

**INVESTIGATING THE RELATIONSHIP BETWEEN
FORTITUDE AND ACADEMIC ACHIEVEMENT IN
STUDENTS FROM HISTORICALLY DISADVANTAGED
BACKGROUNDS**

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A mini-thesis submitted in partial fulfilment of the requirements for the degree of Magister Psychologiae in the Department of Psychology, University of the Western Cape.

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AND ACADEMIC ACHIEVEMENT IN STUDENTS FROM
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ABSTRACT

This research study employs a strengths perspective. This means that, instead of the traditional deficits or pathology-based approach of focusing on weaknesses, the focus is on positive outcomes. Fortitude, more specifically, is the strength gained from appraising oneself, one's family, and one's social support, in a positive manner. This strength equips people to cope successfully in stressful situations. Fortitude as a construct in the strengths perspective promises to give insight into student success because it takes more than one level of analysis into account. The current research study investigates whether there is a link between fortitude and academic achievement in first year students at the University of the Western Cape.

A non-experimental, survey research design was adopted for this study. The sample consisted of 150 first- year psychology students at the University of the Western Cape. Data was collected using a demographic questionnaire and the Fortitude Questionnaire (FORQ).

Factors that are looked at include accommodation (whether the students stayed at home or on residences while studying), gender, languages, family & friends' influence, and having siblings at university. A significant weak positive correlation exists between fortitude and psychology average ($r=0.178^{**}$, $p<0.01$) indicating that, whilst fortitude is correlated with academic achievement, there are other variables which influence academic achievement, and that fortitude is not necessarily the most important factor. Gender does not appear to have an effect on the relationship between fortitude and academic achievement. Participants' first language appears to have an influence on the relationship between fortitude and psychology average for those participants who speak African languages but not for those who speak English nor Afrikaans. There is a significant positive correlation between fortitude and psychology average for those who stay at residence but not for those who stay at home indicating perhaps that accommodation affects the relationship between fortitude and psychology results. No effects were found on the association between fortitude and academic achievement for having or not having a sibling at university, nor for participation in recreation.

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- Dr Theunis Kotze for his kind assistance with the statistical analysis
- The Psychology Department at UWC for their support



DECLARATION

I declare that *Investigating the relationship between fortitude and academic achievement in students from historically disadvantaged backgrounds* is my own work, that it has not been submitted before for any degree or examination in any other university, and that all the sources I have used or quoted have been indicated and acknowledged as complete references.

Mohamed Zubair Rahim December 2007

Signed: _____



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CHAPTER ONE

OVERVIEW OF THE STUDY

1.1. General Introduction

The focus on deficits and vulnerabilities is a characteristic of much scientific and medical thinking, that has even entrenched itself within western culture (Saleebey, 1996; Seeman, 1989; Strümpfer, 1995). The focus on discovering risks and vulnerabilities, and the costly aim of treating people in order to recover from problems once they have occurred, manifests this way of thinking. Whilst there is much value in this model, this “emphasis on what is wrong, what is missing, and what is abnormal”, (Saleebey, 1996, p. 297) is limited. In the context of tremendous adversity, positive outcomes still abound.

In South Africa today, the impact of the oppressive systems of apartheid as well as colonialism, are still evident in various ways. The term disadvantaged refers to deprivation of some kind. In South Africa, referring to individuals as “previously disadvantaged” is not necessarily accurate due to the fact that many still experience the after-effects of the past. In terms of the education system, although access to tertiary education has now been granted to individuals from previously disadvantaged backgrounds, and conditions in the education system have improved tremendously, they still suffer many difficulties ranging from poverty to an inferior schooling system. Given their disadvantaged educational background, students may not be adequately prepared to cope with the more demanding university education (Barends, 2004; Huysamen & Raubenheimer, 1999).

All of these factors still set these individuals in a negative cycle in that the ‘odds are against them’ in succeeding at the tertiary institution. Much research has been done at tertiary institutions on the reasons for student failure and drop out, the feelings and experiences of the students etc. However, these negative outcomes are not always the case and many students excel despite adversity.

This research study aims to highlight a different viewpoint related to these students, who come from previously disadvantaged backgrounds and who are now entering a tertiary institution of a similar nature. The different viewpoint of this research study is not to look at the difficulties of these students or where they are lacking, but rather to focus on the more positive viewpoint of what 'have they got going for them'. This positive viewpoint links with the strengths perspective.

Pretorius (1998) proposes the construct of fortitude, which emanates from the strengths perspective. Fortitude is the strength gained from appraising oneself, one's family, and one's social support, in a positive manner. It is this strength, which equips people to cope with stress.

The present study focuses on investigating the link between fortitude and academic achievement in university students at the University of the Western Cape (UWC). This connects with the factors discussed above, regarding students' disadvantaged backgrounds as well as the university setting being of a similar nature, looking at whether fortitude is aiding in them achieving academic success in the university context.

1.2 The Aim of the study

The aim of this study is to explore the relationship between fortitude and academic achievement in students from the University of the Western Cape.

1.3 The Value of the study

This study aims to build the knowledge base from a strengths perspective. Discovering what works will assist in building on these positives and thereby assisting not only students, but other individuals as well. This will thus provide insight into how the perspective can be spanned to different contexts and situations. The findings of this study will also, it is hoped, assist in developing applicable support structures to aid students, including student counselling, mentoring and other interventions which will foster

fortitude. Essentially, this study, it is hoped, will assist in providing a better understanding of what students' strengths are– within this context and in the instance of students coming from diverse cultural backgrounds and being exposed to the South African schooling system.

1.4 Overview of the Manuscript

This document is comprised of five main chapters, which have been set out as follows.

Chapter 2 is a review of literature pertinent to this research study. The main frame of reference of strength that has been adopted in line with the philosophy of health promotion (Thoresen & Eagleston, 1985), prescribed within medicine and thereby the field of psychology. Health promotion (WHO, 1986) encompasses the view of drawing on the positives and thereby strengths and resources instead of merely focussing on pathology and illness. In adopting this strength perspective, other concepts in relation to this have been reviewed within chapter 2 and are discussed in depth. Academic achievement and the factors related to it like the South African education context follows and lastly the interaction between the various factors.

Chapter 3 describes the research methodology implemented within this research study. The research methodology comprises the discussion of the particular research design implemented, the aims of the study and the research instruments decided upon for use within this study. The research instruments are in the form of questionnaires that were used and information is provided on the construction of these instruments. The specific characteristics of the sample of the participants are provided followed by the ethical considerations implored.

Chapter 4 systematically reports the results of the study. The different variables focused on in the study are presented, as well as the analyses of the interrelationship between variables.

Chapter 5 is the discussion of the results presented within chapter 4. The findings on exploration of the different variables is interpreted in relation to the actual findings and in correlation with the body of literature drawn upon. The limitations of the present study as well as recommendations are provided thereafter.



CHAPTER TWO

LITERATURE REVIEW

2.1. Introduction

In this chapter, the literature pertinent to this research study is reviewed. First, the overarching theory of systems theory is discussed. Systems theory allows for a more holistic understanding of an individual by simultaneously taking into account more than one level of analysis.

Next the traditional deficits model, also known as the medical model is looked at. This model dominates the established field of psychology and to a large extent influences the interventions used and policy formulation.

Thereafter, the chapter deals with fortitude, which forms part of the frame of reference that focuses on the strength perspective. The strength perspective is adopted in line with the philosophy of health promotion, which is the new viewpoint prescribed within medicine and thereby the field of psychology. According to the World Health Organization (WHO), “Health promotion is the process of enabling people to increase control over, and to improve, their health... Health is a positive concept emphasizing social and personal resources, as well as physical capacities” (WHO, 1986).

Health promotion encompasses the view of drawing on the positives and thereby utilising the strengths and resources, instead of solely focussing on pathology and illness (WHO, 1986). In adopting this strength perspective, other concepts in relation to it have been reviewed within chapter 2 and are discussed in depth. The concepts related to the strength

model that are discussed are resilience, positive psychology, hardiness, social support and fortitude.

Thereafter literature on academic achievement and factors related to it are discussed. Critical to the theme of academic achievement, is the context of the South African education system, as well as the interaction of the various factors, which is discussed next.

2.2. Over-arching theoretical perspective- systems theory

This study employs a systems theory approach. It assumes that “(a)ny individual person or situation can be thought of as being simultaneously both a discrete entity (a bounded system) and part of a number of different systems, for example a family system, a school system, and a peer system”(Green, 2001, p.8). Systems theory is a useful way of making sense of the complex interactions between different sites or sub-systems the individual inhabits and, more importantly, the individual’s interpretation of these interactions.

The ecological or eco-systemic model, proposed by Bronfenbrenner (1979) and developed further by others, puts forward the idea that an individual is a member of a number of systems of interaction (Thomas, 1992). This approach allows one to study the effects on an individual at escalating levels of analysis. Starting from the microsystem (a given setting such as “school, home, and peer group locations” (Thomas, 1992, p.439), mesosystem (the interaction between more than one microsystem), exosystem (one or more settings which the individual does not inhabit but where decisions are made that do affect the individual) and finally the macrosystem (consisting of the preceding systems) (Thomas, 1992). This therefore allows one to conceptualise and study risk, and similarly protective factors which exist at different levels. “The physical, intellectual/cognitive and personal/social aspects of development form one integrated process, although they may be examined in artificial isolation for the purposes of study” (Green, 2001, p.8).

Pretorius' concept of fortitude (1997) which is the strength obtained from appraisal of oneself, one's family and one's social support positively, uses systems thinking as it is comprised of different levels of analysis offered by systems theory. Similarly, various studies have focused separately on different levels of analysis when looking at the same concept of academic achievement. The same levels that we can study academic achievement by are the same levels of analysis we can study fortitude by. It is thus apt that a systems theory approach is used in this study.

2.3. The traditional model

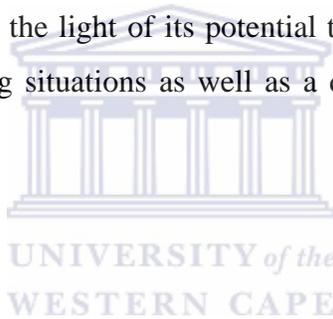
Traditional psychology models focus on deficits in mental health and repairing these weaknesses. Sigmund Freud (1856-1939) is a well-known theorist primarily focussing on the development of the personality. His stages of psychosexual development emphasize the traditional psychology phenomena whereby the emphasis is on a certain set of sequences of events towards the acquisition of success and health. The main focus is, however, always on the individual who has not achieved the prescribed set stages and the subsequent emphasis of the negative outcome in terms of illness or dysfunction. This typically portrays traditional psychology's viewpoint of deficits and problems.

Traditional psychology focuses on "fixing what is broken" rather than strengthening and reinforcing existing strengths. This is an inefficient model of operating- prevention is usually more effective than cure. In a sense, traditional psychology represents a reactive framework responding to a crisis, while the new psychology represents a proactive attitude, which aims to prevent a crisis.

Traditional models of psychology have been successful in developing typologies of mental disorders, methods of treatment and furthering the understanding of the human mind. This has made its way into the maelstrom of modern living and culture, with psychological concepts accepted and even entrenched in mainstream culture. An

indicator of this is that terms like stress, depression and self-esteem are regularly the theme of television programmes, whether entertainment or actuality.

Stress is often blamed for negative trajectory outcomes that are observed within individuals and their lives. Stress can be defined as an unpleasant state of emotion usually accompanied by physiological symptoms that individuals experience in situations that they perceive as threatening or challenging. It manifests itself in the individual in many ways (Folkman *et al*, 1986; Folkman, 1997). These include physiological, psychological, and emotional and the behavioural characteristics that are associated with it (Zimbardo, 1992). Besides the negative effects that stress can produce, it can also have positive effects. The negative effects of stress can be seen in the manifestations of physical illnesses such as heart attacks, high blood pressure and many other illnesses. The positive effects of stress can be seen in the light of its potential to motivate individuals to better performance within challenging situations as well as a display of heightened creativity (Zimbardo, 1992).



2.4. The strengths model

The hegemonic emphasis on weakness and deficits has started to shift.

“Psychology must rate as one of the most irrelevant endeavours in South African society today ... we continue to elaborate the sickness model and emphasize pathology at the expense of paying sufficient attention to the potential of the vast majority of people who function quite adequately” (Holdstock, 1981, p.123).

While in 1981 Holdstock was writing about the lack of an ‘African Psychology’ in South Africa which is dominated by Euro-centric perspectives in psychology, his views resonate today with the growing number of those who argue that psychology in general emphasises a disease or “sickness” model as opposed to a health model (Antonovsky, 1979; Pretorius, 1998; Seligman & Csikszentmihalyi, 2000; Strümpfer, 1995; Wissing & van Eeden, 1998). This shift is perhaps personified by Martin E.P. Seligman whose earlier work looking at learned helplessness (Seligman & Maier, 1967) was grounded in

the clinical or deficit model, and whose later work shifted to learned optimism (Seligman, 1990), as well as his leading role in the development of positive psychology (Seligman & Csikszentmihalyi, 2000).

This gap in traditional psychology, with its focus on deficits and weakness, is beginning to receive increased awareness and research attention. Whilst traditional models have played, and will continue to play, an important role in the development of psychology, they do not satisfy the need to make the most of limited resources (Saleebey, 1996).

Psychofortology or “the science of psychological strengths” is gathering momentum within psychology (Wissing & van Eeden, 1998, p.379). This is evidenced by the proliferation of concepts to explain well-being and resistance to stress (Lightsey, 1996).

A central question in psychofortology is “Where does the strength come from?” In attempting to answer this question, Pretorius (1997) introduces the construct of fortitude. Fortitude is the strength obtained by appraising oneself and the world one lives in, in a positive manner. More specifically it is defined as the strength, gained from appraising oneself, one’s family, and one’s social support structure positively. It is this fortitude or strength, which enables the individual to cope with life’s stress and stay well (Pretorius, 1998). Fortitude thus consists of three domains: individual, family and social support.

Though each of these appraisal domains has been studied in other related constructs, when viewed separately they do not represent fortitude (Pretorius, 1998). Human beings are complex and focusing on one domain does not capture that complexity. Incorporating fortitude as the frame of reference would thus assist in providing as accurate a view as possible related to the individuals’ strength systems, due to the fact that fortitude consists of the three above-mentioned appraisal domains. It should therefore be emphasized that since fortitude does not view each appraisal domain in isolation, the three domains together provide more of a holistic viewpoint on the individual (Pretorius, 1998).

Not much research exists on fortitude itself. However large bodies of research exist on the various constructs which appear to be central to fortitude (Gibson, 2001; Julius, 1999). These constructs include: resilience (Cowen & Work, 1998; Dyer & McGuinness, 1996; Garmezy, 1993; Garmezy & Masten, 1986; Luthar & Zigler, 1991; Rak & Patterson, 1996; Rutter, 1981, 1985; Saleebey, 1996), potency (Ben-Sira, 1985), hardiness (Allred & Smith, 1989; Funk & Houston, 1987; Funk, 1992; Kobasa, 1979), and social support (Pretorius & Diedericks, 1994). In the next section, these concepts which are relevant to understanding how people deal with stress such as the demands of academic achievement at university, will be discussed.

2.4.1. Positive Psychology

Positive psychology is conceptualised as the “science of positive subjective experience, positive individual traits, and positive institutions to improve quality of life and prevent the pathologies that arise” (Seligman & Csikszentmihalyi, 2000, p.5). Sheldon and King (2001) put it more simply as “nothing more than the scientific study of ordinary human strength and virtues...what works, what is right, and what is improving” (p.216).

Positive psychology can thus be seen as an attempt by some psychologists to shift research and theoretical focus from the dominant medical paradigm focusing on pathology and healing, to understanding how the majority of people are able to live pathology-free “happy” (Myers, 2000) lives. It criticises the training of psychologists primarily in the identification and treatment of pathology, without an equal emphasis on the understanding and development of positive human qualities and emotions. Positive psychology advocates for the use of the scientific model of knowledge development to be applied to the positive human experience, not to the exclusion of the negative human experience, but in development of a science that provides space to investigating “what is and what could be” (Seligman & Csikszentmihalyi, 2000, p.7).

Positive psychology has much in common with psychofortology. It appears that both emphasise understanding and developing psychological strengths. However, positive

psychology has been criticised for being so (over) enthusiastic in its pursuit of psychological strengths that it does exclude negative human experience and has a tendency to focus on the extraordinary (Hundermark, 2004). Perhaps positive psychology does not offer the integrated approach, balancing positive and negative elements, that psychofortology promises.

2.4.2. Resilience

Resilience, as a concept, has been framed in the strengths rather than deficit model (Zimmerman & Arunkumar, 1994). While much work has been, and is being done to study resilience, there is not yet a consistent, agreed upon definition for the construct (Kaplan, 1999; Zimmerman & Arunkumar, 1994). Generally, resilience is seen as the ability to bounce back from adversity (Mangham et al., 2000; Montgomery et al., 2000; Olsson et al., 2003; Rak & Patterson, 1996). Resilience can be defined as the “factors and processes that interrupt the trajectory from risk to problem behaviours or psychopathology and thereby result in adaptive outcomes even in the presence of adversity” (Zimmerman & Arunkumar, 1994, p.4).

Terms such as ‘invulnerability’ and ‘invincibility’ have been used interchangeably with resilience (Cowen & Work, 1988; Engle, Castle & Menon, 1996; Monaghan-Blout, 1996; Rutter, 1985). However, these terms were abandoned as they imply perfect coping, and that no harm or effect of being exposed to the risk factor was experienced. Resilience, on the other hand does not imply zero- effect.

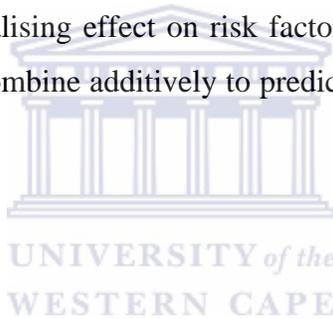
While resilience has in the past been conceptualised as a constant which operates across a person’s life span, in different spheres, research has not borne this out (Monaghan-Blout, 1996; Rutter, 1987). Importantly, resilience is not a universal construct that applies to all life domains, all the time. Rather, one might be resilient to specific risk factors at certain periods of ones life and less so at other times and vice versa. Also, resilience is the result of individual as well as environmental factors (Rutter, 1985).

Dyer and McGuinness (1996, p. 277) identify four critical attributes of resilience: (1) rebounding, bouncing back and carrying on with life after adversity; (2) a sense of self, having enduring values; (3) determination, perseverance until the goal is achieved; and (4) a pro-social attitude, the ability to elicit support from others.

Three main models of resiliency have been identified (Zimmerman & Arunkumar, 1994): (i) Compensatory model, (ii) Challenge model and (iii) Protective factor model.

i. Compensatory model

The word ‘compensate’ means to counterbalance and within the compensatory model, what is meant is that one returns from the damage or loss. A compensatory factor has a direct, independent, and neutralising effect on risk factors. In this model the risk factor and the compensatory factor combine additively to predict the outcome (competence) i.e. they balance each other out.



ii. Challenge model

In the challenge model, a challenge refers to a demanding task, one that calls upon the use of one’s skill and strength. In this model, a stressor promotes successful adaptation, as long as it is not excessive. Too much of a stressor is debilitating and promotes maladaptive behaviour, while too little is not challenging enough. The experience of successfully dealing with a challenging yet manageable stressor (challenge) helps the individual cope with the next one successfully. Rutter (1987) calls this “inoculation” or “steeling” as in strengthening the individual for future stressful situations. On the other hand, not meeting the challenge of a stressor means that the individual will be more vulnerable to risk (Rutter, 1987). This could be reflected by the individual not attempting a similar situation again or the loss of their ability to meet this challenging situation, due to the prior defeat.

iii. Protective factor model

To protect oneself means to keep from harm or injury. This is what the protective model describes in that individuals make use of protective factors to safeguard themselves. Protective factors are proposed to operate in two ways (Zimmerman & Arunkumar, 1994). Firstly, protective factors reduce the effects of risk factors. Alternatively, protective factors enhance the effect of variables that decrease the probability of negative effects.

It is important to note that the three models described above are not mutually exclusive, and different processes may be perceived concurrently. Individuals may use a number of coping strategies at the same time, depending on the situation as well as the individuals' preference of strategy/ies.

The general lack of a clear definition for resilience is a distinct limitation. The term has been used in a range of ways. In the literature, resilience is used interchangeably with outcome (Zimmerman & Arunkumar, 1994) meaning that resilience can refer to the outcome or the process (cause of outcomes). Because of this, Kaplan (1999) argues that whilst resilience has been a useful concept, it may "be permitted to retire from the field gracefully and with honour" (p.77). In its place he recommends developing "theoretical structures that take into account individual, environmental, and situational factors that influence each other and interact with each other to influence other variables in different ways..." (Kaplan, 1999, p.77). The concept of fortitude holds promise of satisfying these requirements.

2.4.3. Potency

Potency refers to an individual's confidence in his/her own capacities, and in society which is perceived as basically ordered, predictable and meaningful. This confidence/potency influences the ability to cope with stressful situations (Ben-Sira, 1985).

When the individual is faced with stress, their potency assists them in absorbing some of the effects of the stress and therefore allowing the restoration of homeostasis within the self and within the environment. Potency can therefore be seen as a stress-buffering intervening mechanism. The concept of potency views the person in context since it considers coping to be a product of the interaction between the person and the environment. Conversely low potency occurs when the person has experienced failures, which would result in an inability and incapacity to cope, a sense of learned helplessness. However, a critique of potency is that many individuals may have experienced a number of failures but still continue to have confidence in their ability and persevere (and eventually succeed).

2.4.4. Hardiness

Kobasa (1979) defines hardiness as the person's ability to rise above challenges and turn them into opportunities for growth. Hardiness is a constellation of three psychological characteristics: commitment, control and challenge (Kobasa, 1982). Commitment refers to the ability to involve oneself fully with the challenges of different spheres of life. Control is the belief that one can influence events, and challenge is the ability to embrace change and tolerate ambiguity (Funk & Houston, 1987).

Hardy individuals tend to have higher positive self-beliefs in stress situations than those with low hardiness in similar stress situations (Allred & Smith, 1989). Hardy individuals also tend to have fewer illnesses because they are able to think of life events in more positive, less threatening ways (Funk & Houston, 1987).

However, several fundamental issues with regards to hardiness remain unresolved (Funk, 1992). These include: the fact that hardiness has been poorly operationalised; the use of multiple scales and non-standard scales complicates interpretation; the most common way of discerning high versus low hardiness is flawed and is not consistent with hardiness theory; hardiness does not buffer stress; and most worryingly, hardiness scales have been found to inadvertently measure neuroticism (Funk, 1992).

This last criticism is perhaps the most poignant. Since hardiness is a construct that is located within the positive view of psychology, which investigates strength and mental health as opposed to psychopathology, it is perhaps ironic and troubling that it uses negative characteristics (such as alienation, and lack of personal control) as part of its measure, which are in fact closer to measures of maladjustment (Allred & Smith, 1989; Funk & Houston, 1987; Funk, 1992). “As long as measures of hardiness are contaminated with neuroticism, and as long as reported illness or other health behaviours... are used as an outcome measure, studies of hardiness and health are open to serious alternative interpretations” (Allred & Smith, 1989, p. 264).

2.4.5. Social Support

Social support in this instance is defined as the encouragement and help gained from individuals in one's social sphere. Having social support is found to have an important positive effect on how people cope with stress (Pretorius & Diedericks, 1994). This access to available supportive others is important for personal satisfaction and ability to cope with different situations (Kiessling et al, 2004). Gender differences suggest that social support may work differently for males and females (Diedericks, 1991; Mallinckrodt & Frederick, 1992; Thomas, 1998). It has been found that there is a relationship between social support and other demographic variables (Diedericks, 1992). She found that having siblings at university as well as to which religion one belongs to, may influence the level of support experienced. She also found that female students reported a larger number of supportive others. However these findings are not conclusive as other studies have found contrary results. For example, Roothman et al. (2003) found no gender differences with regard to social aspects and the general psychological wellbeing of participants in their study.

Finally, this suggests that the constructs discussed above denote strengths that apply to one or more of the domains namely the individual, family, and social.

2.4.6. Fortitude

Fortitude is the strength to manage stress and stay well, obtained from appraising one's self, family support, and social support in a positive manner (Pretorius, 1998). "Strength or the absence thereof is derived from our construction of ourselves and our world" (Pretorius, 1998, p.23). Fortitude thus is broadly placed in a post-modernistic, constructivist outlook which posits that reality is constructed and, amongst other things, that perception of reality is not objective, but negotiated.

The above constructs focus on the conditions for a healthy response to stress. The main difference between fortitude and related concepts is that these concepts are a "mixture of both self-assessments and objective factors" while fortitude, on the other hand, is based clearly within a theory of appraisal (Pretorius, 1998, p.28). People with positive appraisals of the self, family and support will engage in more active coping behaviour, while those with less positive appraisals of these factors would have less confidence in their ability and use less active coping strategies (Barends, 2004).

Pretorius (1998) argues that while it might well be true that certain dimensions of fortitude could be more important than others or that certain dimensions interact more significantly with each other, research has not confirmed this, and the concept should thus be treated in its entirety. As yet, there is very little research done on fortitude locally or internationally. However, from an appraisal perspective, fortitude holds much promise for insight into the study of strengths. Fortitude has thus been presented as a construct that could better explain how people maintain psychological well-being in the context of stress.

2.5. Academic Achievement

Studying at university represents a complex, stressful experience which requires adaptation, learning, change and development on the part of students, in order to cope or succeed (Lindgren, 1969). Academic achievement is an important outcome for all

stakeholders in education, including students, their families, communities, industry and government (Gerdes & Mallinckrodt, 1994; St. John et al., 2001). Research on academic achievement can be grouped into studies which focus on one or more of the following levels of analysis, namely, individual, family, and social / contextual factors.

2.5.1. Individual Factors

Research focussing on individual factors reveals psychological traits and behaviours of academic achievers that are thought to be predictive of academic achievement. Different learning styles are related to higher performance in certain university subjects such as maths, science and fine arts (Drysdale, Ross & Schulz, 2001). Reading strategies were also found to differentiate between high achieving and low achieving undergraduate students (Taraben, Rynearson & Kerr, 2000). Finn and Rock (1997) highlighted the importance of student engagement, in academic resilience of at-risk students. Mwamwende (1995) found no significant difference in academic achievement when comparing graduate students with internal versus external locus of control.

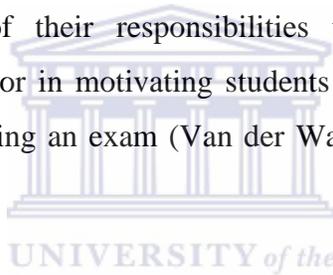
Theron (1989) found that non-cognitive variables (variables not including matric results and cognitive aptitude or ability) were unable to predict the performance of Black students. Matriculation results, followed by aptitude test results, were the best predictors of academic achievement. Faculty of Science students obtained higher multiple correlations than other faculties, probably because of the more objective factual basis of the subjects.

These studies highlight some of the individual factors which influence academic achievement. However, to focus only on the individual would be to ignore the influence of the family on academic achievement, which will be taken into account next.

2.5.2. Family Factors

Having a supportive family is a strong predictor of academic achievement, even when students have to deal with much stress (Fergusson & Lynskey, 1996; King, 1998). Arellano and Padilla (1996) as well as Walsh (1996) found that supportive families and teachers are important in making ‘at-risk’ students, ‘invulnerable’ to negative consequences. Students’ family background has an effect on Grade Point Average (GPA) at university (Betts & Morell, 1999). Comparing students whose parents have never attended college, those whose parents have some college experience and those whose parents graduated, Zallaquett (1999) found no significant differences in GPA and retention rates of first generation students and the other two groups.

Lack of parental involvement was rated as the single most important reason for the high failure rate in grade 12 students (van der Westhuizen et al., 1999). Parental involvement seems to remind teachers of their responsibilities toward the students. Parental involvement is also a key factor in motivating students to learn, as well as supporting students emotionally when facing an exam (Van der Walt & Kruger, 1991 cited in van der Westhuizen 1999).



Sack (1972) found no significant difference when considering parents’ level of education, when studying medical students. However, she did find that living with parents was associated with higher pass rates, and that having siblings at university was associated with higher academic achievement. It was hypothesised that the parental guidance and support system was instrumental to providing the students with a structured home environment which positively influenced their academic achievement. Thus having a supportive family is thought to be related to better academic achievement.

2.5.3. Social Factors

Interpersonal relationships are also important in academic achievement. Goldman and Flake (1996) find that being flexible with regards to others is related to academic achievement. Similarly, as reported above, having supportive relationships is also related

to greater academic achievement or resilience (Arellano & Padilla, 1996; Nettles, Muchera & Jones, 2000).

Davis (1994) finds that the social variables: student background, racial congruency and college environment, are related to academic performance in African American males. Heller and Viek (2000) regard both individual (cognitive and motivational) and socially stimulating factors as contributors to academic excellence, and consider varied social support for gifted university students as being the most effective for sustaining academic achievement. Gonzales et al.'s (1996) study looking at family, peer, and neighbourhood influences on academic achievement had contrasting results. They found that family variables including family income and parental educational level were not predictive of academic achievement. They also found that neighbourhood risk was related to lower grades. Peer support was related to better grades when living in a low-risk neighbourhood.

Hunt et al. (1994) conducted a longitudinal study with African American students at the University of Maryland. Thirty-four percent of those contacted in the follow-up had not completed their first degree (classified “non-graduates”), while 66% had completed at least the baccalaureate degree (classified “graduates”). Graduates and non-graduates alike reported similar levels in their ability to confront issues of career, interpersonal relations and establishing an intimate relationship with a lover/ partner. However non-graduates reported finding more difficulty with autonomy issues than graduates. “Students with low autonomy skills would likely find that type of setting an impediment to one’s persistence in higher education” (Hunt et al., 1994, p. 283). Autonomy whilst an individual factor, appears to have a link to culture. Western cultures prize autonomy and western institutions are thus infused with this underlying cultural value. Other cultures place emphasis on the social. When others enter an institution that prizes autonomy, then they are out of place and find it difficult to cope. Autonomy thus seems to be an important issue with regards to students’ persistence and perseverance in higher education (Ferreira, 1995).

2.6. Interaction between the factors

Looking at the factors described above (individual, family and social) in isolation, as discrete contexts would be reductionistic and inadequate. We need to also look at the interaction of these factors. Betts and Morell (1999) in a study on over 5,000 undergraduates at the University of California, found that personal background: gender, ethnicity, family income, as well as the socio-economic environment of the high school attended, indicated by the teacher-pupil ratio, teacher experience and teacher qualification, had significant effects on the Grade point average (GPA) of students at university. These represent the individual, family and social factors discussed above.

Sack (1972) conducted an investigation of academic achievement among medical students at the historically “advantaged” University of Pretoria. She investigated psychological as well as socio-demographic factors. She found that psychological factors contributing most to academic achievement, varied according to year of study. Family factors such as having siblings at university as well as lodgings (i.e. staying in parents’ home, hostels or private lodgings) were found to have an effect on GPA.

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2.7. Gender

Since appraisal from social settings form a part of the construct of fortitude, literature regarding the appraisal impact and differences related to gender has been consulted. Lee et al. (2002) found that social appraisals function differently for males and females. For females, social appraisal seemed to mediate the negative direct effect of social connectedness on perceived stress. This means that those “women with low connectedness self verify through social appraisal, and this self verification accounts for perceived stress otherwise associated with low connectedness” (Lee et al., 2002, p.359). However, this model only accounted for 9% of the total variance in perceived stress, meaning that other factors also contribute to perceived stress in women. Men were found to more negatively appraise the college climate than women do. Social connectedness

was found to be more related to perceived stress for men than for women. For men, there was only a weak relationship between social appraisals with perceived stress.

Cross and Madson (1997 in Lee et al. 2002) propose that women maintain a more interdependent self-construal whilst men maintain a more independent self-construal. Lee and Robbins (2000) found that, for women, social connectedness was based on relationships that emphasise “intimacy and physical proximity” and for men, social connectedness was based on relationships that “emphasise power and status”.

In considering their results, Lee et al. (2002) conducted a content analysis of the items contained in the instrument. They found that the individual was posited against others in a comparative way, emphasising difference as opposed to similarity. This construction would be more in line with men’s self-construal, as opposed to women’s self-construal, and they suggest that a more interdependent or relational measure might have been more appropriate for women. Also, the stigma attached to low social connectedness, as well as the self-report nature of the instruments might have affected the results (Lee et al., 2002), i.e. respondents would have reported higher social connectedness and this needs to be taken into account. They further point out that social connectedness refers to one’s sense of interpersonal closeness to others, not necessarily the quantity of one’s existing social network.

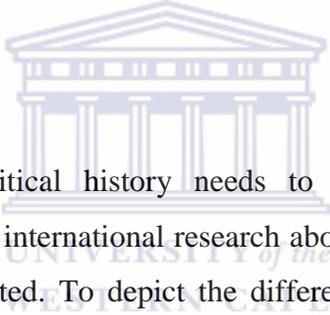
Felsten and Wilcox (1992) investigated the effect of satisfaction with social support on academic performance in male psychology students. They found that satisfaction with support was not directly related to academic performance but, combined with situation-specific mastery, reduced stress, which did have a direct effect on (decreasing) academic performance for those experiencing high stress.

Mwamwende (1994) found that there were gender differences in levels of test anxiety. Women reported higher levels of test anxiety and were also outperformed by men in a class test. Whilst men and women who scored high on test anxiety displayed no difference in test scores, men who had higher test anxiety scored higher than women in

class test scores. However, Mwamwende (1994) argues that the studies' findings are inconclusive as the study was exploratory, and confirms some but not other studies' findings with regards to test anxiety and gender differences. El-Zahhar (1991 in Mwamwende, 1994) argues that perhaps men under-report the levels of anxiety that they may actually be experiencing.

From the above, it appears that there is a link between gender and social appraisal, as well as a link between social appraisal and academic achievement. It thus seems highly likely that, since fortitude is comprised of a measure of social appraisal, that there will be a relationship between fortitude and academic achievement, which will be affected by gender.

2.8. South Africa



The South African socio-political history needs to be taken into account when considering the applicability of international research above. A brief description of some significant statistics will be listed. To depict the differences in the literature reviewed from western perspectives and then from the South African context, the term “colleges” will exclusively be referred to when discussing American literature. The terms “university” and “higher education” will be used when discussing South African literature and studies.

Fedderke, Luiz & De Kadt (1994) describe some of the historical inequalities between “whites” and “blacks” education systems in South Africa. For instance, “white” school pupil-teacher ratios remain steady at the mid-20 level while the best “black” pupil-teacher ratio is 32:1. Also, in white schools the percentage of teachers with tertiary qualifications was 80%, while in black schools the comparative percentage at the same time (1982) was less than 5% (Fredderke et al., 1994, p.70). Studies within South Africa also need to be placed in context with regard to the time of the study and the institution (whether advantaged or disadvantaged).

The circumstances in learners' secondary education setting and matriculation performance need to be considered. Grade 12 is the final year on secondary school, the matriculation year, before students are able to enter a higher education institution.

Van der Westhuizen et al. (1999), on studying the performance of Grade 12 learners, concluded that a "...lack of culture of teaching and support services." (p. 315) was fundamental to the high failure rate. While instructional related issues were rated very high for learners, teachers and principals rated them very low. Van der Westhuizen et al. (1999) argue that this indicates learners' eagerness to learn, but that teachers and principals place a lower importance on teaching and learning, raising the question of the main focus of the school.

Lack of parental involvement was rated as the single most important reason for the high failure rate in grade 12 learners (Van der Westhuizen et al., 1999). This was confusing at first since parents are at work and not the ones educating the learners. However, parental involvement, seems to remind teachers of their responsibilities toward the learners, and is also a key factor in motivating learners to learn and supporting learners emotionally when facing an exam (Van der Walt & Kruger, 1991 cited in Van der Westhuizen 1999).

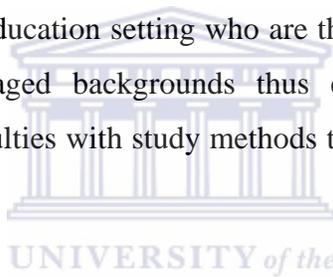
Lack of resources as well as instructional related issues were also seen as very important factors. Given the legacy of apartheid, there will for a long time be inequality between schools and it will take much, presently unavailable resources to redress this issue.

In conclusion, all the challenges learners face in their schooling, has an impact on them even prior to entering the university setting. These factors are the reason for the presumption that these learners are not adequately equipped to succeed at the university setting.

Wittenberg (2001), discusses reasons for individuals pursuing a university education as more than simply wanting to acquire knowledge, but also to obtain the qualifications required for a chosen profession. Moreover individuals are drawn to university due to the

high perceptions of status of this learning institution. An important reason for going to university is also the pressures received from parents and secondary schools.

Despite these somewhat ambitious and positive reasons for going to university, Ferreira (1995) describes some of the reasons for high failure and drop-out rates of first year university students. These include that the different foci of secondary and higher/tertiary education institutions. Schools focus on the acquisition of knowledge whereas universities require the application of knowledge combined with independent study. A second reason for failure is the deteriorating lecturer-student ratio. This combined with ever increasing class sizes means less opportunity for individualised instruction. The third reason is the diversity of students. Students come from much more diverse backgrounds and many are first generation students. The term 'first generation students' refer to individuals entering a higher education setting who are the first from their families to do so. Students from disadvantaged backgrounds thus experience a wide variety of challenges ranging from difficulties with study methods to emotional problems (Ferreira, 1995, p. 154).



Essentially, according to Ferreira (1995), the problems are that the transition from secondary school to university is not properly managed. A transition phase is needed due to the three main reasons given above regarding the students' diverse backgrounds, being first generation students, the impact of large classes and different expectations in terms of learning. A difficulty is also that the university lecturers' teaching skills are inadequate, as these academics are not rewarded for teaching, but for research and publication.

Ferreira (1995) finds that "study manuals are potentially an important teaching and learning instrument and that its quality influences achievement of students" (p.157). Attention also needs to be paid to lecturer's teaching skills. Traditionally, lecturers' research and publication records are the sole criteria when academic promotion or progress is considered, not their teaching skills.

Wittenberg (2001) provides a psychoanalytic perspective of what an average student experiences on entering a university setting. The new student experiences feelings of loss and insecurity to some extent. The reasons Wittenberg attributes this to is the fact that

entering the university setting is a great change for this young person. These changes are that of not having a structured time-table as was available in the secondary school setting, as well as the lack of close supervision. An important factor to note is that the new student had come from a secondary school where he/she was a senior and part of a successful group that provided a degree of support and status to now finding him/herself alone amongst a new peer-group that is composed of highly intelligent young achievers. The reality sets in for the student that he/she now has to assume the role of being an adult and thereby taking more responsibility on his/her own, with no adults' assistance to fall back on.

Added pressure is experienced by this new university student who may feel that having achieved academic success to enable a place being offered at the university, that the expectation is to display good results deeming him worthy of the university position. It can be noted that even the more secure students still experience these feelings on entering university and for others it could be too overwhelming (Wittenberg, 2001). Ferreira (1995) reports that students from disadvantaged backgrounds experience a wide variety of challenges ranging from difficulties with study methods, to emotional problems.

Having stated above that the average student experience many difficulties, fears and pressures on entering university, it can then be thought that the students from disadvantaged backgrounds, who have some idea of their shortcomings, would experience negative emotions to a greater extent.

Wittenberg (2001) finds that coming to university represents both great opportunities for mental-emotional development as well as a threat. The latter, as we have seen, arises from the loss of a familiar environment, exchanging being still largely relying on and cared for by adults for a life of far greater independence and responsibility. How this will be dealt with depends to a large extent on the way previous losses have been dealt with and the inner strengths the individual has developed. It also depends on the extent of the outer change. Hence, feelings of strangeness and loss will be particularly acutely experienced by those who have never lived away from home, students who have come

from abroad and/or a different culture and/or have to communicate in a language other than their mother-tongue.

In conclusion students enter the university for great reasons of acquiring knowledge, pressures to prove themselves and in an attempt to acquire the skills to enter the job market. Despite these high ideals and ambition that are positive driving forces, other factors play a role in the ‘wellness’ of students and their ability to cope at this new setting. Average or normal students experience feelings of loss and anxiety. From a psychoanalytical point of view, the students also feel a deep need to prove themselves as they feel they don’t deserve to be at this setting.

South African students, who are poorly equipped due to their schooling and have not fully developed autonomy skills, may thus be experiencing these doubts even more intensely. All these factors would lead one to believe that these students would not cope at the university setting, yet many of them do. Looking at the positives now, in what these students do possess to assist them in succeeding would be the likely next step. Therefore, within this study Fortitude and how this impacts on the students achieving academically will be explored.

2.9. Culture

Cultural differences between (1) the culture which the students bring with them and (2) school and university learning cultures (Ferreira, 1995) where learners are “spoon-fed” at school and are now expected to do research and self study, might have a detrimental effect on students’ intellectual development (Hunt et al., 1994). Whilst graduates and non-graduates in Hunt et al.’s study were similar on most measures, autonomy seems to be a measure where non-graduates were weaker than their graduate counterparts. This can be related to both individual differences as well as cultural differences.

High school results predicted university achievement to a certain extent (Betts & Morell, 1999; Huysamen & Raubenheimer, 1999; Melamed, 1992). This (matriculation result) is

a strong reflection of the poverty and level of education among adults in the neighbourhood (Betts & Morell, 1999). This can perhaps be used as an indicator of the local as well as academic culture within which the student was brought up.

2.10. Autonomy

As mentioned previously autonomy seems to be an important issue with regards to students' persistence and perseverance in higher education. According to Ferreira (1995) "the transition from school to university is too drastic. This is attributed to a difference in approach: schools concentrate on the acquisition of knowledge, whereas universities require the application of knowledge combined with independent study" (Ferreira, 1995, p.154). Autonomy, whilst an individual factor can also be part of the broader cultural milieu. It is indeed a central feature of western culture and as institutions based in western culture, universities emphasize autonomy (Ferreira, 1995). At South African universities the students gaining access come from different cultural backgrounds. This represents a possible mismatch between the institution's ethos and the student's cultural values (Ferreira, 1995; Nyamapfene & Letseka, 1995).

Hunt et al. (1994) found in their study that non-graduates (ex-students who did not complete their degree) reflected that they had autonomy difficulties after leaving university and this could indicate that they may have experienced these same difficulties while still studying at university. Their difficulties could be dealing with being on their own and having to make decisions. Students with low autonomy skills would experience difficulties within the tertiary education setting. This environment is complex and circumscribed by the need to sort through various options, evaluate, organize and then to make decisions, something that students with low autonomy skills cannot do. In many previously disadvantaged schools, learners are highly dependent on their teachers as their main learning resource since they don't have adequate access to textbooks and other resources, a legacy of apartheid (Hartshorne, 1991; Van der Westhuizen et al., 1999). This may have influenced their learning models which would require major adjustment

when entering university (Ferreira, 1995). Within the fortitude model, the above emphasizes the first aspect, namely the self-aspect.

Interestingly enough, non-graduates reported that in hindsight, had they had the opportunity to return to the university setting, they would definitely make different decisions to assist in their coping within this setting. These non-graduates indicated that they would use more of the support services that are available at the university, namely academic advisors, academic support - and counselling services. Furthermore this would reflect that had these students accessed available resources, it could have assisted them in better coping and developing while on college. In light of the fortitude viewpoint, this reflects the second aspect, namely the social aspect.

Hunt et al.'s (1994) research further find that both graduates and non-graduates alike identified having career goals and the influence of their parents as positive influences. The revelation of the impact of parents' support is emphasized more by graduates. This research study clearly indicates that even with the support of parents, the attainment of academic goals is only possible when combined with clear career goals. This finding reflects family support, the third aspect of fortitude. It also shows that one aspect does not guarantee success on its own, but that different interrelated factors assist in successful academic achievement.

Hughes (1987) reports on the perceptions of African American students at predominantly white universities. The white universities are identified as being very independent (autonomy), competitive and intellectually orientated by the African American students. Hughes suggests that perhaps this perception could have hindered the intellectual and other development of these African American students. Perhaps this has a bearing on students at the University of the Western Cape (UWC). While UWC is a historically black university, the institution itself might represent the western cultural values of tertiary institutions, identified by Hughes (1987) above, to a greater or lesser degree, and this might have a similar impact on students' intellectual skill development.

Hughes' (1987) research study further shows that the African American students at college experience low self-confidence and lack of goal-orientated behaviour. This is further compounded by the students viewing themselves as having low intellectual capabilities which hampers their development while at the college and erodes their self-belief.

2.11. Recreation

Recreation can be defined as participation in an activity that has benefits for the physical self, as well as the psychological and social well-being (Jones, 1995). In South Africa the experience of recreation can lead to numerous benefits including the enhancement of physical and mental well-being and ethnic values, as well as facilitation of integration by breaking down social barriers and improvement of quality of life (Jones, 1995).

Recreational sports are forms of physical recreation that have been identified as a vital facet in a student's quality of life on campus (National Intramural Recreational Sport Association, 2004). The University of the Western Cape offers recreational sports such as dance, aquatics, hiking, judo, softball and hockey amongst others, (UWC Sports Administration, 2005), to their students as a potential platform to break social barriers, create a healthier society and enrich their quality of campus life.

2.12. Fortitude and Academic Achievement

Academic achievement is linked to the individual, family, and social domains. All the factors or domains discussed above are therefore important when discussing academic achievement. Some studies take these domains as separate, while others combine them. Fortitude (Pretorius, 1998) is the strength gained from appraising oneself, one's family support and one's social support. Academic achievement appears to be strongly linked to factors in the three domains which are also central to fortitude, namely the individual, family and social domain. Most of the research investigating the relationship between

fortitude or fortitude-related constructs and academic achievement, has focussed on adolescents and young children (Capella & Weinstein, 2001; Overstreet & Braun, 1999; Rumbaut, 2000; Wang, Haertel, & Walberg, 1999). There has been relatively little research in adult populations (Cutrona, Cole & Colangelo, 1994; Gigliotti & Gigliotti, 1998).

2.13. Conclusion

This chapter introduced and explored the concept of the Strength model. In particular it looked at the positives that allow individuals to succeed despite adversity or stress. One example, the construct of resilience, displays different models of how one is able to bounce back from adversity. Three models of resilience are described namely the Compensatory model where the individual compensates in order to deal with the stressor, the Challenge model where the individual faces the challenge, and the Protective factor model that describes the methods individuals make use of in protecting themselves against the stress. In relation to this positive viewpoint other literature along with the Strength Model perspective has been discussed, namely Positive Psychology, Potency and Hardiness. Next, fortitude is discussed. Fortitude looks at the individual's appraisal of three domains, namely the individual domain of appraisal, the family - and the social support domain.

Since this research study is set at a South African university and relates to academic achievement, the South African context and school system and themes central to this, such as the impact of the disadvantaged backgrounds of the students have been discussed. In addition, factors like culture and gender have been reviewed.

The experiences of students entering a university setting has been discussed by exploring not only from a practical point of view the challenges faced, but also looking at the psychological frame of mind of the new students. Thereafter the impact of factors like the disadvantaged backgrounds of the students and the impact of the poor schooling are extrapolated further. The literature has continuously been portrayed from the western

sense and thereafter specifically brought back to the South African context in which this study has been set.



CHAPTER THREE

RESEARCH METHODOLOGY

3.1. Introduction

The motivation, aims and rationale for this study will be presented in this chapter. Thereafter an exposition of the methods used, and a description of the participants will be reported.

3.2. Motivation for the study

The body of research into strength resources and the salutogenic paradigm is continuously growing (Wissing and van Eeden, 1998). This body of knowledge aims to understand and develop strengths which will, it is hoped, lead to positive outcomes. However, most of the research is conducted in developed countries. Lessons learnt in these contexts are not always applicable to the developing world. There is thus a strong need for research in this field within the South African context.

Furthermore, the concept of fortitude (Pretorius, 1998) holds the promise of shedding light on the important issue of strengths and the ability to remain well even when dealing with tremendous stress. It is based on the positive appraisal of one's strengths in three domains, namely self, family and social support. Given that fortitude is a relatively new concept, little empirical research has been conducted in this area, and it is hoped that this study will add to the body of knowledge.

A number of studies investigate the link between strengths such as resilience with academic achievement. However, much of this research is conducted in educational settings in developed countries, particularly America. The applicability of these studies to

developing countries in general, and South Africa in particular is not always direct. There is thus a shortage of research on academic achievement in relation to strengths in developing countries. Understanding how fortitude and academic achievement interact will help those who offer assistance to develop appropriate assistance to students and the broader community alike. Ultimately it is hoped that this research will contribute to the improvement of fortitude and academic achievement of students at UWC and other universities in South Africa and elsewhere.

3.3. Aim

The broad academic aim of this research is to determine whether there is a relationship between fortitude and academic achievement in students from historically disadvantaged backgrounds. More specifically the main aim of this study is:

1. To investigate whether there is an association between fortitude and academic achievement in Psychology One students at the University of the Western Cape.

3.4. Hypotheses

3.4.1. Main Hypothesis

Hypothesis: Higher fortitude score will be associated with higher academic achievement

Null hypothesis: Higher fortitude score will not be associated with higher academic achievement

3.4.2. Additional Hypotheses

3.4.2.1. Gender

Hypothesis: Gender will influence the relationship between fortitude and academic achievement

Null hypothesis: Gender will not influence the relationship between fortitude and academic achievement

3.4.2.2. Language

Hypothesis: First language will influence the association between fortitude and academic achievement.

Null hypothesis: First language will not influence the association between fortitude and academic achievement.

3.4.2.3. Accommodation

Hypothesis: Where students reside will influence the association between fortitude and academic achievement

Null Hypothesis: Where students reside will not influence the association between fortitude and academic achievement

3.4.2.4. Siblings at university

Hypothesis: Having siblings at university or tertiary institution will influence the association between fortitude and academic achievement

Null Hypothesis: Having siblings at university or tertiary institution will not influence the association between fortitude and academic achievement

3.4.2.5. Family residing in Cape Town

Hypothesis: Having immediate family residing in Cape Town will influence the association between fortitude and academic achievement

Null Hypothesis: Having immediate family residing in Cape Town will not influence the association between fortitude and academic achievement.

3.4.2.6. Participation in recreational activities

Hypothesis: Participation in recreational activities will have an influence on the relationship between fortitude and academic achievement

Null Hypothesis: Participation in recreational activities will not influence the association between fortitude and academic achievement

3.5. Research design

A non-experimental survey research design (Vadum and Rankin, 1998) was employed in this study. The design was correlational which, while not ideal, was considered appropriate for investigating the variables under study.

Correlational studies are often criticised as being limited since they don't allow for the manipulation of the independent variable, and merely investigate a link or relationship between the two variables. This weakness can also be one of the strengths of a correlational design especially in situations where it would be unethical to deprive one group of a particular "treatment" (Vadum and Rankin, 1998).

The issue of causality also detracts from the use of correlation. In fact causality is not usually inferred in correlational studies. One of the main issues is that correlational studies are open to multiple interpretations. While a relationship between two variables may be present, the interpretation of that relationship is not clear-cut (Howell, 1989; Vadum and Rankin, 1998). However, while correlational studies are known for their inherent weaknesses, they have offered many valuable insights such as the link between smoking and cancer etc. and have often been the starting point for more in-depth research (Vadum and Rankin, 1998). Since this study is in a field where not much research has been done, the use of a correlation design, it is hoped will provide a good starting point for future, more in-depth research.

3.6. Sample

A non-random convenience sample was selected. 150 students registered in the first year Psychology course at the University of the Western Cape participated on a voluntarily basis. By permission of the relevant lecturers, students completed the questionnaire during part of a lecture period. The sample was made up of predominantly female (71%), unmarried (95.9%), full-time students (98.7%), enrolled in their first year of study

(82.6%). The majority of participants resided at home (67.8 %), as opposed to staying at a private or university residence (32.1%) and spoke English as a second language (59.9%).

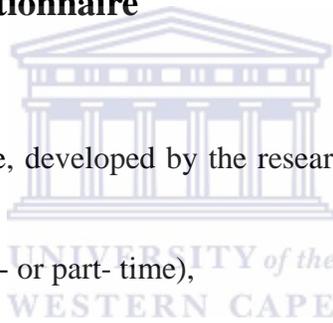
3.7. Instruments

The Fortitude Questionnaire (FORQ), developed by Pretorius (1998), as well as a demographic questionnaire designed by the researcher were used in this study. These will be discussed next.

3.7.1. Demographic Questionnaire

The demographic questionnaire, developed by the researcher, included questions related to (see Appendix 1):

- study status (whether full- or part- time),
- gender,
- age,
- first to fourth languages,
- marital status,
- number of years at university,
- whether or not the participant's family resides in Cape Town,
- where the participant resides while studying at UWC,
- how much contact the participant has with the family,
- whether the participants have siblings at university,
- the extent to which the participant considers her family supportive during exam time,
- the extent to which the participant considers her friends supportive during exam time, and
- the extent to which the participant engages in any recreational activities.



3.7.2. Fortitude Questionnaire

The twenty-item Fortitude Questionnaire (FORQ), developed by Pretorius (1998) was used in this study.

i. Construction

A range of questionnaires were used in the initial study to develop the Fortitude Questionnaire (Pretorius, 1997 in Pretorius, 1998), namely:

- The Personal Competence scale (Campbell, Converse, Miller, & Stokes, 1960),
- Self-esteem Scale (Rosenberg, 1965),
- Problem Solving Inventory (Heppner & Petersen, 1982),
- Network Orientation Scale (Vaux, Burda, & Stewart, 1986),
- Social Support Questionnaire (Sarason, Levine, Basham & Sarason, 1983),
- the Perceived Social Support Scale (Procidiano & Heller, 1983),
- the Inventory of Socially Supportive Behaviors (Barrera, Sandler & Ramsay, 1981), and
- the Family Environment Scale (Moos, 1986).

Factor analysis of a number of health sustaining and stress reducing factors revealed three latent factors namely: self, family and social factors. These are identified as the basis of fortitude. A total of 36 items were selected from these questionnaires, based on the contribution these items made to the reliability of the specific questionnaires as well as the item-total correlation. Four raters independently rated each item. All four raters eventually agreed upon 24 items, and the other 12 were dropped. After a pilot study a further 4 items were dropped as they contributed negative item-total correlation (Pretorius, 1998), resulting in the twenty-item Fortitude Questionnaire (FORQ) (See Appendix 2).

ii. Description

The Fortitude Questionnaire (FORQ) consists of 20 items - 7 representing self-appraisals, 7 family appraisals and 6 support appraisals. A four point scale ranging from 1= “does not apply” to 4 = “applies very strongly” is used to rate each item. Scoring for the final item is reversed.

iii. Reliability

The reliability of the FORQ total scale is 0.85, which is regarded as highly satisfactory (Pretorius, 1998: 43). All the items contributed significantly to the total reliability, with item- total correlations of the various subscales ranging between 0.38 and 0.77. The alpha for the various subscales ranged between 0.74 and 0.82 and were considered “very satisfactory” (1998:43).



iv. Validity

Pretorius (1998) reports that the inter-correlations between subscales are moderate (between 0.38 and 0.48), indicating that despite a relation between these subscales, each is a distinct subscale. He also reports that the relation between the subscales and the total score is relatively high (between 0.72 and 0.84), which means that each subscale contributes significantly to measuring fortitude.

The predictive validity of the Fortitude Questionnaire was tested by correlation with measures of psychological well being (Positive and Negative Affectivity Schedule, Satisfaction with life Scale and Short-Happiness and Affect Research Protocol) and psychological distress (CES-Depression Scale) (Pretorius, 1998). These correlations revealed that the relationships were “all in the expected directions” (Pretorius, 1998: 50) i.e. fortitude and its domains were all positively related to well-being indices, and negatively related to distress indices.

The concurrent validity was calculated using the same scales (or subscales) from which the items were used. Pretorius (1998) reports strong, significant relationships between the fortitude domains and sub-scales of assessment tools: (1) self appraisals is most strongly related to self esteem and appraisal of problem solving skills measures; (2) family appraisal is most strongly related to family support and cohesion measures; and (3) support appraisal is most strongly related to satisfaction with support and quantity of support measures.

3.8. Academic Achievement

For the purposes of this study, academic achievement is measured by two measures, namely psychology average, and results average. Psychology average is the average obtained in Psychology One modules during the year. Results average is the average percentage of the final mark of all courses the participants were registered for in the year, obtained by simply averaging the students' final marks i.e. adding all the percentages for the different subjects registered for and dividing by the number of subjects done.

Conceptually, average results offers a more representative measure of academic results as it includes performance in a range of courses. However, the range of students doing psychology is very broad and students come from diverse disciplines. Psychology One is the only subject that all participants are doing simultaneously and is a constant. This provides a fairer basis of comparison, nullifying the effects of more or less difficult courses. Therefore both measures have been included in this study.

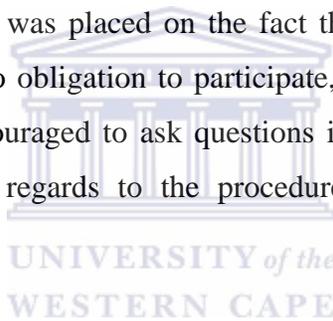
3.9. Procedure

After permission to conduct the study was obtained from the department, the researcher obtained permission from Psychology one lecturers to use part of their class time to conduct the survey. The lecturers introduced the researcher to the class. The researcher informed participants of the nature of the study, its aims, as well as their rights as participants. The procedure was described to participants in terms of how to fill in the

questionnaires as well as how the scale in the questionnaire worked. The process of what would happen to the questionnaires after they were filled in, in terms of data collection and analysis, was described to participants. The participants were then asked to complete the questionnaires and thanked for their participation.

3.10. Ethical considerations

Permission to conduct the study was obtained from the Psychology Department. Participants were informed of the nature of the study, its aims, the information needed for the study, as well as the potential value the study might contribute. They were asked to provide their student numbers so that access could be gained to their academic results for the purposes of the study. Assurance was given that participants' personal information would be protected. Emphasis was placed on the fact that participation was voluntary, that participants were under no obligation to participate, and could withdraw if they so wished. Participants were encouraged to ask questions if they did not understand what was explained to them with regards to the procedure and their rights as research participants.



3.10. Data analysis

Statistical analyses were conducted using the Statistical Programme for the Social Sciences version 12 (SPSS). The non-parametric Spearman's two-tailed correlation analysis was performed to explore whether there are any correlations between individual variables. The advantage of this non-parametric analysis is that a normal distribution for each value of the other variable is not assumed (Pretorius, 1995).

CHAPTER FOUR

RESULTS

4.1. Introduction

Chapter Three provided a description of the sample of participants, the instruments used as well as the procedures followed in data collection. This chapter aims to describe the results of statistical analyses of the data collected. Statistical analyses were conducted using the Statistical Programme for the Social Sciences version 12 (SPSS)¹. Spearman's two-tailed correlation analysis was performed to explore whether there are any correlations between individual variables.

4.2. Psychometric properties of the FORQ

The results of the internal analysis of the FORQ are presented in Table 4.2.

Table 4. 2. Internal Analysis of the FORQ

Spearman's rho		Selfsub	Famsub	Suppsub	Fortotal
Selfsub	Correlation Coefficient	1.000	.273(**)	.179(*)	.619(**)
	Sig. (2-tailed)	.	.001	.030	.000
	N	147	146	147	146
Famsub	Correlation Coefficient	.273(**)	1.000	.393(**)	.810(**)
	Sig. (2-tailed)	.001	.	.000	.000
	N	146	147	147	146
Suppsub	Correlation Coefficient	.179(*)	.393(**)	1.000	.701(**)
	Sig. (2-tailed)	.030	.000	.	.000
	N	147	147	149	146
Fortotal	Correlation Coefficient	.619(**)	.810(**)	.701(**)	1.000
	Sig. (2-tailed)	.000	.000	.000	.
	N	146	146	146	146

** Correlation is significant at the 0.01 level (2-tailed).
 * Correlation is significant at the 0.05 level (2-tailed).

¹ I would like to acknowledge the assistance of Dr. Theunis Kotze in the statistical analysis.

Fortitude is significantly positively correlated with the self sub-scale ($r = 0.619^{**}$, $p < 0.01$), family support sub-scale ($r = 0.810^{**}$, $p < 0.01$) and social support sub-scale ($r = 0.701^{**}$, $p < 0.01$).

Self-appraisal sub-scale is significantly positively correlated with the family appraisal sub-scale ($r = 0.273^{**}$, $p < 0.01$), as well as the social support appraisal sub-scale ($r = 0.179^*$, $p < 0.05$). The family support appraisal sub-scale is significantly positively correlated with social support appraisal sub-scale ($r = 0.393^{**}$, $p < 0.01$).

4.3. Fortitude and Academic Achievement

Spearman's two-tailed correlation were performed to see whether there are any correlations between fortitude and academic achievement, as presented in Table 4.3.

Table 4.3. Correlation Table between Fortitude and Academic Achievement

Spearman's rho		Results average	Psych aver	fortotal
Results average	Correlation Coefficient	1.000	.877(**)	.075
	Sig. (2-tailed)	.	.000	.384
	N	142	142	138
Psych aver	Correlation Coefficient	.877(**)	1.000	.178(*)
	Sig. (2-tailed)	.000	.	.036
	N	142	143	139
fortotal	Correlation Coefficient	.075	.178(*)	1.000
	Sig. (2-tailed)	.384	.036	.
	N	138	139	146

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

* Correlation is significant at the 0.05 level (2-tailed).

Null Hypothesis: Higher fortitude will not be associated with higher academic achievement.

There is a positive correlation between fortitude and psychology average ($r=0.178^*$, $p < 0.05$) but no correlation between results average and fortitude. Psychology results are positively correlated with results average ($r= 0.877^{**}$, $p < 0.01$). The null hypothesis should therefore be rejected.

4.4. GENDER ANALYSIS

Gender differences were tested for any effect on the relationship between fortitude and academic achievement using Spearman's two-tailed correlations.

Table 4.4.1. Correlation Table for Males

Correlations^a

			Results average	Psych aver	selfsub	famsub	suppsub	fortotal
Spearman's rho	Results average	Correlation Coefficient	1.000	.885**	.245	-.100	.369*	.141
		Sig. (2-tailed)	.	.000	.144	.552	.023	.406
		N	38	38	37	38	38	37
Psych aver	Psych aver	Correlation Coefficient	.885**	1.000	.300	.062	.482**	.287
		Sig. (2-tailed)	.000	.	.072	.712	.002	.085
		N	38	38	37	38	38	37
selfsub	selfsub	Correlation Coefficient	.245	.300	1.000	.400**	.483**	.752**
		Sig. (2-tailed)	.144	.072	.	.009	.001	.000
		N	37	37	41	41	41	41
famsub	famsub	Correlation Coefficient	-.100	.062	.400**	1.000	.367*	.778**
		Sig. (2-tailed)	.552	.712	.009	.	.017	.000
		N	38	38	41	42	42	41
suppsub	suppsub	Correlation Coefficient	.369*	.482**	.483**	.367*	1.000	.770**
		Sig. (2-tailed)	.023	.002	.001	.017	.	.000
		N	38	38	41	42	42	41
fortotal	fortotal	Correlation Coefficient	.141	.287	.752**	.778**	.770**	1.000
		Sig. (2-tailed)	.406	.085	.000	.000	.000	.
		N	37	37	41	41	41	41

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

* . Correlation is significant at the 0.05 level (2-tailed).

a. Gender = Male

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Table 4.4.2. Correlation Table for Females

Correlations^a

			Results average	Psych aver	selfsub	famsub	suppsub	fortotal
Spearman's rho	Results average	Correlation Coefficient	1.000	.880**	-.120	.011	.289**	.082
		Sig. (2-tailed)	.	.000	.233	.911	.003	.420
		N	102	102	100	99	101	99
Psych aver	Psych aver	Correlation Coefficient	.880**	1.000	-.023	.008	.319**	.142
		Sig. (2-tailed)	.000	.	.816	.938	.001	.160
		N	102	103	101	100	102	100
selfsub	selfsub	Correlation Coefficient	-.120	-.023	1.000	.242*	.111	.587**
		Sig. (2-tailed)	.233	.816	.	.014	.263	.000
		N	100	101	104	103	104	103
famsub	famsub	Correlation Coefficient	.011	.008	.242*	1.000	.371**	.820**
		Sig. (2-tailed)	.911	.938	.014	.	.000	.000
		N	99	100	103	103	103	103
suppsub	suppsub	Correlation Coefficient	.289**	.319**	.111	.371**	1.000	.665**
		Sig. (2-tailed)	.003	.001	.263	.000	.	.000
		N	101	102	104	103	105	103
fortotal	fortotal	Correlation Coefficient	.082	.142	.587**	.820**	.665**	1.000
		Sig. (2-tailed)	.420	.160	.000	.000	.000	.
		N	99	100	103	103	103	103

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

* . Correlation is significant at the 0.05 level (2-tailed).

a. Gender = Female

Null Hypothesis: Gender will not influence the association between fortitude and academic achievement.

There is no significant positive correlation between fortitude and average results or psychology average for either males or females. The social support sub-scale is positively correlated with both average results as well as psychology average for both males ($r=0.369^*$, $p<0.05$; $r=0.482^{**}$, $p<0.01$) and females ($r=0.289^{**}$, $p<0.01$; $r=0.319^{**}$, $p<0.01$). Fortitude is correlated with all the sub-scales of the FORQ for both males and females. Therefore the null hypothesis should not be rejected.



4.5. Languages

The effect of participants' first language on the relationship between fortitude and academic achievement was investigated using Spearman's two-tailed correlations.

Table 4.5.1. Correlation Table for English First Language speakers

Correlations^a

			Results average	Psych aver	selfsub	famsub	suppsub	fortotal
Spearman's rho	Results average	Correlation Coefficient	1.000	.846**	.102	.145	.141	.168
		Sig. (2-tailed)	.	.000	.475	.310	.323	.239
		N	51	51	51	51	51	51
Psych aver	Psych aver	Correlation Coefficient	.846**	1.000	.091	.072	.188	.147
		Sig. (2-tailed)	.000	.	.519	.611	.182	.299
		N	51	52	52	52	52	52
selfsub	selfsub	Correlation Coefficient	.102	.091	1.000	.350*	.335*	.679**
		Sig. (2-tailed)	.475	.519	.	.010	.014	.000
		N	51	52	53	53	53	53
famsub	famsub	Correlation Coefficient	.145	.072	.350*	1.000	.413**	.809**
		Sig. (2-tailed)	.310	.611	.010	.	.002	.000
		N	51	52	53	53	53	53
suppsub	suppsub	Correlation Coefficient	.141	.188	.335*	.413**	1.000	.744**
		Sig. (2-tailed)	.323	.182	.014	.002	.	.000
		N	51	52	53	53	53	53
fortotal	fortotal	Correlation Coefficient	.168	.147	.679**	.809**	.744**	1.000
		Sig. (2-tailed)	.239	.299	.000	.000	.000	.
		N	51	52	53	53	53	53

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

* Correlation is significant at the 0.05 level (2-tailed).

a. langs = English

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Table 4.5.2. Correlation Table for Afrikaans First Language Speakers

Correlations^a

			Results average	Psych aver	selfsub	famsub	suppsub	fortotal
Spearman's rho	Results average	Correlation Coefficient	1.000	.881**	-.039	-.048	.182	.017
		Sig. (2-tailed)	.	.000	.858	.825	.395	.936
		N	25	25	24	24	24	24
Psych aver	Psych aver	Correlation Coefficient	.881**	1.000	-.033	-.179	.282	.007
		Sig. (2-tailed)	.000	.	.879	.402	.182	.976
		N	25	25	24	24	24	24
selfsub	selfsub	Correlation Coefficient	-.039	-.033	1.000	-.210	-.300	.230
		Sig. (2-tailed)	.858	.879	.	.314	.145	.268
		N	24	24	25	25	25	25
famsub	famsub	Correlation Coefficient	-.048	-.179	-.210	1.000	.218	.715**
		Sig. (2-tailed)	.825	.402	.314	.	.295	.000
		N	24	24	25	25	25	25
suppsub	suppsub	Correlation Coefficient	.182	.282	-.300	.218	1.000	.577**
		Sig. (2-tailed)	.395	.182	.145	.295	.	.003
		N	24	24	25	25	25	25
fortotal	fortotal	Correlation Coefficient	.017	.007	.230	.715**	.577**	1.000
		Sig. (2-tailed)	.936	.976	.268	.000	.003	.
		N	24	24	25	25	25	25

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

a. langs = Afrikaans

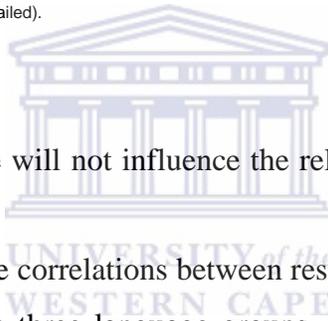
Table 4.5.3. Correlation Table for Speakers of African Languages as a First Language

Correlations^a

			Results average	Psych aver	selfsub	famsub	suppsub	fortotal
Spearman's rho	Results average	Correlation Coefficient	1.000	.700**	.058	-.110	.142	.001
		Sig. (2-tailed)	.	.000	.651	.387	.256	.993
		N	66	66	64	64	66	63
	Psych aver	Correlation Coefficient	.700**	1.000	.332**	.194	.342**	.345**
		Sig. (2-tailed)	.000	.	.007	.126	.005	.006
		N	66	66	64	64	66	63
	selfsub	Correlation Coefficient	.058	.332**	1.000	.409**	.439**	.720**
		Sig. (2-tailed)	.651	.007	.	.001	.000	.000
		N	64	64	69	68	69	68
	famsub	Correlation Coefficient	-.110	.194	.409**	1.000	.441**	.838**
		Sig. (2-tailed)	.387	.126	.001	.	.000	.000
		N	64	64	68	69	69	68
	suppsub	Correlation Coefficient	.142	.342**	.439**	.441**	1.000	.776**
		Sig. (2-tailed)	.256	.005	.000	.000	.	.000
		N	66	66	69	69	71	68
	fortotal	Correlation Coefficient	.001	.345**	.720**	.838**	.776**	1.000
		Sig. (2-tailed)	.993	.006	.000	.000	.000	.
		N	63	63	68	68	68	68

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

a. langs = African Languages



Null hypothesis: First language will not influence the relationship between fortitude and academic achievement.

There are no significant positive correlations between results average and fortitude or any of its sub-scales for any of the three language groups. For African Language speakers there is a significant positive correlation between psychology average and fortitude ($r=0.345^{**}$, $p<0.01$), but not for English and Afrikaans speakers. There are also significant positive correlations between psychology average and social support sub-scale ($r=0.342^{**}$, $p<0.01$), and the self sub-scale ($r=0.332^{**}$, $p<0.01$) for African, but not for English and Afrikaans first language speakers. The null hypothesis should therefore be rejected.

4.6. Accommodation

The differences between those who stayed at home and those who stayed at university or private residence (simply termed residence) were investigated using Spearman's two-tailed correlations.

Table 4.6.1. Correlation for those who Reside at Home

Correlations^a

			Results average	Psych aver	selfsub	famsub	suppsub	fortotal
Spearman's rho	Results average	Correlation Coefficient	1.000	.896**	-.044	-.037	.294**	.074
		Sig. (2-tailed)	.	.000	.669	.716	.003	.476
		N	100	100	97	97	99	96
Psych aver	Psych aver	Correlation Coefficient	.896**	1.000	.053	-.011	.342**	.157
		Sig. (2-tailed)	.000	.	.606	.917	.001	.127
		N	100	100	97	97	99	96
selfsub	selfsub	Correlation Coefficient	-.044	.053	1.000	.283**	.090	.583**
		Sig. (2-tailed)	.669	.606	.	.004	.373	.000
		N	97	97	100	99	100	99
famsub	famsub	Correlation Coefficient	-.037	-.011	.283**	1.000	.349**	.828**
		Sig. (2-tailed)	.716	.917	.004	.	.000	.000
		N	97	97	99	100	100	99
suppsub	suppsub	Correlation Coefficient	.294**	.342**	.090	.349**	1.000	.652**
		Sig. (2-tailed)	.003	.001	.373	.000	.	.000
		N	99	99	100	100	102	99
fortotal	fortotal	Correlation Coefficient	.074	.157	.583**	.828**	.652**	1.000
		Sig. (2-tailed)	.476	.127	.000	.000	.000	.
		N	96	96	99	99	99	99

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

a. Accomodation = Home

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Table 4.6.2. Correlation Table for those who stay at a University Residence

Correlations^a

			Results average	Psych aver	selfsub	famsub	suppsub	fortotal
Spearman's rho	Results average	Correlation Coefficient	1.000	.806**	.073	.025	.287	.148
		Sig. (2-tailed)	.	.000	.644	.877	.065	.349
		N	42	42	42	42	42	42
Psych aver	Psych aver	Correlation Coefficient	.806**	1.000	.209	.171	.461**	.331*
		Sig. (2-tailed)	.000	.	.179	.272	.002	.030
		N	42	43	43	43	43	43
selfsub	selfsub	Correlation Coefficient	.073	.209	1.000	.338*	.458**	.718**
		Sig. (2-tailed)	.644	.179	.	.020	.001	.000
		N	42	43	47	47	47	47
famsub	famsub	Correlation Coefficient	.025	.171	.338*	1.000	.482**	.786**
		Sig. (2-tailed)	.877	.272	.020	.	.001	.000
		N	42	43	47	47	47	47
suppsub	suppsub	Correlation Coefficient	.287	.461**	.458**	.482**	1.000	.810**
		Sig. (2-tailed)	.065	.002	.001	.001	.	.000
		N	42	43	47	47	47	47
fortotal	fortotal	Correlation Coefficient	.148	.331*	.718**	.786**	.810**	1.000
		Sig. (2-tailed)	.349	.030	.000	.000	.000	.
		N	42	43	47	47	47	47

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

* . Correlation is significant at the 0.05 level (2-tailed).

a. Accomodation = Residence

Null hypothesis: accommodation will have no effect on the relationship between fortitude and academic achievement. No significant positive correlations were present between results average and fortitude for either group. However for those who stayed at home, the social support sub-scale was positively correlated with results average ($r=0.294^{**}$, $p<0.01$).

For those who stayed at a residence there is a significant positive correlation between fortitude and psychology average ($r=0.331^*$, $p<0.05$), whilst there is no significant finding for those who stayed at home. The null hypothesis should therefore be rejected.

For those who stayed at home as well as those who stayed at residence, social support sub-scale was positively correlated with psychology average ($r=0.342^{**}$, $p<0.01$ and $r=0.461^{**}$, $p<0.01$).



4.7. Siblings at University or other Tertiary Institutions

Having siblings at university or other tertiary institutions was hypothesised to have an effect on the relationship between fortitude and academic achievement. The null hypothesis is that having one or more siblings at university or other tertiary institutions would not affect the relationship between academic achievement and fortitude.

Table 4.7.1. Correlation Table for those who Have siblings at university

Correlations^a

			Results average	Psych aver	selfsub	famsub	suppsub	fortotal
Spearman's rho	Results average	Correlation Coefficient	1.000	.902**	-.015	-.250	.109	-.002
		Sig. (2-tailed)	.	.000	.937	.183	.561	.993
		N	31	31	31	30	31	30
Psych aver	Psych aver	Correlation Coefficient	.902**	1.000	-.010	-.125	.285	.130
		Sig. (2-tailed)	.000	.	.956	.512	.120	.493
		N	31	31	31	30	31	30
selfsub	selfsub	Correlation Coefficient	-.015	-.010	1.000	.313	.213	.659**
		Sig. (2-tailed)	.937	.956	.	.082	.235	.000
		N	31	31	33	32	33	32
famsub	famsub	Correlation Coefficient	-.250	-.125	.313	1.000	.582**	.794**
		Sig. (2-tailed)	.183	.512	.082	.	.000	.000
		N	30	30	32	32	32	32
suppsub	suppsub	Correlation Coefficient	.109	.285	.213	.582**	1.000	.819**
		Sig. (2-tailed)	.561	.120	.235	.000	.	.000
		N	31	31	33	32	33	32
fortotal	fortotal	Correlation Coefficient	-.002	.130	.659**	.794**	.819**	1.000
		Sig. (2-tailed)	.993	.493	.000	.000	.000	.
		N	30	30	32	32	32	32

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

a. Siblings at univ. = Yes

Table 4.7.2. Correlation Table for those who have no siblings at university

Correlations^a

			Results average	Psych aver	selfsub	famsub	suppsub	fortotal
Spearman's rho	Results average	Correlation Coefficient	1.000	.862**	-.044	.034	.356**	.116
		Sig. (2-tailed)	.	.000	.654	.729	.000	.238
		N	108	108	105	106	107	105
Psych aver	Psych aver	Correlation Coefficient	.862**	1.000	.053	.073	.399**	.202*
		Sig. (2-tailed)	.000	.	.591	.457	.000	.038
		N	108	109	106	107	108	106
selfsub	selfsub	Correlation Coefficient	-.044	.053	1.000	.266**	.171	.613**
		Sig. (2-tailed)	.654	.591	.	.005	.073	.000
		N	105	106	111	111	111	111
famsub	famsub	Correlation Coefficient	.034	.073	.266**	1.000	.357**	.811**
		Sig. (2-tailed)	.729	.457	.005	.	.000	.000
		N	106	107	111	112	112	111
suppsub	suppsub	Correlation Coefficient	.356**	.399**	.171	.357**	1.000	.671**
		Sig. (2-tailed)	.000	.000	.073	.000	.	.000
		N	107	108	111	112	113	111
fortotal	fortotal	Correlation Coefficient	.116	.202*	.613**	.811**	.671**	1.000
		Sig. (2-tailed)	.238	.038	.000	.000	.000	.
		N	105	106	111	111	111	111

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

* . Correlation is significant at the 0.05 level (2-tailed).

a. Siblings at univ. = No

For those who have siblings at university, there is no significant positive correlation between fortitude and results average or psychology average. For those who don't have siblings at university, there is no positive correlation between results average and fortitude. However there is a significant positive correlation between psychology average and fortitude for this group ($r=0.202^*$, $p<0.05$). The null hypothesis should therefore be rejected.

There is also a positive correlation between social support sub-scale and average results ($r=0.356^{**}$, $p<0.01$) as well as psychology average ($r=0.399^{**}$, $p<0.01$) for those who have no siblings at university.

For those who have siblings at university or tertiary institutions, all the sub-scales are correlated with fortitude. However, the self sub-scale is not correlated with either family sub-scale, or social support sub-scale.

For those who don't have siblings at university or tertiary institutions, all the sub-scales are correlated with fortitude. The self sub-scale is not correlated with the social support sub-scale.

4.8. Family Residing In Cape Town

It is hypothesised that having one's family reside in Cape Town will have an effect on the relationship between fortitude and academic achievement.

Table 4.8.1. Correlation Table for those whose Family Reside in Cape Town

Correlations^a

			Results average	Psych aver	selfsub	famsub	suppsub	fortotal
Spearman's rho	Results average	Correlation Coefficient	1.000	.895**	-.131	-.031	.315**	.063
		Sig. (2-tailed)	.	.000	.215	.771	.002	.551
		N	95	95	92	92	94	91
	Psych aver	Correlation Coefficient	.895**	1.000	-.067	-.022	.344**	.117
		Sig. (2-tailed)	.000	.	.522	.838	.001	.266
		N	95	96	93	93	95	92
	selfsub	Correlation Coefficient	-.131	-.067	1.000	.265**	.072	.590**
		Sig. (2-tailed)	.215	.522	.	.009	.483	.000
		N	92	93	96	95	96	95
	famsub	Correlation Coefficient	-.031	-.022	.265**	1.000	.303**	.805**
		Sig. (2-tailed)	.771	.838	.009	.	.003	.000
		N	92	93	95	96	96	95
	suppsub	Correlation Coefficient	.315**	.344**	.072	.303**	1.000	.637**
		Sig. (2-tailed)	.002	.001	.483	.003	.	.000
		N	94	95	96	96	98	95
	fortotal	Correlation Coefficient	.063	.117	.590**	.805**	.637**	1.000
		Sig. (2-tailed)	.551	.266	.000	.000	.000	.
		N	91	92	95	95	95	95

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

a. Family reside CT? = Yes

Table 4.8.2. Correlation Table for those whose Family Does Not Reside in Cape Town

Correlations^a

			Results average	Psych aver	selfsub	famsub	suppsub	fortotal
Spearman's rho	Results average	Correlation Coefficient	1.000	.801**	.220	-.002	.256	.133
		Sig. (2-tailed)	.	.000	.142	.989	.086	.378
		N	46	46	46	46	46	46
	Psych aver	Correlation Coefficient	.801**	1.000	.367*	.164	.434**	.357*
		Sig. (2-tailed)	.000	.	.012	.276	.003	.015
		N	46	46	46	46	46	46
	selfsub	Correlation Coefficient	.220	.367*	1.000	.356*	.485**	.710**
		Sig. (2-tailed)	.142	.012	.	.011	.000	.000
		N	46	46	50	50	50	50
	famsub	Correlation Coefficient	-.002	.164	.356*	1.000	.524**	.821**
		Sig. (2-tailed)	.989	.276	.011	.	.000	.000
		N	46	46	50	50	50	50
	suppsub	Correlation Coefficient	.256	.434**	.485**	.524**	1.000	.823**
		Sig. (2-tailed)	.086	.003	.000	.000	.	.000
		N	46	46	50	50	50	50
	fortotal	Correlation Coefficient	.133	.357*	.710**	.821**	.823**	1.000
		Sig. (2-tailed)	.378	.015	.000	.000	.000	.
		N	46	46	50	50	50	50

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

* . Correlation is significant at the 0.05 level (2-tailed).

a. Family reside CT? = No

For those participants whose families reside in Cape Town, there is no significant correlation between fortitude and results average or psychology average. However there is a positive correlation between social support sub-scale and both results average ($r=0.315^{**}$, $p<0.01$) and psychology average ($r=0.344^{**}$, $p<0.01$).

For those participants whose families do not reside in Cape Town, there is a significant positive correlation between fortitude and psychology average ($r=0.357^*$, $p<0.05$). The null hypothesis should therefore be rejected.

However there is no correlation between fortitude and average results for those whose family do not reside in Cape Town. Psychology average is also correlated with self appraisal sub-scale ($r=0.367^*$, $p<0.05$), and social support sub-scale ($r=0.434^{**}$, $p<0.01$). All the sub-scales are correlated with fortitude, as well as with each other.

4.9. Participation in Recreational Activities

Participation in recreational activities is hypothesised to have an effect on the relationship between fortitude and academic achievement. Participants partook in recreational activities regularly, sometimes or not at all.

Table 4.9.1. Correlation Table for those who participate regularly in recreational activities

Correlations^a

			Results average	Psych aver	selfsub	famsub	suppsub	fortotal
Spearman's rho	Results average	Correlation Coefficient	1.000	.848**	-.197	.258	.518*	.272
		Sig. (2-tailed)	.	.000	.392	.245	.014	.232
		N	22	22	21	22	22	21
Psych aver	Psych aver	Correlation Coefficient	.848**	1.000	-.061	.370	.594**	.432
		Sig. (2-tailed)	.000	.	.793	.090	.004	.051
		N	22	22	21	22	22	21
selfsub	selfsub	Correlation Coefficient	-.197	-.061	1.000	.252	.237	.543**
		Sig. (2-tailed)	.392	.793	.	.247	.277	.007
		N	21	21	23	23	23	23
famsub	famsub	Correlation Coefficient	.258	.370	.252	1.000	.436*	.760**
		Sig. (2-tailed)	.245	.090	.247	.	.033	.000
		N	22	22	23	24	24	23
suppsub	suppsub	Correlation Coefficient	.518*	.594**	.237	.436*	1.000	.826**
		Sig. (2-tailed)	.014	.004	.277	.033	.	.000
		N	22	22	23	24	24	23
fortotal	fortotal	Correlation Coefficient	.272	.432	.543**	.760**	.826**	1.000
		Sig. (2-tailed)	.232	.051	.007	.000	.000	.
		N	21	21	23	23	23	23

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

* Correlation is significant at the 0.05 level (2-tailed).

a. Participate recreational activ = Regularly

Table 4.9.2. Correlation Table for those who sometimes participate in recreational activities

Correlations^a

			Results average	Psych aver	selfsub	famsub	suppsub	fortotal
Spearman's rho	Results average	Correlation Coefficient	1.000	.895**	-.025	-.086	.204	.023
		Sig. (2-tailed)	.	.000	.820	.427	.056	.835
		N	89	89	88	87	88	87
Psych aver	Psych aver	Correlation Coefficient	.895**	1.000	.033	-.038	.297**	.108
		Sig. (2-tailed)	.000	.	.764	.724	.005	.321
		N	89	89	88	87	88	87
selfsub	selfsub	Correlation Coefficient	-.025	.033	1.000	.178	.142	.621**
		Sig. (2-tailed)	.820	.764	.	.092	.177	.000
		N	88	88	92	91	92	91
famsub	famsub	Correlation Coefficient	-.086	-.038	.178	1.000	.330**	.765**
		Sig. (2-tailed)	.427	.724	.092	.	.001	.000
		N	87	87	91	91	91	91
suppsub	suppsub	Correlation Coefficient	.204	.297**	.142	.330**	1.000	.656**
		Sig. (2-tailed)	.056	.005	.177	.001	.	.000
		N	88	88	92	91	92	91
fortotal	fortotal	Correlation Coefficient	.023	.108	.621**	.765**	.656**	1.000
		Sig. (2-tailed)	.835	.321	.000	.000	.000	.
		N	87	87	91	91	91	91

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

a. Participate recreational activ = Sometimes

Table 4.9.3. Correlation Table for those who do not participate in recreational activities at all

Correlations^a

			Results average	Psych aver	selfsub	famsub	suppsub	fortotal
Spearman's rho	Results average	Correlation Coefficient	1.000	.885**	-.083	-.148	.319	.019
		Sig. (2-tailed)	.	.000	.664	.435	.080	.922
		N	31	31	30	30	31	30
Psych aver	Psych aver	Correlation Coefficient	.885**	1.000	-.038	-.050	.365**	.081
		Sig. (2-tailed)	.000	.	.840	.790	.040	.664
		N	31	32	31	31	32	31
selfsub	selfsub	Correlation Coefficient	-.083	-.038	1.000	.437*	.215	.629**
		Sig. (2-tailed)	.664	.840	.	.012	.237	.000
		N	30	31	32	32	32	32
famsub	famsub	Correlation Coefficient	-.148	-.050	.437*	1.000	.503**	.886**
		Sig. (2-tailed)	.435	.790	.012	.	.003	.000
		N	30	31	32	32	32	32
suppsub	suppsub	Correlation Coefficient	.319	.365**	.215	.503**	1.000	.730**
		Sig. (2-tailed)	.080	.040	.237	.003	.	.000
		N	31	32	32	32	33	32
fortotal	fortotal	Correlation Coefficient	.019	.081	.629**	.886**	.730**	1.000
		Sig. (2-tailed)	.922	.664	.000	.000	.000	.
		N	30	31	32	32	32	32

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

* . Correlation is significant at the 0.05 level (2-tailed).

a. Participate recreational activ = Not at all

For those who regularly take part in recreational activities, there is no significant correlation between fortitude and average results or psychology average. There is a

positive correlation between social support sub-scale and results average ($r=0.518^*$, $p<0.05$) as well as psychology average ($r=0.594^{**}$, $p<0.01$).

For those who sometimes take part in recreational activities, there is no significant positive correlation between fortitude and academic achievement. There is a positive correlation between social support sub-scale and psychology average ($r=0.297^{**}$, $p<0.01$).

All the sub-scales are correlated with fortitude. However, not all the sub-scales are correlated with each other: the self sub-scale is not correlated with either family support or the social support sub-scale.

For those who reported that they do not participate at all in recreational activities, there is no positive correlation between fortitude and average results or psychology average. There is a significant positive correlation between social support sub-scale and psychology average ($r=0.365^*$, $p<0.05$).

All the sub-scales are correlated with fortitude. All the sub-scales are correlated with each other, except the self and social support sub-scales are not correlated with each other.

The null hypothesis should therefore not be rejected.

CHAPTER FIVE

DISCUSSION

5.1. Introduction

This chapter provides a discussion of the results reported in Chapter Four. The internal consistency of the Fortitude Questionnaire (FORQ) is discussed. The hypothesised relationship between fortitude and academic achievement is discussed. The effect of different variables on the relationship between fortitude and academic achievement is highlighted.



5.2. Discussion of Results

This study sought to investigate the relationship between fortitude and academic achievement. In particular, the relationship between fortitude and average results and Psychology One results was investigated. The effects of various demographic and other variables were tested for their influence on the relationship between fortitude and academic achievement. It is important to note that the generalisability of these results is limited due to the sampling techniques used (non-random) as well as the limited scope of correlation analysis.

5.2.1. Internal Consistency of the FORQ

The Fortitude Questionnaire (FORQ) consists of three sub-scales, namely the self sub-scale, the family sub-scale, and the social support sub-scale, which add up to construct the fortitude measure.

The self sub-scale is significantly positively correlated with fortitude ($r=0.619^{**}$, $p<0.01$). This is similar to the 0.6176^{**} ($p<0.001$) correlation obtained by Julius (1999) but below the 0.72^{**} ($p<0.001$) correlation obtained by Pretorius (1997).

A significant positive and high correlation exists between fortitude and family sub-scale ($r=0.810^{**}$, $p<0.01$). This is slightly below the ($r=0.840^{**}$) correlation obtained by Pretorius (1997) and the ($r=0.831^{**}$) correlation obtained by Julius (1999) but is still within the high correlation range (Pretorius, 1995).

The social support sub-scale is positively and highly correlated with fortitude ($r=0.701^{**}$, $p<0.01$). This is below the correlations obtained by both Pretorius ($r=0.81^{**}$) in 1997 as well as Julius ($r=0.8434^{**}$) in 1999, but is still within the range classified as 'high' by Pretorius (1995).

The Fortitude Questionnaire can thus be regarded as valid, as all the sub-scales are significantly correlated with each other at low levels, and at high levels with fortitude itself. This indicates that whilst they form part of the same concept of fortitude, they are significantly differentiated from each other measuring the different aspects of the concept of fortitude. Since the instrument used is valid the results obtained using it can be assumed to be valid.

5.2.2. The relationship between Fortitude and Academic Achievement

For the purposes of this study, academic achievement is measured by two measures, namely psychology average and results average. Average results offer a more representative value of academic results. However, the range of students doing psychology is very broad and students come from many disciplines. Psychology One is the only subject that all participants are doing simultaneously. This therefore provides a fairer basis of comparison, nullifying the effects of more or less difficult courses. Therefore both measures have been included.

A significant positive correlation exists between fortitude and psychology average ($r=0.178^{**}$, $p<0.01$). The positive correlation indicates that the higher participants' fortitude is, the higher their psychology results are likely to be and vice versa. (A negative correlation would indicate that while one variable increases the other decreases). Since correlation studies don't indicate causality, one cannot assume that one variable causes the other. Also, whilst the correlation is significant, indicating that the correlation is not merely due to chance, the magnitude of the correlation is weak (Pretorius, 1995). This indicates that while fortitude and psychology average results do correlate with each other, there are other factors which have a stronger influence on each of the variables.

This result (the significant correlation between fortitude and psychology average) appears to support the findings of other studies that show that having a positive appraisal of self (Finn and Rock, 1997), family (Van der Westhuizen et al, 1999) and of others (Bryan, 2005; Mallinckrodt and Leong, 1992) positively influences academic achievement. This would indicate that an individual's appraisal of his or her own strength as well as the support from family and social support structure is positively related with academic achievement. However, the strength of the correlation ($r=0.178^{**}$, $p<0.01$) obtained is not very strong indicating that, whilst fortitude is correlated with academic achievement, there are other variables which influence academic achievement, and that fortitude is not necessarily the most important factor.

The impact of the sample, its size and characteristics, must be taken into account when looking at this and other results in this study. That is, even though a fairly large sample was used ($n=150$), the peculiarities of the sample could also have an influence on the relationship between fortitude and academic achievement (Mallinckrodt & Leong, 1992). The influence of having a higher concentration of a psychology students compared to other students in the sample needs to be considered (Nunns & Ortlepp, 1994).

A further factor could be the combination in terms of the variety as well as the number of courses registered for. Participants are registered for a number of various courses. For example, participants might have been aiming to major in psychology and thus be

motivated to do well in it, or merely done it as a first-year “filler” subject to obtain the necessary credits for the degree they are registered for. Also, students might have the potential to do well in psychology, but might be enrolled for technically more demanding courses (for example the science courses such as Anatomy) which diverts their attention and focus, leading to underachieving in psychology modules. Future studies should control for the varying levels of difficulty of courses as well as the wide spread of courses participants are registered for. Again, this finding might be peculiar to this specific group of participants and should not be generalised.

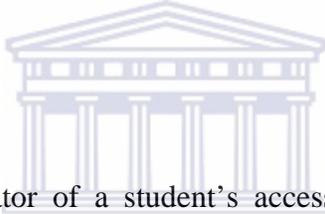
5.2.3. Gender

The impact of the variable of gender in relation to fortitude and academic achievement was explored. Males and females display a lack of correlation between fortitude and academic achievement. It is thus safe to interpret this to mean that gender does not have an effect on the relationship between fortitude and academic achievement. This finding is in keeping with Julius (1999) who found no significant difference between males and females on fortitude. However, this contrasts with Roothman et al.’s (2003) findings that men in their sample scored higher on fortitude than women, which they found were in line with gender stereotypes and traditional socialisation practises. Clark (1993) found that females were more likely to be successful than men at university in terms of attrition rates and by implication results. Perhaps this can be explained by the different context of Clark’s (1993) research, that is, pre-democracy South Africa in a historically white university. It also contrasts with Mwamwende’s (1994) exploratory finding of gender differences in levels of test anxiety and subsequent test performance, where women experienced higher anxiety and did not perform as well as men in an exam.

The difference in level of correlation between males ($r=0.482^{**}$, $p<0.01$) and females ($r=0.319^{**}$, $p<0.01$) as far as social support appraisal and psychology average as well as results average (males: $r=0.369^{*}$, $p<0.023$; females: $r=0.289^{**}$, $p<0.003$) could be an indication of gender having a more subtle effect on social appraisal and subsequent results, but further research is needed to investigate this aspect.

A further factor to consider is the construction of the social appraisal component of the measuring instrument (Strümpfer, 2001). Mallinckrodt et al (1992) found that the measuring instrument significantly affects the construction of social appraisal, denoting a buffering or direct effects model. What they found is that social support may be generally beneficial for men, regardless of the level of stress. Whilst for women social support only seemed to be beneficial in interaction with stress. This is significant, given Lee et al.'s (2002) findings that social appraisals function differently for males and females which in turn affects stress levels and academic performance (Felsten & Wilcox, 1992). Again the make up of the sample must also be taken in to account as this sample is predominantly made up of female students (71%). Perhaps having equal numbers of males and females in the sample may have produced a different result.

5.2.4. Languages

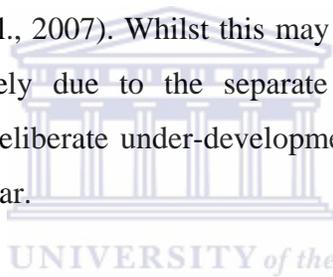


First language is a key indicator of a student's access to the academic discourse at university (Simelane, 1996). In the context of South Africa's separate development policies of apartheid, first language is also a key indicator of the participants' culture. The Western Cape remains one of the most segregated provinces, spatially and culturally in South Africa (Western Cape Department of Economic Development and Tourism Annual Report 2005-2006). Language was therefore included as an important variable in this study. Given the cultural differences between the language groups, it was assumed that fortitude levels would display significant differences since different cultures place different emphasis on individualism, family values and being part of a broader community (Maton et al., 1996; Maton et al. 1998).

There is a significant positive correlation between fortitude and psychology average for those students who speak African languages ($r=0.345^{**}$, $p<0.01$), but not for those who speak English nor Afrikaans. This can be interpreted to mean that languages influence the relationship between fortitude and academic achievement i.e. that first language has an influence on the relationship between fortitude and psychology average. In addition to the

positive correlation between fortitude and psychology average for those who speak an African language as their first language, there are also positive correlations between psychology average and self sub-scale ($r=0.332^{**}$, $p<0.01$), as well as between psychology average and social support ($r=0.342^{**}$, $p<0.01$). These correlations suggest a link between fortitude and psychology average for those who speak an African language as a first language. Unequal sample sizes make comparisons between language groupings untenable, but suggest that future research is needed in this regard. First language spoken can be taken as a broad, but not definitive indicator of culture and ethnic group.

Breier et al. (2007), in a case study at the University of the Western Cape, found that the higher proportion of Africans and Xhosa speakers amongst university leavers (drop outs) as compared to graduates indicates that these groups found it most difficult to complete their qualifications (Breier et al., 2007). Whilst this may be due to difficulty studying in English, it is also more likely due to the separate development under apartheid educational policies, and the deliberate under-development of black students in general and African students in particular.



This would indicate that for African students, their fortitude, or appraisal of strength, plays a bigger role in their academic achievement as opposed to other students for whom previous academic training might be more important. Given the greater obstacles African students face in getting access to the university but also in getting access to the educational discourse, they need to have more fortitude in order to do well. Their academic achievement might have more to do with their tenacity and strength, and the support they receive than for other students.

Simelane (1996) identifies a host of issues related to reading, writing, and talking in a second language that affects students' academic performance. She argues that many students are inadequately prepared for university due to inferior education and that second language English proficiency is a significant issue. Similarly, Veenendal (2004) finds that English language proficiency may have been an issue with Afrikaans speaking high school respondents.

5.2.5. Accommodation

There is a significant positive correlation between fortitude and psychology average for those who stay at residence ($r=0.331^*$, $p<0.05$), but not for those who stay at home. This indicates perhaps that accommodation affects the relationship between fortitude and psychology results. Different social and family support levels are available depending on where one is residing whilst studying. Those who stay at residence may have more social resources available. This social support might be more directly translated into better results, since fellow residence dwellers are also students and thus able to offer help with academic work. Further, to a large extent, the fellow residents are primarily situated there because they are not from Cape Town. They thus all share the experience of bouts of feeling homesick and isolated and may make greater efforts to draw on the support of their fellow residents.

Ordinarily one would associate living at home with more support (Sack, 1972). However given the socio-economic background of the majority of students at the University of the Western Cape, those who stay at home might not be getting the type of support they need. In contrast they might be more exposed to the stresses of daily life – poor living circumstances such as living in squatter camps, doing excessive part-time work to afford living and studying expenses, caring for children and (extended) family, lengthy commuting due to staying far away from university (Simelane, 1996, Maxakato, 1999) - and therefore feel less supported than those who resided in residences (Simelane, 1996).

This contrasts with Sack (1972) who found that living with parents had a positive effect on pass rates. However, the research context again needs to be taken into account, having been done at a historically white university, where it is more likely that parents of students would be better educated, and have resources to support the students. It is unlikely that, given the student profile at UWC, family members have attended university (Simelane, 1996; Maxakato, 1999). What is clear however is that more research is needed

into this issue of parents' level of education, home circumstances and general socio-economic background and its effect on academic achievement and fortitude.

For those participants whose families reside outside Cape Town, there is a positive correlation between fortitude and psychology average ($r=0.357^*$, $p<0.05$). This means that for those whose families don't reside in Cape Town, there is a positive association between fortitude and psychology average- the higher the fortitude level the higher the psychology results are likely to be and vice versa. This is similar to the findings on students living on residence who depended on social support.

5.2.6. Siblings at University or other Tertiary Institutions

Research has found that having siblings at university or other tertiary institutions is associated with improved academic achievement (Sack, 1972). It is thought that siblings will be able to give advice and support to each other on content as well as administrative and practical issues. It is also thought to be a good indicator of family resources, including economic and educational.

In this study however, there is no correlation between fortitude and academic achievement variables for those who do have siblings at university, whilst there is a correlation between fortitude and psychology average ($r=0.202^*$, $p<0.05$) for those who don't have siblings. This is perhaps counterintuitive, but again, the different backgrounds of students at the University of the Western Cape (Maxakato, 1999; Simelane, 1992) compared to the sample used in Sack (1972) might have an impact. In this sample, not having siblings at university or other tertiary institutions might indicate that family resources are being utilised to support the participant, and not siblings. In fact, siblings might be working to support the participants financially.

A limitation of this measure is the unequal group sizes that make the comparison of those who do ($n=33$), and those who don't ($n= 109$) have siblings at university or other tertiary institutions perhaps unreliable. At the same time, this bias in the sample having a

much greater number of students not having siblings at tertiary institutions is perhaps also a reflection of the social and educational backgrounds of the students in this study. That is, many are first time students who are the first students in their (extended) families entering a tertiary institution given the difficult history of education in South Africa. For these participants, their fortitude is more significant in their academic achievement in psychology, than for other participants.

5.2.7. Participation in Recreational Activities

There is no correlation between fortitude and academic achievement for any of the three levels of participation in recreational activities. This is contrary to Bradock et al. (2007) who found that “(p)articipation in sports may teach the tools necessary for academic resilience” (p.113).

Social support is correlated with average results ($r=0.518^*$, $p<0.05$) only for those who regularly participate in recreational activities. Social support is correlated with psychology average for all three levels of recreational participation. The uneven number of participants in the different groups makes comparison between the groups unreliable. Participation in recreational activities could represent an opportunity for socialising and stress release (Mallinckrodt et al., 1992) contributing to a more rounded lifestyle of the students.

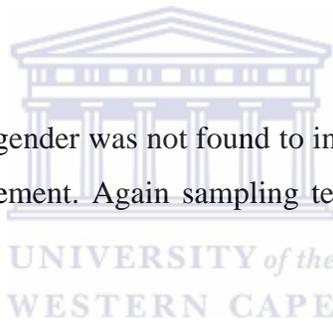
5.3. Summary and Conclusion

The three aspects of fortitude namely individual, family and social support followed by factors in conjunction with context and other variables were explored for their effect on the relationship between fortitude and academic achievement. Confounding variables including gender, background, culture, language, accommodation, as well as recreational activities were looked at to see the effect on the relationship between fortitude and academic achievement.

The link between fortitude and academic achievement was investigated in this study. Fortitude consists of three components, namely self appraisal, family appraisal and social support appraisal. The effects of various demographic and other variables were tested for their influence on the relationship between fortitude and academic achievement.

A significant positive correlation was found between fortitude and psychology average ($r=0.178^*$, $p<0.05$), a result which indicates that higher fortitude is associated with higher academic achievement. Correlation analysis does not allow one to infer causality- i.e. one cannot say that fortitude causes higher academic achievement, nor the opposite, that higher academic achievement causes higher fortitude but merely indicates the presence of an association between the two variables. However, the low level of correlation was not in keeping with existing research. This is perhaps due to the nature of the particular sample of students.

In keeping with Julius (1999), gender was not found to influence the association between fortitude and academic achievement. Again sampling technique and sample size might have influenced this result.



Culture, as indicated by first language, was found to influence the association between fortitude and academic achievement for African language speakers. First language was found to significantly influence the correlation between fortitude and academic achievement for African language speakers. This is perhaps an indicator of culture as well as academic access at the university (Breier et al., 2007; Simelane, 1996; Veenendal, 2004). More importantly this is perhaps an indicator of the importance of fortitude in the success of these participants' academic achievement compared to other groups.

Participation in recreational activities was found not to influence the relationship between fortitude and academic achievement. For those participants who stayed in residence, as well as those who did not have a sibling at university, there appears to be a low correlation between fortitude and academic achievement. Whilst the latter results might

seem counter intuitive and not in keeping with the research, the unique and specific characteristics of the sample needs to be taken into account.

Overall, the influence of social support appraisal was highlighted throughout the results, indicating perhaps the dominance of this factor in influencing the association between fortitude and academic achievement. However, it must be remembered that social support appraisal is a part of fortitude which constitutes all three appraisal dimensions, and Pretorius (1998) cautions against isolating one dimension from the concept of fortitude.

5.4. Limitations and shortcomings of the study

No research project can claim to be unlimited in its scope or totally unconstrained. It is in recognising the limitations of a study that its results can be properly contextualised and more effectively understood and ultimately used.

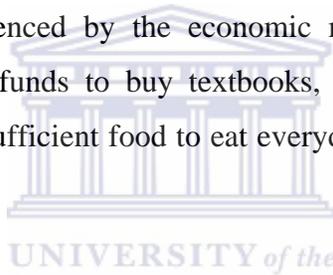
In this study non-random sampling combined with the limited sample size due to time, financial and access constraints, means that the sample was not truly representative. The results only apply to this sample and generalisations may not be made from these results. Also the use of non-random sampling and unequal group sizes meant that certain parametric tests could not be used and comparisons not made. The results may thus be sample specific.

Causal relationships and the direction thereof cannot be conclusively established by the correlational findings of this study. We can only conclude that there are associations where reported but not the direction in terms of which variable caused the effect in the other, nor the nature of the relationship.

A further limitation of the study is that participants might have had different goals, attributions and motivations (Scott, 1992) for the courses they were registered for. Whilst some participants might be registered only for subjects which are generally considered less challenging, others could be registered for structured professional health degrees,

commerce, or science degrees which might be regarded as more difficult and have a higher academic workload (Scott, 1992). This could also be an indication that some participants were more academically prepared than others, having gained access to degrees with more demanding entrance requirements, and also displayed different goals, attributions and motivation (Scott, 1992) for success in psychology. Perhaps future studies could contain a measure of the ranking of the importance of the subject (and controlling for that) for the respondent as well as a control for the level of difficulty of the courses registered for.

This study does highlight, however, that a key variable which needs to be added to future studies on this topic is socio-economic background. Whilst students may be registered for the same course, and they may have similar levels of motivation to study, their access to the coursework will be influenced by the economic means of access to education- whether they have sufficient funds to buy textbooks, course work or other learning materials; whether they have sufficient food to eat everyday; the living conditions where they live.



In addition, culture, without perpetuating racial stereotypes needs to be taken into account. Whilst both of these variables are key factors, it was difficult to accurately quantify, given the complexity of the concept, as well as the self-reported nature of the current survey research. Perhaps future studies would apply substantial research attention to this aspect and use accurate and sufficiently complex measures in this regard.

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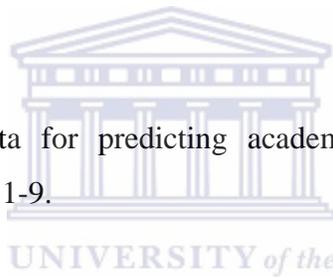
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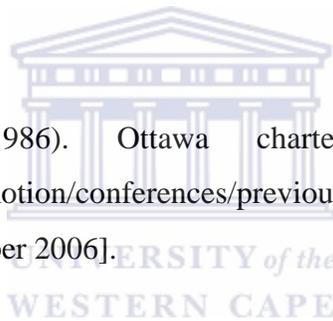
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APPENDIX A

Demographic Questionnaire



APPENDIX B

FORTITUDE QUESTIONNAIRE

