned by students in the study as sometimes being more stressful than the stress within the world of academia (Wilson and Pritchard 2005).

Another source of stress, which the girls in particular refer to, is the consequential stress as a result of comparing themselves to their peers. Friends and peers within their group were used as a gauge in determining, for example, how close they were to completing an assignment, or how much they had studied for an exam or in relation to appearance. If their friend was deemed to be near completion of an assignment, then the students reported that they perceived this situation as stressful. In chapter two, it has been acknowledged, that during middle childhood, children begin to compare themselves to their peers, which in turn is incorporated into their self-evaluation (Frey and Ruble 1985; 1990; Damon and Hart 1988). The girls interviewed in the study appear to be enmeshed with their peers in relation to academic issues and appearances. The process known as the separation-individuation begins during infancy, where the young infant is beginning to see itself as separate from their primary care giver (Mahler 1986). While the process of individuation is relevant throughout life, the process begins during infancy and the initial phase is usually completed between the ages of 3 and 5 years of age (Mahler 1975). The second peak in individuation occurs during adolescence. It appears from this study that the girls are inclined to be interdependent in comparison to the boys.

Blos (1967; 1979) points out that the process of individuation in the adolescent relates to the ending of the domination of the repressive superego, an end to the dependency on the parental introjects for approval, self-esteem, and standards of behaviour. A major goal to be aspired to during adolescence is concerned with the development of a sense of identity, in terms of goals, aspirations and belonging and also in the achievement of autonomy and separation (Erikson 1950; 1968). The quality of our primary holding world i.e. the family has a significant influence on one's ability to individuate. The open emergence of the child's self is influenced by the continuity and quality of the adult-child relationship

within the family. If this holding world is not experienced by the child as being safe then they will have difficulty in trusting the world within and beyond the family (Humphreys 2008; Humphreys and Ruddle 2010). Individuation for adolescents is best achieved with parents rather than without (Ryan and Lynch 1989). What is important in the parent-adolescent relationship is that parents give their child freedom with responsibility. To belong in a group is very important as is the need to continue and grow as an individual. It is in part of a group that loyalty is learnt. Adolescents' enlist the support of the group and those who are not members are isolated. If a successful resolution is reached during this stage the ego is strengthened and incorporated into the personality with the adolescent having a strong sense of self and well being. However, according to Erikson (1950), if there is an unsuccessful outcome to this stage then the adolescent presents with a sense of confusion regarding their own sense of self in terms of their values and beliefs and their relationships with others.

In this study, the female students whilst referring to friends as being very supportive, also found it stressful when their friends were at a more advanced stage academically than them or if they 'looked better'. Cambron et al. (2010) in a study with university students (n = 287) contend that there is a predictive link between individuals with high friendship contingent self-esteem, and, depressive symptoms. However, friendship is one of the factors deemed to be of great importance in feeling good (NicGabhainn and Sixsmith 2006; O'Higgins et al. 2010). Ones quality of life is threatened when one is without friends. Helseth and Misvær (2010), from their study, maintain that the majority of adolescents refer to the importance of being one's own friend and that this matter in turn has a positive influence on their quality of life. Furthermore, if one is happy and content it is in turn easier to get friends. The current study's findings of girls comparing themselves

to others are analogous with Festinger's (1942; 1954) theory of social comparison. This theory contends that individuals, in order to function effectively, have a drive to evaluate the accuracy of their opinions and evaluate their abilities against objective standards. If objective standards are unavailable then individuals compare themselves with people similar to themselves. Interestingly, orientation towards social comparisons is negatively correlated to self-esteem (Rosenberg 1965; Park and Croker 2008). Similarly, Robert K. Merton's (1957) theory on 'Relative Deprivation' purports that an individuals who compares themselves to another person who is deemed 'better off', may lead to them feeling deprived. This theory contends that individuals' evaluations of themselves are dependent on who they compare themselves to (Merton 1957; Pettigrew, Christ, Wagner, Meertens, van Dick and Zick 2008; Desruisseaux, St-Pierre, Tougas and de la Sablonniere 2002; Marsh 2010). Bazner, Bromer, Hammelstein and Meyer (2006), have found a significant correlation between current depressive symptoms and social comparisons (r = .25; p<0.001). Wills (1981; 1991) expands on this theory and refers to the comparison to others similar or slightly better than oneself as self-evaluation (upward comparison). He contends that individuals are also motivated by the need of self-enhancement, which is comparing oneself to people who are worse off than oneself (downward comparisons). Wheeler and Miyake (1992) in using their social comparison record, maintain that individuals with high levels of self-esteem appear to make more downward comparisons and have enhanced confidence as a result. This is in contrast to individuals with low selfesteem. Reis, Gerrard and Gibbons (1993) contend, from their research, that individuals with low self-esteem increased their self-esteem levels more following a downward comparison, than individuals with high self-esteem. However, upward comparisons are normally made by individuals with low self-esteem. Bailey and Ricciardelli (2010) have found that the use of more upward comparisons and less downward comparisons predicts

higher body dissatisfaction and eating disturbance. Individuals are motivated to maintain a positive sense of self (Swann 1990). Linked with the motivation of maintaining ones self-esteem is the motivation to gain recognition and value from others (Gilbert 1992; Baumeister and Leary 1995; Leary and Baumeister 2000). For girls in the current study, the importance of having friends and to be recognised as part of the group is very salient. It is as if the girls' sense of self is linked with how they evaluate themselves with their peers. Performing as a sociometer, self-esteem monitors the social environment for cues indicating disapproval and rejection and consequently, the individual, is alerted by negative affective reactions. Hence, there prevails a tendency for individuals to behave in a manner which reduces the likelihood of being rejected or ignored by others (Leary and Downs 1995). Cheng and Kwan (2008) contend that basing ones self-esteem on the approval of others predicts attachment anxiety (r= .36, p< .001) and basing ones self-esteem on social support is significantly and negatively related to attachment avoidance (r=-.48, p< = .001).

Smith and Leach (2004) in a study with university undergraduate students (n = 64) found that 60% of students compared themselves as individuals to other individuals. The comparisons were mainly in the areas of lifestyle and finance. When students compared themselves as a group to other groups, the comparisons were usually related to academic aspects. Nevertheless, the girls in this study, referred to the stress they experienced as a result of the comparisons they made between themselves, (at an individual level), and other students, from both an academic and lifestyle perspective.

Interestingly the students interviewed in the current study when asked what self-esteem meant to them have referred to the word confidence frequently. However, many of the girls whilst mentioning confidence as being a salient aspect of self-esteem spoke about self-esteem, more in terms, of looks and appearance. Pressure to dress and look well is a source of stress, as expressed, by the girls in the study. Concerns with appearance are very common amongst female university students (Wilson and Pritchard 2005; Calogero et al. 2010; Liao et al. 2010). The boys within the current study do not report being under the same pressure. However, some studies contend that there is considerable pressure on young men to have lean muscular bodies as portrayed by the media especially of male sports personalities (Ricciardelli, McCabe and Ridge 2006; McCabe, Ricciardelli and Holt 2010). Harter (1999) purports, that during adolescence, satisfaction with one's physical appearance, is the personal variable most linked to global self-esteem. It appears that girls place a large emphasis on looking well going to university, which includes makeup, dress and physical appearance. From the study, one could almost deduce that there was an unwritten code relating to dress and body image which is present within the university classrooms. Female university students who are less satisfied with their bodies also have a poorer appearance evaluation of themselves (Lee and Chien 2010). However, it has been found that attractive and athletic adolescents are more popular with their peers (Aboud and Mendelson 1998). Positive self-stereotyping for physical traits is associated with higher levels of self-esteem amongst university students, highlighting the salience of physical beauty within their world view and the linking of self-esteem to appearance (Oswald and Chapleau 2010).

The influence of the media on students, particularly girls, is highlighted in the current study. The media image, depicting the criteria to look good, plays an important role in the

perceived pressure experienced by girls in the study. However, Tiggeman (2006) has found no causal role for media exposure in the body image of girls. Fredrickson and Roberts's (1997) theory on 'Self-Objectification' suggests, that individuals especially women, who place salience on the perspectives of others, as a primary view of their physical self are more likely to engage in habitual body monitoring with negative outcomes. Within the current study, this habitual body monitoring is apparent from the expressions of some of the students. Women are targeted more than men to have their bodies portrayed as objects. Self-objectification is a predictor of lowered self-esteem and depression (Tolman, Impett, Tracy and Michael 2006; Breines, Crocker and Garcia 2008). Sexual objectification exists when a when a woman's body is viewed as fragmented from the self and is considered as an object (Bartky 1990). There is a large emphasis within society on appearances. Physical appearances are valued highly and play a large part in the lives of adolescents and young adults (Fredrickson and Roberts 1997). Oehlhof, Musher-Eizenmann, Neufeld and Hauser (2009) posits that women who have higher scores in self-objectification are inclined to aspire to a less muscular body, whereas men with high scores in self-objectification tend to desire more muscular bodies. The ideal body for both men and women are very different and are determined by many factors such as the differential socialization of gender and of course the mass media.

External contingencies of self-worth including appearance is associated with depression and low levels of self-esteem (Sanchez and Crocker 2005; Sargent et al. 2006). Exposure to media images of super thin models is associated with increased levels of body dissatisfaction and low levels of self-esteem amongst girls (Irving 1990) The pursuit of the ideal thin body is a risk factor for body dissatisfaction (James, Phelps and Bross 2001). Sheldon (2010) found that the variables of high family pressure, peer pressure and high

levels of perfectionism influence both women and men to compare themselves to models in magazines and television. These comparisons are found to result in low body selfesteem for both males and females. Having high physical self-concept was a predictive factor in having less body dissatisfaction (Cook-Cottone and Phelps 2003). interesting longitudinal study of elementary school girls (n=656), Kutob et al. (2010) found that the most important predictor of self esteem in all grades was appearance. In middle childhood the views of others are salient to the development of the child's sense of Cooley (1902; 1908) and Mead (1964; 1967), who have developed the 'Early Interactionism Theory', highlight that the judgement of significant others has a major influence on self-esteem. Influential others are used as a social mirror through which an individual view themselves (Harter and Stocker 1996). The parents are the mirror for the child. Mead (1964; 1967) extends this view in saying that it is not only other individual's appraisals that influence self-esteem but also the wider social environment, which may include schools, government or media. Therefore, self-esteem is how one measures up to internalise social values (Cooley 1909, Mead 1964; 1967). This model of self-esteem is referred to as the sociometer model (Leary et al. 1995; Leary et al. 1998; Leary and Baumeister 2000). The sociometer model contends that self-esteem is affected by relational evaluation, which is the degree with which an individual feels valued and respected by another. If low relational evaluation exists then an individual's self-esteem is reduced. In the converse situation where high relational evaluation exists, the individual's self-esteem is enhanced (Leary 2008). Self-esteem which tends to fluctuate according to relational evaluation is deemed to be state self-esteem and trait self-esteem is seen to be more healthy whereby the individual's self-esteem level is unaffected by people's nonacceptance or rejection (Leary and Baumeister 2000; Leary and Mcdonald 2003). If women internalise the views of others, especially women being viewed in a sexual

objectifying manner, into their sense of self then it leads to self-objectification. This perspective of the self leads to self-consciousness which is characterised by habitual monitoring of the outward appearance of one's body leading sometimes to shame, anxiety and reduced peak motivational states and reduced awareness of internal bodily cues (Fredrickson and Roberts 1997). Seidah and Bouffard (2007) in their study with adolescents (n=1362), have found that 35% of adolescents recognize that satisfaction with their physical appearance predetermines their self-esteem. Furthermore, the adolescents with this view, report lower self-esteem and lower satisfaction with their physical appearance. There is a higher incidence of girls, to have this view combined with a need to belong to a group (Seidah and Bouffard 2007). Interestingly, in the current study the girls have significantly lower levels of self-esteem in comparison to the boys. Furthermore, social engagement is a theme which is evident within both phases of the study, particularly in relation to the girls in the study. As a coping process, girls use 'Social Engagement' significantly more than other coping processes. In addition, it is evident from phase two of the study, that friends are important to all students. However, for girls, friends are both a support and a source of stress.

## 10.3. SELF-ESTEEM AND GENDER

Similar to the other research findings, this study has found that boys have a significantly higher level of global self-esteem in comparison to girls (Simmons and Rosenberg 1975; Block and Robins 1993; Corbin et al. 1996; Tiggemann and Rothblum 1997; Bagley et al. 1997; Bagley et al. 2001; Kling and Hyde 1999; Muldoon and Trew 2000; Bagley and Mallick 2001; Twenge and Campbell 2001; Baldwin and Hoffman 2002; Israel and Ivanova 2002; NicGabhainn and Mullan 2003; Hergovicvich and Sirsch 2004; Birndorf et

al. 2005; Sung et al. 2006; Šmídová et al. 2008; Gentile et al. 2009; Puskar et al. 2010). The levels of self-esteem for males and females in other studies are almost identical to the finding established within the current study (Bagley et al. 1997; Bagley and Mallick 2001; Puskar et al. 2010). Furthermore, the Canadian normative self-esteem scores, (Bagley et al. 1997) and the British normative self-esteem scores (Bagley and Mallick 2001; Bagley et al. 2001) are very similar to the self-esteem scores obtained in the current study. The RSES (Rosenberg 1965) is used in these studies. Even though a significant finding was established between self-esteem and gender, the effect size of the significance was within the small to moderate size. The self-esteem levels of the girls in the study were 20 in comparison to 22 for the boys. Both of these results would be regarded to be in the mid to high range of self-esteem.

When the students from the qualitative component of the study had been asked for their views on these findings, the responses generate some interesting views. All the students' within the study do not show any surprise with the finding. The various statements, within the Rosenberg Self-Esteem Scale (Rosenberg 1965), had been analysed individually and provide some interesting information. For example, the statement 'I certainly feel useless at times' is significantly related to gender, specifically to the females in the study with over half of the girls in the study agreeing/strongly agreeing to this statement as opposed to 35% of males. The girls highlight that boys are way more confident within the classroom setting and have 'strong' personalities. The importance of the 'macho' masculine image to boys is alluded to by the girls. Boys find different protectors or defences. The boys in the study believe that males in general are more competitive than girls and therefore it is important for them to portray themselves as being 'on top of the game'. In relation to girls having lower self esteem in comparison to the boys, the boys

remark on the fact that girls have a lot of pressure to look a certain way and as a result they tend to be far too critical of themselves in the way they judge themselves. What was interesting in the study is that girls link appearance to self-esteem. Furthermore, they maintain that boys do not have to worry about how they dress or look. However, from the literature, it is evident that this is changing as boys are being judged also by their appearance e.g. the six-pack physique.

Block and Robins (1993) very interestingly, argue that girls with high self-esteem highlight the importance of interpersonal connectedness for them and the girls are said to be warm, giving, concerned about others and talkative. While in contrast, boys with high self-esteem appear unemotional, uninvolved and their independence is displayed in a distancing way. The male students in this study similarly had higher levels of self-esteem and also used distancing as the main coping process. However, the girls in this study, whilst they had lower levels of self-esteem to the boys, their level of self-esteem is considered to be within the range of mid to high self-esteem. The girls in the study used 'Social Engagement' as a means of coping. These distinct differences may be explained by the socialization process which plays a part in how males and females behave. Gilligan (1979; 1982) posits there are great differences in the personality development of males and females. Female personality development is linked with the qualities of relatedness, empathy, intimacy, nurturance, care, attachment and the salience of interpersonal relationships within one's life. Their identity is defined within the context of relationships and judged by the standard of care and responsibility. Chodorow (1978; 1994) and Leaper (2002) highlight that throughout childhood and adolescence, girls and boys, are socialized differently. Because girls are parented more often than not by the same sex parent i.e. their mothers, they have a propensity to deem relating to others as being important and they tend to show signs of lack of separateness.

Girls in our society have normally remained externally and internally in relationships with their preoedipal mother and have been preoccupied with issues of separation, identification without merging, mitigation of dependency, freedom from ambivalence.

(Chodorow 1978, p.140).

Furthermore, Bem (1993) argues that gender schema develop as the young child, cognitively, internalises society's defining of roles for males and females.

Both the quantitative and qualitative findings in this study highlight the importance of relationships to girls. Unlike Trouillet et al. (2009), who has found no predictive link between gender and either problem-focused or emotion-focused emotions, this study finds a significant association between gender and self-esteem and the use of 'Social Engagement' as coping process for girls and 'Distancing' for boys. Central to females' identity is the importance and maintenance of relationships (Brown 2001). Many theorists have noted the importance of relationships to the development of girls' sense of identity (Gilligan 1982; Brown and Gilligan 1992; Harter et al. 1997). However, in order to sustain others in relationship with them, girls oftentimes lose their own voice or self in the process. If one is inauthentic in their own relationship with self, then it interferes with the ability in remaining authentic in relationships with others, which in turn may lead to low self-esteem (Harter et al. 1997). The girls in the current study refer to the dominance of boys within the class room and their ability to 'steer' the classroom. Girls reach a dilemma during adolescence. The different 'selves' become somewhat confusing and girls find a difficulty in actualising the 'real self'. The 'good woman' stereotype, which is to be there for others, is often used in substitution for being authentic towards self (Gilligan 1993). Harter et al. (1997) refers to this self as 'false self behaviour', in which one does not say what one thinks. However, rather than being a gender issue, Harter, Waters, Whitesell and Kastelic (1998), argue that loosing ones' voice is more to do with gender orientation.

Conversely, male personalities are linked with the traits of independence, assertiveness and decisiveness (Gilligan 1979; 1982). In the males' definition of self assessment and success, individual achievement as opposed to attachment, great ideas and unique activities, are central to the outline (Gilligan 1982). Similarly, Erikson (1968) maintains that for males, identity precedes intimacy, in the cycle of human separation and attachment. Boys differentiate from their mothers in order to develop separateness which in turn produces repression of emotional and relational issues (Chodorow 1978). Boys are oftentimes parented in a way in which they may be restricted in human expression. Pollack (2006) argues that society places too much pressure on boys to be independent from a young age which leads to many problems such as fragile self-esteem and the suppression of emotions in order to appear 'strong'. In addition, he highlights that true strength lies in connection rather than separation (Pollack 2010).

In this study, the findings specify that males' significantly utilised distancing as a coping process. Within the qualitative aspect of the study the boys refer to using their friends, as a source of distraction, when they are feeling stressed, for example talking about sport.

Kegan (1982) refers to the tension which exists in everyone; the need to be included and belong and the need to be autonomous. He advocates the importance of both and refers to the process of development being best described in terms of a spiral as opposed to a line.

This model also recognizes the equal dignity of each yearning, and in this respect offers a corrective to all present developmental frameworks which unequivocally define growth in terms of differentiation, separation, increasing autonomy, and lose sight of the fact that adaptation is equally about integration, attachment and inclusion.

(Kegan 1982, p. 108).

Similarly, Ryan and Lynch (1989) refer to getting the balance right in the process of individuation during adolescence. It is important to view attachment as a dynamic

relationship which changes according to what is required at any particular time and allows for optimal autonomy in the context of emotional support (Ryan and Lynch 1989).

It has been seen in this study that girls' coped within relationships and boys distanced themselves from the situation. It is important for both males and females to balance the relationship with self and others and having an authentic relationship with self which will in turn affect the relationship between self and others. Each individual mirrors out where they are within themselves.

#### 10.4. COPING AND GENDER

There appears to be conflictual evidence in relation to how boys and girls cope. Some of the studies discussed in chapter four relating to coping and gender indicate that males tend to view stress as a challenge and resort to the use of problem-focused coping and girls have a propensity to view stress as a threat or harmful and are prone to using emotion-focused coping (Lazarus and Folkman 1984; Ptacek et al. 1992; Ptacek et al. 1994; Renk and Creasey 2003). Other studies have found that males used rationalization, detachment or distancing as coping processes (Lawrence et al. 2006; Peterson et al. 2006; Gelhaar et al. 2007; Weiling and Miao 2009). The CLAN survey also highlights that male college students frequently cope by ignoring the problem, using drink, drugs or sorting it out alone (Hope et al. 2005). However, other studies indicate no difference between gender and coping (Vitaliano et al. 1987; Conway and Terry 1992; Zakowski et al. 2001; Dyson and Renk 2006; Trouillet et al. 2009). The significant findings in relation to gender and coping have found that both girls and boys, within this study, used emotion-focused coping in order to deal with the emotions which surface as a result of the stressful

situation. Emotion-focused coping can be used either to deny the occurrence of the situation or to maintain hope (Lazarus and Folkman 1984). Albeit that emotion-focused coping processes are used by both boys and girls within this study, the boys use distancing coping and the girls use 'social engagement'. The seeking of social support, by both adolescent and adult girls, as a coping process has been reported in many studies (Billings and Moos 1984; Folkman and Lazarus 1985; Vitaliano et al. 1985; Carver et al. 1989; Seigffge-Krenge 1995; Piko 2001; Gonzalez-Morales 2006; Cecen 2008). Similar to this study, gender was predictive of emotion-focused coping for girls (Renk and Creasey 2003).

The girls interviewed in the study have highlighted that in relation to coping and gender support from friends is a very important source of dealing with stress for them. They talk to their friends and discuss whatever is causing them stress. The boys however say that while friends are important, they engage with their friends in way which distracts them from whatever is stressing them, by for example, playing sport or going to the pub. Both girls and boys similarly remark that the reason for this discrepancy is because girls find it easier to discuss and display their emotions in comparison to boys. Furthermore, boys are not expected to show their emotions or highlight any deficiencies in front of others as it may be seen as a sign of weakness.

In this study, the male students using distancing as a coping process appeared to be independently controlling the stressful situation in an emotional way. The girls were dealing with the distress of the situation in a more inclusive or interdependent manner. Male students have a significantly greater propensity in the use of detaching themselves

from a stressful situation and bottling up their emotions (Hope et al. 2005; Lawrence et al. 2006). Young adult males have a proclivity to use distraction as a coping process more than females (Fromme and Rivet 1994). Furthermore, Gelhaar et al. (2007) findings have shown that boys have a propensity to use withdrawal coping. Distancing oneself from a situation can provide an individual with an opportunity to rethink the situation, refocus and regulate distress (Folkman and Moskowitz 2000; Aldwin 2007). Referring to the unconscious nature of defence mechanisms, Vaillant (1977) contends that as an individual evolves so too does their defence mechanisms. Unlike Haan and Freud, Vaillant believes that defence mechanisms are not necessarily pathological but instead a way of maintaining ego integrity. The use of distancing is likened to the fourth level on Vaillant's hierarchy of defence which consists of mature mechanisms such as, sublimation, altruism, suppression, anticipation and humour (Vaillant 1977). For men and women, seeking social support, planful problem solving and distancing were all negatively related to stress (Peterson et al. 2006). Similarly, seeking social support and distancing coping increased the effectiveness of dealing with psychological distress (Shimazu and Kosugi 2003). As the qualitative component of the study highlights the boys and girls consider friends a very important facet in dealing with stress, albeit relating in different ways. For boys, to discuss stress with their friends may be considered as a sign of weakness.

Seeking social support as a coping process is not itself a reappraisal but may lead to reappraisal of the situation (Lazarus and Folkman 1984). Even though both male and females in this study used emotion-focused coping more than other coping processes, they were used in different ways with different purposes. Girls and boys are socialised in different ways. Girls learn to conform to nurture and be responsible for others and boys

are portrayed as being strong, competitive, and self-reliant and in their heads. The socialization of males and females is discussed in the following section.

#### 10.5. SELF-ESTEEM AND COPING

The prolific quantitative findings within this study tell us a great deal about the 'what' and 'how' of the relationships between self-esteem, coping and university students. The reason behind these significant quantitative findings will be discussed with reference to findings from the qualitative aspect of the study and relevant literature and theoretical perspectives.

Similar to others studies, the current study has found significant associations between levels of self-esteem and the types of coping processes used by university students. In relation to the predictive nature of self-esteem, this study has established that self-esteem is predicted by the following coping processes, 'Wishful Criticism and Escape', 'Disengagement' and 'Social Engagement'. A significant relationship exists between students with higher levels of self-esteem and their use of positive planning, positive self-reflection and the use of distancing coping processes (Moos 1990; Mullis and Chapman 2000; Lo 2002; Lawrence et al. 2006; Wei et al. 2008; Ni et al. 2010). Thoits (1995) has found a significant association between individuals with high levels of self-esteem and the use of active coping processes, whereas individuals with lower levels of self-esteem tend to use passive avoidant coping processes. The students in the study, both male and female, with higher levels of self-esteem use both problem solving and adaptive emotion-focused coping to deal with stress relating to university life. Conversely, students with lower levels of self-esteem have been found to have a significant propensity to use

'Disengagement' and 'Wishful Criticism' as coping processes (Moos 1990; Mullis and Chapman 2000; Lo 2002; Cash et al. 2005; Lawrence et al. 2006; Wei et al. 2008; Ni et al. 2010). Both male and female students in this study with lower levels of self-esteem used emotion-focused coping only. It is important to highlight that Folkman and Lazarus (1980; 1985) and Folkman et al. (1986) reiterated on numerous occasions that coping was a dynamic unfolding process whereby changes may occur during the course of each stressful transaction as opposed to people approaching each stressful event with a particular 'coping style'. To be effective, coping is contextual and changes overtime and across an array of circumstances (Folkman and Lazarus 1985; Goh et al. 2010). Even though the current study is not a longitudinal study it highlights that both problem-focused and adaptive emotion-focused coping processes may be used simultaneously during a stressful encounter (Folkman and Lazarus 1985; Feagans-Gould, Hussong and Keeley 2008; Gaudreau et al. 2010). Problem-focused coping is the use of activities to manage or alter the problem; whereas, emotion-focused coping is directed at regulating the emotional responses to the problem (Folkman and Lazarus 1984). An example of some of the problem-focused coping processes used in this study were activities like making a plan of action, being inspired to do something creative and trying to analyse the problem so as to understand it better. Examples of the emotion-focused coping processes used in this study, by students with higher levels of self-esteem, were 'I changed or grew as a person'; 'I rediscovered what is important in life'; 'I prayed' or 'I didn't let it get to me' or 'I made light of the situation and refused to get too serious about it'. The finding highlights the important relationship between self-esteem and coping. When students have a positive attitude about themselves their coping is adaptive.

The male and female students who had lower levels of self-esteem have used emotion-focused coping such as Wishful criticism and Escape' and 'Disengagement'. Examples of these processes are 'I criticized or lectured myself'; 'I prepared myself for the worst' or 'I tried to make myself feel better by eating, drinking, smoking, using drugs or medication etc'.

The self always finds a way to protect itself and these behaviours such as seeking reassurance, anxiety and avoidance need to be seen as a creative expression which warrants further exploration and assistance. Humphreys (2008) and Humphreys and Ruddle (2010) maintain that unless the meanings of these behaviours are investigated than it is very difficult to make progress in how they may be resolved so that they do not affect the wellbeing of self or others. If one feels good within and has unconditional love towards the self, - a love which is not based on what one accomplishes or one social standing, then the self is very strong. According to Humphreys and Ruddle (2010) "the self is, indeed, marvellously creative, but the self is not its creativity" (Humphreys and Ruddle 2010, p. 58).

The process of how one copes and deals with stress provides very valuable information regarding the individual of where they may be at within themselves, at that particular time. Life is on an evolutionary continuum and individuals are always adapting to it in a diversity of ways (Kegan 1982). Folkman and Lazarus (1986) advocate the transactional nature of coping whereby transactions occur between the person and different variables within the environment. Each person is unique with a different story to tell. The holding world or the psychosocial environment of the individual is the world in which a person at any particular time in their evolutionary journey is embedded (Winnicott 1965; Kegan 1982). This world influences everything we do, think and feel. When one is in a good

holding world, one copes creatively, from within a real and safe place. When the holding world of an individual is not safe, then the coping processes used are still creative, however, they are expressed in a defensive and protective way (Humphreys 2008; Humphreys and Ruddle 2010).

Furthermore within this study, it has been found that, first year students and third and fourth year student use different coping processes in dealing with stress.

## 10.6. FIRST YEAR STUDENTS AND COPING

Some students find the first year in college a very stressful time (Tao and Dong 2000; Crocker and Luhtanen 2003; Heiman 2004; Kariv and Heiman 2005; Lawrence 2006; Bouteyre et al. 2007; Seyedfatemi et al. 2007; Petersen 2009). It may be the first time for many to move away from home. A university can be a very daunting and impersonal place with new systems and routines to get accustomed to. The way in which individuals cope has been found to influence students' exam preparation (Moneta and Spada 2009) and adjustment to college (Aspinwall and Taylor 1992). Petersen et al. (2009) established that adjustment to university life, in first year students, was a significant predictor of academic performance. In a follow up study, it was found that once students adjusted into university life, academic performance was a significant predictor of academic success at completion phase of programme (Petersen 2010). First year is a very critical time when many third level students drop out from their studies. Successful completion of a third level course is deemed to be a very important factor for the self-esteem, educational and intellectual development of students (Mooney, Patterson, O'Connor and Chantler 2010). The Irish national average for non-presence of students at level 8 courses for the year

2007/2008 was 11%, with the University of Limerick at 9% (Mooney et al. 2010). The report highlights the importance of higher institution in ensuring the retention of students by using teaching and learning strategies which are responsive to students needs and ensuring a good student experience especially during their first year in third level education (Mooney et al. 2010).

In the current study there is a significant correlation with students in first year and the use of confronting coping processes. Older students i.e. over 21 years of age predominantly use positive planning and positive self-reflection as coping processes. Most students of this age are in third or fourth year. Problem-focused coping refers to activities such as, action planning, which are focused on changing the stressful situation and the outcome is normally positive with the alleviation of the negative effects of stress. Compas et al. (1988) established that older adolescents use more emotion-focused coping processes. Similarly, Gelhaar et al. (2007) found that early stage adolescents used more active coping, older adolescents used internal coping, and, withdrawal was used frequently during mid adolescence. Emotion-focused coping such as relaxing and social support tend to increase with age (Williams and McGillicuddy-De Lisi 1991). However, similar to the findings of the current study Gamble (1994) and Groer et al. (1992) contend that young adolescents use more emotion-focused and older adolescents use more problem-focused coping.

Confronting coping is an emotion-focused process which is characterised by adjusting one's reaction to the stressful situation. Some emotion-focused coping processes are deemed to be maladaptive as they may exacerbate the stressful situation and cause more

problems (Folkman and Lazarus 1985; Compas et al. 2001; Bouteyre et al. 2007). However, they may be a very creative way for the student to deal with the situation at that particular time (Humphreys 2008; Humphreys and Ruddle 2010). In the current study, examples of the confronting coping processes used are, 'I stood my ground and fought for what I wanted' or 'I expressed anger to the person(s) who caused the problem'. Whilst these processes may be a creative way of dealing with the stressful situation, they may not be the most responsible methods for the individual to use. The students interviewed in the qualitative component of the current study were asked the reason they believed that first years engaged with these coping processes. They provided very prolific information of what it is like being in first year and the rationale as to why the first year students in the current study coped by using confronting coping processes. They also provided useful information in relation to factors they believed may help students to adapt to university life.

Many of the students refer to their first year in college as 'chaos' or 'daunting'. They believe that secondary school does not prepare students sufficiently for their experience of first year in a university setting. Within secondary school the focus in fifth and sixth year is on one exam, the leaving certificate. In contrast to the university system, where each module is assessed within the semester, and when that semester is finished there are more exams and assignments to prepare for in the following term. The assessment process within a university is continuous, which in itself has many advantages. However, the student is required to be organised so as to not allow a build up of assignments for the last minute. Furthermore, the students comment that due to lack of experience, that there was more of an inclination for first year students, not to plan things out in relation to assignments and exams, but instead to leave everything to the last minute which in turn

leads to increased feelings of stress. Because of this there is a tendency to react to the build up of stress by avoidance or getting angry with people.

As many students in first year are away from home for the first time, this 'new found freedom' can lead to lack of attention to academic issues and in some instances the new social life gaining more consideration. The advice in terms of helping first year student to deal with university life ranged from time management, having a network of friends, personal development (in small groups because of the nature of the area), joining societies, counselling and learning to relax. Hayes and Morgan (2005), using a cohort of young adolescents attending secondary school (n=706), found that students' participation in a psycho educational programme helped to significantly reduce the use of 'non-productive' coping processes. A recent Higher Education Authority report highlighted the importance of preparing students, whilst in secondary school, in areas such as life skills and budgeting skills in preparation for the move to third level education. The findings in the report argued that these skills would be advantageous for both student well-being and the improvement in student retention within the third level setting (McCoy, Calvert, Smyth and Darmody 2010).

The current study was cross-sectional rather than longitudinal in nature. As third level drop-out rate tends to be high during the first year of the programme (4%), it is possible that if similar drop-out rates were reflected in the current study, then the exit of students with particular levels of self-esteem and coping processes after year one may not be random. The relationship between self-esteem and coping and drop-out is not known.

Consequently, it would be interesting to include the incidence of drop-outs in any similar future longitudinal study.

#### 10.7. MEASURING AND ANALYSING COPING AND SELF-ESTEEM

Within the quantitative component of this study, a comparative analysis between the use of parametric and non parametric statistics reveal interesting findings. From a review of the literature, there are substantial numbers of research articles which refer to the use of mainly parametric statistics on the Folkman and Lazarus (1988) Ways of Coping Questionnaire (Folkman and Lazarus 1985; Vitaliano et al. 1985; Bouchard 1997; Piko 2001; Zakowski et al. 2001; Tarakeshwar et al. 2005; Peterson et al. 2006; Lundqvist and Ahlstrom 2006; Gencoz 2006; Lequerica, Forch-Heimer, Tate, Roller and Toussaint 2008; Tong, Wang and An 2008; Yip, Rowlinson and Oi Ling 2008; Papastavrou, Charalambous and Tsangari 2009; Voight 2009; Janowski, Steuden and Kuryowicz 2010; Sexton, Byrd and von Kluge 2010; Wilson 2010). Very few studies reported the use of non parametric statistics with the WOCQ (Berntsson and Ringsberg 2003; Wenneberg, Gunnarsson and Ahlstrom 2004; Elfstrom et al. 2005; Brunborg and Wyller 2007; Liakopoulou, Panaretaki, Papadakis, Katsika, Sarafidou, Laskari, Anastasopoulos, Vessalas, Bouhoutsou, Papaevangelou, Polychronopoulou and Haidas 2008).

Similarly with the Rosenberg Self-Esteem Scale (Rosenberg 1965) many of the research articles refer to using mainly parametric statistics (Corbin et al. 1996; Bagley et al. 1997; Byrne 2000; Muldoon and Trew 2000; Bagley and Mallick 2001; Baldwin and Hoffmann 2002; Gudjonsson and Sigurdsson 2003; Birndorf et al. 2005; Wilburn and Smith 2005; Sung et al. 2006; Gailliot and Baumeister 2007; Hayman et al. 2007; Pilafova et al. 2007;

Clifton et al. 2008; Wang and Castaneda-Sound 2008; Mimura et al. 2009; Ni et al. 2010; Puskar et al. 2010). However, the reporting of the use of non parametric statistics with the RSES was greater than similar statistics being used with the WOCQ (Simmons and Rosenberg 1973; Bent, Jones, Molloy, Chamberlain and Tennant 2001; Khanlou 2004; Piao-Yi, Kuo, Ming-Been, Yi-Ming, Shiow-Ling and Li-Chan 2004; Merwin and Wilson 2005; Nollett and Button 2005; Dudek, Dudek, Siwek, Datka, Rzeszutko, Silczuk and Zieba 2007; Magalhaes, Pereira, Manso, Veiga, Nova and Ferreira 2008; Smidova et al. 2008; binYaacob, Newman, Yaakob and Goddard 2009; deMaynard 2009; Inandi, Oxer, Akdemir, Akoglu, Babayigit, Turhan and Sangun 2009; Plazaola-Castano, Ruiz-Perez, Escriba-Aguir, Jimenez-Martin and Hernandez-Torres 2009; Tomas Saba 2009).

The use of parametric statistics requires the data in question to adhere to certain assumptions. The assumptions include that the variables are interval/ratio; the dependant variable is normally distributed; homogeneity of variance and finally each observation is independent of the other (Field 2009; Onwuegbuzie and Combs 2010). In the current study the dependent variables were ordinal. The data in this study has been investigated to establish it distribution. The Kolmogorov-Smirmov test has indicated that the values of the variable, namely, 'Total Self-Esteem' are not normally distributed. Furthermore, the Kurtosis value revealed that the distribution was peaked in the centre. However, the Normal Q-Q Plot has shown a relatively straight line with some outliers. As a result of the above findings it was decided to use parametric statistics on the transformed variable and non transformed variable and compare the results. The parametric Independent- Sample T-Test has been used and the results reveal a very significant relationship between gender and self-esteem. In addition, the dependent variable has been transformed and tested parametrically with similar results.

Furthermore, the non-parametric tests of Mann-Whitney U on the same variables have found the same significant findings. The parametric findings for the significant association between gender and self-esteem are as follows; Males ( $M=21.85,\ SD=4.712$ ) and Females ( $M=19.53,\ SD=4.789$ );  $t=(473)=-5.079,\ p=<.001$ . The non parametric results for the significant association between gender and self-esteem are Males ( $Md=22,\ n=167$ ) and Females ( $Md=19,\ n=308$ ),  $u=18408.500,\ z=-5.131,\ p=<.001$ ). Both findings are very similar showing very little difference between parametric and non parametric findings within this study. As the data in the current study did not adhere to the assumptions for using parametric testing, non parametric tests were used in this study.

Folkman and Lazarus (1988) carried have conducted factor analyses on the Ways of Coping Questionnaire and the findings have yielded eight factors/eight scales which measures two distinct coping processes namely, problem-focused and emotion-focused coping. Many researchers have criticised the instability of the factor structure within the WOCQ and the weak internal reliability on the subscales (Parker et al., 1993; Somerfield and McCrae, 2000, van Heck and de Ridder, 2001). Parker et al. (1993) challenged the theoretical integrity of the WOCQ. They found, using factor analysis that, the eight dimensions within the questionnaire did not show reliability. They advised that factor analysis should be employed to all research using this questionnaire. Aldwin (2007) comments on the factor structure of the WOCQ and contends that the meaning of each item on the scale varies according to the situation and this may be as a result of the instrument's accurate reflection of reality as opposed to poor scale construction. Lazarus and Folkman (1984) have highlighted that people differ in their interpretation, sensitivity and reactions to particular events and they have defined coping as a process rather than as

a style or trait. Understanding coping from a process perspective is a very salient feature of the transactional model of stress and coping.

Many different factors of the WOCQ have been confirmed by various researchers. A three factor model (Bouchard et al., 1995; Bouchard and Theriault 2003; Elfstrom et al. 2005; Genocoz et al. 2006; Trouillet et al. 2009) and a four factor model have been verified (Bouchard et al. 1997; Hunter and Boyle 2004). Furthermore, a five factor model has been recognised by Tarakeshwar et al. (2005) and Lundqvist and Ahlstrom (2006) have created an eight factor model.

The current study subjected the WOCQ to both parametric and non parametric factor analysis to establish the factors/scales specific to the sample used in the study. Even though many studies using psychological questionnaires employ parametric testing, it was decided to use non parametric as well as parametric factor analyses so as to examine similarities or variations between the findings. As discussed earlier the data in the current study does not adhere to the criteria for normal distribution. Starting with the parametric factor analysis, principal component analysis has been conducted on the questionnaire resulting in seven factors/scales. The seven scales are very similar to the eight original scales outlined in the WOCQ manual (Folkman and Lazarus 1988) except that the scale 'accepting responsibility' has not loaded as an individual scale but was subsumed in with another scale. The seven scales are comprised of one problem-focused coping process and six emotion-focused coping processes. A detailed depiction of the scales is outlined in the data analysis chapter.

Following the principal component analysis, the WOCQ was subjected to non parametric factor analysis using the biometric program namely, CANOCO (Ter Braak and Smilauer 2002). This program is normally used in the area of life and earth sciences. It performs many multivariate statistical programmes one of which is Partial Detrended Canonical Analysis. A search of the literature has revealed that this program has never been used on the Ways of Coping Questionnaire. The findings resulted in seven factors/scales very similar to the seven scales derived from the principal component analysis. Similarly, the Rosenberg Self-Esteem Scale (Rosenberg 1965) had been subjected to both parametric and non parametric factor analysis. However, both methods have resulted in using the RSES as a unidimensional scale.

As can be seen from the current study very little difference arose, in the significant findings, as a result of using both parametric and non parametric statistical testing. The use of both approaches enhanced the thoroughness in the examination of the data, whilst also adding to the existing body of knowledge in this area. Some of the data were not normal, but were 'normalized' by appropriate transformation and this allowed the use of both parametric and non-parametric approaches to yield confirmation of the results. Furthermore, the CANOCO program (TerBraak and Smilauer 2002), provided a very clear picture of the relationship between the items in both questionnaires, in particular, the Ways of Coping Questionnaire (Folkman and Lazarus 1988). Canoco was programmed by, and is mainly used by researchers in the area of ecology, and the use of this ordination approach is novel outside of that field.

## 10.8. CONCLUSION

This study has clearly identified the many relationships between the self-esteem levels of university students and the coping processes that they use. Arising from the literature ten hypotheses were developed, seven of which were confirmed. University students with higher levels of self-esteem utilised adaptive coping processes and conversely students with lower levels of self-esteem used avoidance/emotion-focused ways of coping. The coping processes of students were also found to be significantly different for students, depending on the year of university programme they were in, their age and the programme they were enrolled in. Furthermore, male students had significantly higher levels of self-esteem in comparison to female students. In phase two of the study, when asked about what were the main sources of stress for university students, they referred to a variety of stressors viz. exams, deadlines for assignments, academic comparisons, appearance comparisons and the balancing of their social life with university life. The first year in university was mentioned, in particular, as being a very stressful time for many students. The students also commented on differences in the types of coping processes used by male and female students and provided some rational for this finding.

The mind and body are complex and the how and why of our behaviour and emotion is not easy to explain. The key to unlock the answer lies in the uniqueness of each individual and their individual story. Our different holding worlds mould our being. It is imperative to remember that the university is also a holding world for students. This study has contributed somewhat to the ongoing debate on self-esteem and the coping process. By using a mixed methods approach the study has captured a snapshot of both the quantitative and qualitative inferences from the input of four hundred and seventy nine university students. Stress is an inevitable occurrence in life. How one copes with stress is

determined by many factors. Coping is a transactional process between the individual, the environment and the situation with mutual interaction occurring between all variables (Folkman and Lazarus 1985). An individual's coping does not occur in a vacuum. This study has highlighted the significant relationship between self-esteem and coping, particularly its association with the use of very adaptive coping processes. However, within the philosophy of critical realism the social world changes and transforms daily (Bhaskar 1989). As Maxwell and Mittapalli (2010) contend, beliefs, values, feelings and emotions are important constituents in the causal explanations within social sciences. There is wonderful hope within this philosophical paradigm. The students whose self-esteem was low and who coped using less adaptive ways are in a way protecting themselves wisely but not in a mature or responsible way. The university as a holding world can help students in different ways to help them find within themselves the resources to grow and change.

Are boys and girls that different, I believe not? However, through parenting and schooling and other salient relationships within their lives, they may have been socialised in different ways. In the current study, the lower levels of self-esteem have been found to predict the use of less adaptive coping processes. The importance of have a sense of self which is worthy and unconditional is important to life. Rosenberg (1965) claims that having high self-esteem is not only about feeling good about oneself but also involves the acknowledgement of weaknesses and imperfections and working on overcoming them. He believes that individuals with high self-esteem display a congruent sense of self-worth, self-respect and self-acceptance (Rosenberg 1985).

Humphreys (2010) believes the self is innately good and has vast potential to grow once it is nurtured within an unconditional relationship. The self is never weak but creative. The self is the core of our being and the seat of love, where ones loving potential is expressed physically, emotionally, socially, intellectually, behaviourally, sexually, and creatively. He argues that the self is very creative and that it finds substitute ways of dealing with the unsafe conditional worlds one may have grown up in, a world which may not have facilitated the true expression of self.

No man can reveal to you aught but that which already lies half asleep in the dawning of your knowledge. The teacher who walks in the shadow of the temple, among his followers, gives not of his wisdom but rather of his faith and his lovingness. If he is indeed wise he does not bid you enter the house of his wisdom, but rather leads you to the threshold of your own mind.

(Kahlil Gibran 1990, p.50)

# Chapter 11. RECOMMENDATIONS

## 11.1. Introduction

The findings discussed in the previous chapter provide important information which guides this chapter. Recommendations arising from the study will be discussed in the following section. These recommendations may have implications for both local and national educational policy. The limitations of the study and the implications for future research will also be discussed.

#### 11.2. RECOMMENDATIONS

It is important for people involved in education to understand the person behind the behaviour, the person behind the grade and the person within the class. Each student will relate to a lecturer in a unique way which is determined not only by their individual uniqueness but also by their unique contribution to the relationship. The quality of our relationship with others depends on the quality of the relationship with the self. It all begins with having compassion towards the self. Mature leadership in parents, teachers and lecturers is vital in order to act as role models for the mature development of students.

This study is more than a statistical inquiry into the causal relationships between dependent and independent variables. It is a study about four hundred and seventy nine individual university students, all with different stories to tell. The quantitative findings provide a snapshot of where the students were at, within themselves, when they completed the questionnaires on self-esteem and coping. The qualitative phase in the study has

provided the author with the privileged opportunity to listen to eight students and hear what their inferences were on the significant findings.

The following recommendations are based on the findings from the current study.

## 11.2.1. EARLY EDUCATION

The study recommends:

- 1. The setting up of parenting classes whereby the focus of the class is on parenting the self. Being a parent begins with learning to parent oneself. Parents act as a mirror to their child. It is important that parents look creatively at their own relationship with themselves in a non-threatening way. Consequently this would help enhance their relationship with their child.
- 2. Within primary education curricula, the building of confidence must be seen as a salient feature of the classroom environment. Children need to be encouraged to see mistakes as opportunities for growth. Success and failures need to be seen as important components of learning and not a measure of one's goodness or worth. The self-esteem of children should not be contingent on success. Children need to be encouraged to be their own person.

## 11.2.2. SECOND LEVEL EDUCATION

The study recommends:

3. The establishment of programmes to help parents deal with the changing needs of their adolescent children. Teenagers learn to be independent and self-reliant if

they are afforded the opportunity to take on age appropriate responsibility from early childhood. Parents need to learn the importance of providing, for their teenage child, a balance between both the provision of boundaries and the giving of responsibilities.

- 4. First year in third level education can be a daunting experience for many students. This may be as a result, for example, of experiencing a new environment and different social and academic expectations. Hence there should be a programme, within secondary schools, which focuses on the preparation of students for third level education and life.
- 5. There should be an increased emphasis on personal development within both secondary and third level institutions. These classes should take place in small groups because of self-disclosure. For both girls and boys, the classes should help students in understanding the creative meaning behind their behaviours. The classes should also foster and nurture the continued development of self-confidence and the development of a strong sense of self for teenagers and young adults.
- 6. Within a personal development programme an opportunity needs to be created for boys and girls to learn both masculine and feminine relationship qualities. Society tends to steer boys away from the emotional and nurturing aspects of relationships and girls away from behaviours which relate to drive and ambition.

## 11.2.3. THIRD LEVEL EDUCATION

The study recommends:

- 7. The establishment of a specialised programme for first year third level students which deals with academic planning, personal development and life skills training. It is important to examine the different ways in which students cope with stressors. Some students may be coping, albeit, in a way that may not work well for them in the long term.
- 8. In relation to assessment, lecturers should take into consideration the timing and the types of assignments that students complete throughout the semester, rather than simply seeing the assessment of a module in isolation.
- 9. In-service for lecturers with a focus on effective responses to the emotional, behavioural and social problems of students. It is of great importance that lecturers understand the holistic needs of students and the importance of separating the behaviour from the person. Lecturers should be aware of the various stresses that third level students experience e.g. relationships, finance, academic issues etc.
- 10. Staff development for lecturers in areas such as effective communication, problemsolving, positive leadership and stress management. Teaching and engaging with students is based on a relationship and how one relates to oneself influences all other relationships.

- 11. Third level institutions should recognise the importance of peers and friends to students. Teenagers and young adults need a sense of belonging and peers are a great source for this support.
- 12. The media's depiction, of what constitutes the ideal woman or ideal man, is highly unattainable to most people. Hence media critical analysis programmes should be established. These programmes facilitate a healthier interpretation of the student's own body image. They also facilitate the development of critical skills in helping students to identify the influence media has on their lives.

## 11.3. LIMITATIONS OF THE STUDY

Whilst the current study had much strength, it had some limitations. Correlational studies do have limitations, specifically in relation to revealing causal relationships (Frazier et al. 2004; Polit and Beck 2006; 2009; Bowling 2009). However, hierarchical multiple regression tests had been carried out to determine the predictive link between self-esteem and coping processes. A further limitation relates to the research site being limited to one university. The Rosenberg Self-Esteem Scale (Rosenberg 1965) used in the current study to measure the global self-esteem levels of individuals, does not identify whether the self-esteem is fragile or secure.

## 11.4. IMPLICATIONS FOR FUTURE RESEARCH

This study recommends:

 A longitudinal study to measure the self-esteem levels and coping processes of a cohort of students throughout the four years of a university programme.

- A mixed methods design study which would include a longitudinal qualitative phase.
- A larger scale study across all third level institutions in Ireland, which might involve inter-institutional collaboration. This would be beneficial in providing more generalised results.
- A study which would examine the secure and fragile aspects of self-esteem.
- The use of the CANOCO program in future studies of this nature. The ordinations
  allow the visualisation of large data sets with many variables and also the
  exploration of multivariate relationships and their testing using non-metric Monte
  Carlo tests.

## 11.5. CONCLUSION

No one theoretical perspective can explain why people behave the way they do. The explanation is always within the context of their individual story. The results of this study provide a snapshot of how students (n=479) cope with academic stress and they also show the impact of variables, such as self-esteem, on their coping processes. The nature of our being is complex. The biological, psychological and sociological transactions, which are constantly influencing the evolving self, help to mould and sculpt drafts of the individual's story. The young adult is the editor of the story.

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# **APPENDIX A**

# **Contents**

Letter of Ethical Approval

Letter of Ethical Approval Extension

Email of Permission from the Morris Rosenberg Foundation

The Rosenberg Self-Esteem Scale (Rosenberg 1965)

Permission to reproduce the Ways of Coping Questionnaire (Folkman and Lazarus 1988)

Demographic Questionnaire

Letter accompanying questionnaires sent to participants

#### LETTER OF ETHICAL APPROVAL



# University of Limerick

#### OLLSCOIL LUIMNIGH

University of Limerick Research Ethics Committee
C/o Vice President Academic and Registrar's Office, University of Limerick
Tel: (061) 202022, Fax: (061) 330027, Email: VPAReg@staffmail.ul.ie

5 July 2006

Ms Pauline Hartigan O'Reilly Department of Nursing and Midwifery University of Limerick Limerick

Re: ULREC No. 06/55 – Self Esteem And Coping Strategies Of Third Level Students

Dear Ms Hartigan O'Reilly,

The above application was considered by the University of Limerick Research Ethics Committee, at its meeting today, 5<sup>th</sup> July 2006.

Full approval is herewith granted for this application.

Yours sincerely

Dr Kevin Kelleher Chairman University of Limerick Research Ethics Committee

## LETTER OF ETHICAL APPROVAL EXTENSION



# University of Limerick

OLLSCOIL LUIMNIGH

18 September 2009

**Re:** Extension of Ethical Approval

Dear Pauline

Many thanks for your application which has been reviewed by the EHS Research Ethics Committee. I am pleased to inform you that your application for an extension has been approved.

Kind regards

Anne O'Brien

Administrator for

**EHS Research Ethics Committee** 

EMAIL OF PERMISSION FROM THE MORRIS ROSENBERG FOUNDATION

From: nathanjurgenson@gmail.com on behalf of nathan jurgenson

[njurgenson@socy.umd.edu]

**Sent:** 03 November 2008 17:17

To: Pauline.OReilly@ul.ie

**Subject:** Rosenberg Foundation

Pauline O'Reilly:

Thank you for your letter regarding the Rosenberg Self-Esteem Scale. The foundation is

happy to grant permission for use of the scale for PhD research. This sounds like an

interesting project from what you letter indicates and best of luck! Be sure to share your

results with us when the research is completed.

Nathan Jurgenson

The Morris Rosenberg Foundation

11-3-8

-4-

# THE ROSENBERG SELF-ESTEEM SCALE (ROSENBERG 1965)

# **Instructions:**

Below is a list of statements dealing with your general feelings about yourself. If you strongly agree, circle SA. If you agree with the statement circle A. If you disagree, circle D. If you strongly disagree, circle D.

1. On the whole, I am satisfied with myself.	SA	A	D	SD
2. At times, I think I am no good at all.	SA	A	D	SD
3. I feel that I have a number of good qualities.	SA	A	D	SD
4. I am able to do things as well as most other people.	SA	A	D	SD
5. I feel I do not have much to be proud of.	SA	A	D	SD
6. I certainly feel useless at times.	SA	A	D	SD
7. I feel that I'm a person of worth, at least on an				
equal plane with others.	SA	A	D	SD
8. I wish I could have more respect for myself.	SA	A	D	SD
9. All in all, I am inclined to feel that I am a failure.	SA	A	D	SD
10. I take a positive attitude toward myself.	SA	A	D	SD

# THE WAYS OF COPING QUESTIONNAIRE (FOLKMAN AND LAZARUS 1988)-PERMISSION TO REPRODUCE

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# **Ways of Coping Questionnaire**

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#### Instructions

To respond to the statements in this questionnaire, you must have a specific stressful situation in mind. Take a few moments and think about the most stressful situation that you have experienced in the past week. (MUST RELATE TO UNIVERSITY LIFE)

By "stressful" we mean a situation that was difficult or troubling for you, either because you felt distressed about what happened, or because you had to use considerable effort to deal with the situation. The situation may have involved your family, your job, your friends, or something else important to you. Before responding to the statements, think about the details of this stressful situation, such as where it happened, who was involved, how you acted, and why it was important to you. While you may still be involved in the situation, or it could have already happened, it should be the most stressful situation that you experienced during the week.

As you respond to each of the statements, please keep this stressful situation in mind. Read each statement carefully and indicate, by circling 0, 1, 2 or 3, to what extent you used it in the situation.

Key:

0 = Does not apply or not used

1 = Used somewhat

2 = Used quite a bit

3 = Used a great deal

Please try to respond to every question.

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0 = Does not apply or not used 1 = Used somewhat 2 = Used quite a bit 3	= Us	ed a g	reat o	leal
I just concentrated on what I had to do next – the next step	0	1	2	3
2. I tried to analyze the problem in order to understand it better	0	1	2	3
3. I turned to work or another activity to take my mind off things	0	1	2	3
I felt that time would have made a difference – the only thing was to wait	0	1	2	3
I bargained or compromised to get something positive from the situation.	0	1	2	3
I did something that I didn't think would work,     but at least I was doing something	0	1	2	3
7. I tried to get the person responsible to change his or her mind	0	1	2	3
8. I talked to someone to find out more about the situation	0	1	2	3
I criticized or lectured myself	0	1	2	3
10. I tried not to burn my bridges, but leave things open somewhat	0	1	2	3
11. I hoped for a miracle	0	1	2	3
12. I went along with fate; sometimes I just have bad luck	0	1	2	3
13. I went on as if nothing had happened	0	1	2	3
14. I tried to keep my feelings to myself	0	1	2	3
I looked for the silver lining, so to speak;     I tried to look on the bright side of things.	0	1	2	3
16. I slept more than usual.	0	1	2	3
17. I expressed anger to the person(s) who caused the problem	0	1	2	3
18. I accepted sympathy and understanding from someone	0	1	2	3
19. I told myself things that helped me feel better.	0	1	2	3
20. I was inspired to do something creative about the problem	0	1	2	3
21. I tried to forget the whole thing	0	1	2	3
22. I got professional help	0	1	2	3

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		5.7			
0 :	= Does not apply or not used 1 = Used somewhat 2 = Used quite a bit 3	= Use	d a gre	eat de	al
23.	I changed or grew as a person.	0	1	2	3
24.	I waited to see what would happen before doing anything	0	1	2	3
25.	I apologized or did something to make up.	0	1	2	3
26.	I made a plan of action and followed it.	0	1	2	3
27.	I accepted the next best thing to what I wanted	0	1	2	3
28.	I let my feelings out somehow	0	1	2	3
29.	I realized that I had brought the problem on myself	0	1	2	3
30.	I came out of the experience better than when I went in	0	1	2	3
31.	I talked to someone who could do something concrete about the problem.	0	1	2	3
32.	I tried to get away from it for a while by resting or taking a vacation.	0	1	2	3
33.	I tried to make myself feel better by eating, drinking, smoking, using drugs, or medications, etc.	0	1	2	3
34.	I took a big chance or did something very risky to solve the problem.	0	1	2	3
35.	I tried not to act too hastily or follow my first hunch	0	1	2	3
36.	I found new faith.	0	1	2	3
37.	I maintained my pride and kept a stiff upper lip.	0	1	2	3
38.	I rediscovered what is important in life	0	1	2	3
39.	I changed something so things would turn out all right	0	1	2	3
40.	I generally avoided being with people	0	1	2	3
41.	I didn't let it get to me; I refused to think too much about it	0	1	2	3
42.	I asked advice from a relative or friend I respected	0	1	2	3
	I kept others from knowing how bad things were		1	2	3
44.	I made light of the situation; I refused to get too serious about it	0	1	2	3

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0 = Does not apply or not used 1 = Used somewhat 2 = Used quite a bit 3	= Use	ed a g	reat d	eal
45. I talked to someone about how I was feeling.	0	1	2	3
46. I stood my ground and fought for what I wanted	0	1	2	3
47. I took it out on other people.	0	1	2	3
48. I drew on my past experiences; I was in a similar situation before	0	1	2	3
49. I knew what had to be done, so I doubled my efforts to make things work	0	1	2	3
50. I refused to believe that it had happened	0	1	2	3
51. I promised myself that things would be different next time.	0	1	2	3
52. I came up with a couple of different solutions to the problem	0	1	2	3
53. I accepted the situation, since nothing could be done	0	1	2	3
54. I tried to keep my feeling about the problem from interfering with other things	0	1	2	3
55. I wished that I could change what had happened or how I felt	0	1	2	3
56. I changed something about myself	0	1	2	3
57. I daydreamed or imagined a better time or place than the one I was in	0	1	2	3
58. I wished that the situation would go away or somehow be over with.	0	1	2	3
59. I had fantasies or wishes about how things might turn out	0	1	2	3
60. I prayed	0	1	2	3
61. I prepared myself for the worst.	0	1	2	3
62. I went over in my mind what I would say or do	0 .	1	2	3
63. I thought about how a person I admire would handle this situation and used that as a model.	0	1	2	3
64 I tried to see things from the other person's point of view	0	1	2	3
65. I reminded myself how much worse things could be	0	1	2	3
66. I jogged or exercised	0	1	2	3

Stop Here.

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# DEMOGRAPHIC QUESTIONNAIRE

# Please fill in all sections. Thank you

Age	17 – 21□; 22-26□; 27-31□; 32-36□; 37- 41□; 42-46□;
	46 or over □
Gender	Female □ Male □
Nationality	
Year Of Programme	First Year □ Second Year □ Third Year □ Fourth Year □
<b>Programme Title</b>	

## LETTER ACCOMPANYING QUESTIONNAIRES SENT TO PARTICIPANTS



# UNIVERSITY of LIMERICK

OLLSCOIL LUIMNIGH

September 2007

Dear Participant,

I am currently undertaking my PhD research in the University of Limerick. The topic I am investigating is self-esteem and coping strategies of students attending a third level institution.

I would be grateful if you would complete the questionnaires attached and return in the freepost envelope enclosed. Total anonymity will be assured throughout the research process. The questionnaires will be coded and all means of identification will be removed from the questionnaires.

To enhance the research findings I would like to carry out a number of individual interviews. If you would like to volunteer please complete the section attached and return with completed questionnaires.

If you have any queries please feel free to contact me at 061-234210 or email me at

<u>Pauline.OReilly@ul.ie.</u> In the event of the questionnaire raising personal issues for you, the Student Counselling department in the University of Limerick may be contacted at **061-202151**, **061-202332** or **061-202446**.

All participants who return completed questionnaires will be entered in a competition for a  $\epsilon$ 200 voucher (four in total). Draw will take place on Friday December 14<sup>th</sup> 2007.

Thanking you in anticipation,

Pauline O'Reilly

Department of Nursing and Midwifery

This research has been approved by ULREC No 06/55 in July 2006. **If you have concerns about this study and wish to contact someone independent, you may contact** The Chairman of the University of Limerick Research Ethics Committee c/o Vice President Academic and Registrar's Office, University of Limerick, Limerick Tel: (061) 202022 or email <a href="mailto:vpareg@staffmail.ul.ie">vpareg@staffmail.ul.ie</a>

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#### **N.B** (For competition entry only)

Please supply first name and contact number if you would like to be included in the competition.

.....



# **Declaration for Inclusion in selection for Interview**

# **Title of Study**

**Self Esteem and Coping Strategies of Third Level Students** 

I am willing to agree in having my name included for selection for
a follow up interview. I can withdraw from the study at any time. Please give contact details.
If you have any queries please feel free to contact me at 061-234210 or email me at

Pauline.OReilly@ul.ie

# **APPENDIX B**

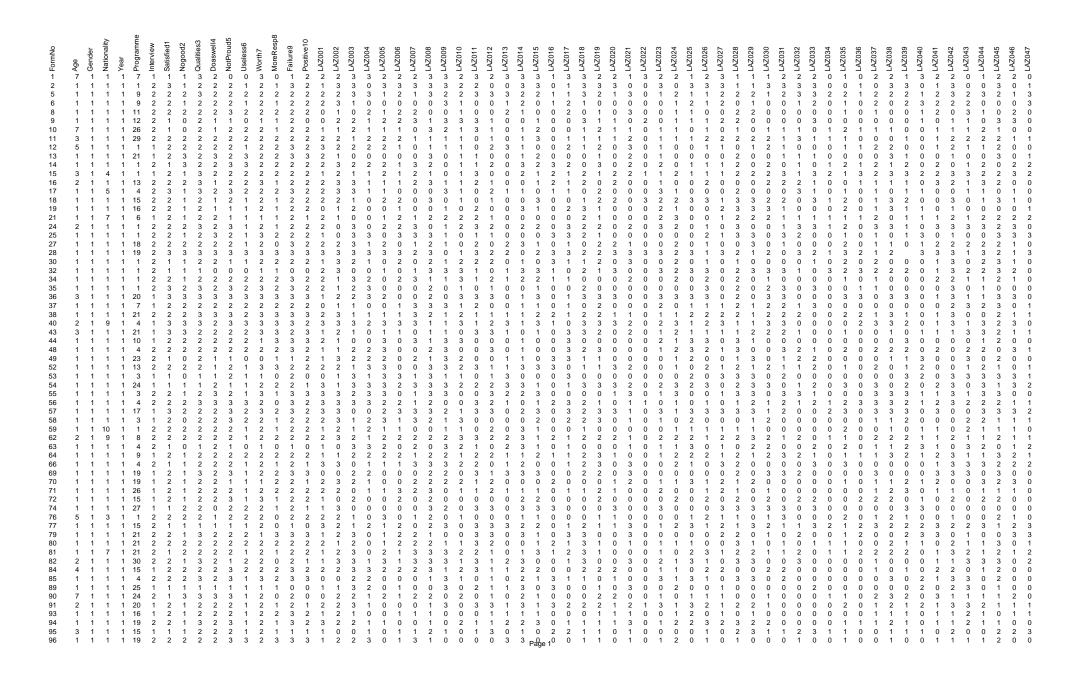
# Contents

Main Data Set

Data Codes

Significant Findings using the original Eight Factor Model of the WOCQ

# MAIN DATA SET



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3 2 0 2 1 2 2 3 0 0 0 0 0 0 0 2 3 0 102 21 2 1	1 4.64	2 0.00 0.12 0.04 0.18 0.23 0.12 0.31		0.12 0.11		0.21 0.0			0.07	0.09 0.0		0.19	0.13 0.27 1
3 0 0 2 0 0 1 3 1 0 3 3 1 2 2 0 1 0 3 101 9 1 1	1 3.08	1 0.07 0.25 0.16 0.07 0.12 0.09 0.24	0.11 (	0.02 0.15	0.09	0.28 0.2	0.09	0.05	0.06	0.26 0.1	8 0.13	0.13	0.04 0.21 1
2 1 0 2 1 0 2 1 2 3 2 3 0 1 0 0 0 3 0 102 20 2 1	1 4.53	2 0.06 0.21 0.15 0.23 0.13 0.21 0.00	0.03	0.15 0.13	0.10	0.15 0.2	0.15	0.10	0.07	0.22 0.1	5 0.20	0.15	0.16 0.06 1
3 0 0 0 0 3 3 3 0 3 3 3 0 3 3 2 0 1 3101 9 1 1	1 3.08	1 0.06 0.22 0.05 0.07 0.20 0.14 0.26		0.11 0.16		0.14 0.1		0.00		0.22 0.0		0.23	0.17 0.20 1
2 2 3 2 3 1 1 2 2 2 0 3 0 3 2 0 1 2 0 102 14 1 1	1 3.81	1 0.04 0.17 0.08 0.20 0.14 0.20 0.18		0.14 0.10		0.16 0.1		0.09		0.17 0.0		0.16	0.14 0.17 1
3 3 0 3 3 3 3 3 0 3 3 3 0 1 3 3 3 2 2 101 21 2 1	1 4.64	2 0.08 0.24 0.03 0.20 0.24 0.19 0.03		0.19 0.13		0.17 0.0				0.19 0.0		0.19	0.20 0.09 1
1 2 2 2 1 2 1 1 1 2 2 1 2 1 2 1 2 1 102 23 2 1 3 3 2 3 3 2 1 1 2 2 2 2 2 0 1 3 0 3 3 0 102 24 2 1	1 4.85 1 4.95	3 0.19 0.17 0.13 0.13 0.17 0.09 0.12 3 0.04 0.19 0.06 0.20 0.17 0.12 0.22		0.12 0.11 0.13 0.08		0.08 0.1 0.16 0.0		0.12 0.10		0.14 0.1 0.15 0.0		0.18 0.15	0.13 0.12 1
3 3 2 3 3 2 1 1 2 2 2 2 0 1 3 0 3 3 0 102 24 2 1 0 2 0 0 0 0 1 2 2 3 2 1 0 0 2 0 2 3 0 101 18 2 1	1 4.95	1 0.08 0.14 0.02 0.16 0.14 0.16 0.31		0.13 0.06 0.11 0.16		0.16 0.0 0.14 0.0		0.10		0.15 0.0 0.16 0.0		0.15	0.13 0.20 1 0.12 0.30 1
1 1 0 1 1 3 1 2 1 2 1 1 0 3 1 1 2 3 1 101 18 2 1	2 4.30	1 0.11 0.23 0.03 0.18 0.11 0.23 0.11		0.15 0.27		0.14 0.0		0.05		0.16 0.0		0.10	0.20 0.17 1
2 2 1 2 2 2 2 2 2 2 2 2 1 2 2 2 2 2 1 101 19 2 2		1 0.11 0.20 0.08 0.15 0.17 0.16 0.13		0.10 0.15		0.17 0.1				0.18 0.1		0.15	0.12 0.14 1
1 0 1 3 1 0 2 3 1 3 3 0 0 1 3 2 3 1 1102 7 1 1	1 2.74	1 0.09 0.20 0.14 0.12 0.03 0.22 0.21	0.07	0.12 0.24	0.00	0.27 0.1	5 0.08	0.07	0.13	0.26 0.1	4 0.07	0.00	0.15 0.24 1
2 2 1 1 2 1 1 2 1 3 3 3 3 3 2 3 2 2 3 101 19 2 1	1 4.42	1 0.18 0.18 0.06 0.15 0.21 0.09 0.13	0.10	0.10 0.11	0.17	0.12 0.1	3 0.14	0.13	0.16	0.18 0.0	0.13	0.21	0.09 0.14 1
3 3 1 3 0 0 1 3 0 1 3 3 0 3 3 0 0 1 0 102 15 1 1	1 3.94	1 0.00 0.21 0.09 0.13 0.16 0.21 0.19		0.12 0.17		0.15 0.1				0.26 0.0		0.21	0.14 0.14 1
0 0 2 0 0 3 3 3 0 0 1 1 0 0 2 0 0 3 1 101 22 2 1	1 4.74	2 0.00 0.19 0.05 0.10 0.32 0.34 0.00		0.27 0.20		0.06 0.1				0.17 0.0		0.35	0.36 0.00 1
1 0 0 2 1 0 2 3 0 3 3 3 0 3 2 0 2 0 0101 15 1 1 1 1 0 0 1 2 2 3 3 2 1 0 1 1 2 2 0 0 3 2 101 18 2 1	1 3.94 1 4.30	1 0.00 0.25 0.06 0.12 0.12 0.20 0.26 1 0.12 0.18 0.00 0.19 0.22 0.13 0.16		0.16 0.11		0.24 0.1 0.03 0.0				0.28 0.0 0.15 0.0		0.10	0.15 0.20 1
1 0 0 1 2 2 3 3 2 1 0 1 1 2 2 0 0 3 2 101 18 2 1 0 0 0 0 2 1 1 1 0 0 0 2 2 1 0 2 2 0 2 0	1 4.30 1 4.42	1 0.23 0.20 0.08 0.15 0.23 0.12 0.00		0.13 0.13 0.10 0.16		0.03 0.0 0.08 0.1		0.17		0.15 0.0 0.15 0.1		0.16 0.25	0.18 0.11 1 0.16 0.00 1
3 3 0 3 3 0 0 0 0 3 3 3 0 0 0 0 0 3 0 102 15 1 1	1 3.94	1 0.00 0.29 0.17 0.29 0.19 0.06 0.00		0.09 0.04		0.19 0.2		0.12		0.23 0.		0.17	0.05 0.00 1
1 1 0 0 1 0 2 0 0 0 0 0 0 1 1 0 2 2 0 101 17 2 2		1 0.00 0.03 0.00 0.34 0.36 0.09 0.19		0.03 0.19		0.05 0.0		0.11		0.04 0.0		0.28	0.08 0.25 1
0 2 1 1 1 1 1 3 2 3 3 3 1 2 3 1 2 3 1 101 9 1 1	1 3.08	1 0.12 0.21 0.13 0.12 0.12 0.19 0.12	0.09	0.19 0.10	0.09	0.17 0.1	5 0.10	0.11	0.13	0.21 0.1	3 0.12	0.12	0.18 0.12 1
0 1 0 0 0 3 1 3 0 0 3 0 0 3 2 0 0 3 0 101 22 2 1	1 4.74	2 0.06 0.19 0.11 0.09 0.10 0.19 0.26		0.21 0.14		0.00 0.1		0.05	80.0	0.18 0.1		0.13	0.20 0.19 1
0 1 2 1 1 0 0 3 1 1 3 1 1 0 1 1 1 0 0 101 20 2 1	1 4.53	2 0.10 0.21 0.14 0.09 0.27 0.06 0.13		0.09 0.08		0.11 0.1				0.19 0.1		0.29	0.05 0.12 1
1 2 1 2 2 0 1 3 2 3 1 3 0 2 3 2 2 3 3 101 17 2 1	2 4.18	1 0.14 0.19 0.07 0.15 0.20 0.08 0.19		0.08 0.13		0.18 0.1		0.09		0.20 0.0		0.20	0.07 0.17 1
1 3 3 0 0 0 3 2 0 3 3 3 3 2 2 0 3 2 0 102 16 2 2 2 2 0 2 2 1 1 1 0 0 1 0 0 0 0 2 0 2		1 0.08 0.21 0.07 0.06 0.19 0.22 0.18 2 0.08 0.17 0.00 0.26 0.23 0.20 0.08		0.14 0.14 0.14 0.12		0.19 0.1		0.06		0.21 0.1 0.11 0.0		0.19	0.15 0.19 1 0.16 0.09 1
2 2 0 2 2 1 1 1 0 0 1 0 0 0 0 2 0 2 0 101 22 2 2 2	1 4.74	3 0.09 0.21 0.14 0.10 0.27 0.08 0.12		0.14 0.12 0.05 0.11		0.09 0.0 0.28 0.1				0.11 0.0 0.26 0.1		0.26	0.16 0.09 1
1 0 1 1 0 0 1 3 0 3 3 3 0 2 2 1 1 1 0 102 8 1 1	1 2.92	1 0.05 0.36 0.23 0.04 0.08 0.24 0.00		0.03 0.11		0.26 0.1		0.00		0.20 0. 0.42 0.2		0.10	0.14 0.03 1
2 3 1 3 2 0 3 3 1 0 3 1 0 1 2 0 1 3 3 102 18 2 2		1 0.04 0.18 0.04 0.22 0.15 0.19 0.18		0.12 0.18		0.12 0.0		0.13		0.17 0.0		0.09	0.15 0.18 1
1 2 2 3 1 1 3 3 1 3 3 3 1 2 3 1 2 1 1101 16 2 2		1 0.07 0.24 0.12 0.13 0.16 0.14 0.14		0.12 0.16		0.20 0.1		0.09	0.11	0.25 0.1		0.14	0.14 0.12 1
1 0 1 1 1 1 2 0 0 1 1 0 0 1 0 1 2 0 101 19 2 1	1 4.42	1 0.00 0.20 0.07 0.15 0.10 0.22 0.26		0.20 0.14	0.07	0.20 0.1	0.13	0.06	0.06	0.16 0.0	7 0.20	0.08	0.23 0.19 1
1 1 0 0 1 1 0 1 0 2 0 1 1 0 1 0 2 2 0 101 20 2 1	1 4.53	2 0.07 0.10 0.00 0.25 0.19 0.27 0.11		0.22 0.14		0.12 0.0		0.14		0.11 0.0		0.16	0.22 0.14 1
0 1 1 0 1 2 1 3 1 1 2 2 2 2 3 0 0 1 0 101 14 1 2		1 0.10 0.23 0.20 0.09 0.18 0.04 0.16		0.08 0.10		0.11 0.2		0.08		0.22 0.2		0.21	0.07 0.10 1
1 2 0 0 1 1 0 0 0 0 0 0 0 3 3 0 3 2 3 101 25 2 1	1 5.05	3 0.00 0.10 0.00 0.16 0.23 0.34 0.17	0.16	0.20 0.22	0.16	0.00 0.0	0.20	0.06	0.05	0.12 0.0	3 0.20	0.20	0.20 0.20 1

LAZ048 LAZ050 LAZ051 LAZ051 LAZ052 LAZ053 LAZ056 LAZ056 LAZ056 LAZ056 LAZ066 LAZ066 LAZ066 LAZ066 LAZ066 LAZ067 LAZ068 LAZ068 LAZ068 RAZ069 RA	SEGIP3 RelPSRDCA RelDis RelDis RelSSDCA RelSSDCA RelSSDCA RelCDCA RelCCC RelDCA RelCCC RelDCA RelCCC RelDCA RelCCC RelDCA RelCCC RelCCCA R
3 3 1 1 2 2 2 1 1 2 2 1 1 2 2 2 2 2 2 2	4.85 3 0.12 0.14 0.03 0.25 0.30 0.04 0.12 0.11 0.12 0.10 0.20 0.07 0.06 0.20 0.14 0.16 0.11 0.04 0.22 0.26 0.12 0.10 1 3.39 1 0.08 0.18 0.15 0.15 0.08 0.20 0.16 0.16 0.08 0.20 0.05 0.07 0.21 0.14 0.08 0.12 0.24 0.17 0.14 0.12 0.10 0.12 1
1 2 0 1 2 2 1 1 1 1 3 2 2 2 3 1 1 2 3 102 19 2 1 1 0 1 0 3 0 0 3 3 0 0 3 3 3 0 0 3 0 1 1 0 101 20 2 1 1	4.42 1 0.13 0.20 0.04 0.21 0.26 0.04 0.13 0.16 0.07 0.12 0.20 0.03 0.11 0.22 0.09 0.11 0.17 0.06 0.19 0.26 0.08 0.13 1 4.53 2 0.00 0.27 0.00 0.07 0.23 0.13 0.30 0.22 0.09 0.16 0.20 0.14 0.13 0.06 0.00 0.00 0.29 0.00 0.06 0.29 0.13 0.23 1
0 2 0 1 2 0 2 2 2 0 0 2 1 0 0 2 2 3 1 101 14 1 1 1	3.81 1 0.14 0.11 0.07 0.16 0.21 0.19 0.12 0.08 0.13 0.14 0.18 0.16 0.05 0.12 0.14 0.17 0.10 0.06 0.17 0.23 0.15 0.13 1
2 3 1 2 0 1 2 2 3 2 0 1 2 1 2 3 3 1 2 101 27 2 1 1 0 0 0 0 0 0 0 0 0 0 2 0 0 0 0 0 0	5.24 3 0.23 0.11 0.12 0.15 0.15 0.12 0.12 0.11 0.15 0.12 0.11 0.12 0.10 0.12 0.11 0.12 0.09 0.14 0.15 0.17 0.10 0.15 0.15 0.15 0.14 0.15 0.13 1 4.85 3 0.00 0.08 0.00 0.07 0.16 0.12 0.56 0.42 0.19 0.13 0.12 0.06 0.00 0.08 0.00 0.00 0.00 0.08 0.00 0.07 0.23 0.12 0.50 1
1 2 0 2 2 2 0 2 3 1 2 3 0 1 2 3 3 2 0 101 26 2 1 1 0 1 1 0 0 1 1 1 1 0 0 1 0 1 1 1 1	5.15 3 0.14 0.16 0.04 0.15 0.22 0.12 0.18 0.15 0.13 0.10 0.15 0.12 0.09 0.13 0.14 0.16 0.14 0.06 0.15 0.20 0.12 0.17 1 5.24 3 0.12 0.13 0.10 0.09 0.26 0.19 0.12 0.14 0.17 0.15 0.17 0.05 0.13 0.03 0.15 0.17 0.14 0.10 0.03 0.23 0.23 0.11 1
2 2 0 3 1 0 2 3 1 3 3 3 1 2 3 2 0 0 0 101 18 2 2 1 3 1 0 0 1 2 1 1 0 3 3 3 2 3 2 1 2 1 0 101 13 1 2 1	4.30 1 0.11 0.29 0.03 0.16 0.20 0.13 0.08 0.07 0.06 0.18 0.16 0.19 0.12 0.14 0.07 0.11 0.32 0.05 0.18 0.22 0.08 0.05 1 3.67 1 0.13 0.17 0.15 0.09 0.12 0.21 0.13 0.12 0.09 0.18 0.08 0.16 0.18 0.11 0.08 0.09 0.21 0.15 0.10 0.14 0.13 0.17 1
3 3 0 3 3 0 0 3 3 3 0 3 3 1 3 2 3 2 1 101 17 2 1 1	4.18 1 0.24 0.28 0.06 0.21 0.12 0.00 0.08 0.09 0.07 0.06 0.09 0.22 0.11 0.20 0.16 0.20 0.24 0.10 0.21 0.11 0.03 0.11 1
3 3 0 3 3 3 3 3 3 3 1 3 0 2 3 0 1 3 0 101 26 2 1 1 3 0 0 2 3 0 3 3 3 101 21 2 1 1	5.15 3 0.07 0.16 0.11 0.21 0.08 0.21 0.17 0.13 0.13 0.14 0.03 0.16 0.12 0.20 0.10 0.09 0.19 0.09 0.22 0.07 0.19 0.15 1 4.64 2 0.16 0.21 0.05 0.16 0.21 0.12 0.08 0.06 0.11 0.16 0.13 0.19 0.08 0.13 0.16 0.19 0.15 0.04 0.15 0.21 0.15 0.10 1
3 1 0 2 1 0 1 3 1 3 3 3 0 0 0 0 0 1 1 0 101 16 2 1 1 1 2 0 1 2 2 2 1 1 1 1 2 1 1 1 0 1 1 1 1	4.06 1 0.02 0.19 0.01 0.15 0.21 0.13 0.28 0.17 0.13 0.05 0.16 0.18 0.10 0.12 0.09 0.08 0.19 0.01 0.15 0.22 0.11 0.24 1 4.42 1 0.08 0.13 0.06 0.17 0.20 0.16 0.21 0.15 0.12 0.11 0.15 0.15 0.05 0.15 0.13 0.13 0.13 0.12 0.03 0.17 0.19 0.16 0.20 1
0 1 2 0 1 0 1 2 3 3 3 3 1 0 2 0 2 1 0 101 14 1 1 2 2 2 0 1 0 2 0 0 0 0 1 0 0 0 1 0 0 2 0 102 20 2 1 1	3.81 1 0.17 0.19 0.15 0.15 0.18 0.06 0.10 0.14 0.08 0.08 0.13 0.06 0.20 0.11 0.18 0.16 0.17 0.18 0.13 0.17 0.08 0.11 1 4.53 2 0.00 0.27 0.00 0.30 0.23 0.20 0.00 0.00 0.17 0.03 0.21 0.21 0.08 0.28 0.03 0.06 0.19 0.00 0.27 0.24 0.24 0.00 1
1 1 3 1 1 2 3 3 1 3 3 3 0 2 2 0 0 0 0101 15 1 1 1	3.94 1 0.02 0.13 0.24 0.08 0.15 0.16 0.21 0.22 0.11 0.17 0.11 0.02 0.23 0.07 0.06 0.06 0.17 0.23 0.09 0.16 0.16 0.14 1
0 2 0 3 2 3 3 3 3 3 2 2 0 0 0 0 3 3 2 102 22 2 1 1 2 2 2 2 2 2 2 2 2 3 3 3 3 3 3	4.74 2 0.09 0.15 0.02 0.24 0.24 0.23 0.03 0.06 0.14 0.16 0.11 0.12 0.06 0.17 0.19 0.20 0.16 0.01 0.20 0.16 0.21 0.07 1 4.95 3 0.23 0.21 0.07 0.20 0.19 0.07 0.03 0.03 0.10 0.11 0.13 0.11 0.15 0.18 0.19 0.21 0.21 0.21 0.06 0.20 0.15 0.11 0.06 1
0 0 0 1 0 0 0 3 0 0 3 3 0 3 0 0 3 3 0 101 19 2 1 1 3 1 1 0 2 1 2 2 3 1 1 1 1 1 2 0 3 2 3 101 18 2 1 1	4.42 1 0.00 0.22 0.14 0.02 0.34 0.08 0.19 0.18 0.11 0.00 0.47 0.05 0.19 0.00 0.00 0.00 0.00 0.24 0.08 0.02 0.34 0.08 0.24 1 4.30 1 0.11 0.12 0.12 0.17 0.17 0.17 0.14 0.16 0.18 0.08 0.15 0.06 0.09 0.16 0.12 0.12 0.12 0.09 0.12 0.16 0.17 0.18 0.14 1
3 3 1 3 3 2 2 2 1 2 1 0 1 1 2 2 3 3 3 101 19 2 2 1 3 0 1 0 1 0 3 3 0 3 3 3 1 3 3 0 1 3 0 101 20 2 1 1	4.42 1 0.11 0.10 0.09 0.23 0.16 0.16 0.13 0.10 0.11 0.15 0.07 0.16 0.06 0.19 0.15 0.16 0.13 0.08 0.22 0.11 0.15 0.16 1 4.53 2 0.03 0.25 0.13 0.09 0.07 0.11 0.30 0.27 0.06 0.23 0.02 0.06 0.22 0.12 0.02 0.02 0.02 0.31 0.14 0.10 0.09 0.08 0.26 1
1 0 0 2 1 2 1 3 1 0 1 0 0 0 3 0 1 2 0102 18 2 1 1 2 1 2 3 1 0 2 2 0 2 3 3 0 2 2 0 3 2 1101 27 2 1 1	4.30 1 0.04 0.19 0.04 0.17 0.12 0.16 0.28 0.13 0.09 0.15 0.06 0.23 0.08 0.17 0.09 0.12 0.20 0.06 0.18 0.09 0.14 0.21 1 5.24 3 0.00 0.24 0.05 0.21 0.11 0.16 0.24 0.15 0.14 0.16 0.01 0.15 0.13 0.14 0.12 0.11 0.21 0.06 0.19 0.05 0.14 0.25 1
999 999 999 999 999 999 999 999 999 999 999 999 999 999 999 999 999 999 101 18 2 1 1	4.30 1
1 2 0 1 2 1 1 1 1 1 2 0 1 1 0 1 1 3 101 26 2 2 1	5.15 3 0.08 0.17 0.03 0.20 0.26 0.09 0.16 0.12 0.15 0.09 0.18 0.15 0.04 0.16 0.11 0.13 0.10 0.04 0.18 0.22 0.15 0.18 1 5.15 3 0.06 0.13 0.07 0.25 0.19 0.13 0.16 0.11 0.11 0.08 0.12 0.13 0.09 0.21 0.15 0.14 0.12 0.11 0.22 0.15 0.13 0.13 1
3 1 0 0 2 1 3 1 0 0 3 1 0 2 2 1 3 2 0 101 20 2 1 1 2 2 2 3 2 3 1 2 3 2 3 2 1 3 3 3 3	4.53 2 0.07 0.18 0.02 0.14 0.28 0.21 0.10 0.15 0.18 0.14 0.22 0.06 0.06 0.13 0.06 0.08 0.13 0.02 0.14 0.28 0.21 0.14 1 3.67 1 0.16 0.18 0.15 0.14 0.12 0.12 0.12 0.10 0.12 0.13 0.11 0.14 0.15 0.12 0.12 0.16 0.19 0.14 0.12 0.11 0.14 0.14 1
0 2 0 2 2 0 2 2 2 1 2 1 0 0 0 2 2 3 2 102 23 2 1 1 1 1 1 0 0 0 1 1 1 1 0 2 1 2 0 0 1 0 1	4.85 3 0.13 0.11 0.02 0.26 0.28 0.17 0.03 0.08 0.11 0.15 0.19 0.07 0.05 0.21 0.13 0.19 0.10 0.02 0.19 0.25 0.14 0.11 1 4.18 1 0.00 0.19 0.00 0.14 0.34 0.17 0.17 0.21 0.13 0.15 0.26 0.00 0.10 0.09 0.07 0.03 0.17 0.03 0.15 0.32 0.17 0.12 1
3 1 2 3 2 3 3 3 2 2 2 3 1 2 2 0 2 3 0 101 19 2 1 1 1 1 0 1 2 3 3 3 3 2 1 3 3 1 3 2 3 1 2 2 0 101 15 1 2 2	4.42 1 0.08 0.18 0.03 0.16 0.16 0.29 0.10 0.07 0.17 0.15 0.13 0.20 0.07 0.13 0.07 0.07 0.22 0.03 0.15 0.19 0.25 0.09 1
2 3 0 3 0 2 3 0 0 3 3 3 1 2 3 0 3 1 3 102 18 2 1 1	4.30 1 0.02 0.24 0.03 0.12 0.22 0.17 0.20 0.17 0.15 0.13 0.15 0.15 0.09 0.10 0.05 0.07 0.19 0.02 0.13 0.21 0.18 0.19 1
2 3 1 3 3 3 1 3 2 3 3 3 3 3 3 3 2 3 0101 20 2 2 2 1 1 1 0 1 1 1 2 3 1 0 0 1 1 1 1 1 1 1 1 0102 16 2 1 1	4.06 1 0.08 0.07 0.03 0.17 0.21 0.23 0.21 0.14 0.18 0.15 0.17 0.07 0.05 0.14 0.12 0.12 0.08 0.07 0.15 0.20 0.21 0.17 1
0 1 0 2 2 2 2 1 2 0 1 0 2 1 2 1 2 2 0 102 19 2 1 1 3 1 0 1 1 0 1 3 1 3 3 3 0 1 3 1 2 0 0 102 17 2 1 1	4.42 1 0.23 0.16 0.00 0.19 0.17 0.18 0.07 0.00 0.13 0.19 0.11 0.22 0.03 0.15 0.19 0.23 0.15 0.02 0.17 0.12 0.18 0.12 1 4.18 1 0.07 0.33 0.08 0.15 0.08 0.13 0.17 0.09 0.09 0.18 0.05 0.24 0.17 0.14 0.05 0.07 0.34 0.09 0.16 0.09 0.07 0.17 1
999 999 999 999 999 999 999 999 999 99	4.53 2 4.18 1 0.19 0.16 0.07 0.16 0.14 0.18 0.10 1
0 2 0 0 2 0 1 0 0 0 0 2 0 0 3 0 3 3 0 102 15 1 1 1 1 0 0 0 0 1 2 1 1 3 0 1 3 2 0 3 3 0 3 0 0 102 12 1 1 1	3.94 1 0.00 0.09 0.00 0.25 0.19 0.13 0.35 0.17 0.08 0.18 0.10 0.09 0.03 0.23 0.11 0.12 0.07 0.00 0.22 0.16 0.10 0.34 1 3.54 1 0.00 0.21 0.06 0.09 0.23 0.12 0.29 0.20 0.12 0.10 0.22 0.17 0.11 0.03 0.05
0 1 2 1 1 2 2 3 3 3 1 2 1 1 2 1 2 2 2 102 13 1 1 1	3.67 1 0.15 0.17 0.17 0.15 0.14 0.13 0.10 0.10 0.13 0.12 0.10 0.15 0.15 0.13 0.13 0.15 0.15 0.15 0.17 0.14 0.12 0.14 0.14 1
3 2 0 3 2 3 2 2 1 2 2 2 2 0 2 3 3 2 0 102 20 2 1 1 0 1 3 3 1 0 2 2 2 1 2 3 0 2 2 1 2 2 1 102 12 1 1 1	4.53 2 0.14 0.15 0.05 0.16 0.20 0.15 0.16 0.11 0.12 0.14 0.15 0.13 0.08 0.14 0.13 0.16 0.13 0.07 0.14 0.20 0.14 0.16 1 3.54 1 0.08 0.25 0.08 0.12 0.22 0.21 0.05 0.04 0.15 0.15 0.15 0.13 0.22 0.12 0.08 0.11 0.14 0.24 0.09 0.10 0.20 0.16 0.07 1
0 2 0 3 2 0 2 1 2 0 2 2 0 3 2 1 3 3 0 102 17 2 1 1 1 1 0 0 0 1 1 2 2 0 1 3 0 0 2 3 0 2 0 0 102 17 2 1 1	4.18 1 0.10 0.22 0.04 0.16 0.25 0.04 0.20 0.10 0.00 0.14 0.18 0.29 0.07 0.14 0.08 0.12 0.21 0.03 0.14 0.25 0.03 0.22 1 4.18 1 0.00 0.20 0.03 0.12 0.20 0.24 0.20 0.14 0.20 0.19 0.20 0.08 0.08 0.08 0.08 0.02 0.02 0.22 0.02 0.11 0.23 0.22 0.17 1
2  2  0  3  2  3  3  1  2  3  3  2  1  1  2  2  0  1  0 102  25  2  1  1  3  1  0  2  3  3  2  1  0  1  3  2  2  3  2  1  2  2  0 102  18  2  1  1	5.05 3 0.13 0.22 0.06 0.23 0.20 0.14 0.03 0.04 0.12 0.16 0.14 0.16 0.11 0.18 0.10 0.14 0.21 0.07 0.19 0.20 0.18 0.02 1 4.30 1 0.09 0.26 0.05 0.14 0.15 0.16 0.15 0.16 0.08 0.12 0.10 0.17 0.12 0.16 0.08 0.13 0.24 0.05 0.14 0.15 0.15 0.15 0.13 1
0 0 1 2 3 3 3 3 3 1 1 3 3 3 3 3 3 3 2 101 18 2 2 1 3 2 1 0 0 1 2 0 0 1 3 0 0 3 1 0 1 0 1 102 19 2 2 1	4.30 1 0.19 0.13 0.07 0.13 0.26 0.13 0.09 0.10 0.13 0.12 0.23 0.04 0.10 0.08 0.20 0.17 0.15 0.03 0.12 0.23 0.18 0.12 1 4.42 1 0.00 0.14 0.07 0.19 0.25 0.23 0.12 0.09 0.13 0.20 0.17 0.00 0.15 0.17 0.09 0.09 0.16 0.06 0.20 0.20 0.19 0.10 2
1 1 1 2 2 3 2 2 1 2 2 3 2 2 3 2 2 3 0 101 22 2 1 1	4.74 2 0.15 0.20 0.07 0.20 0.13 0.14 0.12 0.09 0.16 0.19 0.06 0.12 0.09 0.19 0.09 0.13 0.18 0.06 0.20 0.11 0.18 0.14 2
0 2 0 0 2 0 2 1 0 0 0 0 1 0 2 2 3 2 2 101 23 2 1 1 2 2 0 0 0 0 3 1 2 0 0 2 0 2 0 3 0 0 1 0 101 19 2 1 1	4.85 3 0.15 0.07 0.00 0.20 0.07 0.23 0.29 0.15 0.15 0.26 0.03 0.09 0.02 0.21 0.08 0.16 0.07 0.00 0.20 0.06 0.18 0.33 2 4.42 1 0.11 0.14 0.00 0.28 0.21 0.21 0.05 0.06 0.20 0.15 0.14 0.04 0.04 0.04 0.25 0.12 0.11 0.14 0.00 0.25 0.18 0.28 0.03 2
3 2 0 0 0 0 0 1 1 0 1 1 3 3 3 1 2 3 0 101 16 2 2 1 1 1 3 2 1 2 2 2 2 2 3 2 3 2 2 0 0 2 0 101 17 2 1 1	4.06 1 0.16 0.10 0.04 0.14 0.18 0.24 0.13 0.10 0.20 0.17 0.10 0.03 0.06 0.16 0.17 0.22 0.13 0.06 0.15 0.13 0.17 0.13 2 4.18 1 0.16 0.19 0.14 0.11 0.12 0.15 0.12 0.09 0.07 0.13 0.09 0.17 0.19 0.09 0.16 0.12 0.25 0.14 0.14 0.12 0.14 0.08 2
2  2  1  2  2  1  2  3  2  1  2  2  2  2  3  2  2  2  0 101 19  2  1  1  1  0  1  1  3  2  3  2  3  3  0  3  2  0  1  2  0  2  3  3 102 22  2  1  1	4.42 1 0.12 0.18 0.08 0.15 0.16 0.12 0.18 0.13 0.11 0.12 0.13 0.14 0.11 0.14 0.12 0.14 0.16 0.09 0.16 0.16 0.11 0.18 2 4.74 2 0.07 0.18 0.12 0.16 0.27 0.11 0.09 0.12 0.12 0.10 0.18 0.09 0.13 0.12 0.14 0.13 0.13 0.13 0.12 0.14 0.24 0.14 0.09 2
1 1 0 3 1 0 3 2 0 2 2 2 0 0 0 0 0 1 0 101 15 1 1 1 3 3 3 3 3 3 3 0 2 3 1 0 3 3 3 3 3 2 0 1 0 0 102 17 2 1 1	3.94 1 0.00 0.39 0.03 0.24 0.11 0.22 0.00 0.00 0.07 0.21 0.05 0.31 0.14 0.14 0.10 0.10 0.38 0.03 0.26 0.06 0.16 0.00 2 4.18 1 0.08 0.21 0.11 0.13 0.22 0.03 0.23 0.17 0.02 0.07 0.16 0.16 0.16 0.16 0.15 0.11 0.10 0.19 0.11 0.17 0.22 0.02 0.18 2
1 2 1 1 1 0 1 1 1 1 0 1 3 3 3 0 0 0 0 101 18 2 2 1	4.30 1 0.18 0.20 0.10 0.22 0.18 0.06 0.05 0.02 0.07 0.13 0.12 0.15 0.13 0.19 0.19 0.15 0.23 0.10 0.23 0.17 0.07 0.06 2
2 1 0 0 2 2 2 3 0 2 2 2 3 0 0 0 3 3 0 101 25 2 1 1	5.05 3 0.13 0.08 0.00 0.20 030 0.17 0.13 0.12 0.14 0.14 0.18 0.03 0.07 0.16 0.16 0.14 0.11 0.00 0.16 0.23 0.18 0.17 2

2   3   2   3   2   3   0   2   3   2   3   3   3   3   3   3   3	3	No.   No.
2 1 0 1 2 0 1 2 2 1 1 2 3 3 2 1 1 1 2 3 3 3 2 1 1 1 1	2 0 1 2 0 102 20 2 1 1 4.53 2 0.12 0.16 0.11 0.14 0.16 0.14 0.17 1 0 3 3 0 102 26 2 1 1 1 5.15 3 0.07 0.14 0.08 0.14 0.27 0.18 0.14 0.17 0.19 0.2 3 2 10.10 2.6 2 1 1 5.15 3 0.07 0.14 0.08 0.14 0.27 0.18 0.14 0.27 0.18 0.14 0.27 0.18 0.14 0.27 0.18 0.14 0.27 0.18 0.14 0.27 0.18 0.14 0.27 0.18 0.14 0.27 0.18 0.14 0.27 0.18 0.14 0.27 0.18 0.14 0.27 0.18 0.14 0.27 0.18 0.14 0.28 0.15 0.27 0.15 1 0 2 3 2 102 26 2 1 1 5.15 3 0.09 0.08 0.03 0.22 0.16 0.27 0.15 1 0 2 2 1 0 102 26 2 1 1 5.15 3 0.00 0.03 0.02 0.19 0.28 0.15 0.33 0 0 0 2 1 2 101 27 2 1 1 5.24 3 0.00 0.11 0.00 0.14 0.08 0.31 0.33 3 2 0 3 1 102 23 2 1 1 4.85 3 0.16 0.21 0.10 0.13 0.20 0.16 0.04 2 0 0 1 1 0 0 102 13 1 1 1 3.67 1 0.00 0.34 0.10 0.07 0.03 0.40 0.06 3 0 0 1 0 0 102 7 1 1 1 2.74 1 0.03 0.32 0.11 0.07 0.15 0.23 0.09 0 1 0 3 2 102 26 2 1 1 5.15 3 0.12 0.20 0.08 0.20 0.22 0.08 0.10 0 1 1 0 0 0 102 16 2 1 1 4.46 1 0.09 0.18 0.20 0.25 0.11 0.03 0.13	0.17         0.14         0.10         0.09         0.11         0.13         0.15         0.15         0.16         0.13         0.14         0.14         0.12         0.16         2           0.11         0.07         0.20         0.29         0.08         0.08         0.11         0.06         0.06         0.17         0.02         0.16         0.32         0.11         0.15         2           0.12         0.14         0.12         0.17         0.16         0.12         0.07         0.07         0.07         0.14         0.09         0.13         0.21         0.15         0.21         2           0.15         0.21         0.14         0.08         0.05         0.01         0.21         0.14         0.16         0.08         0.06         0.09         0.13         0.21         0.15         0.21         0.14         0.08         0.08         0.08         0.08         0.09         0.11         0.29         0.11         0.29         0.11         0.29         0.11         0.29         0.11         0.29         0.11         0.29         0.11         0.29         0.11         0.29         0.11         0.29         0.21         0.29         0.11

LAZ048 LAZ049 LAZ050 LAZ051 LAZ052 LAZ053 LAZ055 LAZ056 LAZ056 LAZ056 LAZ056 LAZ060	LAZ063 LAZ064 LAZ066 LAZ066 SET TSE SEGP2 Agegp2 Natreg Sqtse SEGrp3 RelPSRDCA RelDis RelPDCA RelDis RelPDCA RelCOCA	ReICC6 ReISC7 ReISSS6 ReIAR4 ReIEA8	ReIPSRPCA ReIDPCA ReIPSRPCA ReIPSPCA ReISEPCA ReICEPCA ReICEPCA ReICEPCA
2 2 1 2 1 2 1 2 1 2 1 1 1 1 1 2 2 2 1 2 1 2 1 1 2 1 2 2 1 2 1 1 2 1 2 1 2 1 1 2 1 1 2 1 1 2 1 1 2 1 1 1 1 1 1 2 2 2 1	2 2 2 0 102 27 2 2 1 5.24 3 2 2 2 1 4.85 3 2 2 2 1 4.85 3 2 2 2 2 2 2 2 102 23 2 2 1 4.85 3 2 2 2 1 4.85 3 0.14 0.11 0.06 0.25 0.20 0.07 0.17 0.2 1 1 1 0 3 101 13 1 2 1 3.67 1 0.18 0.21 0.10 0.04 0.17 0.12 0.18 0.0 0 1 3 2 0 102 11 1 1 1 3.39 1 0.09 0.29 0.05 0.14 0.09 0.22 0.12 0.0 0 1 1 0 0 101 23 2 2 1 4.85 3 0.00 0.14 0.00 0.36 0.18 0.27 0.05 0.	0.13 0.08 0.08 0.13 0.12 0.07 0.24 0.15 0.08 0.10 0.15 0.17 0.20 0.06 0.08 0.14 0.24 0.08 0.18 0.12 0.11 0.04 0.08 0.16 0.12 0.22 0.00 0.27	0.15         0.16         0.11         0.08         0.24         0.16         0.08         0.18         2           0.10         0.11         0.28         0.11         0.06         0.21         0.09         0.14         3           0.07         0.11         0.30         0.06         0.11         0.09         0.16         0.15         3           0.11         0.15         0.13         0.00         0.33         0.19         0.14         0.06         2           0.10         0.14         0.15         0.00         0.20         0.14         0.16         0.21         3
1     1     0     0     1     0     2     2     0     0     0     1 <td>3 0 1 0 0 102 27 2 1 1 1 5.24 3 0.05 0.12 0.00 0.16 0.09 0.12 0.46 0.0 0 1 0 2 3 0 102 21 2 1 1 1 4.64 2 0.00 0.14 0.11 0.26 0.18 0.13 0.17 0.0 1 1 0 0 102 15 1 1 1 1 3.94 1 0.11 0.17 0.22 0.09 0.03 0.11 0.27 0.3 0 2 2 1 102 13 1 2 1 3.67 1 0.02 0.28 0.07 0.17 0.01 0.28 0.17 0.3 0 1 2 1 101 25 2 2 2 5.05 3 0.12 0.26 0.02 0.20 0.21 0.08 0.12 0.3 3 0 0 3 2 101 14 1 1 1 1 3.81 1 0.11 0.39 0.20 0.01 0.14 0.14 0.00 0.</td> <td>0.31         0.03         0.29         0.00         0.12         0.02         0.18           0.09         0.11         0.08         0.12         0.16         0.14         0.20           0.19         0.03         0.21         0.00         0.19         0.23         0.12           0.12         0.23         0.15         0.00         0.22         0.12         0.13           0.10         0.02         0.14         0.19         0.09         0.16         0.21           0.09         0.11         0.13         0.09         0.25         0.26         0.00</td> <td>0.04         0.05         0.16         0.00         0.23         0.09         0.08         0.39         3           0.12         0.10         0.11         0.11         0.16         0.11         0.16         3           0.03         0.05         0.27         0.22         0.12         0.03         0.11         0.19         3           0.09         0.05         0.26         0.04         0.25         0.24         0.08         0.09         3           0.06         0.06         0.36         0.23         0.02         0.16         0.17         0.09         3           0.18         0.18         0.22         0.04         0.15         0.25         0.04         0.13         3</td>	3 0 1 0 0 102 27 2 1 1 1 5.24 3 0.05 0.12 0.00 0.16 0.09 0.12 0.46 0.0 0 1 0 2 3 0 102 21 2 1 1 1 4.64 2 0.00 0.14 0.11 0.26 0.18 0.13 0.17 0.0 1 1 0 0 102 15 1 1 1 1 3.94 1 0.11 0.17 0.22 0.09 0.03 0.11 0.27 0.3 0 2 2 1 102 13 1 2 1 3.67 1 0.02 0.28 0.07 0.17 0.01 0.28 0.17 0.3 0 1 2 1 101 25 2 2 2 5.05 3 0.12 0.26 0.02 0.20 0.21 0.08 0.12 0.3 3 0 0 3 2 101 14 1 1 1 1 3.81 1 0.11 0.39 0.20 0.01 0.14 0.14 0.00 0.	0.31         0.03         0.29         0.00         0.12         0.02         0.18           0.09         0.11         0.08         0.12         0.16         0.14         0.20           0.19         0.03         0.21         0.00         0.19         0.23         0.12           0.12         0.23         0.15         0.00         0.22         0.12         0.13           0.10         0.02         0.14         0.19         0.09         0.16         0.21           0.09         0.11         0.13         0.09         0.25         0.26         0.00	0.04         0.05         0.16         0.00         0.23         0.09         0.08         0.39         3           0.12         0.10         0.11         0.11         0.16         0.11         0.16         3           0.03         0.05         0.27         0.22         0.12         0.03         0.11         0.19         3           0.09         0.05         0.26         0.04         0.25         0.24         0.08         0.09         3           0.06         0.06         0.36         0.23         0.02         0.16         0.17         0.09         3           0.18         0.18         0.22         0.04         0.15         0.25         0.04         0.13         3
1 2 0 1 3 1 2 0 0 1 3 1 0 2 3 0 0 1 3 1 0 3 2 3 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0	1 2 0 3 0 102 18 2 1 1 4.30 1 0.14 0.19 0.02 0.22 0.20 0.19 0.04 0.2 1 1 0 2 3 1 102 19 2 1 1 4.42 1 0.04 0.22 0.03 0.23 0.18 0.21 0.09 0.1 1 0 2 2 2 1002 17 2 2 1 4.48 1 0.13 0.12 0.07 0.16 0.26 0.17 0.09 0.1 0 0 2 1 0 101 21 2 1 1 4.64 2 0.04 0.24 0.07 0.13 0.08 0.19 0.25 0.0 3 0 2 1 0 101 25 2 1 1 5.05 3 0.00 0.08 0.04 0.27 0.29 0.16 0.17 0.09 3 2 1 2 3 102 16 2 1 1 4.66 1 0.13 0.20 0.09 0.15 0.15 0.15 0.22 0.05 0.	0.02         0.15         0.15         0.21         0.09         0.12         0.19           0.06         0.15         0.16         0.08         0.28         0.02         0.17           0.08         0.20         0.13         0.30         0.00         0.08         0.10           0.09         0.13         0.15         0.04         0.29         0.13         0.14           0.15         0.05         0.16         0.16         0.03         0.04         0.24           0.06         0.13         0.19         0.12         0.11         0.17         0.15	0.07         0.11         0.19         0.02         0.21         0.24         0.18 0.04         3           0.09         0.12         0.22         0.02         0.20         0.13         0.20 0.11         3           0.11         0.08         0.16         0.02         0.14         0.29         0.20         0.11         3           0.07         0.12         0.25         0.07         0.10         0.08         0.18         0.21         3           0.17         0.14         0.10         0.05         0.27         0.23         0.08         0.13         3           0.06         0.09         0.23         0.11         0.18         0.17         0.17         0.05         3
0 0 2 2 2 1 1 1 1 0 1 3 0 1 2 0 2 1 2 3 1 3 1 3 1 3 1 3 1 3 0 1 2 0 0 1 0 0 0 3 2 2 0 0 2 0 1 2 1 2 1 0 0 3 0 0 0 0 0 0 0 1 1 1 1 1 1 3 0 1 1 0 3 2 1 0 0 0 0 3 3	0 0 0 1 0 101 16 2 1 1 4.06 1 0.04 0.22 0.11 0.20 0.25 0.15 0.04 0.1   1 0 0 0 0 0 101 9 1 2 1 3.08 1 0.03 0.19 0.23 0.09 0.13 0.20 0.13 0.1   1 0 1 0 0 101 19 2 1 1 4.42 1 0.06 0.13 0.13 0.07 0.11 0.34 0.17 0.1   1 0 0 0 2 102 20 2 1 1 4.53 2 0.04 0.08 0.05 0.24 0.40 0.11 0.08 0.3   3 0 2 2 0 101 20 2 1 1 4.53 2 0.04 0.08 0.08 0.21 0.20 0.07 0.32 0.	0.04         0.11         0.06         0.16         0.22         0.15         0.15           0.10         0.17         0.09         0.13         0.17         0.20         0.07           0.17         0.20         0.29         0.07         0.00         0.15         0.07           0.11         0.07         0.08         0.30         0.00         0.05         0.30           0.27         0.04         0.17         0.12         0.06         0.03         0.21	0.13         0.16         0.15         0.07         0.17         0.18         0.11         0.17         3           0.11         0.12         0.29         0.09         0.17         0.23         0.14         0.04         3           0.06         0.05         0.21         0.23         0.08         0.13         0.19         0.10         3           0.06         0.05         0.14         0.17         0.10         0.10         0.29         0.14         3           0.10         0.13         0.06         0.06         0.29         0.37         0.04         0.05         3           0.10         0.10         0.11         0.07         0.22         0.18         0.08         0.24         3           0.14         0.17         0.12         0.10         0.17         0.16         0.13         0.16         3
3 3 3 2 2 0 0 0 0 2 3 3 3 3 3 2 2 1 1 2 1 1 1 1 1 2 0 3 1 1 1 1 1 2 0 3 1 1 1 1 1 2 0 3 3 1 1 3 1 3 1 3 1 3 1 3 1 3 1 3 1 3	2 1 3 3 3 101 26 2 1 1 5.15 3 0.18 0.15 0.07 0.14 0.16 0.11 0.18 0.2 2 2 1 1 102 18 2 1 1 4.30 1 0.08 0.15 0.06 0.15 0.18 0.19 0.19 0.19 0.13 0 0.15 0.18 0.19 0.19 0.19 0.19 0.19 0.19 0.19 0.19	0.14         0.10         0.12         0.06         0.15         0.17           0.13         0.16         0.15         0.13         0.09         0.10         0.14           0.13         0.13         0.18         0.16         0.13         0.15         0.10           0.06         0.00         0.08         0.32         0.00         0.05         0.22           0.12         0.12         0.20         0.14         0.00         0.22         0.14           0.02         0.13         0.16         0.26         0.03         0.03         0.08	0.17         0.18         0.16         0.10         0.19         0.15         0.06         0.17         3           0.09         0.13         0.08         0.16         0.18         0.15         0.17         3           0.04         0.07         0.21         0.14         0.12         0.22         0.12         0.13         3           0.27         0.22         0.14         0.00         0.19         0.35         0.05         0.06         3           0.07         0.10         0.19         0.15         0.14         0.18         0.13         0.12         3           0.20         0.19         0.08         0.00         0.24         0.26         0.22         0.00         3
2 0 0 3 1 2 2 2 2 1 3 2 1 3 3 3 3 3 0 0 2 0 3 0 0 0 0 0 0 0 0 0 0	1 0 0 0 2 102 16 2 2 1 4.06 1 0.10 0.31 0.04 0.17 0.05 0.16 0.17 0.1 0 0 2 1 3 102 25 2 2 1 5.05 3 0.04 0.3 0.04 0.3 0.28 0.14 0.14 0.0 0 0 1 1 0 102 24 2 1 1 4.95 3 0.08 0.28 0.20 0.09 0.00 0.31 0.04 0.3 0.28 0.3 0 0 0 3 2 101 25 2 1 1 5.05 3 0.13 0.19 0.17 0.21 0.16 0.13 0.00 0.3 3 2 0 0 0 101 16 2 1 1 4.96 1 0.15 0.28 0.00 0.20 0.20 0.24 0.05 0.08 0.00 0.20 0.20 0.24 0.05 0.08 0.00 0.20 0.20 0.24 0.05 0.08 0.00 0.20 0.20 0.24 0.05 0.08 0.00 0.20 0.24 0.05 0.08 0.00 0.20 0.24 0.05 0.08 0.00 0.20 0.24 0.05 0.08 0.00 0.20 0.24 0.05 0.08 0.00 0.20 0.24 0.05 0.08 0.00 0.25 0.25 0.05 0.08 0.00 0.25 0.25 0.25 0.05 0.08 0.00 0.25 0.25 0.25 0.25 0.05 0.08 0.00 0.25 0.25 0.25 0.25 0.25 0.25 0.25	0.03         0.16         0.12         0.03         0.31         0.13         0.10           0.11         0.09         0.15         0.19         0.03         0.03         0.28           0.12         0.26         0.12         0.00         0.07         0.25         0.14           0.09         0.07         0.16         0.09         0.13         0.15         0.26           0.06         0.12         0.14         0.22         0.06         0.13         0.22	0.10         0.11         0.23         0.11         0.12         0.09         0.20         0.13         3           0.10         0.09         0.30         0.05         0.14         0.04         0.20         0.17         3           0.12         0.10         0.02         0.03         0.31         0.26         0.14         0.14         3           0.04         0.06         0.34         0.23         0.14         0.00         0.19         0.03         3           0.06         0.11         0.20         0.16         0.28         0.17         0.07         0.00         3           0.05         0.12         0.23         0.00         0.20         0.24         0.10         0.10         3           0.04         0.10         0.19         0.14         0.15         0.12         0.17         0.17         0.1         3
1 1 0 0 1 1 2 3 1 3 3 3 1 1 2 0 0 0 0 1 0 1 2 3 0 1 3 0 0 1 1 1 2 1 1 1 2 1 1 1 2 2 1 2 2 2 2	2 0 2 2 1 101 13 1 1 1 3.67 1 0.06 0.18 0.17 0.11 0.21 0.16 0.12 0.2 0 2 3 0 101 13 1 1 1 1 3.67 1 0.00 0.19 0.11 0.04 0.19 0.28 0.19 0. 2 1 2 2 2 101 17 2 1 1 4.18 1 0.14 0.21 0.04 0.20 0.16 0.14 0.11 0. 3 3 0 102 20 2 1 1 4.53 2 0.14 0.23 0.21 0.10 0.04 0.17 0.11 0. 3 0 0 0 1 3 102 17 2 1 1 4.18 1 0.19 0.29 0.12 0.14 0.12 0.09 0.05 0.	0.08         0.13         0.15         0.16         0.15         0.17         0.06           0.12         0.19         0.15         0.17         0.21         0.12         0.02           0.04         0.12         0.13         0.10         0.15         0.13         0.20           0.11         0.13         0.19         0.00         0.14         0.25         0.11           0.11         0.07         0.13         0.08         0.19         0.15         0.13	0.10 0.07 0.20 0.18 0.08 0.20 0.14 0.13 3 0.01 0.00 0.20 0.10 0.05 0.24 0.23 0.18 3 0.01 0.13 0.14 0.21 0.05 0.20 0.12 0.14 0.14 3 0.07 0.10 0.22 0.21 0.13 0.04 0.15 0.15 3 0.13 0.14 0.28 0.11 0.15 0.12 0.11 0.08 3 0.04 0.05 0.20 0.18 0.14 0.14 0.18 0.09 0.16 3
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3     2     1     3     2     2     2     2     1     3     3     3     3     2     2       1     1     0     1     1     1     2     3     1     1     2     1     0     2     3       0     3     1     3     0     2     0     3     1     2     2     3     3     3       0     3     0     2     3     0     1     3     0     2     2     3     3     3       2     2     2     1     2     1     2     1     1     1     1     1     2     1     2	2 0 0 1 0 101 17 2 1 1 4.18 1 0.08 0.17 0.13 0.13 0.15 0.16 0.18 0.3 3 2 3 1 101 15 1 1 2 3.94 1 0.13 0.13 0.13 0.15 0.16 0.18 0.1   3 1 3 3 0 102 21 2 1 1 4.64 2 0.15 0.22 0.04 0.13 0.16 0.10 0.20 0.0   3 1 1 3 3 2 101 19 2 1 1 4.42 1 0.10 0.23 0.09 0.17 0.19 0.05 0.17 0.1   2 2 2 2 0 102 27 2 2 1 5.24 3 0.14 0.12 0.15 0.16 0.15 0.13 0.14 0.0	0.14         0.11         0.15         0.11         0.12         0.15         0.14           0.07         0.11         0.20         0.18         0.05         0.14         0.15           0.12         0.07         0.12         0.14         0.17         0.09         0.12           0.17         0.00         0.14         0.15         0.20         0.11         0.17           0.13         0.12         0.15         0.12         0.10         0.11         0.15	0.18         0.20         0.12         0.04         0.19         0.16         0.12         0.17         3           0.08         0.09         0.19         0.13         0.15         0.15         0.14         0.14         0.3           0.09         0.11         0.16         0.13         0.16         0.22         0.14         0.07         0.21         3           0.16         0.17         0.22         0.02         0.15         0.14         0.07         0.21         3           0.07         0.08         0.24         0.09         0.20         0.21         0.01         0.16         3           0.12         0.17         0.11         0.14         0.15         0.14         0.13         0.15         3           0.08         0.13         0.18         0.13         0.16         0.19         0.11         0.10         0.16         0.19         0.11         0.10
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2 3 0 2 1 3 1 2 1 0 3 3 0 1 2 1 0 2 3 102 19 2 2 1 4.42 1 0.05 0.15 0.07 0.24 0.22 0.12 0.15 0.15 0.07 0.10 0.15 0.08 0.14 0.08 0.09 0.19 0.13 0.14 0.13 0.07 0.20 0.19 0.18 0.09 3 1 3 3 1 1 3 3 1 1 3 2 0 3 2 1 101 4 1 2 1 2.12 1 0.05 0.22 0.14 0.17 0.13 0.19 0.10 0.07 0.11 0.17 0.10 0.17 0.15 0.14 0.09 0.10 0.20 0.15 0.16 0.12 0.15 0.12 3	2 3 0 2 1 3 1 2 1 0 3 3 0 1 2 1 0 2 3 102 19 2 2 1 4.42 1 0.05 0.15 0.07 0.24 0.22 0.12 0.15 0.15 0.15 0.15 0.15 0.08 0.14 0.08 0.09 0.19 0.13 0.14 0.13 0.07 0.20 0.19 0.18 0.09 3	## 66 60 00 00 00 00 00 00 00 00 00 00 00	0 0 0 0 0 2 0 102 20 20 2 1 1 4.53 2 0.05 0.24 0.14 0.08 0.17 3 3 0 1 1 2 102 15 1 1 1 3.94 1 0.09 0.21 0.20 0.11 0.05 0.31 1 1 2 102 15 1 1 1 3.94 1 0.09 0.21 0.20 0.11 0.05 0.31 1 1 0 0 0 3 1 002 26 2 1 1 1 4.30 1 0.00 0.23 0.05 0.25 0.22 0 1 1 0 1 0 0 102 20 2 1 1 4.53 2 0.00 0.06 0.05 0.07 0.30 0 3 0 3 0 0 101 27 2 2 1 1 4.53 2 0.00 0.06 0.05 0.05 0.07 0.30 0 3 0 3 0 0 101 27 2 2 1 5.24 3 0.00 0.13 0.00 0.20 0.32 2 3 3 3 3 3 102 22 2 2 1 5.44 4.95 3 0.03 0.08 0.05 0.22 0.30 3 3 0 3 0 0 102 10 1 1 1 3.24 1 0.00 0.32 0.18 0.14 0.08 0 0 1 2 2 3 102 24 2 1 1 4.95 3 0.03 0.08 0.05 0.22 0.30 3 3 0 3 0 102 20 2 2 2 1 5.54 3 0.00 0.13 0.00 0.02 0.32 2 3 3 0 102 24 2 1 1 4.95 3 0.03 0.08 0.05 0.22 0.30 3 3 0 3 0 1 0 0 101 27 2 2 2 1 5.43 3 0.08 0.08 0.05 0.22 0.30 1 3 0 1 0 2 0 101 1 1 1 3.24 1 0.00 0.32 0.18 0.14 0.08 0 0 1 2 2 2 3 102 24 2 1 1 4.95 3 0.05 0.07 0.00 0.28 0.35 1 3 0 1 0 2 1 1 0 2 1 1 2 5.54 3 0.09 0.13 0.09 0.13 0.02 0.22 1 1 3 3 0 1 0 0 101 2 2 2 1 5.43 3 0.08 0.08 0.10 0.20 0.22 1 3 0 0 0 3 0 102 20 2 2 1 5.53 3 0.09 0.13 0.12 0.24 0.28 1 2 1 1 4.45 3 0.00 0.13 0.14 0.09 0.05 0 0 0 0 2 1 100 2 19 2 1 1 4.45 3 0.00 0.13 0.14 0.09 0.05 0 0 0 0 0 2 1 100 2 19 2 1 1 4.45 1 0.05 0.19 0.00 0.31 0.34 3 3 0 0 0 0 3 3 10 2 28 2 2 1 5.53 4 3 0.00 0.13 0.14 0.09 0.05 0 0 0 0 0 2 1 100 2 1 2 1 1 4.45 1 0.05 0.19 0.00 0.31 0.34 3 3 0 0 0 0 3 3 10 2 28 2 2 1 5.54 3 0.00 0.13 0.14 0.09 0.02 0.29 2 2 3 0 0 0 0 3 0 10 2 10 2 1 2 1 1 4.53 2 0.07 0.20 0.02 0.29 0.22 0 0 0 1 0 2 2 1 2 102 20 2 1 1 4.42 1 0.05 0.19 0.00 0.30 0.20 0.29 0.35 1 2 2 2 2 101 24 2 2 1 1 4.53 2 0.07 0.20 0.07 0.29 0.33 1 2 2 2 2 101 24 2 2 1 1 4.53 2 0.07 0.20 0.07 0.29 0.33 1 2 2 2 2 101 24 2 2 1 1 4.53 2 0.07 0.20 0.07 0.29 0.33 1 2 2 2 2 101 24 2 2 1 1 4.53 2 0.07 0.20 0.07 0.29 0.33 1 2 2 2 2 101 24 2 2 1 4 4.85 3 0.04 0.18 0.04 0.15 0.32 0 1 3 3 0 10 0 102 24 2 2 1 1 4.85 3 0.04 0.18 0.04 0.15 0.32 0 1 3 3 0 0 0 0 102 12 2 2 2 1 4.48 5 3 0.04 0.18 0.04 0.15 0.32 0 1 3 3 0 0 0 0 102 24 2 2 1 1 4.85 3 0.04 0.18 0.04 0.15 0.32 0 1 3 3 0 0	0.33         0.00         0.05         0.25         0.15         0.10         0.15         0.17         0.05           0.12         0.09         0.13         0.09         0.17         0.13         0.02         0.19         0.12         0.20         0.10         0.05         0.18         0.05         0.18         0.02         0.04         0.03         0.02         0.01         1         0.00         0.24         0.17         0.04         0.13         0.20         0.11         0.00         0.22         0.01         0.11         0.02         0.11         0.02         0.11         0.02         0.11         0.02         0.11         0.02         0.11         0.02         0.14         0.12         0.14<	1         0.08         0.10         0.15         0.02         0.25         0.28         0.14         0.06         3           2         0.10         0.11         0.19         0.18         0.07         0.15         0.30         0.00         3           2         0.10         0.12         0.25         0.19         0.12         0.02         0.18         0.11         3           3         0.13         0.12         0.00         0.04         0.19         0.29         0.12         0.14         0.27         0.14         0.27         0.14         0.27         0.14         0.27         0.14         0.22         0.14         0.22         0.14         0.27         0.13         0.11         0.22         0.14         0.22         0.14         0.27         0.07         0.05         0.21         0.22         0.14         0.27         3         4         0.00         0.00         0.09         0.02         0.23         0.34         0.13         0.11         0.19         0.17         0.07         0.19         0.11         0.12         0.13         0.10         0.19         0.11         0.12         0.13         0.10         0.11         0.19         0.11
	1 2 3 3 3 3 2 2 2 2 2 2 2 2 2 2 2 2 2 2	3 3 0 0 3 3 3 0 0 0 0 0 0 0 0 3 0 1 0 2 1 1 0 0 1 0 2 2 0 0 0 3 3 3 2 3 0 3 3 3 3 3 3 3 3	0 3 0 3 3 3 3 102 30 2 1 1 5.52 3 0.09 0.08 0.00 0.35 0.25 1 2 0 1 1 0 102 18 2 2 1 4.30 1 0.00 0.15 0.02 0.19 0.37 0 2 2 2 3 3 102 19 2 2 2 5.24 3 0.19 0.12 0.01 0.20 0.19 1 2 1 0 2 3 102 19 2 2 1 4.42 1 0.05 0.15 0.07 0.24 0.22	0.14     0.09     0.09     0.14     0.13     0.18     0.00     0.00     0.27       0.17     0.09     0.09     0.11     0.09     0.22     0.13     0.05     0.13       0.14     0.15     0.09     0.12     0.11     0.12     0.12     0.12     0.07     0.18       0.12     0.15     0.12     0.15     0.08     0.14     0.08     0.09     0.19       0.19     0.10     0.07     0.11     0.17     0.10     0.17     0.15     0.14	7 0.18 0.17 0.03 0.00 0.27 0.19 0.20 0.14 3 3 0.17 0.12 0.17 0.04 0.18 0.28 0.12 0.09 3 8 0.17 0.18 0.12 0.00 0.20 0.19 0.16 0.15 3 9 0.13 0.14 0.13 0.07 0.20 0.19 0.18 0.09 3

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248 249 250 252 252 253 255 256 256 256 260 360 361	LAZ063 LAZ063 LAZ066 SET AZ066 SET TSE SEgp2 Agegp2 Natreg RelPSRDCA RelDis RelSSDCA RelOca RelOca	ReICC6 ReiD6 ReiSSS6 ReiSSS6 ReiFA8 ReiPRA7 ReiPSRPCA	ReIDPCA ReIPPPCA ReIDistPCA ReICOA ReICOA ProgYear3
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1 2 2 1 1 3 2 2 1 1 1 2 3 1 2	2 0 2 3 2 101 23 2 1 1 4.85 3 0.13 0.15 0.05 0.18 0.15 0.16 0.19	0.12  0.17  0.13  0.08  0.11  0.07  0.14  0.18  0.18  0.14	0.05 0.17 0.11 0.20 0.16 2
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1	0	0	3 3	3 7	3	1	1 1		2	2	2	1	4	1	3	1 102 1 102	25 16	2	2		5.05 4.06							.11 0.00	0.02	0.10 0.15	0.15 0.20	0.17 0.04	0.17 0.23	0.07	0.12 0.10	0.20	0.21 0.08	0.21 0.16	0.08 0.16	0.10 0.14	0.23	0.14 0.02 0.23 0.17	
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# **DATA CODES**

Variable name	Variable	Code
Age	Age	1 = 17 - 20; 2 = 21 - 24; 3 = 25 - 28; 4 = 29 - 32; 5 = 33 - 36; 6 = 37 - 40; 7 = 40 or over
Gender	Gender	1 = Female; 2 = Male
Nationality	Nationality	1 = Irish; 2 = Nigerian; 3 = United Kingdom; 4 = Zimbabwe; 5 = Chinese; 6 = Netherlands; 7 = French; 8 = Latvian; 9 = Filipino; 10 = Spain; 11 = USA; 12 = South Africa; 13 = German
Year	Year of Programme	1 = First Year; 2 = Second Year; 3 = Third Year; 4 = Fourth Year
Programme	Programme Title	1 = Nursing (MH); 2 = Nursing (ID); 3 = Nursing (Gen); 4 = Business Studies; 5 = Public Administration; 6 = Languages; 7 = HPSS; 8 = Industrial Biochemistry; 9 = Pharmaceutical & Industrial Chemistry; 10 = Manufacturing Systems; 11 = Physiotherapy; 12 = New Media &English 13 = Irish Music &Dance 14 = Bio Medical Eng; 15 = Environmental Science; 16 = Health &Safety 17 = Arts; 18 = Aeronautical Eng; 19 = Science Ed; 20 = Equine Science; 21 = Food Science; 22 = Music Media; 23 = Midwifery; 24 = Law & Accounting; 25 = European Studies; 26 = Sports & Exercise Science; 27 = Psychology & Sociology; 28 = Mechanical Eng; 29 = Construction Eng; 30 = Human Resource Management; 31 = Architecture; 32 = Computers Systems; 33 = Maths Science; 34 = Management; 35 = Economics; 36 = English & History;
Interview	Interview	1 = Yes; 2 = No
Satisfied1	Statement 1 RSES	0 = (SD); 1 = (D); 2 = (A); 3 = (SA)
Nogood2	Statement 2 RSES	0 - (SA); 1 = (A); 2 = (D); 3 = (SD)
Qualities3	Statement 3 RSES	0 = (SD); 1 = (D); 2 = (A); 3 = (SA)
Doaswell4	Statement 4 RSES	0 = (SD); 1 = (D); 2 = (A); 3 = (SA)
Notproud5	Statement 5 RSES	0 - (SA); 1 = (A); 2 = (D); 3 = (SD)
Useless6	Statement 6 RSES	0 - (SA); 1 = (A); 2 = (D); 3 = (SD)
Worth7	Statement 7 RSES	0 = (SD); 1 = (D); 2 = (A); 3 = (SA)
MoreResp8	Statement 8 RSES	0 - (SA); 1 = (A); 2 = (D); 3 = (SD)
Failure9	Statement 9 RSES	0 - (SA); 1 = (A); 2 = (D); 3 = (SD)
Positive10	Statement 10 RSES	0 = (SD); 1 = (D); 2 = (A); 3 = (SA)
LAZ001 – LAZ066	66 Statements of WOCQ	0 = Does not apply; 1 = Used somewhat; 2 = Used quite a bit; 3 = Used a great deal
SET	Science Engineering and	101 = SET =
	Technology	Nursing (MH); Nursing (ID); Nursing (Gen); Midwifery; Industrial Biochemistry; Pharmaceutical & Industrial Chemistry; Manufacturing Systems; Physiotherapy; Bio Medical Eng; Environmental Science; Health &Safety Aeronautical Eng; Science Ed; Equine Science; Food Science; Mechanical Eng; Construction Eng; Architecture; Computers Systems; Maths Science;
HSS	Humanities and Social Sciences	102 = HSS = Business Studies; Public Administration; Languages; HPSS; New Media &English Irish Music &Dance Arts; Music Media; Law & Accounting; European Studies; Sports & Exercise Science; Psychology & Sociology; Human Resource Management; Management; Economics; English & History;
TSE	Total Self-Esteem	0 - 30
SEgrp2	Self-Esteem in Two Groups	1 = 0 - 15; 2 = 16 - 30

Natreg	Nationalities Regrouped	1 = Irish; 2 = Others
Sqtse	Square Root (TSE + 0.5)	None
SEgrp3	Self-Esteem in Three Groups	1 = 0 - 19; 2 = 20 - 22; 3 = 23 - 30
RelPSRDCA	Positive Self Reflection DCA	None
RelWCEDCA	Wishful Criticism DCA	None
RelDisDCA	Disengagement DCA	None
RelPPDCA	Positive Planning DCA	None
RelSSDCA	Social Engagement DCA	None
RelDdca	Distancing DCA	None
RelCDCA	Confronting DCA	None
RelCC6	Relative Confronting Coping (WOCQ8)	None
RelD6	Relative Denial (WOCQ8)	None
RelSC7	Relative Self-Controlling (WOCQ8)	None
RelSSS6	Relative Seeking Social Support (WOCQ8)	None
RelAR4	Relative Accepting Responsibility (WOCQ8)	None
RelEA8	Relative Escape Avoidance (WOCQ8)	None
RelPPS6	Relative Planful Problem Solving (WOCQ8)	None
RelPR7	Relative Positive Reappraisal (WOCQ8)	None
RelPSRPCA	Relative Positive Self Reflection PCA	None
RelWCEPCA	Relative Wishful Criticism PCA	None
ReDPCA	Relative Disengagement PCA	None
RelPPPCA	Relative Positive Planning PCA	None
RelSEPCA	Relative Social Engagement PCA	None
RelDistPCA	RelativeDistancing PCA	None
RelPSRPCA	Relative Confronting PCA	None
Prog Year 3	Programme in Three Groups	1 = Year One; 2 = Year Two; 3 = Year Three and Four

# SIGNIFICANT FINDINGS USING THE ORIGINAL EIGHT FACTOR MODEL OF THE WOCQ

## Hypothsis one to four - There is an association between self-esteem and

### 1. Gender

Subscale	N	Median	R	Significance
Gender	474	22	.23	.001***
		(Male)		

\*\*\*. Correlation is significant at the .001 level (2-tailed).

**2. Age** No significant findings

**3. Year of programme** No significant findings

**4. Programme type** No significant findings

## Hypothesis Five to Eight - There is an association between coping and

### 5. Gender

Subscale	N	Median	R	Significance
Distancing	474	.1333	.14	.004**
		(Male)		
<b>Self Controlling</b>	474	1.524	.14	.002**
		(Male)		
Seeking Social	474	.1370	.24	.001***
Support		(Female)		

\*\*\*. p < .001; \*\*. p < .01.

### 6. Age

Subscale	N	Median	R	Significance
Confrontive	474	Age17-20	.11	.015*
Coping		.1081		
Planful Problem	474	Age 21+	.13	.004**
Solving		.1557		
Positive	474	Age 21+	.20	.005**
Reappraisal		.1199		

\*\* p < 01.; \*.. p <.05.

## 7. Year of Programme

Subscale	N	Median	R	Significance
<b>Self Controlling</b>	474	.1492	.11	.011**
		(Year 3 & 4)		
Planful Problem	474	.1485	.10	.047*
Solving		(Year 3 & 4)		

\*\* p < .01 level.; \*. p < .05 level.

# 8. Programme Type

No significant findings.

Hypothesis Nine - There is an association between:

# 9. Higher levels of self-esteem and adaptive coping processes.

### **Total Self-Esteem**

Total Self-Esteem and WOCQ (Folkman and Lazarus, 1988)	N	Correlation Coefficients	Significance (2-tailed)
Planful Problem Solving	474	.275	.001***
Positive Reappraisal	474	.194	.001***

<sup>\*\*\*</sup>Correlation is significant at the .001 level (2-tailed).

### **Self-Esteem in two groups**

Subscales	N	Median	R	Significance
Planful Problem Solving	474	.1474	.30	.001***
Positive Reappraisal	474	.1058	.20	.001***

<sup>\*\*\*</sup> p < .001.

# **Self-Esteem in Three Groups**

Subscale	N	Median	Significance
Planful Problem	474	.1591	.001***
Solving			
Positive Reappraisal	474	.1200	0.005**
*** p < .001.			
** p < .01.			
Subscale	N	Median	Significance

Subscale	N	Median	Significance
		Group 20-22	
Distancing	474	.1351	.033*

<sup>\*.</sup> P< .05.

# Hypothesis Ten there is an association between;

# 10. Lower levels of self-esteem and avoidance/emotion-focused coping processes.

## **Total Self-Esteem**

Total Self-Esteem	N	Correlation Coefficients	Significance (2-tailed)
Accepting Responsibility	474	280	.001***.
<b>Escape-Avoidance</b>	474	317	<b>.001***</b> .

<sup>\*\*\*.</sup> Correlation is significant at the .001 level (2-tailed).

# **Self-Esteem in Two Groups**

Subscales	N	Median	R	Significance
Accepting Responsibility	474	.1600	.20	.001***.
Escape Avoidance	474	.1522	.30	.001***.

<sup>\*\*\*.</sup> p< .001.

# **Self-Esteem in Three Groups**

Subscale	N	Median	Significance
		Group <19	
Accepting Responsibility	474	.1504	.001***.
<b>Escape Avoidance</b>	474	.1162	.001***.

<sup>\*\*\*.</sup> p < .001.

# APPENDIX C

# **Contents**

Letter to Interviewees

Consent Form

Interview Guide

Example of Interview Transcript with Codes

Example of codes with data extracts for initial theme

#### **LETTER TO INTERVIEWEES**



# UNIVERSITY of LIMERICK

### OLLSCOIL LUIMNIGH

Dear Participant,

I am currently undertaking my PhD research in the University of Limerick. The subject I am investigating is self-esteem and coping strategies of students attending a third level institution.

I would be grateful if you would consent to participating in an interview lasting approximately thirty minutes to one hour. I propose to digitally record the interviews. Total anonymity will be assured, as no names will be used.

Your participation in this study is voluntary and you are under no obligation to do so. You have the right to withdraw from the study at any time.

Yours Sincerely,

Pauline Hartigan O'Reilly,

Department of Nursing and Midwifery

University of Limerick

### **CONSENT FORM**



# University of Limerick

OLLSCOIL LUIMNIGH

Having read the previous letter, I fully understand the nature and purpose of this study. I am willing to participate in the interviewing process, with the knowledge that confidentiality will be maintained.

I hereby give consent to be interviewed and for these interviews to be digitally recorded, with the full understanding that all forms of identification will be removed from the transcripts. I am of the understanding that I can withdraw from the study at any time.

Name:	
Phone Number:	
Date:	

### INTERVIEW GUIDE

Can you describe what you would consider to cause stress within the University setting?

How would you cope with that situation?

What would help you the most?

What does the university do to help students cope with stressful situation?

What could the university do to help students cope?

What advice would you give students in relation to coping?

What is like to be a first year student?

What is your understanding of self-esteem?

How does self-esteem affect your life? What influences its development?

Each finding, from phase one, of the study was outlined and the students were asked was this an accurate finding based on their experience? Furthermore, they were asked, why did think that this was the situation?

Male students have a higher level of self-esteem in comparison to females. Is this an accurate finding based on your experience? Why do you think this is the situation?

Male students use 'Distancing' as a coping process more than other coping processes. Is this an accurate finding based on your experience? Why do you think this is the situation?

Female students use 'Social Engagement' as a coping process more than other coping processes. Is this an accurate finding based on your experience? Why do you think this is the situation?

Students with higher levels of self-esteem use coping processes such as 'Positive Self-Reflection' and 'Positive Planning' and 'Distancing' more than other types of coping. Is this an accurate finding based on your experience? Why do you think this is the situation?

Students with lower levels of self-esteem use coping processes such as 'Wishful Criticism and Escape' and 'Disengagement' more than other types of coping. Is this an accurate finding based on your experience? Why do you think this is the situation?

First year students use the coping process 'Confronting' more than other types of coping. Is this an accurate finding based on your experience? Why do you think this is the situation?

Students age twenty one years of age and over use the coping processes 'Positive Planning' and 'Positive Self-Reflection' more than other types of coping. Is this an accurate finding based on your experience? Why do you think this is the situation?

Students enrolled in Science Engineering and Technology programmes use the coping process 'Confronting' more than other types of coping. Is this an accurate finding based on your experience? Why do you think this is the situation?

### INTERVIEW TRANSCRIPT SAMPLE WITH CODES

## October 20th 2009 053 (Female)

I Good morning. This is the 20<sup>th</sup> October 2009. I'd like to welcome \* here and thank you very much \* for taking part in this interview. Even though I'm using your name \* it will be erased from the transcripts. Anonymity and confidentiality will be maintained throughout the study. There will be no means of identification between this interview and what is documented in the study. So again thank you very much for participating. Would you like a drink of water \*?

- \* No thanks. I'm fine.
- I How is the semester going for you?
- \* Grand it's busy you know.
- I If it is ok with you I would like to record the interview. Is that ok with you?
- \* No prob.

- I know you signed a permission form when you initially agreed to participate in the interviews. Would you mind having a read of the permission form again and if you still agree would you sign it?
- \* That's fine.
- I At any stage please feel free to stop me ok. Just in case you need information regarding the Student Counselling services, this is their brochure.
- \* I will be grand thanks.
- The overall aim of the study is to look at the associations between students' self esteem and the coping processes that they use when dealing with stress within the university setting. I used both quantitative and qualitative methods in the study. I want to get your views on the findings from the quantitative study and to see do they reflect your understanding of the area. \*? Please feel free to stop me at any stage ok. Just to start off \* can you describe what you would consider to be a typical source of stress to students within university?

1(h) & 2(a)

\* Probably exams more so now that I'm in college. It's really the exams and assignments because there are so many of them and I think that would be the most stressful for me and others at the moment.

I At the moment okay. And is there anything in particular about exams and assignments that what would make them stressful?



- \* I suppose the deadlines and not really knowing what exactly is wanted. Because it's so different from secondary school and even though I'm in 3<sup>rd</sup> year now it's still hard to get used to not really knowing what exactly a lecturer wants things like that I suppose.
- I Okay. And is there anything else that is a source of stress?
- \* Probably just worrying about QCA and you know wanting to do well and it's just that kind of pressure overall.
- I The end result
- \* Exactly yeah.
- I How would you normally cope with that situation? What would help you the most?



\* Well we all study together all my friends and we kind of panic a bit but we kind of support each other I suppose and just we take breaks when we can and try and cope that way but it does get too much at times and you find it hard to cope.

4(i)

So are you saying that your friends are a good source of support? I Definitely yeah. I Is there anything else that helps you to cope? I suppose if I stopped studying at the end of the day I might just go home and try and shut off or watch telly or something that sometimes work, just taking a break from 3(e) & things. 4(i) I So taking a break helps? Taking a big break yeah. I Is there anything else that would be stressful for you within the University? I suppose at times kind of the social aspect as well because there can be a lot of pressures to do things and go places and you mightn't feel ready for it or whatever but you kind of feel like you have to do it because everyone's doing it and things like that. I suppose body image as well kind of comes into that because everyone kind of tends to dress up and look their best and you feel huge pressure to kind of look good like a 1(d) time. And this is your experience? Can you tell me more? I



\* Yeah, yeah definitely. There are a lot of comparisons between girls. I don't think it's intentional or anything, even within our friends we'd look and we go ah she's, she looks really good today I wish I was like that and you know and even though it's kind of harmless comments they kind of build up and you kind of think about it and it puts a lot of pressure to getting clothes doesn't it.

I Where does this pressure come from?



- \* Ourselves- friends. The media and that it's important for girls to look at certain way. Yeah it's a lot of pressure because trying to get the money and the recession and there's, I'm an only child and I live at home and there's only one parent working so I had to get a job over the summer and it was really intensive and I have to keep it up at the weekends in order to like pay for my own, pay my own way and that's kind of stressful as well trying to do that and exams and everything getting it all together.
- I Is there anything else that helps you to deal with theses stresses?
- \* I suppose my mother because I'm very close to my mother and she'd be a quite similar personality because we're both kind of worriers and I see the way she copes and she's sees when I worry and she tries to tell me how she copes with things to try and ease that.
- I So your personality influences your coping?
- \* Yeah I suppose mostly it's my personality and what my mother tells me.

I Okay are you aware \* of what the university does to help students in relation to coping and stress?



\* I know there's counselling, I went for a few months last semester because everything got on top of me. With all the pressure of everything I went for a while and that was good.

# I In what way did it help you?

- \* I think going to someone who doesn't know you and doesn't know your friends and you could just talk and you didn't feel like you were being a bitch or, you could talk behind someone's back, you could just let it all out and I thought that was just really helpful.
- I What do you mean by it being important that the counsellors do not know your friends?



- \* Friends are great but they can be stressful too. What I was doing was just bottling it up because you're afraid if you have a fight with someone you're afraid to go and talk about it to someone else because they might feel like your stabbing them in the back or ....
- I Okay so you find counselling safe?

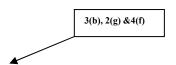
- Yeah great. I And what advice would you give to students in relation to coping? I would say if they couldn't feel that they could cope I would say go to counselling here because it's really good and just try and relax really, just try and, it's not the end of the world if they don't pass exams or whatever you know. I Thanks \*. What is your understanding of self-esteem? I suppose the way you look at yourself, the way you think you are, what you think you're worth really. I Do you think that self esteem affects your life? Yeah definitely. Ι In what way \*? If you don't have good self esteem I suppose you won't have confidence, you
- won't be able to live fully, I've always had like poor self esteem so I've struggled like, I was like, I'm a lot better now but I used to be very, very shy and any kind of closed, you could close off a bit let's say you know to making new friends and things like that.

I And \* you said you have improved. What do you think influenced that change?

5(b)

- \* I don't know I suppose I just got my core group of friends and they were a good group of friends so I was comfortable with them then. But I still wouldn't have the confidence to be out there, as outgoing as everyone else really. I still find, you know, meeting other people that weren't.... that don't know me is still hard.
- I What influences its development self esteem do you think?
- \* Probably childhood like what's, you know things that you've heard or the way you've been brought up with your family. And the little things, I know for me it was the little things.
- I Like what \*?
- \* Well I was, I used to be quite overweight as a child and I used to remember being when I was very young like other kids saying things or little things and then they'd build up and then you know my parents might say things but in a kind way but I would still keep it all in and I would remember them and I still remember them, so I suppose I kind of just, it stays with you. What everyone says to you when you're young you know. Society in general affects it.
- I Like who?

*	Your parents, friends you know and teachers. I used to compare myself to my		
friends and I still do.			
I	Can you say more?		
*	When I was young we all compared ourselves to one another, clothes, school. It		
was th	e done thing for girls.		
I	Are you aware * of what the University does to help people in relation to self-		
esteem	1?		
*	Yeah the counselling		
I	Do you think there's anything else the University could do to help students in		
relation to self-esteem?			
*	I don't think there's enough emphasis on it; I think there should be like a day or		
something where they have like body awareness, something like a kind of a class or			
something like personal development.			
I	Would you mind elaborating */		



- \* Yeah kind of like personal issues development, expressing yourself, the way you feel. But specific to like in a small group not in a, for the whole University kind of thing like
- I Ok. Just in small group. Why \*?
- \* People won't talk in big groups it's too personal.
- I Okay. One of the things that I found \* in the study was that male students had higher self esteem than female students. Would that be an accurate account from your experience?
- \* Oh definitely.
- I Can you explain why?
- \* I don't know maybe they don't, well I don't know I can't speak for them but maybe they don't have as much pressures onto the way they look as girls do, I think there's a lot more focus in all the magazines to be a certain way for girls and look a certain way in the movies and everything more so than guys, so maybe there's a reason.



I Is there anything else \*?

\* Girls are probably more a bit more sensitive maybe to what people say whereas guys seem to just kind of laugh it off or just they don't really listen or something.



- I Guys laugh things off? Why do you think they do that?
- \* They can't let other see them upset or things. ◀ 4(c)
- The other thing that I found in the study was that there was differences between the types of coping and the levels of self esteem of students. Students with higher self esteem used more problem-focused coping strategies. Students who had lower levels of self esteem tended to use more avoidance type of coping. Like 'I criticized or lectured myself' or 'I tried to make myself feel better by eating, drinking, smoking using drugs or medications etc'. What are your views on this? Can you explain it?
- \* Yeah definitely. Yeah sometimes, I know because we have kind of low self esteem all of my friends really like, none of us really are, some of us are confident or whatever but I know that if you feel like you look terrible or whatever on a night out you feel like you just have to drink to kind of look, feel like you look better or something like that, it's a confidence or something but I wouldn't say we drink to forget or anything like that but just to kind of give a boost to yourself. I'd say it's easier when you feel confident.
- I Okay let me see now what else I found \*. There was a difference between coping strategies and age. Students who were 21 and over used more positive problem solving

like deliberate problem-focused efforts to alter a situation, being very analytical. They also used positive reappraisal and according to the questionnaire used this is where one approaches a situation in an analytical way and also makes efforts to create positive meaning by focusing on personal growth. What do you thinks of this? Can you explain it?

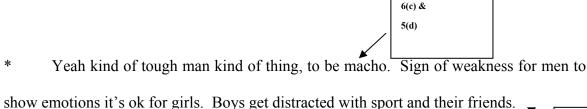
\* Yeah I would because I don't have many friends that are over 21 they're all kind of my age, they'd be 19/20 so I'd say, yeah I would say so like.

## I Why?

5(d)

- \* You learn from others and maybe from making mistakes, you have more experience.
- I Thanks \*. The study also found that female students tended to use more social support as a coping process. This describes efforts to seek informational support, tangible support and emotional support. The boys in the study tended to use distancing as a coping process. What are your views on this? Why do you think this is the case?
- \* Yeah definitely. Boys might be afraid if someone found out or they might feel weak or something like that. I suppose they do have pressure on them to feel that they have to be strong and there's nothing wrong with them I think there's that. Girls find it easier to talk to their friends. It's not ok for boys to let on they have problems.

I That is interesting \*. Can you say more?



- 4(a) & (b)
- I Where do you think this comes from?
- \* It's always there that how it is.
- I Okay. Thanks \*. Another finding was students in first year tended to use confrontive coping and confrontive coping would be aggressive efforts to alter a situation and this type of coping suggests some degree of hostility and risk taking. What are your views on this finding? Can you explain?
- \* Yeah definitely yeah
- I Okay can you elaborate?
- \* I suppose I remember first year 'cause it's so new you kind of just, you get angry at the whole thing and you just think oh I'll just leave this bit out it won't happen kind of thing and you'll just say oh I'll study this and I'll just take a chance and I won't do that. But definitely I can see it already and I'm only in third year two months and I can see that we're doing everything now, planning, it has to be done like.

3(d) &

- I So what is first year in university like?
- \* Daunting, really daunting because it's so huge and there were so many people and so many buildings and trying to figure it all out and you know it was hard.
- I Are students prepared enough for the transition to University life?
- \* I suppose well I felt I was because I did transition year and I felt in transition year is a really important year because there's less homework, like you know. When you're in secondary school you're given a deadline, you're told exactly what to do and you have to have it done and the teacher will be constantly looking at it but in transition year it's more like college where you're given a project and a deadline in three months and you're not told anything you just have to do it and do a presentation and there's more freedom I think so I felt more kind of prepared going into university but if I hadn't done transition year I would have had problems some students in university don't have that experience.

3(a)

- I Anything else that would help?
- \* No I can't think at the moment.
- I Ok \*. The other thing that I found in the study was that there was a difference between the types of programmes students are enrolled in and the coping processes that they use. The programmes were divided up into two categories Humanities and Social Science and Science, Engineering and Technology. The study found that Science,

Engineering and Technology students engaged in more 'confronting'. Have you any opinions on this finding?

- \* Not really maybe for our group but I have seen it.
- I And do you think that students cope differently from different programmes, would you have much experience with other students from other groups?
- \* Yeah a few, I have a few friends who are in different courses and yeah I suppose some of them cope differently. It's an individual thing.
- I If you were to advise and help first year students is there anything apart from what you've already said that you think could be done for students that would help them deal with the stresses they may experience within university?
- \* Maybe they should, I know there was, I remember from first year there was an option to do a class or something I can't remember what it was, the life skills I think it was, maybe if they became mandatory or something and then they had to do it because I think it would have been very useful.

  3(b) & 3(g)
- I Did you do it?
- \* I remember reading it and it was the same course that I did in transition year so that's why I didn't do it in first year but I think it should be mandatory for first years.

I	So * what did you cover in the course during transition year?			
* relatio	We covered a bit on self esteem and sexual education, contraception, body image, nships, like how to cope as well. More of it should be done.			
I	That sounds like a good programme *.			
*	Yeah it was very good.			
I me?	I think that is all. Is there anything else that you would like to add or indeed to ask			
*	No I'm fine.			
I	I will give you my mobile number in case there is anything else that you would			
like to add or change. Thank you so much for giving me the opportunity for interviewing				
you.	You have given me plenty food for thought. I would like to wish you the very best			
of luck in your own studies and again thanks *.				
*	No prob.			

# EXAMPLE OF CODES WITH DATA EXTRACTS (INITIAL THEME)

# 1. Causes of Stress

Data Extract	Coded For
"Outside life feeds into everything, like, do	Balancing
you know? If you're having a fight with the	
boyfriend or something the last thing you	
want to do is research" (0098)	
"When you are coming into class, for girls,	Body Image
there is make-up and hair, your dress and	
how you look". (0037).	
Assignments. The majority of them have to	Assignments
all be in either on the same week or on the	
same day". (0098)	
"Everyone kind of tends to dress up and	Dress Code
look their best and you feel huge pressure	
to kind of look good all the time". ((053)	
"Trying to get money and the recessionI	Finance
had to get a joband it was really intensive	
and that's kind of stressful as well trying to	
do that and exams". (053)	
Your social life. when you go out you	Social Life
mightn't go to lectures the next	
morningyou don't print off notes and then	

you will fall behind". (0139)	
"Time or dates to hand up assignments or	Deadlines
	Beaumes
case studies in politics and stuff like that is	
very stressful. There's not enough time	
given for to complete them and then you are	
kind of cramming". (0139)	
"Just before exams you would kind of get	Exams
stressed out or trying to psyche yourself up	
for exams". (0031)	
"Girls can be more studious, more perfect;	Commonisons and Enjoyds
Oiris can be more studious, more perject,	Comparisons and Friends
boys can be more laid back. So girls,	Comparisons and Friends
	Comparisons and Friends
boys can be more laid back. So girls,	Comparisons and Friends
boys can be more laid back. So girls, especially friends, they will always compare	Comparisons and Friends
boys can be more laid back. So girls, especially friends, they will always compare what you are wearing and then they will	Comparisons and Friends
boys can be more laid back. So girls, especially friends, they will always compare what you are wearing and then they will compare assignmentsa lot of	Media
boys can be more laid back. So girls, especially friends, they will always compare what you are wearing and then they will compare assignmentsa lot of comparisons". (0071)	
boys can be more laid back. So girls, especially friends, they will always compare what you are wearing and then they will compare assignmentsa lot of comparisons". (0071)	

# 2. Difficulties in First Year

Data Extract	Coded For
"In first year you think oh I will leave this	Exams
bit out it won't come upyou say I will	
study this and I'll just take a chance for the	
exams". (053)	
"Trying to manage money as well can be	Finance
stressful." (0022)	
"Maybe they have (first year students) too	Social Life
much freedom, living away from home they	
can do what they want. There are no	
controlling parents; they are out of the	
picture like. Drink, drugs, hurting	
themselves in some way, kind of loosing	
motivation." (0071)	
"In first year they leave everything to the	Deadlines
last minute. They take a risk and hope it	
turns out all right". (0139)	

The above themes lead to the development of the final theme viz. 'The Experiences of Stress'.