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WORRY DOMAINS, PERCEIVED STRESS AND SOCIAL ANXIETY  
AMONG  
TERTIARY-LEVEL STUDENTS IN NEW ZEALAND

A thesis

submitted in fulfilment

of the requirements for the degree

of

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at the

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by

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## Abstract

Contemporary research into the health concerns of students is sparse, particularly in New Zealand. Overseas literature indicates that students in tertiary education institutions may be at increased risks for physical health problems, stress-related syndromes and emotional dysfunctions. Of particular concern are anxiety disorders as, in addition to their negative impact on quality of life, they are associated with impaired academic performance and poorer educational outcomes.

Skilled, educated individuals are a social asset and it is therefore surprising that so little interest has been paid to the ways in which involvement with the tertiary education impacts on student welfare and anxiety levels. As a first step towards redressing the lack of health data for tertiary populations, this thesis investigates aspects of anxiety among students at a New Zealand university. The primary research aims were to establish an estimate of the levels of anxiety experienced by students and to outline the requirements of tertiary study that students perceive to be the most anxiety-inducing. To achieve the former, students ( $n = 1,082$ ) were invited by e-mail to participate in an online psychometric survey; to explore the latter, discussion groups were arranged wherein students ( $n = 18$ ) were asked to talk about their anxiety-related experiences.

Anxiety has many forms and can be conceptualised in a number of different ways. In recognition of the diverse nature of tertiary study, it was decided that a broad framework would be needed to thoroughly investigate the ways in which it might manifest in tertiary student populations. Thus, a tripartite conceptualisation was constructed, viewing anxiety in cognitive, physiological and interpersonal terms. Specifically, the study assessed worry, stress and social anxiety among

tertiary students and invited participants to comment on personal experiences in each of these areas.

Comparing study data to norms for student populations in America revealed that New Zealand tertiary students report greater levels of worry, stress and social anxiety than their American counterparts. Within-group comparisons were made as a function of student gender, age, school of study, ethnicity and birth status. Significant differences on at least one survey measure were noted within each of these categories, with the exception of school of study. The possible implications of and explanations for these findings are discussed.

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## CHAPTER ONE: INTRODUCTION

### Introduction

It is acknowledged that tertiary education improves not only the lives of students, but also “...through them, the wider community and the economy” (Smart, 2006, p.9). Recent research shows that, in New Zealand, people who hold tertiary qualifications are more likely to gain employment, to earn more money, and to experience better health outcomes than those who do not (Nair, Smart & Smyth, 2007). These ostensibly personal gains translate into social advantage in the forms of reduced unemployment and a decrease in the burden on public health resources. More direct benefits to society can arise, however, in the form of increased economic productivity (Barr, 2005), scientific advances (Solmon, 1987), and the transmission of cultural attitudes and values (Barr, 2005; McMahon, 1987). Moreover, universities often contribute to the improvement of local communities by forging institutional partnerships and through the volunteer work of their students (Levin, 2003).

If the tertiary graduate is considered to be a social asset, then the tertiary student is best thought of as a social investment. In order to maximise both the quality and the quantity of tertiary graduates – to see the best ‘return on investment’ – it is necessary to examine the conditions in which students are required to operate; the compound question must be asked: what are the difficulties faced in tertiary-level study, and how do they impact on the well-being of students?

Student welfare research began to emerge in the United States in the 1920s and it was not long before a range of problems specific to students were identified, with important implications for student service providers (Heppner et al., 1994). Social knowledge rapidly becomes obsolete, however, as social contexts change and new conditions are established (Holm, 2005). Such is the case for tertiary study: in the last two decades, as Britain and America have attempted to broaden participation in higher education, tertiary populations have become more diverse than ever before (Northedge, 2003; Choy, 2002), a trend that has been mirrored in New Zealand (D. Scott, 2003). Coinciding with this increase in diversity, researchers in Britain, America and Hong Kong have reported significant increases in tertiary student demand for psychological services (Waller et al., 2005; Andrews & Wilding, 2004; Lucas & Berkel, 2006; Cook, 2007; Hyun, Quinn, Madon & Lustig, 2006).

Despite this increase, and despite the negative impact of psychological distress on student academic performance, vocational achievement and life-quality (Wong, Cheung, Chan, Ma & Tang, 2006), research into the contemporary health issues of students in tertiary education remains a largely neglected area (Connell, Barkham & Mellor-Clark, 2007; Stewart-Brown et al., 2000). Compounding the problem, most of the extant literature focuses on students from single institutions (Connell et al., 2007), from specific disciplines (Hyun et al., 2006; Monk, 2004) or on the effects of individual stressors (Monk, 2004), which limits the ability to generalise from findings. Although studies with samples that reflect entire university populations are scarce, indications from several large British and Canadian studies suggest that tertiary students tend to experience poorer health in comparison to the general population, (Stewart-Brown et al., 2000; Roberts,

Golding, Towell & Weinreb, 1999; Adlaf, Gliksman, Demers & Newton-Taylor, 2004), possibly due to the stressful demands of tertiary education (Stewart-Brown et al., 2000). Of particular concern are the higher levels of emotional problems among students, relative to the general population (Stewart-Brown et al., 2000; Monk, 2004). Indeed, studies of the counselling needs of college students in America, Hong Kong and Britain have highlighted the prevalence of depression and anxiety (Lucas & Berkel, 2006; Hyun et al., 2006; Wong et al., 2006; Andrews & Wilding, 2004).

Anxiety disorders are the most prevalent of psychiatric complaints (Pinel, 2006; Saddock & Saddock, 2003). In the United States, a large-scale epidemiological survey of mental health disorders (n = 8,098) estimates the lifetime prevalence of anxiety disorders to be 24.9% in the general population (Kessler et al., 1994). This finding has been mirrored by the results of a recent Ministry of Health survey in New Zealand: the mental health of a nationally representative sample (n = 12,992) was investigated using a standardised structured clinical interview and, consistent with the findings of Kessler et al. (1994), results indicate that anxiety disorders are the most frequent psychiatric disturbance, with an estimated lifetime prevalence of 24.9% (Browne, 2006). Although this finding presents a nationwide health concern, it has significant implications for students as, in addition to their negative impact on health and general functioning (Saddock & Saddock, 2003), anxiety disorders are associated with poorer educational outcomes and impaired academic achievement (Ameringen, Mancini & Farvolden, 2003; Stein & Kean, 2000; Newbegin & Owens, 1996).

A comprehensive search of online databases (PsycINFO, PsycARTICLES, Pubmed) and the Australasian Digital Thesis Program reveals that there are currently no comprehensive studies on the mental health concerns of students in New Zealand tertiary institutions. In recognition of this research deficit, the present study investigates the mental health of students at a New Zealand university, with a focus on anxiety because it has been identified as a significant concern for university students around the world (Lucas & Berkel, 2006; Wong et al., 2006; Andrews & Wilding, 2004; Hyun et al., 2006). Three dimensions of anxiety will be assessed: cognitive (worry), physiological (stress) and interpersonal (social anxiety). These concepts will each be defined in turn.

### Anxiety

Human emotions emerged from evolutionary processes and can be thought of as predispositions to action (Lang, Bradley & Cuthbert, 1998). Emotions are powerful and insistent sensations that can displace other information in the conscious mind (LeDoux, 1998), leading the individual to focus on emotionally-relevant stimuli. Such a shift of attention is frequently beneficial to the individual as emotions tend to be associated with situations that have implications for immediate survival (Lang et al., 1998). Fear, defined as “...a response to a known, external, definite, or nonconflictual threat” (Saddock & Saddock, 2003, p.591), is an excellent example of an emotional response that prompts survival behaviours; fearful sensations elicited by threatening stimuli prompt defensive behaviours, such as avoidance, that preserve the individual.

Anxiety is differentiated from fear insofar as it refers to fearful sensations that “...persist in absence of any direct threat...” (Pinel, 2006, p.458). Thus, where fear reactions protect the individual from tangible threats, anxiety serves as a warning system for possible dangers – threats as yet undefined (Saddock & Saddock, 2003). From an evolutionary point of view anxiety responses are advantageous, as the ability to predict and respond to potential threats before they occur is more conducive to survival than defensive reactions that are only elicited once the threat has emerged. When the anxiety responses themselves become so severe that they interfere with normal functioning, however, they cease to be adaptive and warrant the label of ‘anxiety disorder’ (Pinel, 2006).

From the above definition it can be seen that ‘anxiety’ is a generic term that may be applied to a broad range of circumstances. Although the various manifestations of anxiety may be related at a conceptual level, their presentations may be remarkably dissimilar. For instance, where the central characteristic of ‘generalised anxiety disorder’ is a pattern of excessive and uncontrollable worry about a broad range of events (Borkovec & Newman, 1998), ‘panic disorder’ is defined in terms of the spontaneous co-occurrence of anxious feelings and strong physiological responses such as increased heart rate, breathing irregularities, perspiration and dizziness (Nevid, Rathus & Greene, 2003). Clearly, the former is conceptualised as anxiety of a primarily psychological nature, whereas the latter is considered to be psychophysiological. Distinguishing among the different types of anxiety is important, as differing aetiologies and symptom patterns require different interventions.

## Worry

It was not until the 1970s that anxiety researchers began to investigate the psychological phenomenon of worry, with initial investigations suggesting that worry is a cognitive aspect of anxiety (Borkovec & Newman, 1998). In the 1980s Borkovec and colleagues gave a formalised definition of worry as “...a chain of thoughts and images, negatively affect-laden and relatively uncontrollable. The worry process represents an attempt at mental problem-solving on an issue whose outcome is uncertain but contains the possibility of one or more negative outcomes” (Borkovec, Robinson, Pruzinsky & DePree, 1983, p.10). This often-cited definition has been substantiated by the findings of subsequent research and there is now strong consensus that worry is distinct from, but related to anxiety (Davey, Hampton, Farrell & Davidson, 1992).

Although worry may include both verbal and image-based cognitions, numerous studies have demonstrated that verbal cognitions predominate (Tallis, Davey & Capuzzo, 1994; Freeston, Dugas & Ladouceur, 1996; Behar, Zullig & Borkovec, 2005). These verbal cognitions take on a narrative form for many people (Tallis et al., 1994), becoming a ‘bad luck’ story in which the individual contemplates all of the negative ways in which some future event could transpire. To this extent, worry has been argued to be a problem-solving technique of sorts, albeit one that is “...extremely inefficient and ineffective” (Davey, 1994, p.36).

Other research into the potential function of worry has revealed the differential psychophysiological impacts of verbal and image-based thought. Borkovec, Ray and Stöber (1998) outline the evidence that verbal thoughts, including those with emotional content, are associated with limited cardiovascular and autonomic

responses. The reverse has been shown to be true for image-based thought, highlighting the link between imagery and the somatic experience of emotion. These discoveries have led to a view of worry as a cognitive avoidance strategy: negative verbal thoughts do not elicit the same unpleasant physiological fear-responses as negative imagery, and thus become negatively reinforced (Borkovec, 1994; Behar et al., 2005; McLaughlin, Mennin & Farach, 2007; Price & Mohlman, 2007). Furthermore, as physiological responses to anxiety-provoking stimuli are thought to be a necessary component of emotional processing and fear habituation (Foa & Kozak, 1986), the reduced physiological arousal associated with worry is also implicated as a maintaining factor.

Adding another layer of complexity, the intensity of worry experiences can be placed on a continuum that stretches from mild and constructive at one end to chronic and intrusive at the other (Kelly & Miller, 1999). Worry of a less severe nature is adaptive as it brings potential problems to the attention of the individual, prompting a timely resolution (Davey, 1994); chronic worry, by contrast, is associated with generalised anxiety disorder (APA, 2000; Borkovec & Newman, 1998), depression (Molina, Borkovec, Peasley & Person, 1998), tension, apprehension, self-consciousness (Borkovec et al., 1983) and is negatively related to life-satisfaction (Paolini, Yanez & Kelly, 2006).

Another important dimension of worry is its general subject matter. We do not simply 'worry', we 'worry about', and where similarities or themes exist in the content of our worries we can group them together into worry domains. Worry domains are more than convenient categories into which to arrange data, however, as they have implications for real-world worry behaviours. Eysenck's (1984) research suggests that worry information is organised into clusters in long-term

memory; the number of these clusters and the way that they are arranged determine how often and for how long an individual will worry about a given subject. Worry may therefore become cyclical as, the more an individual worries about issues in a certain worry domain, the more information clusters pertaining to that domain are augmented in long-term memory, which increases the likelihood that those worries will recur.

Differences have been found in worry patterns for a number of populations. For instance, the United States study of Tallis, Davey and Bond (1994) reports significant differences between an undergraduate student sample and a sample of full-time workers on the Worry Domains Questionnaire (WDQ; Tallis, Eysenck & Matthews, 1992). Students demonstrated higher total WDQ scores, and elevated scores on the Relationship and Work scales, respectively, in comparison to full-time workers. However, interpretation of these differences is not clear-cut, as the authors report that the student sample was significantly younger than the full-time worker sample. The differences in worry patterns may therefore be attributable to age differences, the demands of tertiary study, or a combination of the two.

Other researchers in the United States and Canada have noted differences in worry domain patterns as a function of ethnicity (Scott, Eng & Heimberg, 2002) and gender (Wood, Conway, Pushkar & Dugas, 2005; Robichaud, Conway & Dugas, 2003; Dugas, Freeston & Ladouceur, 1997). Regarding the former, the available literature is sparse and further research is required before conclusions may be drawn about worry domains in different cultural groups. Regarding the latter, the available literature is more abundant, but research findings regarding male and female worry patterns are conflicting: although the studies mentioned above have reported that females worry more than males, a number of worry

investigations have reported no gender differences on worry measures (Borkovec et al., 1983; Tallis et al., 1994; Brown, Antony & Barlow, 1992).

### Stress

When individuals speak of stress, they are generally referring to the discomfort that arises when they feel unable to meet the demands placed on them by their environment (Caltabiano, Byrne, Martin & Sarafino, 2002). Stress is therefore similar to worry insofar as both involve unpleasant reactions to the perception of negative situations. Whereas worry is a cognitive phenomenon, however, stress responses are physiological in nature and consist of bodily changes that result from exposure to harmful stimuli (Pinel, 2006). This tidy distinction segregates worry from stress by consigning the former to the realm of ‘mind’ and the latter to that of ‘body’, but stress may be caused by psychological as well as physical stimuli (Landy & Conte, 2007) and there is a degree of interaction: that which is worrisome may also be stressful. This point will be revisited later.

The stress response, also known as ‘general adaptation syndrome’, consists of three phases: the alarm reaction, the resistance reaction, and exhaustion. The alarm phase is an adaptive response to threat in which resources are diverted to those bodily systems that are required for immediate survival, whilst non-essential processes are inhibited. The resistance phase is characterised by chemical changes that occur within the body to extend the individual’s ability to resist threats after the initial alarm response has dissipated. The exhaustion phase occurs when threats persist and the body’s resistance resources are depleted. During this phase the adaptive changes of the alarm phase become damaging, causing a range of

negative health consequences (Selye, as cited in Tortora & Grabowski, 2000). These include, but are not limited to, gastric ulcers, immune system suppression (Pinel, 2006), irritable bowel syndrome, asthma, hypertension, rheumatoid arthritis, migraines, anxiety, depression (Tortora & Grabowski, 2000), heart disease and burnout (Landy & Conte, 2007).

The threatening stimuli that provoke stress responses, referred to as stressors (Tortora & Grabowski, 2000), differ from one person to the next as the perception of threat is mediated by individual variables such as personal experience and expectations (Silverthorn, 2004). Despite this subjectivity, researchers have identified a number of common physical and psychological stressors. Examples from the physical domain include extremes of temperature, light and noise; examples from the psychological domain include interpersonal conflict and a perceived lack of control over one's environment (Landy & Conte, 2007).

Conceptualisations of stress fall into three general categories (Caltabiano et al., 2002; Hobfoll, 1989): response-based models, stimulus-based models and transactional models. The decision to work with a particular model has important implications for experimental research as the manner in which stress is conceptualised governs how researchers observe and measure it. A succinct summary of how each conceptual category influences experimental format is offered by Sutherland and Cooper (1990): response-based models view stress as something that 'happens' to the individual, treating it as a dependent variable; stimulus-based models equate stress with stressors, thus viewing it as a causal or independent variable; and transactional models are holistic in nature, describing integrated 'stress systems' in which stress is understood as an interaction between environmental demands (stressors), individual factors (e.g. cognitive appraisal,

personality, experience), social factors (e.g. support networks, social disruptions) and behaviours (e.g. coping responses, stress responses).

The present study does not view stress as an automatic physiological response (dependent variable) or as an objective causal agent (independent variable), but adopts a transactional framework that views stress as a process in which the relationship between stressor and stress response is mediated by the perception of the individual. The measurement of stress within such a framework is complicated because individual measures do not provide adequate information to understand all elements of the stress process (Bishop, 1994). To investigate the stressors encountered by tertiary students in New Zealand it will suffice to employ qualitative/descriptive instruments, but assessing the degree to which they impact on student stress levels will require a self-report measure that is sensitive to differences of stress appraisal and perception.

A large-scale survey of 'perceived stress', conducted in the United States, has revealed significant differences between gender, age and ethnicity groups (Cohen & Williamson, 1988). Specifically, women reported higher perceived stress than men, younger people reported higher perceived stress than older people, and those who self-identified as 'black' reported higher perceived stress than those who self-identified as 'white'. Other studies have replicated the findings for gender (Hudd et al., 2000; Hall, Chipperfield, Perry, Ruthig & Goetz, 2006) and age groups (Hamarat et al., 2001), but there is a dearth of research that directly compares stress levels among different ethnic groups.

Further, Wong and colleagues (2006) compared the perceived stress levels of students in Hong Kong to groups from the general population and found that the

scores of their student sample were significantly higher in all instances. Such studies are scarce, however, and further research comparing students to non-student groups will need to be conducted before any conclusions may be reached about the relative stressfulness of tertiary study.

### *Social Anxiety and Fear of Negative Evaluation*

In recent years the broadening of tertiary curricula, coupled with a desire to widen participation in tertiary education, has led to a dramatic diversification of student populations overseas (Northedge, 2003; Choy, 2002) and in New Zealand (Scott, 2003). Trends in Britain and the United States show increasing numbers of older students (Bye, Pushkar & Conway, 2007) and people from different ethnic backgrounds (Smith, 2006; Meacham, McClellan, Pearse & Greene, 2003) in tertiary education. Mirrored in New Zealand (Scott, 2003; Smart, 2006), these trends have led to the development of complex campus social environments that are comprised of demographic mixtures seldom seen in other organisations. While such diversity can lead to positive outcomes, it can also affect institutional climates in negative ways. For instance, where ethnic diversity and interracial mix can promote a sense of belonging and connectedness to an educational institution, researchers in America have found that it can also lead to feelings of ethnic discomfort and interracial tension (Santos, Ortiz, Morales & Rosales, 2007).

Diversity has been argued to improve educational outcomes in tertiary settings as interaction between different groups exposes students to alternative points of view, promoting the development of academic skills and cultural competencies (Gurin, Dey, Hurtado & Gurin, 2002). However, intergroup interactions have also

been associated with negative psychological outcomes. The research of Schlenker and Leary (1982) suggests that anxiety arises in social exchanges where the individual wishes to make a favourable impression on others, but perceives an inability to do so. In interracial contexts this presents a particular problem: the desire not to appear racially prejudiced or socially incompetent may augment the desire to make a positive impression, but a lack of familiarity with the norms and behavioural expectations of other ethnic groups creates uncertainty as to what behaviours will be positively received (Plant & Devine, 2003). In addition to a lack of familiarity, prejudiced beliefs have been identified as a contributor to social anxiety in other intergroup interactions (Blair, Park & Bachelor, 2003). When considering both the ubiquitous nature of prejudice (Pataki, 2004; Appiah, 2003) and the diversity of the groups in tertiary education, the risks for social anxiety are considerable.

Social anxiety is not limited to interpersonal exchanges, however. The diagnostic criteria for social phobia in the DSM-IV-TR (APA, 2000) specify that the diagnosis may be given to individuals who show a persistent fear of social or performance situations involving unfamiliar people or the possibility of being placed under scrutiny by others. Examples of such performance situations include having to get up on stage, public speaking and eating with others (Nevid et al., 2003). The fact that social anxiety can arise in such varied forms raises an important question: what is the common factor? Schlenker and Leary (1982) argued that social anxiety is characterised by the fear of negative evaluation from others (FNE). Subsequent research has supported this claim, with factor analyses consistently identifying 'fear of negative evaluation' as the primary social anxiety

factor (Rapee & Heimberg, 1997; Duke, Krishnan, Faith & Storch, 2006; Gore, Carter & Parker, 2002).

Stopa and Clark (2001) demonstrated that measures of FNE were able to differentiate socially phobic populations from individuals with other anxiety disorders and non-anxious controls. The authors suggest that this justifies the use of FNE as a research analogue for social anxiety. This assertion is strengthened by the fact that FNE has been found to be associated with a number of specific performance-related fears, including test anxiety (see the meta-analysis by Hembree, 1988) and fear of public speaking (Cho, Smits & Telch, 2004; Rapee & Lim, 1992).

Social anxiety often results in withdrawal from, or avoidance of, anxiety-provoking situations. Escape and avoidance behaviours are negatively reinforced as they relieve anxiety, but in the long-term they are counterproductive as they prevent the individual from acquiring the skills that they need to cope with feared social situations more effectively (Nevid et al., 2003). In addition to these skills deficits, socially anxious individuals are at a higher risk for substance abuse and major depression (Saddock & Saddock, 2003). Specific evaluative fears have implications for academic populations: test anxiety, for instance, is of concern to students as it is known to have a negative effect on academic performance (Hembree, 1988). Fear of public speaking, by contrast, is associated with a bias towards negative self-evaluation but does not necessarily hinder task performance during speech delivery (Woody & Rodriguez, 2000; Rapee & Lim, 1992). Despite this, it is evident that fear of public speaking is capable of causing a high degree of personal distress (Harris, Kemmerling & North, 2002; Buss, 1980), making life

extremely unpleasant for those whose social and academic roles require them to speak in front of an audience.

From the limited number of studies that directly assess FNE among university students, gender effects are apparent: female students tend to report higher FNE scores than male students (Duke et al., 2006; Stopa & Clark, 2001; Carleton, Collimore & Asmundson, 2007). The study conducted by Duke et al. (2006) also assessed the FNE scores of students as a function of age, but found no significant differences. To date, there have been no investigations of FNE as a function of ethnicity among students. Furthermore, although American norms exist for students and the general population, no studies have reported statistical comparisons between these groups.

### The Current Investigation

British researchers have identified student health and well-being as a neglected area of research (Connell et al., 2007; Stewart-Brown et al., 2000). This is certainly the case in New Zealand, as an extensive review of the literature shows that there are currently no studies reporting on the mental health status of New Zealand university students. This is a troubling state of affairs as studies from America, Hong Kong and Britain show that depression and anxiety are prevalent among tertiary students (Lucas & Berkel, 2006; Hyun et al., 2006; Wong et al., 2006; Andrews & Wilding, 2004). Anxiety disorders are of particular concern as, in addition to their negative impact on general health (Saddock & Saddock, 2003),

they are associated with lower levels of educational and academic achievement (Ameringen et al., 2003; Stein & Kean, 2000; Newbegin & Owens, 1996).

As a step towards redressing the paucity of research, this thesis reports on the first comprehensive investigation of anxiety among students at a New Zealand university. The central aims of the study are twofold: first, to gain an appreciation of how the requirements of tertiary study in New Zealand affect the anxiety levels of students; second, to determine which elements of the ‘tertiary lifestyle’ students perceive to be the most anxiety-inducing.

### Research Design

The study was conducted in two phases: a quantitative component, and a qualitative component. Mixed-method research designs have become commonplace in contemporary social science research (Bryman, 2006) as investigators have come to realise that quantitative and qualitative techniques can, when combined appropriately, complement each other and improve the quality of research (Kelle, 2006; Onwuegbuzie & Leech, 2005). Indeed, mixed-method approaches can lead to a more rounded appreciation of a given subject matter as quantitative methods provide information “...on a macro-level, whereas qualitative methods can be used to gain access to local knowledge...” (Kelle, 2006, p.309).

A sequential ‘quantitative to qualitative’ research design was employed to gather data, the benefits of which are outlined by Morgan (2006): quantitative research data can be used to identify areas in which further elaboration with qualitative methods would be profitable; the results of qualitative enquiry can then

be applied to the original quantitative findings to improve interpretation and understanding.

The quantitative component of the study took the form of a survey in which participants were asked to complete self-report measures of worry, stress and social anxiety. The data gathered were used in two ways: for between-group comparisons and for within-group comparisons.

Between-group comparisons were used to gauge how the requirements of tertiary study affected students in New Zealand by contrasting their worry, stress and social anxiety data with other populations. The most direct way to assess the impact of tertiary study on these variables would have been to compare New Zealand students to the general population, but data norms for the latter do not exist. As a consequence, it was decided to contrast data from the present study with normative data from tertiary student populations in the United States. America was chosen because recent, relevant data norms are available and, like New Zealand, it is an English-speaking Western country.

Within-group comparisons were guided by previous research. Because investigations of worry, stress and social anxiety have variously noted effects for gender, age and ethnicity, the present study examined survey data as a function of these demographic categories. In the case of ethnicity, the primary ethnic affiliation of students was subcategorised by 'birth status' to permit data comparisons between students who were born in New Zealand and those who were born overseas.

Furthermore, student health researchers often study students within the context of a single academic discipline (Monk, 2004), but few have compared students

from different schools of study. Therefore, to ascertain whether there are differences in the levels of worry, stress and social anxiety experienced by students across different disciplines, data comparisons were also made by school of study.

The quantitative survey proved useful in designing the qualitative component of this study. The self-report measures for worry, stress and social anxiety provided an initial template for the subject areas that would be broached in qualitative interviews. Refinement of the interview schedule was achieved by determining what important questions remained unanswered by the survey and adding them to the schedule. When complete, results of the qualitative assessment were combined with quantitative findings as appropriate to construct possible explanations for the differences that emerged.

## CHAPTER TWO: METHODOLOGY

### Recruitment

Internet usage has become an everyday part of student life (Wong et al., 2006; Jones & Madden, 2002), particularly in New Zealand (Kypri & McAnally, as cited in Kypri, Gallagher & Cashell-Smith, 2004). As the target population of the present study was large, and the University of Waikato supplies e-mail addresses and internet access to all enrolled students, it was decided that the most efficient means of recruiting participants would be via e-mail.

Gaining access to student e-mail addresses was achieved by contacting the University's Student Academic Services division. The division sends an electronic newsletter to students each week by means of mass distribution lists, and with their permission it was possible to send an e-mail outlining the details of the study to the 9,855 students who were registered at the Hamilton city campus (for a copy of the e-mail, please refer to Appendix A).

Invitations were sent on two separate occasions in the second semester of 2007. The decision to commence the survey in the latter half of the second semester was made as it was felt that the initial apprehensions of students new to the University would have abated by this point, leaving the anxiety measures free from any bias that might have resulted from the trepidations and uncertainties of attending a new institution.

As 1,082 students out of the 9,855 who were contacted participated in the study, the study's response rate was 10.98%. Low response rates such as this are not uncommon in internet-based research (Kraut et al., 2004; Sills & Song, 2002).

Although low response rates may suggest non-response/self-selection biases, the effects of this can be minimised if the study sample is sufficiently similar to the target population (Shaughnessy, Zechmeister & Zechmeister, 2006). This will be revisited in the discussion section.

### Participants

Study participants were 1,082 students from the Hamilton city campus of the University of Waikato. As a representative cross-section of the University population was sought, the following inclusion criteria were used:

- Students could be male or female
- of any age group
- of any ethnicity
- from any school of study
- either New Zealand born or non-New Zealand born
- studying full-time or part-time at the Hamilton city campus, or recent degree-completers from the University of Waikato (i.e. they had graduated, or were due to graduate, in 2007).

As the qualitative component of the study involved discussion groups that were held on Hamilton campus grounds, it was decided to exclude students from other University of Waikato campuses (e.g. the Tauranga campus, approximately

105km to the east of Hamilton) from participation as it was felt that inviting students from further afield would increase the possibility of self-selection bias.

A summary of the demographic data for the student sample is presented in the table below:

Table 1

*Student Sample Demographic Data*

Gender	N	% of Total
Male	341	31.52
Female	741	68.48
TOTAL	1,082	100.00
<hr/>		
Age Group		
< 20	334	30.87
21-30	541	50.00
31-40	110	10.17
40+	97	8.96
TOTAL	1,082	100.00
<hr/>		
School of Study		
Arts and Social Sciences	288	26.62
Computing and Mathematical Sciences	73	6.75
Education	144	13.31
Law	109	10.07
Management	273	25.23
Maori and Pacific Development	11	1.02
Science and Engineering	184	17.00
TOTAL	1,082	100.00
<hr/>		
Ethnicity		
Asiatic	24	2.22
Chinese	86	7.95
Indian	29	2.68
NZ European/European/Pakeha	734	67.84
NZ Maori	115	10.63
Tagata Pasifika	31	2.87
Other	63	5.81
TOTAL	1,082	100.00
<hr/>		
Birth Status		
New Zealand Born	783	72.37
Non-New Zealand Born	299	27.63
TOTAL	1,082	100.00

## Quantitative Measures

Three psychometric questionnaires were used to gather data in this study, one for each of the constructs being assessed. Worry domains were assessed using the Worry Domains Scale – Short Form (WDQ-SF; Stöber & Joormann, 2001); the self-reported stress of participants was gauged with the Perceived Stress Scale – 10 (PSS-10; Cohen & Williamson, 1988); and, as research has demonstrated the utility of the fear of negative evaluation construct for investigating social anxiety (Stopa & Clark, 2001), the Brief Fear of Negative Evaluation questionnaire (BFNE; Leary, 1983) was employed to measure the social anxiety levels of students.

### Worry Domains Questionnaire – Short Form

The WDQ-SF (see Appendix B) is an adaptation of the original WDQ (Tallis et al., 1992). Like its predecessor, it is a self-report measure that is designed to assess non-pathological worry in five different domains: relationships, lack of confidence, aimless future, work and finances. The WDQ-SF retains the Likert scale format of the WDQ, requiring question responses to be rated from 0 ('not at all worried') to 4 ('extremely worried'). A total score is obtained for the WDQ-SF by adding all of the individual responses together, whereas subscale values are computed by adding together the scores of items within individual worry domains.

The WDQ of Tallis et al. (1992) consisted of 25 questions (5 for each domain), but it was felt by Stöber and Joormann (2001) that the measure was slightly cumbersome. Streamlining the questionnaire, they developed the WDQ-SF, which contained a total of only 10 questions (2 for each domain). Validation statistics

from the Stöber and Joormann (2001) study demonstrate that the measure has excellent psychometric properties, including a high internal consistency (Cronbach's  $\alpha = 0.88$ ), clear retention of the five-factor structure and a high correlation with the original WDQ ( $r = 0.97$ ). As the WDQ-SF combines validity with brevity, it was a more appropriate instrument for this study than its lengthier counterpart, the WDQ.

#### Perceived Stress Scale – 10

The PSS was developed by Cohen and colleagues (1983) as a means to measure the individual's subjective appraisal of stress. It is a self-report measure that asks respondents to rate the incidence of various stressful feelings and situations over the previous one month. Ratings are made on a five-point Likert scale, which ranges from 0 ('never') to 4 ('very often'), with some positively-phrased items being reverse-scored. Item scores are totalled, providing an overall PSS score, giving an indication of the degree to which the individual is currently experiencing stress.

The PSS is available in 14-item, 10-item and 4-item formats (PSS-14, PSS-10 and PSS-4, respectively). An investigation comparing the psychometric properties of each has revealed the superiority of the 10-item version: the PSS-10 had higher internal consistency (Cronbach's  $\alpha = 0.78$ ) than both the PSS-14 and the PSS-4 (Cronbach's  $\alpha = 0.75$  and  $0.60$ , respectively), and has a factor structure that explains more variance (Cohen & Williamson, 1988).

The PSS-10 (see Appendix C) was selected for use in this study as it is more psychometrically sound than its alternate forms and contains a sufficient number

of questions to assess sources of stress in the complex environment of tertiary education.

### *Brief Fear of Negative Evaluation*

The BFNE (see Appendix D) is an updated version of the original Fear of Negative Evaluation questionnaire (FNE; Watson & Friend, 1969). Another self-report measure, its purpose is to ascertain the degree to which individuals experience anxiety whilst in situations that present the possibility of negative evaluation.

The FNE of Watson and Friend (1969) asked 30 questions in a ‘true or false’ format. Leary’s (1983) BFNE reduced the number of questions to 12 and replaced the ‘true or false’ system with a five-point Likert scale. Questions take the form of self-statements and require those answering the test to rate them from 1 (‘not at all characteristic of me’) to 5 (‘extremely characteristic of me’), with some items being reverse-scored. Item scores are summed to provide a total BFNE score, indicating the level to which the individual fears negative evaluation.

Leary’s (1983) evaluation of the instrument showed the BFNE to have a high internal consistency (Cronbach’s  $\alpha = 0.90$ ) and a high correlation with the original FNE ( $r = 0.96$ ). Moreover, the four-week test-retest reliability coefficient for the BFNE was 0.75, in comparison with 0.68 for the FNE.

Significant correlations between the BFNE, Watson and Friend’s (1969) Social Avoidance and Distress scale (anxiety subscale,  $r = .35$ ,  $p < .05$ ; avoidance subscale,  $r = .19$ ,  $p < .05$ ) and Leary’s (1983) Interaction Anxiousness Scale ( $r =$

.32,  $p < .05$ ) support Stopa and Clark's (2001) assertion that measuring fear of negative evaluation is an acceptable means of investigating social anxiety.

Furthermore, in a study of clinically anxious individuals, Collins, Westra, Dozois and Stewart (2005) found that the BFNE, re-worded to remove double negatives, correlated highly with the social avoidance subscale ( $r = .53$ ,  $p < .01$ ) of the Fear Questionnaire (FQ; Marks & Matthews, 1979). Moreover, the measure was able to discriminate socially anxious from panic disordered/non-anxious individuals.

In summary, the brevity, internal reliability, test-retest reliability and validity of the BFNE as a quantifier of social anxiety led to its inclusion in this study.

### Qualitative Measures

As mentioned previously, the purpose of the qualitative component of this study was to gain an appreciation of the worry, stress and social anxiety issues of New Zealand university students by exploring the experiences of study participants reported in their own words. The qualitative measure was a semi-structured interview schedule (see Appendix E) that was devised to facilitate discussion about worry, stress and social concerns in a group format. Although it was necessary to discuss each of these areas, the individual questions of the interview schedule (e.g. "what do you worry about most?", "how do you define stress?", "is it important that other people evaluate you positively?") were optional, serving only as prompts.

A semi-structured interview format was employed for two reasons: first, a degree of structure was required as the qualitative data would be used to

complement the findings of the quantitative survey; second, although the broad areas for discussion are predetermined, the semi-structured format permits authentic dialogue as participants are able to discuss them in their own words (Hesse-Biber & Leavy, 2006).

## Procedure

### Quantitative Component: Survey

The study's quantitative component (hereafter referred to as 'the survey') was a test battery comprised of the three quantitative measures: the WDQ-SF, PSS-10 and BFNE. It was presented online at a website operated by the psychology department of the University of Waikato (see Appendix F), which students could access by clicking on a hyperlink at the bottom of the recruitment e-mail described earlier.

The website homepage began by explaining the nature of the research and the requirements of the survey. It was stated that students would be asked to fill in a three-part questionnaire and that this would take approximately 20 minutes. Due to the online format of the survey, it was explained to the student that his/her consent to participate in the research would be assumed if he/she voluntarily completed and submitted the questionnaire.

Details of a prize draw were then elaborated. As response bias in surveys can be mitigated by offering incentives to participate (Sills & Song, 2002), the decision to offer five prizes of \$200 Dick Smith Electronics gift vouchers was

made. Students were informed that they would be required to supply a valid e-mail address in order to participate in the survey, and that the e-mail address would be used to notify prize winners. Collection of e-mail addresses, while necessary for the prize draw, served the dual function of verifying the participants' status as a student of the University of Waikato. Prize winners were selected at the completion of survey data gathering using the random number generator in Microsoft Excel 2007.

Next, details of the qualitative component of the study were supplied. It was stated that all students who completed the survey were invited to attend 'worry, stress and social concerns' discussion groups. Students could register their interest by selecting the appropriate option on page two of the survey website, after providing a contact e-mail address. It was made clear that a registration of interest did not obligate students to participate in a discussion group, and that discussion group attendance would not influence the chances of winning one of the \$200 gift vouchers.

As an ethical consideration, the contact e-mail address and the telephone number of the University Counselling Service were supplied. Students who were experiencing distress due to worry or anxiety were encouraged to make contact with the service through one of these mediums.

Finally, the students were informed that more information about the study would be presented after the survey was completed. Any queries that the student had about the research were directed to the present author's e-mail address and a link was provided to proceed to the next page of the website.

After the providing an e-mail address and indicating whether they were interested in attending the discussion groups, participants were taken to the website survey page. Demographic information was requested at the top of the webpage, including age-group, gender, school of study, ethnicity and birth status (NZ born/non-NZ born). The survey questionnaires were then presented in the following order: WDQ-SF, PSS-10 and B-FNE. To preserve test integrity, the visual appearance and the instructions of each questionnaire were kept as close to their pencil-and-paper counterparts as possible. When participants were satisfied with their answers they could complete the survey by clicking the 'submit' button at the bottom of the page. To avoid missing values, however, the webpage was arranged so that questionnaires could not be submitted if the participant had not responded to all of the items. An error page would come up in such an event, indicating the questions to which no answer had been supplied and the participant would be taken back to the questionnaire page to make the necessary corrections. Once submitted, the participants were taken to the final page of the website, which contained a thank you statement, an expanded description of the research and a further invitation to contact the present author via e-mail if they had any questions, comments or concerns about the study.

Survey data was transmitted from the website to Microsoft Excel spreadsheets. To preserve the anonymity of survey participants, e-mail addresses were recorded on a separate spreadsheet to demographic data and survey responses. Recorded on both spreadsheets, however, were the time and date of survey submission and the IP address of the computer from which the survey participant had been working. This information was used to cross-reference survey data with e-mail data in three situations: first, when the participant had failed to supply a valid e-mail address

and it was necessary to delete their survey data (n = 16); second, when the survey participant had accidentally submitted their data more than once and it was necessary to identify and remove duplications (n = 35); and third, when an e-mail address had been supplied without corresponding survey data (n = 132).

### Qualitative Component: Discussion Groups

If survey participants were interested in the qualitative component of the study (hereafter referred to as ‘discussion groups’), this was recorded next to their e-mail address on the e-mail data spreadsheet. An e-mail providing a comprehensive outline of discussion group proceedings (see Appendix G) was sent to each interested party (n = 189). Information was included about the discussion format, consent to participate, confidentiality issues, participant rights, complaints procedure, venue, the number of people expected to attend and the lunch that would be provided.

Discussion groups were arranged by gender as it was felt that some students may feel more comfortable talking in a particular gender environment. Prospective participants were therefore asked to indicate whether they would prefer to attend an all male, an all female or a mixed-gender discussion group. They were also requested to indicate their availability during the week that discussion groups would be held. From student responses (n = 30), the times and dates that allowed the maximum number of people to attend each group were determined and a confirmation e-mail was sent. Due to schedule conflicts, discussion groups were smaller than desired: the male discussion group was the

smallest ( $n = 5$ ), followed by the female discussion group ( $n = 6$ ), and the mixed-gender group ( $n = 7$ ).

Discussion groups were scheduled to last for one hour and were held in a conference room of the psychology department at the University of Waikato. At the beginning of each group the rights of the participants were explained and issues of informed consent were discussed. Group participants were then informed that notes would be taken while they talked and that discussion would be recorded. Assurances were given that no-one outside of the study would be given access to recordings and that no group member would be quoted by name.

A standard University of Waikato consent form was then provided to all discussion group members (see Appendix H) as well as a demographic information sheet (see Appendix I). To ensure anonymity of group participants, a different capital letter was used on the top left corner of each demographic sheet that would serve as an identifier in lieu of their names (e.g. Participant A, Participant B, etc.).

When all of the consent forms and demographic sheets had been collected, the recording device was activated and the discussion commenced. The discussions were kept informal in nature and followed the semi-structured interview outlined earlier in the qualitative measures section. Effort was made to ensure that roughly equal amounts of time were given to talking about worry, stress and social anxiety, and a brief definition of each concept was given as they were introduced to the discussion. During the worry section, students were asked to talk about the issues of worry pertaining to student life that were most frequently on their minds; the stress section invited discussion about study-related issues that were the

greatest causes of stress responses/stress symptoms; and in the social anxiety component of the discussion, students were asked to list any social concerns that they had about interacting with others from both university and non-university backgrounds.

## Data Analysis

### Survey Data Analyses

All statistical analysis for the survey data was conducted using SPSS version 15.0. Before statistical analysis began, however, the demographic data for the study sample was tabulated against the University of Waikato population data for 2007 to determine whether the composition of the study sample was equivalent to the greater student body. Because the University does not collect data on the birth status of students, this demographic category is displayed independently.

The subsequent section examines the number of participants within each demographic category (gender, age, ethnicity, school of study and birth status) to determine whether numbers were sufficient for statistical testing. Where insufficient numbers were found, data groups were altered or omitted as necessary.

WDQ-SF, PSS-10 and BFNE data for the total University of Waikato sample are presented next. Each measure is compared with the most current normative data from American student populations using one sample t-tests. An  $\alpha$ -level of

.05 was used for each test and, where significant differences were found, effect sizes are reported with the Cohen's *d* statistic.

Next, reliability analyses were conducted for the WDQ-SF, PSS-10 and BFNE measures. Item-total correlations and Cronbach's alpha were calculated for each and, where questionnaire items were revealed to be unsuitable, they were removed from the data pool and reliability statistics were recalculated for the adjusted data set. Further, due to the fact that worry and stress are often intertwined, a Pearson correlation was performed on the finalised data sets for the WDQ-SF and PSS-10 to ensure that the questionnaires were measuring their respective targets.

Descriptive statistics for the gender category are then reported for each study measure. Independent-samples *t*-tests were used, with an  $\alpha$ -level of .05, to determine whether differences existed between males and females on any of the measures. Where significant differences were found, effect sizes are reported with Cohen's *d*.

The following section begins with a presentation of age-group data. One-way ANOVA test with an  $\alpha$ -level of .05 were used to determine if differences existed between age-group scores on any of the study measures. Where statistically significant findings emerged, post-hoc tests with the Bonferroni adjustment were employed to compare age-group means and effect sizes were expressed with Cohen's *d*.

Data for school of study are presented next. As with the previous section, a one-way ANOVA with an  $\alpha$ -level of .05 was used to determine if differences existed between schools of study on any of the questionnaires. Where statistically significant findings emerged, post-hoc tests with the Bonferroni adjustment were

employed to compare school of study group means and effect sizes were expressed with Cohen's  $d$ .

Data for ethnicity groups are reported in the following section. One-way ANOVA tests with an  $\alpha$ -level of .05 were used to determine whether differences existed between ethnic group scores on any of the measures. Where statistically significant findings emerged, post-hoc tests with the Bonferroni adjustment were employed to compare ethnicity group means and effect sizes were expressed with Cohen's  $d$ .

Finally, the descriptive statistics for the birth status WDQ-SF, PSS-10 and BFNE data are reported. One-way ANOVA tests with an  $\alpha$ -level of .05 were used to examine scores to determine whether differences existed between birth status groups on any of the measures. Where statistically significant findings emerged, post-hoc tests with the Bonferroni adjustment were employed to compare group means and effect sizes were expressed with Cohen's  $d$ .

### Discussion Group Analyses

Although the statistical data provided by the survey give an indication of the magnitude of worry, stress and social anxiety concerns among students at the University of Waikato, it is impossible to infer anything about the specific nature of these concerns from this type of data. The information collected from the discussion groups, by contrast, represents a direct account of students' experiences with worry, stress and social anxiety given in their own terms.

Content analysis procedures were used to describe and enumerate the issues of concern in each area for all three of the discussion groups.

Following the content analysis procedure described by Giles (2002), data coding took place in three stages: the recordings for each discussion group were played and care was taken to record all of the worry, stress and social anxiety issues raised by participants; once this data was transcribed into written form, each point was given a descriptive label that reflected the nature of the issue being raised; finally, these descriptive labels were grouped together into broader conceptual headings that served as data categories for the content analysis. This procedure was conducted for each research topic, yielding separate content analyses for worry domains, stress levels and social anxiety, respectively.

#### Worry Content Analysis

From the worry content analysis it was possible to group the various worry concerns raised by students into broad worry domains and to determine the number of times that worries were mentioned within each domain during the course of discussion. This information is presented in the form of a frequency table, combining data from the male, female and mixed-gender discussion groups. After the table, the worry themes within each category are elaborated and illustrative quotes from discussion group participants are provided.

Emergent worry domains categories included (alphabetically):

- Male discussion group: academic, financial, future concerns, relationships, role-conflict and self-confidence.

- Female discussion group: financial, health, relationships, role-conflict and study expectations.
- Mixed-gender discussion group: academic, financial, future concerns, relationships, role-conflict and study expectations.

### Stress Content Analysis

From the stress content analysis it was possible to group the various stressors discussed by students into broad stress categories and to determine the number of times that stressors were mentioned within each category during the course of discussion. This information is presented in the form of a frequency table, combining data from the male, female and mixed-gender discussion groups. After the table, the stress themes within each category are elaborated and illustrative quotes from discussion group participants are provided. Although worry and stress overlap to a degree, it should be remembered that stressors refer specifically to those stimuli that place demands on coping resources and provoke a physiological 'stress response'.

Emergent stress categories included (alphabetically):

- Male discussion group: academic, financial, future concerns, relationships, and role-conflict.
- Female discussion group: academic, financial, health, relationships, and role-conflict.

- Mixed-gender discussion group: academic, immigration, relationships, and role-conflict.

### *Social Anxiety Content Analysis*

From the social anxiety content analysis it was possible to group the various social concerns raised by students into broad social anxiety categories and to determine the number of times that social anxiety issues were mentioned within each category during the course of discussion. This information is presented in the form of a frequency table, combining data from the male, female and mixed-gender discussion groups. After the table, the social anxiety themes within each category are elaborated and illustrative quotes from discussion group participants are provided.

Emergent social anxiety categories included (alphabetically):

- Male discussion group: interaction with university peers, interaction with non-university peers.
- Female discussion group: interaction with family, interaction with university peers, interaction with non-university peers
- Mixed-gender discussion group: interaction with family, interaction with university peers, interaction with non-university peers, language barriers and racial stigma.

## CHAPTER THREE: RESULTS

*Demographic Information*

Table 2

*Study Sample Demographics Compared with University of Waikato Student Demographic Data for 2007*

Study Sample Demographic Data			University of Waikato Student Demographic Data for 2007		
Gender	N	% of Total	Gender	N	% of Total
Male	341	31.52	Male	4,216	40.71
Female	741	68.48	Female	6,140	59.29
<b>TOTAL</b>	<b>1,082</b>	<b>100.00</b>	<b>TOTAL</b>	<b>10,356</b>	<b>100.00</b>
<u>Age Group</u>			<u>Age Group</u>		
< 20	334	30.87	< 20	3,354	32.39
21-30	541	50.00	21-30	4,755	45.91
31-40	110	10.17	31-40	1,101	10.63
40+	97	8.96	40+	1,146	11.07
<b>TOTAL</b>	<b>1,082</b>	<b>100.00</b>	<b>TOTAL</b>	<b>10,356</b>	<b>100.00</b>
<u>School of Study</u>			<u>School of Study</u>		
Arts and Social Sciences	288	26.62	Arts and Social Sciences	2,321	22.77
Computing & Mathematical Sciences	73	6.75	Computing & Mathematical Sciences	637	6.25
Education	144	13.31	Education	1,966	19.29
Law	109	10.07	Law	831	8.15
Management	273	25.23	Management	2,876	28.21
Maori and Pacific Development	11	1.02	Maori and Pacific Development	444	4.36
Science and Engineering	184	17.00	Science and Engineering	1,118	10.97
<b>TOTAL</b>	<b>1,082</b>	<b>100.00</b>	<b>TOTAL</b>	<b>10193*</b>	<b>100.00</b>
<u>Ethnicity</u>			<u>Ethnicity</u>		
Asiatic	24	2.22	Asiatic	384	3.71
Chinese	86	7.95	Chinese	1,477	14.27
Indian	29	2.68	Indian	264	2.55
NZ European/European/Pakeha	734	67.84	NZ European/European/Pakeha	5,047	48.75
NZ Maori	115	10.63	NZ Maori	2,047	19.77
Tagata Pasifika	31	2.87	Tagata Pasifika	405	3.91
Other	63	5.81	Other	728	7.03
<b>TOTAL</b>	<b>1,082</b>	<b>100.00</b>	<b>TOTAL</b>	<b>10352**</b>	<b>100.00</b>

\* Excludes Language Institute Students \*\* Excludes 4 students due to non-response

NB: See Appendix J for official University demographic spreadsheet.

Several differences are evident between the study sample demographics and the University of Waikato population figures for 2007. First, males formed 31.52% (n=341) of the study sample, but comprised 40.71% of the total student population. Second, the data indicate that both Chinese and NZ Maori students were under-represented in the study: Chinese students made up 7.95% (n=86) of the sample compared with 14.27% of the Waikato population total; NZ Maori contributed 10.63% (n=115) to the sample versus 19.77% of total population. Conversely, students in the NZ European/European/Pakeha category were over-represented, forming 67.84% (n=734) of the study sample against 48.75% of population total. Finally, there was a slight under-representation of Education students with 13.31% (n=144) in the sample against 19.29% in the student population, and a slight over-representation of Science and Engineering students with 17.00% (n=184) in the sample against 10.97% of the university population.

A possible explanation for the under-representation of males in the study sample is the subject matter of the study. Epidemiological data from New Zealand (Browne, 2006) and the United States (Saddock & Saddock, 2003; Kessler et al., 1994) show that the lifetime prevalence rate for anxiety disorders is almost twice as high for females as it is for males; anxiety-related concerns may therefore be considered to be less important by male students, resulting in male to female study sample ratio that is lower than that of the student population.

Language barriers may be responsible for the under-representation of Chinese students. The study survey was presented in English and contained a relatively complex set of instructions that might have been daunting to those Chinese students who speak English as a second language.

The under-representation of NZ Maori students may be due to the fact that the study survey was presented online. Differences have been identified in patterns of internet usage between Western and non-Western cultures, with the former reporting higher rates of internet usage in educational settings (Fusilier, Durlabhji, Cucchi & Collins, 2005; Li & Kirkup, 2007). In New Zealand, research suggests that Maori students, whilst technologically competent, prefer face-to-face learning as they come from a culture with a strong oral tradition (Zepke & Leach, 2002); this preference for immediate as opposed to remote interaction in educational settings may be responsible for the lower survey response rate of Maori students.

Finally, the under-representation of Education students and the over-representation of Science and Engineering students may be due to differences in the importance of the internet as a learning resource between schools. Further research is required to confirm this hypothesis.

#### *Demographic Information: Birth Status*

‘Birth status’ was used to differentiate students born in New Zealand from those born overseas. It is expressed as a function of ethnicity:

Table 3

#### *Birth Status of the Study Sample as a Function of New Zealand/Non-New Zealand Ethnic Identity*

Birth Status/Ethnicity Group	N
NZ Born/NZ Ethnicity*	745
NZ Born/Non-NZ Ethnicity	38
Non-NZ Born/NZ Ethnicity*	114
Non-NZ Born/Non-NZ Ethnicity	185
TOTAL	1,082

\* NZ Ethnicity merges both NZ European/European/Pakeha and NZ Maori students

*Sample Frequencies and Statistical Testing*

A sufficient number of participants were available to permit statistical testing in the gender and age-group categories, but difficulties were encountered with ethnicity, school of study and birth status.

In the ethnicity category, statistical testing was not possible for the Asiatic, Indian, and Tagata Pasifika categories due to insufficient numbers. To remedy this, data from these groups were merged with the Chinese and Other groups to form a new, ‘Non-New Zealand Ethnicity’ category (n=223). Ten individuals from the Other group were redistributed to the NZ European/European/Pakeha group (n=744) because, although they had reported multiple ethnicities, they recorded a primary ethnic affiliation with this group. The amended ethnicity groupings are as follows:

Table 4

*Amended Ethnicity Groups after Adjustment Due to Insufficient Numbers*

Ethnicity Group	N
Non-New Zealand Ethnicity	223
NZ European/European/Pakeha	744
NZ Maori	115
TOTAL	1,082

In the school of study category, small sample size precluded statistical testing for the Maori and Pacific Development group (n=11). It was not possible to merge the data with any of the other groups and thus the Maori and Pacific Development group was excluded from analysis. The final groupings for the school of study category are shown in Table 5 on page 41.

Table 5

*Amended School of Study Groups after Adjustment Due to Insufficient Numbers*

School of Study Group	N
Arts and Social Sciences	288
Computing and Mathematical Sciences	73
Education	144
Law	109
Management	273
Science and Engineering	184
TOTAL	1,082

In the birth status category, there were too few participants in the New Zealand born/Non-New Zealand Ethnicity group to permit statistical testing (n=38). It was necessary to remove this group, leaving the following groups for analysis:

Table 6

*Amendment of Birth Status Groups after Adjustment Due to Insufficient Numbers*

Birth Status/Ethnicity Group	N
NZ Born/NZ Ethnicity	745
Non-NZ Born/NZ Ethnicity	114
Non-NZ Born/Non-NZ Ethnicity	185
TOTAL	1,082

*Total Study Sample WDQ-SF, PSS-10 and BFNE Scores Compared with**Normative Data*

Descriptive statistics for the total study sample WDQ-SF, PSS-10 and BFNE are shown in Table 7 on page 42, in addition to the most current normative data from American student populations.

Table 7

*Descriptive Statistics for the University of Waikato Sample WDQ-SF, PSS-10 and BFNE Measures Contrasted with Recent Normative Data*

Data Source	N	M	SD	Range
Study Sample WDQ-SF	1,082	15.75	7.50	0-38
WDQ-SF Normative Data <sup>a</sup>	540	12.15	7.86	-
Study Sample PSS-10	1,082	18.83	6.55	14-30
PSS-10 Normative Data <sup>b</sup>	281	18.30	2.89	-
Study Sample BFNE	1,082	34.65	8.41	12-60
BFNE Normative Data <sup>c</sup>	201	30.70	9.04	-

<sup>a</sup> Stöber & Joormann, 2001

<sup>b</sup> Roberti, Harrington & Storch, 2006

<sup>c</sup> Carleton, McCreary, Norton & Asmundson, 2006

One-sample t-tests reveal that:

- Waikato students reported higher WDQ-SF scores ( $M = 15.75$ ,  $SD = 7.50$ ) than the normative group,  $t(1,081) = 10.81$ ,  $p < .001$ ,  $d = .47$ .
- Waikato students reported higher PSS-10 scores ( $M = 18.83$ ,  $SD = 6.55$ ) than those in the normative sample,  $t(1,081) = 2.672$ ,  $p = .008$ ,  $d = .08$ .
- Waikato students reported higher BFNE scores ( $M = 34.65$ ,  $SD = 8.41$ ) than the normative sample,  $t(1,081) = 15.452$ ,  $p < .001$ ,  $d = .41$ .

*Reliability Analyses: Waikato Sample WDQ-SF, PSS-10 and BFNE*

Internal reliability statistics for the Waikato sample WDQ-SF are presented in

Table 8 on page 43.

Table 8

*Item-Total Correlations and Cronbach's Alpha for the Waikato Sample WDQ-SF*

Item 1	Item 2	Item 3	Item 4	Item 5	Item 6	Item 7	Item 8	Item 9	Item 10
.714	.640	.619	.746	.613	.628	.718	.628	.586	.735

Cronbach's  $\alpha = .857$

Internal reliability statistics for the study sample PSS-10 are as follows:

Table 9

*Item-Total Correlations and Cronbach's Alpha for the Waikato Sample PSS-10*

Item 1	Item 2	Item 3	Item 4	Item 5	Item 6	Item 7	Item 8	Item 9	Item 10
.699	.761	.730	.520	.646	.714	.610	.698	.628	.808

Cronbach's  $\alpha = .873$

Internal reliability statistics for the study sample BFNE are as follows:

Table 10

*Item-Total Correlations and Cronbach's Alpha for the Waikato Sample BFNE*

Item 1	Item 2	Item 3	Item 4	Item 5	Item 6	Item 7	Item 8	Item 9	Item 10	Item 11	Item 12
.772	.355	.761	.330	.798	.813	.448	.764	.767	0.445	0.764	0.745

Cronbach's  $\alpha = .878$

Items 2, 4, 7 and 10 show inadequate item-total correlations. A recalculation of internal reliability after removal of these items is presented below:

Table 11

*Item-Total Correlations and Cronbach's Alpha for the Waikato Sample BFNE after Adjustment for Inappropriate Test Items*

Item 1	Item 2	Item 3	Item 4	Item 5	Item 6	Item 7	Item 8	Item 9	Item 10	Item 11	Item 12
.772	-	.761	-	.798	.813	-	.764	.767	-	0.764	0.745

Cronbach's  $\alpha = .930$

Pearson Correlation: WDQ-SF and PSS-10

The Pearson correlation between the WDQ-SF and PSS-10 data sets was significant ( $r(1,080) = .667, p < .01$ ). The high r-value indicates that a strong, positive relationship exists between the measures, but it remains low enough to conclude that the questionnaires were measuring different phenomena.

Waikato Sample Comparisons for the WDQ-SF, PSS-10 and BFNE: Gender

Descriptive statistics are presented for the study sample WDQ-SF, PSS-10 and BFNE as a function of gender in the table below:

Table 12

*Descriptive Statistics for the Waikato Sample WDQ-SF, PSS-10 and BFNE as a Function of Gender*

WDQ-SF	N	M	SD
Male	341	14.47	7.31
Female	741	16.34	7.51
<u>TOTAL</u>	1,082	-	-
<u>PSS-10</u>			
Male	341	17.27	6.42
Female	741	19.55	6.49
<u>TOTAL</u>	1,082	-	-
<u>BFNE</u>			
Male	341	19.64	6.84
Female	741	21.05	7.38
<u>TOTAL</u>	1,082	-	-

Independent-samples t-tests reveal that:

- female students reported significantly higher worry scores on the WDQ-SF ( $M = 16.34, SD = 7.51$ ) than male students ( $M = 14.46, SD = 7.31$ ),  $t(1,080) = 3.83, p < .001, d = .25$ .

- female students reported significantly higher perceived stress scores on the PSS-10 ( $M = 19.55$ ,  $SD = 6.49$ ) than male students ( $M = 17.27$ ,  $SD = 6.42$ ),  $t(1,080) = 5.402$ ,  $p < .001$ ,  $d = .35$ .
- female students reported significantly higher social anxiety scores on the BFNE ( $M = 21.05$ ,  $SD = 7.38$ ) than male students ( $M = 19.64$ ,  $SD = 6.84$ ),  $t(1,080) = 3.08$ ,  $p = .002$ ,  $d = .20$ .

*Waikato Sample Comparisons for the WDQ-SF, PSS-10 and BFNE: Age-Groups*

Descriptive statistics for the study sample are provided as a function of age-group in the table below:

Table 13

*Descriptive Statistics for the Study Sample WDQ-SF, PSS-10 and BFNE as a Function of Age-Group*

WDQ-SF	N	M	SD
< 20	334	16.41	7.21
21-30	541	15.98	7.63
31-40	110	14.87	7.46
41+	97	13.23	7.26
TOTAL	1,082	-	-
<b>PSS-10</b>			
< 20	334	18.93	6.46
21-30	541	18.92	6.58
31-40	110	19.00	6.35
41+	97	17.83	6.90
TOTAL	1,082	-	-
<b>BFNE</b>			
< 20	334	21.58	6.95
21-30	541	20.76	7.34
31-40	110	19.46	6.95
41+	97	17.71	7.12
TOTAL	1,082	-	-

Significant one-way ANOVA results:

- age had a significant effect on WDQ-SF scores,  $F(3, 1,078) = 5.25$ ,  $p = .001$ ,  $\eta_p^2 = .014$ . Post-hoc tests show that the < 20 age group reported higher scores on the WDQ-SF ( $M = 16.41$ ,  $SD = 7.21$ ) than those in the 41+ age group ( $M = 13.23$ ,  $SD = 7.26$ ),  $d = .44$ . Further, those in the 21-30 age group were found to report higher WDQ-SF scores ( $M = 15.98$ ,  $SD = 7.63$ ) than those in the 41+ age group ( $M = 13.23$ ,  $SD = 7.26$ ),  $d = .36$ .
- age had a significant effect on BFNE scores,  $F(3, 1,078) = 8.33$ ,  $p < .001$ ,  $\eta_p^2 = .023$ . Post-hoc tests reveal that the < 20 age group reported higher BFNE scores ( $M = 21.58$ ,  $SD = 6.95$ ) the 31-40 group ( $M = 19.46$ ,  $SD = 6.95$ ),  $d = .31$ . The < 20 group also reported higher FNE scores ( $M = 21.58$ ,  $SD = 6.95$ ) than the 41+ ( $M = 17.71$ ,  $SD = 7.12$ ) age group,  $d = .55$ . Further, BFNE scores for the 21-30 age group ( $M = 20.76$ ,  $SD = 7.34$ ) were found to be significantly higher than those of the 41+ age group ( $M = 17.71$ ,  $SD = 7.12$ ),  $d = .42$ .

Non-significant one-way ANOVA results:

- there was no significant age group effect for the PSS-10.

Waikato Sample Comparisons for the WDQ-SF, PSS-10 and BFNE: School of Study

Descriptive statistics for WDQ-SF, PSS-10 and BFNE scores by school of study are provided in Table 14 on page 47.

Table 14

*Descriptive Statistics for the Waikato Sample WDQ-SF, PSS-10 and BFNE as a Function of School of Study*

WDQ-SF	N	M	SD
Arts and Social Sciences	288	16.19	7.34
Computing and Mathematical Sciences	73	15.33	7.56
Education	144	15.25	7.62
Law	109	16.59	7.97
Management	273	15.68	7.71
Science and Engineering	184	15.16	6.67
TOTAL	1,071	-	-
<hr/>			
PSS-10			
Arts and Social Sciences	288	19.29	6.73
Computing and Mathematical Sciences	73	17.93	6.51
Education	144	18.99	6.53
Law	109	19.51	7.47
Management	273	18.41	6.57
Science and Engineering	184	18.69	5.50
TOTAL	1,071	-	-
<hr/>			
BFNE			
Arts and Social Sciences	288	20.62	7.61
Computing and Mathematical Sciences	73	21.22	6.93
Education	144	20.62	7.24
Law	109	20.94	8.34
Management	273	20.37	7.08
Science and Engineering	184	20.60	6.25
TOTAL	1,071	-	-

Non-significant one-way ANOVA results:

- there was no significant school of study effect for the WDQ-SF.
- there was no significant school of study effect for the PSS-10.
- there was no significant school of student effect for the BFNE.

*Waikato Sample Comparisons for the WDQ-SF, PSS-10 and BFNE: Ethnicity*

Descriptive statistics for WDQ-SF, PSS-10 and BFNE scores are presented by ethnicity in Table 15 on page 48.

Table 15

*Descriptive Statistics for the Study Sample WDQ-SF, PSS-10 and BFNE as a Function of Ethnicity*

WDQ-SF	N	M	SD
Non-New Zealand Ethnicity	223	14.86	7.67
NZ European/European/Pakeha	744	15.97	7.45
NZ Maori	115	16.06	7.37
<b>TOTAL</b>	<b>1082</b>	<b>-</b>	<b>-</b>
<b>PSS-10</b>			
Non-New Zealand Ethnicity	223	19.39	6.41
NZ European/European/Pakeha	744	18.73	6.57
NZ Maori	115	18.40	6.69
<b>TOTAL</b>	<b>1082</b>	<b>-</b>	<b>-</b>
<b>BFNE</b>			
Non-New Zealand Ethnicity	223	20.94	7.44
NZ European/European/Pakeha	744	20.92	7.13
NZ Maori	115	17.90	7.06
<b>TOTAL</b>	<b>1082</b>	<b>-</b>	<b>-</b>

## Significant one-way ANOVA results:

- ethnicity had a significant effect on BFNE scores,  $F(2, 1,079) = 9.09$ ,  $p < .001$ ,  $\eta_p^2 = .017$ . Post-hoc tests reveal that students who identify as NZ Maori report lower scores on the BFNE ( $M = 17.90$ ,  $SD = 7.06$ ) than students who identify as NZ European/European/Pakeha ( $M = 20.92$ ,  $SD = 7.13$ ),  $d = .42$ . Further, NZ Maori students reported significantly lower BFNE scores ( $M = 17.90$ ,  $SD = 7.06$ ) than those students identifying as a Non-NZ Ethnicity ( $M = 20.94$ ,  $SD = 7.44$ ),  $d = .42$ .

## Non-significant one-way ANOVA results:

- there was no significant ethnicity effect for the WDQ-SF.
- there was no significant ethnicity effect for the PSS-10.

*Waikato Sample Comparisons for the WDQ-SF, PSS-10 and BFNE: Birth Status*

Descriptive statistics for WDQ-SF, PSS-10 and BFNE scores are presented by birth status below:

Table 16

*Descriptive Statistics for the Waikato Sample WDQ-SF, PSS-10 and BFNE as a Function of Birth Status*

WDQ-SF	N	M	SD
NZ Born/NZ Ethnicity	745	16.01	7.23
Non-NZ Born/NZ Ethnicity	114	15.79	8.46
Non-NZ Born/Non-NZ Ethnicity	185	14.33	7.42
TOTAL	1,044	-	-
<hr/>			
PSS-10			
NZ Born/NZ Ethnicity	745	18.64	6.56
Non-NZ Born/NZ Ethnicity	114	19.01	6.74
Non-NZ Born/Non-NZ Ethnicity	185	19.22	6.20
TOTAL	1,044	-	-
<hr/>			
BFNE			
NZ Born/NZ Ethnicity	745	20.54	7.16
Non-NZ Born/NZ Ethnicity	114	20.40	7.41
Non-NZ Born/Non-NZ Ethnicity	185	21.15	7.15
TOTAL	1,044	-	-

Significant one-way ANOVA results:

- birth status had a significant effect on WDQ-SF scores,  $F(2, 1,041) = 3.81$ ,  $p = .023$ ,  $\eta_p^2 = .007$ . Post-hoc tests show that Non-NZ Born/Non-NZ Ethnicity students had lower WDQ-SF scores ( $M = 14.33$ ,  $SD = 7.42$ ) than those in the NZ Born/NZ Ethnicity group ( $M = 16.01$ ,  $SD = 7.23$ ),  $d = .23$ .

Non-significant one-way ANOVA results:

- there was no significant birth status effect for the PSS-10.
- there was no significant birth status effect for the BFNE.

Content Analysis Results: Worry

The distribution of worries for the combined male, female and mixed-gender discussion groups is shown in Table 17 below. An elaboration of worry categories is provided after the table along with a selection of the most relevant worry quotes. Additional quotes are available in Appendix K.

Table 17

*Frequency Table Showing the Distribution of Worry Themes for the Combined Male, Female and Mixed-Gender Discussion Groups*

Male Discussion Group Worry Themes	Frequency	% of Total
Academic	13	16.46
Financial	8	10.13
Future Concerns	2	2.53
Health	1	1.26
Relationships	32	40.51
Role Conflict	12	15.19
Self-Confidence	2	2.53
Study Expectations	9	11.39
TOTAL	79	100.00

Examining worries in each of these areas reveals that:

Academic worries can be sub-classified into: workload/time management (4/13); quality of teaching (3/13); grades (2/13); understanding university processes (2/13); and working to the university's timetable (2/13).

- Regarding workload/time management, Participant B (Male, 21-30, Arts and Social Sciences, NZ European) said: "...[the] workload can vary... you have real flat patches where you don't have much on and then bang! You're hit with a whole lot of deadlines all at once."

- Concerning quality of teaching, Participant P (Female, 21-30, Arts and Social Sciences, Kiwi) said: “...in my first year here there were a lot of strikes from the lecturers. It was annoying because the lecturers wouldn’t make any time up and I worked out that it was like \$60 I lost every time a lecture wasn’t on.”
- With respect to grades, Participant E (Male, 31-40, Arts and Social Sciences, NZ European/Maori) said: “It seems that the further through you go, the more important the grades seem to be.”
- Learning university procedures was problematic for some. Participant C (Male, 21-30, Arts and Social Sciences, NZ European) stated: “...as a first year student, a lot of it’s just like, university processes... the actual processes like essay writing...”
- Participant A (Male, 31-40, Arts and Social Sciences, NZ-Scandinavian-Maori) indicated that working to the university’s timetable was also a source of worry: “...you are at the whim of the timetable; that is out of your control.”

Financial worries can be broken into: earning enough money to be comfortable (7/8) and conforming to StudyLink regulations (1/8).

- Earning enough money to be comfortable was raised by Participant B: “...I pretty much live week to week... you can’t really save for something when you’re only pulling in \$200 to \$300 a week, and you still want to have fun and enjoy your time as a student...”
- On this same note, Participant G (Female, 21-30, Management, Pakeha) said: “I’m fairly fortunate. I live at home and I don’t pay rent, and I don’t

buy food, but it's still hard to try and save up for the things you want to do.”

- Further, Participant Q (Female, 41+, Arts and Social Science, No Ethnicity Specified) stated: “...being a mature student, my concerns or my worries aren't necessarily about my studies, but more about my finances and not being able to do things that I used to do when I wasn't a student.”
- With respect to StudyLink regulations, Participant B stated: “...I've been entitled to a student allowance, but that puts restrictions on you when you go out to work, when you just want to try and get a little bit more in your pocket.”

All Future Concern worries related to uncertainty about the future after tertiary education (2/2).

- Participant C said: “...where am I going to be in 5 years time? Is what I'm learning going to be relevant, or am I wasting my time?”
- Participant M (Male, < 21, Management, Pakeha) commented: “I really have no idea where my life is going to take me... I read a lot about statistics and stuff with people that leave university but can't get a job because they have all these qualifications but no work experience.”

The Health worry that was raised concerned mental well-being (1/1).

- The pressures of tertiary study can have a negative impact on the mental health of students. On this note, Participant I (Female, 31-40, Maori, Science and Engineering) said: “I had a mental breakdown, for instance, in the middle of [my] doctorate.”

Relationship worries can be sub-classified into: relationships at university (23/32); relationships with non-university students (5/32); and relationships with family members (4/32).

- Relationships at university were considered to be very important.  
Participant E said: “...the topic of relationships... deserves a little more emphasis. I’ve known some people who get really upset about that sort of thing.”
- Participant D (Male, < 21, Computing and Mathematical Sciences, NZ European) added: “Especially if you don’t like your lecturer.”
- With respect to student-staff relationships, Participant I said: “I had significant problems with supervisors... dysfunctional supervision.”
- Cultural worries were also raised. Participant F (Female, 21-30, Arts and Social Sciences, European – Polish) said: “...if you have special cultural, religious, or whatever, needs, you’re kind of left out...”
- Moreover, some students felt that they were not treated like human beings by the university system. Participant N (Female, 31-40, Arts and Social Sciences, Latin American) said: “...people that work here, they are very comfortable with the structure; this is their world and this is the only thing that they see. Because they work here, this is also part of their personal lives, so to some extent I guess they have difficulties to see that other peoples’ personal lives are not enclosed in these four walls.”
- To this, Participant L (Male, 21-30, Arts and Social Sciences, Samoan) added: “At the end of the day, the University’s a business and we are pretty much what we’ve just written [on these forms]: we’re numbers, we’re letters.”

- Participant O (Male, 31-40, Law, British) followed this by saying: “...it is a business, yes, but it’s also a consumer relationship. We are the consumers, whether it’s through StudyLink or our own funds; we are paying for a service. There are certain obligations they have; they want to be able to get their grades up and things, but it’s a symbiotic relationship. We’re supposed to be working together and I think they haven’t always worked that out.”
- Regarding relationships with non-university students, Participant E indicated that social interaction is often impeded by generalisations about students: “...people tend to make assumptions about you as a student once they learn that about you. They expect you to behave in certain ways and to have certain ideals.”
- In a similar vein, Participant J (Female, 21-30, Arts and Social Sciences, Maori/Pakeha) stated: “...all they see is this perception of a student, and you know they think we just go out and drink and have fun. They don’t consider it as real work.”
- Concerning relationships with family, Participant A said: “A huge worry for myself and my social circle. Those of us who have children; those of us who want children; those of us who are maintaining relationships external to academia – they’re critical in connection to mum, dad, brothers, sisters...”

Role conflict worries can be broken into: work/study conflicts (6/12) and personal life/study conflicts (6/12).

- Personal life/study conflicts caused a great deal of stress for some. Participant N stated: “I have personal life commitments and projects, so I

started getting worried and stressed about my situation... the University treats you as though you have nothing else to do.”

- This was supported by an anecdote provided by Participant O: “To give you an example, I had an assignment to do. Friday afternoon it was given, due on Monday morning and I had my children on the weekend, and no allowance. No – you’ve just got to do it.”
- Personal life/study conflicts were seen as an impediment to social relationships. Participant J said: “...the balance of work and social elements. That’s a huge thing.”
- Participant B highlighted the implications for romantic relationships, specifically: “...relationship problems can take your mind off the task at hand. I think it kind of makes relationships quite risky.”
- Work/study conflicts were, in some cases, severe. Participant D said: “I try not to work too much so it doesn’t affect uni, but you know, I end up working 30-35 hours a week and trying to do full-time study as well.”

All Self-Confidence issues related to speaking in class (2/2).

- Participant E said: “...there’s a disincentive to be seen as significantly different, or either stupid, or overly intelligent.”
- Giving a first year students’ perspective, Participant C added: “...that’s one thing that I know, myself. I’m always very keen not to give a wrong answer in class.”

Study Expectation worries can be sub-classified into: self expectations (3/9); social expectations (3/9); and family expectations (3/9).

- Self-expectations with relation to study were underscored as a significant source of worry. Participant H (Female, 41+, Law, Maori) said: “A major issue is expectation, my own expectations, and sometimes, because I think I have quite high expectations, you can sabotage yourself.”
- Social expectations induced worry for some students. Participant F said: “I think people encourage us to have high expectations. If you’re not aiming to achieve the best, then that’s not good.”
- Participant L commented that social expectations also have a racial dimension: “For me, there’s a stigma attached to being a Pacific Islander. In terms of success, in terms of social stigma. You know, we’re on the lowest stats; if you look up any stats, we’ll be on the lowest, and for me it was a big thing to prove that wrong.”
- Following this, Participant L spoke about family expectations: “It was made known to me that if I was only going to get Cs, there’s no point being here. I had my brothers, one who’s older than me, who came out of high school and went straight into work. He was supporting family back home, and so for me to just be at university and living it up was not an option.”

### Content Analysis Results: Stress

The distribution of stressors for the combined male, female and mixed-gender discussion groups is shown in Table 18 on page 57. An elaboration of stress categories is provided after the table along with a selection of the most relevant stress quotes. Additional quotes are available in Appendix L.

Table 18

*Frequency Table Showing the Distribution of Stress Themes for the Combined Male, Female and Mixed-Gender Discussion Groups*

Male Discussion Group Stress Themes	Frequency	% of Total
Academic	13	35.14
Financial	4	10.81
Future Concerns	1	2.70
Health	2	5.41
Immigration	2	5.41
Relationships	6	16.21
Role Conflict	9	24.32
TOTAL	37	100.00

Examining stressors in each of these areas reveals that:

Academic concerns can be sub-classified into: quality of teaching (3/13); cultural issues (2/13); institutional change (2/13); language barriers (2/13); workload/time management (2/13); lack of student control (1/13) and university processes (1/13).

- The quality of service delivery at the University was identified as a stress factor by students. Participant H (Female, 41+, Law, Maori) said: “[It’s an issue of] getting your money’s worth. A lot of these institutional changes actually impact on the quality of the teaching that you receive.”
- As a stress factor, Participant G (Female, 21-30, Management, Pakeha) commented on cultural issues: “...the system was designed by white people, for white people and white people’s values.”
- Institutional change was seen as a significant stressor. Participant J (Female, 21-30, Arts and Social Sciences, Maori/Pakeha) stated: “It will exacerbate the stress levels of students because fees will go up and there will be less administrative staff support.”

- Language barriers presented obstacles for some students. Participant R (Male, 21-30, Management, People's Republic of China) said: "I remember when I just came to New Zealand four years ago... it was really hard for me to study in a second language. The way we study English in China is different from studying *in* English."
- When asked to identify major sources of stress, Participant C (Male, 21-30, Arts and Social Sciences, NZ European) stated: "I reckon workload and time management."
- Participant M (Male, < 21, Management, Pakeha) added: "I don't know if they purposely do it, but all massive assignments are always due in the same week."
- The lack of student control concerning major institutional changes was also a stress factor. Participant F (Female, 21-30, Arts and Social Sciences, European – Polish) said: "There's not a lot of student input as they're thinking about these changes."
- With respect to stress arising from university processes, Participant I (Female, 31-40, Maori, Science and Engineering) commented: "...[the] complaints process was three months of hell."

Financial stressors can be grouped into: unexpected bills (2/4); conforming to StudyLink regulations (1/4) and earning enough money to be comfortable (1/4).

- Although students reported that earning enough money to be comfortable was their primary financial worry, it is interesting to note that their biggest financial stressor was unexpected bills. Participant A (Male, 31-40, Arts

and Social Sciences, NZ-Scandinavian-Maori) said: “Just those random things; you can guarantee they’re going to occur, you just don’t know when it’s going to happen. We’re on low disposable incomes, we can’t be financially prepared to go ‘bang’, it’s okay, we can move on.”

- Participant B (Male, 21-30, Arts and Social Sciences, NZ European) indicated that StudyLink policies often cause stress for university students, particularly the fact that students receiving an allowance are only permitted to work short hours: “...I got a job half way through that year and it was like, I really wanted to take all the hours I could get so I could show that I was a good worker... so there was always stress with having to deal with StudyLink...”
- When asked to discuss the most significant stressors for students, Participant J said: “The main one would be financial.”

The Future Concerns stressor that was raised involves uncertainty about acquiring employment after tertiary education (1/1).

- Approaching the end of his degree, Participant B said: “...I’ve applied for a few jobs, and [am] waiting to hear back after an interview I had earlier this week... I want to be sure that I’ve got something to go into and... once uni’s finished I can keep paying the bills.”

All Health stressors concerned the quality of health service provision (2/2).

- There was some concern about support for people with certain disabilities. Participant F said: “...I have a muscular function disorder... you get the

support, but because I'm not a status quo illness... because I can still sit in a lecture... there's support but you have to come and get it."

Immigration stressors can be divided into: employment (1/2) and residency requirements (1/2).

- Regarding employment, trying to find work is a stressful undertaking for overseas students. Participant G said: "...I'm not a permanent resident, although I've got a work permit. Not many employers would like to hire a Chinese graduate."
- Wishing to stay in New Zealand can present stressful challenges for some overseas students. Participant R said: "...for those of my friends who want to stay in New Zealand, it's really hard because we are foreigners."

Relationship stressors can be sub-classified into: relationships at university (2/6); isolation (3/6) and flatmates (1/6).

- Participant E (Male, 31-40, Arts and Social Sciences, NZ European/Maori) highlighted relationships with university staff as a stress factor: "I'm very conscious of the need not to get on a lecturer's bad side. I mean, I imagine if you're a masters or doctorate student, if you piss off your supervisor, you're toast."
- Social isolation can occur within some study programmes. Participant I commented on this as a source of stress: "It's isolation. I've worked seven days a week for a lot longer than 9-5... there's lack of sleep, a loss of friends. A whole lot of things."

- The comments of Participant O (Male, 31-40, Law, British) reinforce this: “I’ve actually got a flat in Auckland that’s my own. You know, thanks to Housing New Zealand – hooray. Because I don’t – I’m not from New Zealand – I don’t have family here, I find... I’m sitting at home, realising that because of the amount of work I’m putting in at university, I’ve basically lost all my friends and I’m thinking ‘what the hell now?’. I don’t know anybody; I’m at a loose end.”
- Participant P (Female, 21-30, Arts and Social Sciences, Kiwi) added: “...I understand what you mean, because you do lose contact with people and you just can’t catch up with them because you’ve got no time.”
- It was also stated that flatmates can sometimes be a cause of stress. Participant P said: “I think it’s really hard, and when I get the most stressed is when something in my flat isn’t quite right.”

Role Conflict stressors can be sub-divided into: to work/study conflicts (7/9) and personal life/study conflicts (2/9).

- Participant D (Male, < 21, Computing and Mathematical Sciences, NZ European) indicated that work/study conflicts were primary stressors: “[It] certainly creates the most stress. Basically all of my stress.”
- Participant B added: “It always really has for me.”
- When asked about major stressors, Participant G said: “[It’s] balancing the financial with the other things you have to do.”
- Regarding personal life/study conflict, Participant F said: “A lot of students are pushing themselves... until they break.”

*Content Analysis Results: Social Anxiety*

The distribution of social anxiety concerns for the combined male, female and mixed-gender discussion groups is shown in Table 19 below. An elaboration of social anxiety categories is provided after the table along with a selection relevant social anxiety quotes. Additional quotes are available in Appendix M.

Table 19

*Frequency Table Showing the Distribution of Social Anxiety Themes for the Combined Male, Female and Mixed-Gender Discussion Groups*

Male Discussion Group Social Anxiety Themes	Frequency	% of Total
Interaction with Family	5	12.82
Interaction with University Peers	24	61.54
Interaction with Non-University Peers	5	12.82
Language Barriers	2	5.13
Racial Stigma	3	7.69
TOTAL	39	100.00

Examining social anxiety issues in each of these areas reveals that:

Interaction with Family social anxiety issues can be sub-classified into: family obligations (3/4); family expectations (1/4) and a lack of common ground (1/1).

- Elaborating on familial concerns, Participant L (Male, 21-30, Arts and Social Sciences, Samoan) remarked: “[It’s] family obligations and wanting to do the very best you can so you’re not letting them down.”
- Participant R (Male, 21-30, Management, People’s Republic of China) added: “...my family... want me back, and also my girlfriend’s parents want me to go back to China.”

- With respect to family expectations, Participant Q (Female, 41+, Arts and Social Sciences, No Ethnicity Specified) said: “I’m the youngest of 12. None of my other family or siblings have got a university degree. My sister went through Tec, and she got a media arts degree through Tec, but she’s not using it, so she’s wasted her four years of study according to [my family.]”
- A lack of common ground with family was also cited as a social concern. Participant K (Female, 21-30, Science and Engineering, Pakeha) said: “They have no idea what it is you do. Then you try to explain it to them, but you know they’re going to get bored with what you tell them because you know they’re not really interested.”

Interaction with University Peers social anxiety issues can be sub-classified into: interdisciplinary segregation (5/24); cultural issues (5/24); fitting in with student culture (3/24); mature student issues (3/24); younger student issues (3/24); isolation (2/24); relationships with classmates (2/24); and personal expression (1/24).

- Students mentioned that they seldom mix with people from different schools within the University. Participant A (Male, 31-40, Arts and Social Sciences, NZ-Scandinavian-Maori) said: “We do not have a successful interdisciplinary relationship for our undergrads. It really is just a stab in the dark as to who you’ll meet down at the banks. Otherwise, we do tend to stick to our own disciplines.”
- The perceived divide between students had implications beyond socialising for some. Participant D (Male, < 21, Computing and

Mathematical Sciences, NZ European) said: "...it may stop you from taking papers in another subject... I'm doing a political science paper this semester, but I'm doing that because one of my friends and me... we thought we'd try something completely random. If I'd known someone in that department, or in a different department, I may have taken more different papers earlier on..."

- Cultural issues were significant social concerns for many of the participants. Participant I (Female, 31-40, Science and Engineering, Maori) said: "[I've experienced] isolation from my own people and my own various factions of Maori academia within this institution, on top of isolating factors within non-indigenous communities as well."
- Other students found that people were making cultural assumptions about them based on their appearance. Participant J (Female, 21-30, Arts and Social Sciences, Maori/Pakeha) said: "People will look at me and think that I'm a white person, but I'm actually part Maori. At times I've spoken up and I've been chastised by both parties, cut down by both groups..."
- Participant F (Female, 21-30, Arts and Social Sciences, European – Polish) remarked that she felt there was some hostility towards the 'dominant culture': "Being the European, you stand up and say something and you're attacked, and they can't understand that you're offended and that their attack actually hurt you..."
- Fitting in with student culture was an issue for some, especially where alcohol use is concerned. Participant C (Male, 21-30, Arts and Social Sciences, NZ European) said: "...I guess I find it reasonably difficult, in

some ways, to fit into the after hours student lifestyle. I'm not really a big drinker.”

- Participant B (Male, 21-30, Arts and Social Sciences, NZ European) added: “...if you're in a setting where most people are under the influence, or heavily under the influence, and you're not, it's sort of hard to fit in.”
- Participant J felt that mature students sometimes have difficulty interacting with younger students: “...the older ones feel that they have... a lot to offer, and in some cases they do... they feel that they're not being listened to.”
- Difficulties were also perceived for younger students. Participant M (Male, < 21, Management, Pakeha) said: “...I'm the supposed 'Generation Y', where, you know, we just want to take, take, take, take, take from everyone... how do I present myself to say 'I want to give to your organisation'?”
- Isolation was another big social issue. Participant J said: “...those people who are doing those self-directed studies... can often feel quite isolated... everything is on your own unless there are facilities in place and people are creating opportunities for you to be a part of the group.”
- Participant O (Male, 31-40, Law, British) stated that relationships with classmates can be extremely important for students aiming to get into certain professions: “You get a bad name here, going back to the bad name, you're not in...”
- Regarding difficulties with personal expression, Participant C stated: “...I go to mass every Monday and I actually get quite peeved by the people

who run Student Life. Even though it's the same religion, it's really conflicting... the way people want to present it."

Interaction with Non-University Peers social anxiety issues can be sub-classified into: social expectations (3/5); lack of common ground (1/5) and superficiality of interaction (1/5).

- With reference to social expectations, Participant J said: "People my age just don't get it; they don't understand what being a student is all about. They always say 'so, when are you going to get a job?', and when I say to them 'well actually, I'm going back to do more study', their jaw drops."
- Participant Q said: "From my perspective, coming back to study at my age, I've got people saying 'so what are you going to do with it?'. I presume they mean my degree. First of all, I'm going to hang it on the wall and I'm going to stare at it a lot, because I didn't even get School C... there's this pressure of 'what are you going to do with it?' You know, you've got to get out there and make gazillions of dollars."
- Lack of common ground was cited as a reason that interaction with people outside of university is sometimes difficult. Participant B said: "I don't know hardly anything about mechanics, or cars, or boy-racer culture... sometimes I find myself in those circles and I just cannot care less about the dynamics going on there and the things they're interested in."
- Superficiality of interactions with non-university students was also considered to be a social impediment. Participant B said: "...you kind of just know them on a superficial basis... I guess when you go through uni you follow a sort of path or a particular subject or whatever... there were

people you used to have a lot more to do with a few years back or back in school, and all of a sudden you don't have that anymore. It becomes really superficial.”

All Language Barrier social anxiety issues relate to being perceived as stupid due to inability to speak perfect English (2/2).

- Participant N (Female, 31-40, Arts and Social Sciences, Latin American) said: “...for some reason I feel this need to tell people that I have been living here for a few years and I am a citizen, now. It's like telling them I have passed all the tests – the English tests and everything and I have been accepted as a citizen... I think I have this need of proving I am not stupid.”

All Racial Stigma social anxiety issues concerned being prejudged based on racial affiliation (3/3).

- Participant L said: “There's plenty of literature around on it; you just do a library search on that kind of stuff. Stigma, racism... it's out there and the reality of it is that people actually live it.”

## CHAPTER FOUR: DISCUSSION

### Normative Comparisons

#### Worry Domains Questionnaire – Short Form

A comparison of the University of Waikato WDQ-SF data with normative data from an American student population (Stöber & Joormann, 2001) revealed that students from the New Zealand university reported higher worry scores ( $M = 15.75$ ,  $SD = 7.50$ ) than their American counterparts ( $M = 12.15$ ,  $SD = 7.86$ ). There was a medium effect size ( $d = .47$ ), indicating that the difference is clinically significant (Cohen, 1988).

This observed worry difference can be explained in several ways. First, it is possible that worry findings emerged due to differences in the sample compositions of the respective studies; second, the worry scores may reflect underlying cultural differences; and third, worry may have been influenced by differences in the real-world challenges faced by tertiary students in New Zealand and America.

Differences between the sample compositions of the two studies were substantial. The Stöber and Joormann (2001) recruited undergraduate psychology students from an introductory course at the Pennsylvania State University, whereas the present study sought a representative cross-section of students at the University of Waikato that included undergraduate and graduate students from all disciplines. While scores on the WDQ-SF were not affected by school of study, it

is possible that they were influenced by level of study (that is, undergraduate versus graduate).

The pressures placed on graduate students are generally more intense than those experienced by undergraduates. In addition to regular student concerns, graduates are more likely to have family obligations, are often involved with teaching, face the challenges of conducting research and must maintain positive relationships with supervisors (Hyun et al., 2006). Facing greater challenges and more responsibilities, graduate students have more potential sources of worry than undergraduates and it would be unsurprising to find that they report higher scores on worry measures.

However, as the present study did not ask participants to indicate whether they were studying at undergraduate or graduate level, it is not possible to determine whether WDQ-SF scores were influenced by level of study. Consequently, further research will be required to establish whether the inclusion of graduate students in the sample of the present study was responsible for the elevated WDQ-SF scores of Waikato students relative to the undergraduate sample of Stöber and Joormann (2001).

Alternatively, worry differences between the two samples may be due to the impact of culture. Attempting to define culture is no simple matter as the term is used heterogeneously within and across many disciplines (for a summary of the most influential conceptualisations, see Rapport & Overing, 2000). A generic psychological definition of culture describes it as “[t]he system of information that codes the manner in which people in an organized group, society or nation interact with their social and physical environment” (Reber & Reber, 2001,

p.170). Explicit to this formulation is the idea that culture functions as a guide to socially acceptable modes of behaviour, but there is also an implicit proposition: if culture is a ‘system of information’, it must manifest (at least in part) within the minds of individuals. Although the precise nature of internal ‘cultural information’ is debated – for instance, it may include culture-specific beliefs (Ingold, 2002), values (Rapoport, 2002) and/or symbolic meanings (Foster, 2002) – it is apparent that culture influences what individuals think as much as how they behave.

Moreover, contemporary psychological research into the cognitive dimension of culture reveals that, beyond influencing thought content, the culture within which the individual is socialised also shapes how they think. An illustration of this can be found by comparing cultures at the highest level of aggregation: while individuals from cultural backgrounds that emphasise harmony, compromise and holism (traditionally ‘collectivist’ or ‘Eastern’ cultures) tend to think in dialectical terms, those from cultures that value personal agency and independence (traditionally ‘individualist’ or ‘Western’ cultures) have a tendency to think in ways that appeal to the principles of formal logic (Nisbett, Peng, Choi & Norenzayan, 2001; Peng & Nisbett, 1999; Heine & Norenzayan, 2006).

It is important to note that the degree to which inferences can be made about individuals based on their affiliation with broad cultural groups is limited due to the fact that there are often, within large cultural populations, numerous subcultures (Smith, Spillane & Annus, 2006). It is equally important, however, to acknowledge that subcultures are not impermeable social units that exist in isolation from each other. Descriptions of ‘culture’ in the overarching sense refer

to those commonalities that exist between subcultures as a result of interdependence and interaction (Rosman & Rubel, 1995). With this in mind, is it possible to explain the difference in WDQ-SF scores that was found between University of Waikato and Pennsylvania State University students in the present study by appealing to cultural differences between New Zealand and America.

As 'Western' countries, both New Zealand and America are placed at the individualist end of the cultural spectrum. America, described as "...one of the most individualistic countries in the world" (Triandis, 1994, p.171), takes the more extreme position and boasts a culture that gives strong emphasis to self-assertion, individuality and independence (Nisbett et al., 2001; Marcus & Kitayama, 1991; Triandis, 1989; Brewer & Chen, 2007). Socialisation in such an environment may encourage some individuals to adopt a cognitive style characterised by augmented beliefs about their ability to overcome life's challenges. As researchers have found an inverse association between self-efficacy and worry (Stanley et al., 2002; Siddique, LaSalle-Rici, Glass, Arnkoff & Diaz, 2006; Davey, Jubb & Cameron, 1996; Fretz, Kluge, Ossana, Jones & Merikangas, 1989; Mulkey & O'Neil, 1999), a cultural impetus towards such a cognitive style would account for the significantly lower WDQ-SF scores of the Pennsylvania State University students when compared with those from the University of Waikato. Further research will be required to investigate this hypothesis.

A third possibility is that WDQ-SF differences arose due to differences in the real-world challenges associated with tertiary study in New Zealand and America. A comparison of these challenges is beyond the scope of this thesis, however, as it

would require an in-depth analysis of the complex financial, social, academic and political factors that affect the lives of students in both countries. In recognition of this limitation, the present discussion is restricted to an outline of those challenges and difficulties that are likely to be significant sources of worry for the majority of tertiary students in New Zealand.

The most obvious pressure that is unique to students is the cost of tertiary education. The most recent national data show that, in 2006, a total of 470,507 individuals owed money on student loans. Comparisons reveal that the average amount owed has increased from \$12,413 in 2000 to \$15,833 in 2006, corresponding with steady increases in tertiary fees over the same period (Ministry of Education, n.d.). This trend of increasing tertiary student debt is certainly cause for concern as students are forced to meet the rising costs of education each year in pursuit of their chosen qualifications.

In addition to debt, New Zealand tertiary students face financial difficulties with day to day living. Although full-time students may request government assistance with living costs, borrowing is limited to the sum of \$150 per week and the total is added to the their student loan (Ministry of Social Development, 2008). An allowance that does not have to be repaid is also available, but the eligibility criteria are restrictive: the most recent figures show that only 12.1% of enrolled tertiary students were granted student allowances in 2006 (Ministry of Education, n.d.). Most tertiary students, therefore, must work to support themselves whilst they study. This situation is far from ideal as students become forced to balance the demands of paid employment against their study commitments and social/family obligations. The significance of such role

conflicts as a source of worry was underscored by participants in all three of the discussion groups of this study.

The financial difficulties of tertiary students are being further compounded by rising costs of living in New Zealand. Economic reports show that the prices of necessities such as petrol, food and rent are increasing (Westpac Economics Division, 2007), which puts a strain on individuals with limited incomes as the buying power of their earnings is slowly eroded. Some may choose to compensate for this by increasing their paid work hours, but for the tertiary student this is an impractical resolution as it reduces the amount of time and energy available to invest in study. This situation may be described as a 'double bind' as the student must choose between working more and sacrificing quality of education, or accepting price rises and sacrificing quality of life.

New Zealand tertiary students may also have cause to worry about negative attitudes towards them from other non-student groups. Relationship difficulties with non-university students were expressed by members of all three discussion groups in the present study, with two common themes emerging: prejudgment of students based on negative stereotypes and a general lack of understanding about the requirements of tertiary study. Although these findings are consistent with numerous anecdotal reports, the absence of research concerning public attitudes towards students in New Zealand and the small number of discussion group participants (n=18) in the present study prevent the generalisation of these findings to the total student population. Further research will, therefore, be required to determine both the degree to which other social groups express

negative sentiment towards tertiary students in New Zealand and whether this has a significant impact on student worry levels.

#### Perceived Stress Scale – 10

Comparing the PSS-10 data for the University of Waikato student sample to normative data from an American student population (Roberti et al., 2006) revealed that students from the New Zealand university reported higher worry scores ( $M = 18.83$ ,  $SD = 6.55$ ) than their American counterparts ( $M = 18.3$ ,  $SD = 2.89$ ). The effect size ( $d = .08$ ) was negligible (Cohen, 1988).

These results demonstrate that, while statistically significant, the marginal difference in group means is not clinically significant. Kraemer and Kupfer (2006) provide an illustration of the difference between these concepts: tests of statistical significance express the likelihood that differences observed between populations are non-random and therefore did not occur due to chance variation; effect sizes, by contrast, indicate the magnitude of the differences observed between populations and allow researchers to determine whether they have relevant clinical implications. Thus, the PSS-10 difference of 0.53 observed between New Zealand and American students was not due to chance but it is so small that it is clinically meaningless.

#### Brief Fear of Negative Evaluation

Comparing the BFNE data for the University of Waikato student sample to normative data from an American student population (Carleton et al., 2006)

revealed that students from the New Zealand university reported higher social anxiety scores ( $M = 34.65$ ,  $SD = 8.41$ ) than their American counterparts ( $M = 30.70$ ,  $SD = 9.04$ ). The effect size ( $d = .41$ ) was small-medium, indicating that the difference is clinically significant (Cohen, 1988).

There are several potential explanations for this observed social anxiety difference. First, there are differences in the sample compositions of the two studies; second, it is possible that cultural differences are responsible; and third, social anxiety may have been influenced by differences in the social factors that affect tertiary students in New Zealand and America.

Participants in the Carleton et al. (2006) study were undergraduate students from the University of Houston, whereas the University of Waikato sample, as previously indicated, consisted of students from all levels of study. It is difficult to reconcile this difference with the social anxiety findings, however, as although graduate students generally have more reasons to worry than undergraduates (Hyun et al., 2006), there is no research to indicate that graduate students experience increased levels of social anxiety. Moreover, the present study found an inverse relationship between age group and scores on the BFNE. Although it is not possible to compare the ages of graduate and undergraduate participants, it is reasonable to assume that graduates were, on average, older and thus their inclusion in the University of Waikato sample is more likely to have decreased the mean sample score for the BFNE than to have raised it. Further research will be required to confirm this assertion, but present indications suggest that differences between the University of Waikato and Carleton et al. (2006) study samples do not adequately explain the observed difference in social anxiety.

Cultural factors provide an alternative explanation. As discussed previously, American culture is characterised by self-assertion, individuality and independence (Nisbett et al., 2001; Marcus & Kitayama, 1991; Triandis, 1989; Brewer & Chen, 2007). Although there are numerous American subcultures (Rosman & Rubel, 1995), the status of self-assertion as a primary value within the overarching cultural framework suggests that mainstream socialisation processes in the United States are likely to foster self-confidence and to discourage fear of negative evaluation. This does not mean to imply that Americans are less prone to social anxiety than others – indeed, mental health data from America (Kessler et al., 1994) and New Zealand (Browne, 2006) show similar prevalence rates for social anxiety disorder in the general population – but it does suggest that psychologically healthy individuals who are shaped by ‘mainstream American culture’ are less likely to cultivate a fear of negative evaluation. It is therefore possible that the lower BFNE scores reported by students in the Carleton et al. (2006) study relative to students at the University of Waikato were the result of American cultural forces that promote self-assertion and diminish fear of negative evaluation. Further research will be required to investigate this hypothesis.

A third possibility is that the difference in BFNE scores reflects dissimilarities in the social factors affecting tertiary study in New Zealand and America. Students in the discussion groups of the present study identified relationship concerns as significant sources of worry in their lives. When asked to elaborate on these concerns, students reported that they experienced relationship difficulties both at university and with non-university students.

Social concerns at university were complex. Among the most frequently cited were cultural/racial issues, interdisciplinary segregation, difficulties fitting in with student culture, feelings of isolation and communication problems between mature (that is, older) students and their younger counterparts. This brief list highlights the diversity of 'life on campus' and suggests that students at the University of Waikato face social challenges related to their cultural affiliations, the degree to which they appreciate the student lifestyle and even their age group.

Social concerns involving non-university students were less complicated. Discussion group participants indicated that their interactions with individuals from outside of university were characterised by negative social expectations and a lack of common understanding. Illustrations of the former included constant queries as to when the student was going to find gainful employment and challenges about the uses to which their qualification would eventually be put. Examples of the latter ranged from difficulties socialising with non-university peers due to a lack of mutual interests through to conversations in which non-students declared their incomprehension as to why people continue with tertiary study.

Research with American tertiary students reveals a different pattern of concerns. While adjustment to the university environment and social integration are considered to be important issues (Gerdes & Mallinckrodt, 1994), students in the United States have a tendency to rate examination stressors and conflicts within intimate and family relationships as more distressing than relationship difficulties at university (Li, Lin, Bray & Kehle, 2005). An extensive literature

search did not reveal any data on the degree to which American tertiary students experience social problems with non-student populations, however.

Contrasting the data from the University of Waikato discussion groups with the American research findings outlined above must be done with caution for several reasons. First, the small sample size of the discussion groups ( $n = 18$ ) prevents the generalisation of research findings to the total student population. Second, even if findings could be generalised, the University of Waikato is one tertiary institution among many in New Zealand and so the data might not be representative at the national level. These limitations notwithstanding, the issues raised by the discussion group participants did not appear outlandish or, upon face value, to be institutionally specific.

Operating, for the moment, under the working hypothesis that the discussion group findings are representative of tertiary student concerns nationally, it is apparent that social difficulties, particularly those arising at university, are considered to be more problematic by New Zealand students than their American counterparts. This does not necessarily mean that the social factors associated with tertiary study in New Zealand present greater challenges to students than those in the United States; it could be the case that American students encounter similar challenges but are less concerned by them. Both of these explanations would account for the higher BFNE scores reported by students at the University of Waikato relative to students in the Carleton et al. (2006) study, however, and warrant further investigation.

## Within-Study Comparisons

### Gender

Gender comparisons for the University of Waikato sample show that women reported higher scores on the WDQ-SF ( $M = 16.34$ ,  $SD = 7.51$ ) than males ( $M = 14.47$ ,  $SD = 7.31$ ); higher scores on the PSS-10 ( $M = 19.55$ ,  $SD = 6.49$ ) than males ( $M = 17.27$ ,  $SD = 6.42$ ); and higher scores on the BFNE ( $M = 21.05$ ,  $SD = 7.38$ ) than males ( $M = 19.64$ ,  $SD = 6.84$ ). Effect sizes for each measure ( $d = .25$ ,  $.35$  and  $.20$ , respectively) indicate that, although differences were relatively small, they are clinically significant (Cohen, 1988).

These results are consistent with the results of other studies: research indicates that females have a tendency to report greater worry levels than males (Wood et al., 2005; Robichaud, et al., 2003; Dugas, et al., 1997), greater perceived stress levels than males (Cohen & Williamson, 1988; Hudd et al., 2000; Hall et al., 2006) and higher levels of social anxiety than males (Duke et al., 2006; Stopa & Clark, 2001; Carleton et al., 2007). An examination of social factors provides insight as to why this is so.

Betz (1994) highlights the importance of educational systems for the transmission of ideas about socially acceptable gender roles. She writes that gender stereotyping in institutions of higher education is a factor that impedes the advancement of women in terms of academic achievement and career opportunities. Institutional attitudes stemming from gender stereotypes may lead to active or passive discouragement of female students. Active discouragement may take the form of overt or covert behaviours that disrupt the progress of

female students, whereas the passive form is described by the author as a 'null environment', in which female students are neither praised nor disparaged, but simply ignored.

The results of a recent New Zealand survey show that university environments may not be the problem, however. Ritchie and Ritchie (2005) distributed an attitude questionnaire to 48 female students in a course entitled 'psychology and women' at the University of Waikato, seeking their opinions on a range of social issues pertaining to women. Sixty-five percent of the sample saw the need for a women's movement in New Zealand, but only 15% perceived women's equality in education to be the most important goal. By contrast, 31% of the sample reported promoting women's equality in the workforce as a primary objective and 31% indicated that redressing social inequalities for women was of the greatest importance. In the workforce, the greatest disadvantages to women were considered to be rates of pay and choice of occupation; in the social sphere, the biggest concerns were rape, sexual harassment, domestic violence and home/work role conflicts.

Although the small sample size and the specificity of the population surveyed make it difficult to generalise these findings to female students en masse, the findings of the Ritchie and Ritchie (2005) survey do suggest that women at New Zealand universities encounter work-related and social problems that are not experienced by their male counterparts. The additional strain placed on female students who find themselves fighting a social system that hinders their advancement would explain the higher worry, stress and social anxiety scores reported in the University of Waikato sample.

The content analysis of the present study revealed that the female discussion group was the only group to list social and family expectations for study as a source of worry. Although the specific issues raised differed from those found in Ritchie and Ritchie (2005), the sensitivity shown by female students towards the opinions of others does lend support to the idea that women in New Zealand are at a social disadvantage.

### Age

One-way ANOVA testing revealed that age had a significant effect on WDQ-SF scores ( $F(3, 1,078) = 5.25, p = .001, \eta_p^2 = .014$ ) and on scores for the BFNE ( $F(3, 1,078) = 8.33, p < .001, \eta_p^2 = .023$ ). Post-hoc testing for the WDQ-SF revealed that: students in the < 20 age group reported significantly higher worry scores than the 41+ age group ( $d = .44$ ), as did the 21-30 age group ( $d = .36$ ). Post-hoc testing for the BFNE revealed that: students in the < 20 age group reported significantly higher social anxiety scores than the 31-40 ( $d = .31$ ) and 41+ age groups ( $d = .55$ ); and the 21-30 age group was found to report significantly higher social anxiety than the 41+ age group ( $d = .42$ ). All effect sizes were small-medium, indicating that the observed differences are clinically significant (Cohen, 1988)..

Analysing these findings, there is a clear trend for decreasing WDQ-SF scores (< 20  $M = 16.41$ ; 21-30  $M = 15.98$ ; 31-40  $M = 14.87$ ; 41+  $M = 13.23$ ) and decreasing BFNE scores (< 20  $M = 21.58$ ; 21-30  $M = 20.76$ ; 31-40  $M = 19.46$ ; 41+  $M = 17.71$ ) as student age increases. Investigation reveals separate explanations for each of these trends.

The decrease in worry with increasing age can be accounted for by coping resource differentials. Hamarat et al. (2001) investigated coping resource availability, perceived stress and life satisfaction as a function of age. The study sample (n = 189) was recruited from a community setting in the United States and participants were divided into three categories: younger adults (18-40, n = 65), middle-aged adults (41-65, n = 62) and older adults (65+, n = 63). Younger adults reported higher perceived stress than middle-aged and older adults and were found to have lower scores than both groups on a measure of coping resources in five key areas: financial freedom; confidence in coping abilities; problem solving skills; social support; and acceptance of self, others and the world.

Similar results emerged in a more recent study (Amirkhan & Auyeung, 2007), suggesting that, relative to middle-aged and older adults, younger adults lack financial resources, lack problem solving experience and have less developed social networks. This stands to reason as, by definition, young adults have only recently made the transition into adulthood and can therefore be expected to have had less contact with the workforce and the difficulties of adult life.

The inverse relationship found between worry and age in the present study makes sense in light of the coping resource deficits identified between younger and older adults: the constant and often complex challenges of adult life are a greater source of worry for the young adult of limited means, problem-solving experience and social support.

The decrease in social anxiety with increasing age can be understood in developmental terms. Rey (1995) believes that one of the most important tasks of adolescence is the establishment of personal identity. This process involves

distancing oneself from family relationships in favour of stronger peer associations to facilitate self-exploration and self-expression.

Peer group integration requires social approval. Côté (1996) describes this process as a system of exchange wherein the individual adolescent projects images of the self that comply with group standards in order to receive acceptance. As social desirability factors are of such importance during this stage of life, adolescents are likely to be extremely conscious of and sensitive to the evaluations of others.

When entering young adulthood, the attention of the individual shifts from the development of personal identity to occupational considerations and the establishment of intimate relationships (Saddock & Saddock, 2003). Although the individual is no longer as concerned with positive peer evaluations as they were in adolescence, a strong desire to experience romantic relationships suggests that most young adults remain sensitive to the evaluations of others, albeit to a lesser extent.

Priorities shift again in the advance to middle adulthood. Adults in their 30s have generally founded families and taken on child-rearing responsibilities. By middle-age, children have generally left home and the parent begins to reassess their obligations to their family, partner and themselves. Reassessment may culminate in the desire to radically alter life direction in order to achieve greater life satisfaction (Saddock & Saddock, 2003). By middle-age the individual has achieved the formation of personal identity, gained acceptance to peer groups and experienced intimacy. The focus of attention is on family concerns and personal development, with a minimal emphasis on the evaluations of other people.

The developmental sequence outlined above describes a trajectory from adolescence to middle-adulthood in which the importance ascribed to social evaluation changes dramatically. Peaking in adolescence, concerns about evaluation from others gradually diminish as developmental milestones are reached and the focus of attention shifts from peers, to intimate partners, family and the self. This pattern is clearly reflected in the inverse relationship found between social anxiety and age in the present study.

### School of Study

No effects were found for school of study on scores for the WDQ-SF, PSS-10 or BFNE. This suggests that the institutional climates within each school of study (Arts and Social Sciences; Computing and Mathematical Sciences; Education; Law; Management; and Science and Engineering) are equivalent in the extent to which they impact on the levels of worry, stress and social anxiety experienced by students. It must be noted, however, that the present study did not investigate worry, stress or social anxiety patterns. Thus, although the total WDQ-SF, PSS-10 and BFNE scores of students were similar across disciplines, it is possible that students place emphasis on different worry, stress and social anxiety domains as a function of the requirements and culture of their respective learning environments.

### Ethnicity

One-way ANOVA testing revealed that ethnicity had a significant effect on BFNE scores ( $F(2, 1,079) = 9.09, p < .001, \eta_p^2 = .017$ ). Post-hoc tests reveal that:

students who identify as NZ Maori reported lower social anxiety scores than both NZ European/European/Pakeha students ( $d = .42$ ) and those who identified with a Non-NZ Ethnicity ( $d = .42$ ). Effects sizes are small-medium, indicating that they are clinically significant (Cohen, 1988).

It is possible that the lower BFNE scores observed for Maori students relative to other ethnic groups are due to the influences of culture on interaction style and social interaction expectations. This hypothesis must be advanced cautiously, however, in recognition of the fact that ‘Maori culture’ is made up of numerous, diverse tribes and cannot be thought of as a homogeneous collective (Ritchie, 1992). Thus, the degree to which values thought of as ‘traditionally Maori’ are adopted by individuals will depend on a number of factors including the particular community in which they were raised.

The difficulties of inferring values based on cultural affiliation notwithstanding, it can at least be argued that identifying with a given culture increases the likelihood that the individual will adopt that culture’s core values. With this in mind, discussion now turns to some of the central values of Maori culture and their implications for socialisation. Rochford (2004) described a holistic culture when he wrote that the traditional Maori “...based their social and cultural structures around concepts of interconnectedness and interdependence” (p.44). The recognition of interconnections in social organisation suggests a collectivist orientation, but while collectivism in Eastern cultures emphasises the boundaries and limits of social roles (Nisbett et al., 2001), Maori cultural values encourage the social participation of all members of society. This is exemplified in the principle of *kotahitanga*, the process of political consensus – “by this

everyone is brought together, all personal differences of opinion are aired and, even if they cannot be incorporated in the final decision, given respect.” (Ritchie, 1992, p.57).

More generally, Patterson (1992) writes that Maori society, although hierarchical, has an inherent respect for people. Despite the fact that some wield more authority than others, there is a cultural impetus to ensure that individuals are “...treated with respect... understood and cared for, as a part of a harmonious interlocking whole...” (p. 26). The Maori term for this principle is manaakitanga and it demands that “[f]irst, and last, the concerns of the whanau or the hapu, the tribe or the Maori people generally, must be put before anything else.” (Ritchie, 1992, p.60).

The preceding does not mean to suggest that Maori society is somehow utopian; indeed, statistics highlight a number of social issues affecting Maori people including overrepresentation in prison populations and poorer health outcomes for Maori youth relative to other ethnic groups (Durie, 2003). The conceptual outline does suggest, however, that Maori communities respecting the traditional principles of kotahitanga and manaakitanga possess a collective strength based on the inclusion and valuing of each individual. Socialisation in such an environment may lead to reduced levels of social anxiety as each person in the community feels the right to voice their own opinions, perhaps even heatedly (kotahitanga), without fear of judgment or negative evaluation from others (manaakitanga).

This is an oversimplified account of an extremely complex culture, but it offers a potential explanation for the lower BFNE scores reported by Maori students in

the present study relative to students from the NZ European/European/Pakeha and Non-NZ Ethnicity groups. As a recommendation for future research, comparing the socialisation experiences of Maori and non-Maori students would be a useful first step towards determining whether differences in culturally-mediated socialisation processes have an impact on social anxiety levels.

### Birth Status

One-way ANOVA testing showed that birth status had a significant effect on WDQ-SF scores,  $F(2, 1,041) = 3.81, p = .023, \eta_p^2 = .007$ . Post-hoc tests show that: Non-NZ Born/Non-NZ Ethnicity students had lower WDQ-SF scores than those in the NZ Born/NZ Ethnicity group ( $d = .23$ ). The effect size shows that the difference in scores, while small, was clinically significant (Cohen, 1988).

The finding that Non-NZ Born/Non-NZ Ethnicity students have lower worry scores, on average, than their NZ Born/NZ Ethnicity counterparts is surprising. Although survey participants were not asked to indicate whether they were domestic or international students, it can reasonably be assumed that many of the Non-NZ Born/Non-NZ Ethnicity students fall into the latter category. Table 2, which shows the demographic composition of the University of Waikato student population in 2007, indicates that the largest non-New Zealand ethnic group was Chinese students (14.27%), followed by Tagata Pasifika (3.91%), students from other Asiatic countries (3.71%) and Indian students (2.55%). A further 7.03% of the student body selected the 'Other' ethnic affiliation option.

International students face many potential obstacles when making the move from their country of origin to study in a new environment. Studies have

identified language barriers (Poyrazli & Grahame, 2006; Stoyhoff, 1997; Yeh & Inose, 2003), cultural differences in social interaction styles (Yeh & Inose, 2003), loss of social support (Hayes & Lin, 1994; Poyrazli & Grahame, 2006) and differences in teaching styles across cultures (Poyrazli & Grahame, 2006) as significant impediments to the healthy adjustment of international students. These and other difficulties suggest that the life of the international student may be filled with more reasons to worry than domestic students, but the findings of the present study suggest that this is not the case.

A potential explanation for these results stems from finances. Scott et al. (2002) found a number of differences in patterns of worry for students across ethnic categories in the United States, with the exception of financial concerns. All ethnic groups reported that finances were a significant source of worry, suggesting that student well-being is influenced to a large degree by the students' ability to support themselves whilst studying. This notion is supported by data from the content analyses of the present study, in which discussion group participants named financial issues as sources of considerable worry and stress.

Study fees for international students are much higher than they are for domestic students, however. The International Student Fees information on the University of Waikato (2008) website indicates that the cost of an undergraduate degree is between \$16,000 and \$23,000 per year for international students, approximately four times the price paid by domestic students. The increased cost of university fees for overseas students indicates that it would be foolhardy to attempt to study in New Zealand without adequate financial resources. It is therefore likely that many Non-NZ Birth/Non-NZ Ethnicity (specifically,

international) students come from backgrounds of higher socioeconomic status than NZ Birth/NZ Ethnicity (domestic) students and that the financial security that they enjoy is responsible for the lower levels of worry observed between the two populations. Further research comparing the socioeconomic status levels and financial worries of international and domestic students will be required to validate this hypothesis.

Another consideration is the amount of time that international students intend to spend in New Zealand. If students from overseas desire to stay in the country only until the completion of their university qualification, they may be less inclined to worry about language barriers, cultural differences and socialising than those who intend to make New Zealand their home. The lower worry scores found between Non-NZ Born/Non-NZ Ethnicity students and NZ Born/NZ Ethnicity students may, therefore, reflect the fact that the former group are living in what they consider to be a relatively ‘consequence free’ environment. To investigate this hypothesis, further research is required comparing the worry levels of international students who intend to stay in New Zealand against those who do not.

### Limitations of the Present Study

#### Web-Based Survey

Web-based surveys offer convenience of administration and allow researchers to contact large numbers of potential participants, but they are not without limitations. For instance, the survey in the present study was created by adapting three pencil-and-paper questionnaires for use on the internet; whether response

patterns differ between these two survey formats is yet to be established (Wong et al., 2006). Preliminary investigations are encouraging, however: drug and alcohol researchers in the United States have found minimal response differences between postal and web-based surveys (McCabe, Couper, Cranford & Boyd, 2006; McCabe, Boyd, Couper, Crawford & D'Arcy, 2002), suggesting that the latter are an effective means of collecting information on psychologically sensitive issues.

Recruiting participants via the internet also introduces the possibility of sample bias: web-based surveys have a tendency to yield lower response rates than mail and telephone surveys (Kraut et al., 2004) and, as participation is restricted to those who have access to the internet, respondents may not necessarily represent all members of the target population (Shaughnessy et al., 2006).

To reduce selection bias in the survey, a prize draw was offered as a participation incentive. Despite this countermeasure, almost 90% of those invited to participate in the study did not respond; this suggests that many students were either uninterested in the survey or were too busy to participate, but more importantly it raises the possibility that those who did respond (10.98%) are somehow 'different' from non-respondents and do not represent the university population as a whole. Given the nature of the study, it seems reasonable to assume that respondents were students for whom anxiety is a significant issue; the data collected from the survey may, therefore, indicate higher levels of worry, stress and social anxiety than would have been found in a broader sample of students. Such bias, although undesirable, does not constitute a fatal flaw in the context of the present study. Recalling that one of the primary research goals is to ascertain whether the demands of tertiary study have a negative impact on student

anxiety levels, those students for whom anxiety is a salient issue are of particular interest.

Furthermore, differences between the demographic characteristics of the survey sample and the University of Waikato student population in 2007 were moderate, indicating that the sample composition is a reasonable approximation of the greater student body. Combined with the large sample size ( $n = 1,082$ ), this similarity permits a cautious generalisation of survey results to the university population, despite the low response rate.

### Discussion Groups

Of the total survey sample ( $n = 1,082$ ), only a small proportion ( $n = 189$ ) indicated that they were interested in receiving information about discussion groups. The number of students confirming their intention to attend a discussion group was smaller again ( $n = 30$ ), resulting in a response rate of only 2.77%. Although a free lunch was offered to discussion participants to reduce selection bias, this exceptionally low response rate suggests that those who expressed a desire to attend were not representative of the student population as a whole. The special interest shown by this small subsection of the original survey sample suggests that they are a group for whom anxiety-related issues are particularly relevant. Schedule conflicts precluded some of them from attending discussion groups; although meeting times were tailored to allow the maximum number of students to participate, the final number was much smaller than originally desired ( $n = 18$ ).

The strong indications of selection bias and the small sample size notwithstanding, the worry, stress and social anxiety themes raised in the

discussion groups fit with common sense expectations. Academic, financial, relationship and role-conflict concerns were mentioned in all of the groups, presenting an initial sketch of how the numerous demands of tertiary study influence student anxiety. Although it is difficult to draw firm conclusions from discussion group data at this stage, they serve as a foundation upon which future research may build.

### Normative Comparisons

The final study limitation is the nature of the normative comparison data. To determine whether the pressures placed on New Zealand tertiary students create unhealthy levels of worry, stress and social anxiety it would be logical to compare student data for each of these constructs to the New Zealand general population. However, because no New Zealand norms were available for the WDQ-SF, PSS-10 or BFNE, normative data from American university samples were used instead. International comparisons of this nature can be used to highlight differences between societies, but they cannot answer the question of whether the forces acting on students create differential anxiety outcomes within a society.

Study findings show that New Zealand university students had higher worry, stress and social anxiety scores than American comparison groups. This raises the possibility that the requirements of tertiary study in New Zealand produce greater levels of student anxiety than those found in America, but comparisons between New Zealand tertiary students and the New Zealand general population will be required before any firm conclusions can be drawn.

## Suggestions for Future Research

Anxiety disorders have negative impacts on health and general functioning (Saddock & Saddock, 2003), but are especially problematic for students because they are associated with poorer educational outcomes and impaired academic achievement (Ameringen et al., 2003; Stein & Kean, 2000; Newbegin & Owens, 1996). Despite the serious implications of anxiety disorders for tertiary students, a comprehensive search of online databases (PsycINFO, PsycARTICLES, Pubmed) and the Australasian Digital Thesis Program reveals that there are currently no published studies of anxiety among tertiary students in New Zealand. This study, therefore, represents a 'first step' towards redressing the lack of data for this population.

The central aims of the present study were to investigate the extent to which the requirements of tertiary study in New Zealand impact upon student anxiety levels and to determine the elements of the 'tertiary lifestyle' that students perceive to be the most anxiety-inducing. To achieve the former, an online survey measuring cognitive (worry), physiological (stress) and interpersonal (social anxiety) dimensions of anxiety was administered to students at the University of Waikato; to achieve the latter, survey participants were invited to attend discussion groups to talk about their experiences in each of these areas.

Comparing survey data to anxiety norms from American student populations revealed that Waikato students reported higher levels of worry, stress and social anxiety than their American counterparts. All differences were statistically significant, but effect size calculations indicate clinical significance for the worry and social anxiety measures only. Various hypotheses can be offered to explain

these findings, including differences between the sample compositions of the present and comparison studies, the possibility that worry and social anxiety are mediated by cultural factors and potential differences in the factors (academic, financial, social, etc.) associated with tertiary study in New Zealand and America. Future research should examine whether the differences observed in this study were an artefact of sample differences, a product of cultural/socialisation processes or resulted from differences in the burdensome factors associated with tertiary study in the two countries.

Comparing the anxiety scores of the Waikato sample to American student norms provides an indication of the extent to which New Zealand students experience anxiety relative to students from another Western country. Although this information is useful, contrasting the anxiety data of New Zealand students with norms for the general population would allow a more direct means of assessing whether the requirements of tertiary study have an adverse impact on student anxiety levels. Future research should, therefore, aim to establish anxiety norms for non-student populations within New Zealand society.

Within-group comparisons for the present study yielded some interesting results: gender comparisons showed that female students reported higher worry, stress and social anxiety scores than male students; age group comparisons reveal that age is inversely associated with both worry and social anxiety; no differences were found between schools of study on any measure; NZ Maori students reported lower social anxiety scores than NZ European/European/Pakeha and Non-NZ Ethnicity students; and birth status comparisons showed that Non-NZ born/Non-NZ ethnicity students reported lower levels of worry than those in the NZ born/NZ ethnicity group. Where possible, explanations appealing to previous

research were offered for each of these findings, but it must be stressed that all explanations are speculative at this juncture as it is not possible to establish firm conclusions on the basis of a single study. Researchers, therefore, would do a service to the study of anxiety among tertiary students in New Zealand by attempting to replicate any of the findings above.

Moreover, Connell et al. (2007) indicate that one of the major shortcomings of contemporary student health research is that studies tend to examine single institutions in isolation. The present study is an inaugural assessment of the anxiety concerns of tertiary students in New Zealand, but the study sample was confined to a single university. It is not possible to generalise the research findings from such a restricted sample to tertiary students at a 'national level' and further research must be conducted with students from a range of New Zealand tertiary institutions in order to attain a nationally representative dataset.

Finally, the qualitative component of this study should be expanded. Although useful worry, stress and social anxiety data was gathered from students who participated in the discussion groups of the present study, there were two notable shortcomings: first, the total sample size of the groups ( $n = 18$ ) was small and thus the sample data reflect the views of only a limited section of the university population; second, students talked avidly about worry, stress and social anxiety concerns but they were not asked to rank them in any way. Future research should attempt to recruit an adequate number of participants and in the course of discussion, students should be asked to rank their worry, stress and social anxiety concerns from 'most distressing' to 'least distressing' in order to identify the elements of tertiary study that students consider to be most problematic.

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## Appendix A

### Study Recruitment E-mail

Dear Student,

I am a masters student at the University of Waikato, conducting a survey into the **worries, stresses and social concerns** of tertiary level students. This e-mail invites you to complete the survey and allow your personal experience as a student to be reflected in my research.

The survey will take approximately 20 minutes to complete, and **your identity and responses will be completely confidential.**

**PARTICIPATION** in the survey enters you into a **PRIZE DRAW** - winners will receive one of five electronic goods vouchers, worth \$200.

Included in the survey form is an option to receive information about **discussion groups** that I will be hosting. Attending a discussion group will not affect your chances of winning a prize, but lunch will be provided to all attendees.

**The survey will be open from the 3<sup>rd</sup> until the 17<sup>th</sup> of September**, so please ensure that your survey response is submitted before then.

All survey and discussion group participants will remain anonymous. Upon completion of my thesis, the data will be provided to the university to help improve the effectiveness of services provided to students.

Please click here to go to the survey website:

<http://psychology.waikato.ac.nz/surveys/self/index.htm>

My contact details are provided on the website, and I will be happy to answer any questions that you have

James D. Richards.

## Appendix B

## Worry Domains Questionnaire – Short Form (Stöber &amp; Joormann, 2001)

Please tick an appropriate box to show how much you **WORRY** about the following:

<i>I worry...</i>	Not at all	A little	Moderately	Quite a bit	Extremely
1. that I'll never achieve my ambitions	<input type="checkbox"/>				
2. that I will not keep my workload up to date	<input type="checkbox"/>				
3. that I am not able to afford things	<input type="checkbox"/>				
4. that I feel insecure	<input type="checkbox"/>				
5. that I can't afford to pay bills	<input type="checkbox"/>				
6. that I leave work unfinished	<input type="checkbox"/>				
7. that I lack confidence	<input type="checkbox"/>				
8. that I am unattractive	<input type="checkbox"/>				
9. that I will lose close friends	<input type="checkbox"/>				
10. that I haven't achieved much	<input type="checkbox"/>				

## Appendix C

### Perceived Stress Scale – 10 (Cohen & Williamson, 1988)

#### Instructions

The questions in this scale ask you about your feelings and thoughts during the last month. In each case, you will be asked to indicate how often you felt or thought a certain way. Although some of the questions are similar, there are differences between them and you should treat each one as a separate question. The best approach is to answer each question fairly quickly. This is, don't try to count up the number of times you felt a particular way, but rather indicate the alternative that seems like a reasonable estimate.

For each question, choose from the following alternatives:

- 0 = never**
- 1 = almost never**
- 2 = sometimes**
- 3 = fairly often**
- 4 = very often**

1. In the last month, how often have you been upset because of something that happened unexpectedly?
2. In the last month, how often have you felt unable to control the important things in your life?
3. In the last month, how often have you felt nervous and stressed?
4. In the last month, how often have you felt confident about your ability to handle personal problems?
5. In the last month, how often have you felt that things were going your way?
6. In the last month, how often have you found that you could not cope with all of the things that you had to do?
7. In the last month, how often have you been able to control the irritations in your life?
8. In the last month, how often have you felt that you were on top of things?
9. In the last month, how often have you been angered because of things that happened that were outside of your control?
10. In the last month, how often have you felt difficulties were piling up so high that you could not overcome them?

## Appendix D

## Brief Fear of Negative Evaluation (Leary, 1983)

For the following statements please indicate how characteristic each is of you using the following rating scale:

- 1 = Not at all characteristic of me
- 2 = Slightly characteristic of me
- 3 = Moderately characteristic of me
- 4 = Very characteristic of me
- 5 = Extremely characteristic of me

Please record your answers in the spaces to the left of the items.

- 1. I worry about what other people will think of me even when I know it doesn't make any difference.
- 2. I am unconcerned even if I know people are forming an unfavourable impression of me.
- 3. I am frequently afraid of other people noticing my shortcomings.
- 4. I rarely worry about what kind of impression I am making on someone.
- 5. I am afraid that people will not approve of me.
- 6. I am afraid that other people will find fault with me.
- 7. Other people's opinions of me do not bother me.
- 8. When I am talking to someone, I worry about what they may be thinking about me.
- 9. I am usually worried about what kind of impression I make.
- 10. If I know someone is judging me, it has little effect on me.
- 11. Sometimes I think I am too concerned with what other people think of me.
- 12. I often worry that I will say or do the wrong things.

## Appendix E

### Discussion Group: Semi-Structured Interview

Worry: What do you worry about?

- Academic issues? University workload? Grades? Processes/systems?
- Finances?
- Future concerns?
- Relationships? Social? University peers? Family? Staff?
- Self-confidence/performance?
- Work/employment?
- Other issues?

Stress: As a student, what are the things that stress you the most?

- Academic issues? University workload? Grades? Processes/systems?
- Finances? Rent, university fees, other expenses?
- Future concerns?
- Relationships? Social? University peers? Family? Staff?
- Self-confidence/performance? Personal expectations?
- Work/employment? Dual role of student/worker?
- Other issues?

Social anxiety: What are the social concerns that you experience as a tertiary level student? Which are of greatest concern to you?

- Cultural issues?
- Relationships with university peers?
- Relationships with non-university peers?
- Relationships with university staff?
- Relationships with family?
- Religious/personal belief issues?

## Appendix F

### Survey Website

#### Webpage 1:

THANK YOU FOR TAKING THE TIME TO PARTICIPATE IN MY SURVEY

I am a Masters student examining the areas of worry, levels of stress and social concerns of tertiary-level students. You will be asked to fill in a three-section questionnaire designed to measure each of these areas respectively. This should take approximately 20 minutes, and consent to participate will be assumed if you choose to complete the questionnaire. The computer cannot accept incomplete questionnaires, so please ensure that you respond to all questions.

**PRIZES** are offered for participation: 5 participants will each win electronic goods vouchers valuing \$200. The winners will be contacted via their University of Waikato e-mail address, so **PLEASE ENSURE THAT YOU ENTER IT CORRECTLY**. Responses that are not accompanied by a valid Waikato University e-mail address must be discarded from the survey.

As a part of my research I will also be conducting discussion groups. If you would like to receive information about these groups, please tick the appropriate box when entering your e-mail address. Showing interest does NOT obligate you to participate, nor does it affect your chances of winning a prize.

If you are experiencing levels of worry or anxiety that are causing distress, I encourage you to contact the University Counselling Service on (07) 838-4201 or e-mail [student\\_services@waikato.ac.nz](mailto:student_services@waikato.ac.nz)

More information about the study is presented after the questionnaire. Please address any questions to the following address:

[jdr5@waikato.ac.nz](mailto:jdr5@waikato.ac.nz)

James D. Richards

[Lets do the survey!](#)

Webpage 2:

Please enter your University of Waikato email address:

@waikato.ac.nz

I would like to receive information about the discussion groups?

Webpage 3:**DEMOGRAPHIC INFORMATION**

Please indicate your age:  Under 20  21-30  31-40  41+ years

Gender:  Male  Female

School of Study

Ethnicity  Other

Were you born in New Zealand?  Yes  No

**WORRY DOMAINS QUESTIONNAIRE**

Please indicate the appropriate answer from the scale below to show how much you worry about the following:

1. That I'll never achieve my ambitions

<input type="checkbox"/> Not at all	<input type="checkbox"/> A little	<input type="checkbox"/> Moderately	<input type="checkbox"/> Quite a bit	<input type="checkbox"/> Extremely
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2. That I will not keep my workload up to date

<input type="checkbox"/> Not at all	<input type="checkbox"/> A little	<input type="checkbox"/> Moderately	<input type="checkbox"/> Quite a bit	<input type="checkbox"/> Extremely
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3. That I am not able to afford things

<input type="checkbox"/> Not at all	<input type="checkbox"/> A little	<input type="checkbox"/> Moderately	<input type="checkbox"/> Quite a bit	<input type="checkbox"/> Extremely
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4. That I feel insecure

<input type="checkbox"/> Not at all	<input type="checkbox"/> A little	<input type="checkbox"/> Moderately	<input type="checkbox"/> Quite a bit	<input type="checkbox"/> Extremely
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5. That I can't afford to pay the bills

<input type="checkbox"/> Not at all	<input type="checkbox"/> A little	<input type="checkbox"/> Moderately	<input type="checkbox"/> Quite a bit	<input type="checkbox"/> Extremely
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6. That I leave work unfinished

<input type="checkbox"/> Not at all	<input type="checkbox"/> A little	<input type="checkbox"/> Moderately	<input type="checkbox"/> Quite a bit	<input type="checkbox"/> Extremely
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7. That I lack confidence

<input type="checkbox"/> Not at all	<input type="checkbox"/> A little	<input type="checkbox"/> Moderately	<input type="checkbox"/> Quite a bit	<input type="checkbox"/> Extremely
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8. That I am unattractive

<input type="checkbox"/> Not at all	<input type="checkbox"/> A little	<input type="checkbox"/> Moderately	<input type="checkbox"/> Quite a bit	<input type="checkbox"/> Extremely
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9. That I will lose close friends

<input type="checkbox"/> Not at all	<input type="checkbox"/> A little	<input type="checkbox"/> Moderately	<input type="checkbox"/> Quite a bit	<input type="checkbox"/> Extremely
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10. That I haven't achieved much

<input type="checkbox"/> Not at all	<input type="checkbox"/> A little	<input type="checkbox"/> Moderately	<input type="checkbox"/> Quite a bit	<input type="checkbox"/> Extremely
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## PERCEIVED STRESS SCALE

### Instructions

The questions in this scale ask you about your feelings and thoughts during the last month. In each case, you will be asked to indicate how often you felt or thought a certain way. Although some of the questions are similar, there are differences between them, and you should treat each one as a separate question. The best approach is to answer each question fairly quickly. That is, don't try to count up the number of times you felt a particular way, but rather indicate the alternative that seems like a reasonable estimate.

1. In the last month, how often have you been upset because of something that happened unexpectedly?

<input type="checkbox"/> Never	<input type="checkbox"/> Almost never	<input type="checkbox"/> Sometimes	<input type="checkbox"/> Fairly often	<input type="checkbox"/> Very often
--------------------------------	---------------------------------------	------------------------------------	---------------------------------------	-------------------------------------

2. In the last month, how often have you felt that you were unable to control the important things in your life?

<input type="checkbox"/> Never	<input type="checkbox"/> Almost never	<input type="checkbox"/> Sometimes	<input type="checkbox"/> Fairly often	<input type="checkbox"/> Very often
--------------------------------	---------------------------------------	------------------------------------	---------------------------------------	-------------------------------------

3. In the last month, how often have you felt nervous or stressed?

<input type="checkbox"/> Never	<input type="checkbox"/> Almost never	<input type="checkbox"/> Sometimes	<input type="checkbox"/> Fairly often	<input type="checkbox"/> Very often
--------------------------------	---------------------------------------	------------------------------------	---------------------------------------	-------------------------------------

4. In the last month, how often have you felt confident about your ability to handle your personal problems?

<input type="checkbox"/> Never	<input type="checkbox"/> Almost never	<input type="checkbox"/> Sometimes	<input type="checkbox"/> Fairly often	<input type="checkbox"/> Very often
--------------------------------	---------------------------------------	------------------------------------	---------------------------------------	-------------------------------------

5. In the last month, how often have you felt that things were going your way?

<input type="checkbox"/> Never	<input type="checkbox"/> Almost never	<input type="checkbox"/> Sometimes	<input type="checkbox"/> Fairly often	<input type="checkbox"/> Very often
--------------------------------	---------------------------------------	------------------------------------	---------------------------------------	-------------------------------------

6. In the last month, how often have you found that you could not cope with all of the things that you had to do?

<input type="checkbox"/> Never	<input type="checkbox"/> Almost never	<input type="checkbox"/> Sometimes	<input type="checkbox"/> Fairly often	<input type="checkbox"/> Very often
--------------------------------	---------------------------------------	------------------------------------	---------------------------------------	-------------------------------------

7. In the last month, how often have you been able to control the irritations in your life?

<input type="checkbox"/> Never	<input type="checkbox"/> Almost never	<input type="checkbox"/> Sometimes	<input type="checkbox"/> Fairly often	<input type="checkbox"/> Very often
--------------------------------	---------------------------------------	------------------------------------	---------------------------------------	-------------------------------------

8. In the last month, how often have you felt that you were on top of things?

<input type="checkbox"/> Never	<input type="checkbox"/> Almost never	<input type="checkbox"/> Sometimes	<input type="checkbox"/> Fairly often	<input type="checkbox"/> Very often
--------------------------------	---------------------------------------	------------------------------------	---------------------------------------	-------------------------------------

9. In the last month, how often have you been angered because of things that happened that were outside of your control?

<input type="checkbox"/> Never	<input type="checkbox"/> Almost never	<input type="checkbox"/> Sometimes	<input type="checkbox"/> Fairly often	<input type="checkbox"/> Very often
--------------------------------	---------------------------------------	------------------------------------	---------------------------------------	-------------------------------------

10. In the last month, how often have you felt difficulties were piling up so high that you could not overcome them?

<input type="checkbox"/> Never	<input type="checkbox"/> Almost never	<input type="checkbox"/> Sometimes	<input type="checkbox"/> Fairly often	<input type="checkbox"/> Very often
--------------------------------	---------------------------------------	------------------------------------	---------------------------------------	-------------------------------------

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### BRIEF FEAR OF NEGATIVE EVALUATION

For each of the following statements, please indicate how characteristic each is of you using the rating scale.

1. I worry about what other people think of me even when I know it doesn't make any difference.

<input type="checkbox"/> Not at all	<input type="checkbox"/> Slightly	<input type="checkbox"/> Moderately	<input type="checkbox"/> Very	<input type="checkbox"/> Extremely
-------------------------------------	-----------------------------------	-------------------------------------	-------------------------------	------------------------------------

2. I am unconcerned even if I know that people are forming an unfavourable impression of me

<input type="checkbox"/> Not at all	<input type="checkbox"/> Slightly	<input type="checkbox"/> Moderately	<input type="checkbox"/> Very	<input type="checkbox"/> Extremely
-------------------------------------	-----------------------------------	-------------------------------------	-------------------------------	------------------------------------

3. I am frequently afraid of other people noticing my shortcomings.

<input type="checkbox"/> Not at all	<input type="checkbox"/> Slightly	<input type="checkbox"/> Moderately	<input type="checkbox"/> Very	<input type="checkbox"/> Extremely
-------------------------------------	-----------------------------------	-------------------------------------	-------------------------------	------------------------------------

4. I rarely worry about what kind of impression i am making on someone.

<input type="checkbox"/> Not at all	<input type="checkbox"/> Slightly	<input type="checkbox"/> Moderately	<input type="checkbox"/> Very	<input type="checkbox"/> Extremely
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5. I am afraid that other people will not approve of me

<input type="checkbox"/> Not at all	<input type="checkbox"/> Slightly	<input type="checkbox"/> Moderately	<input type="checkbox"/> Very	<input type="checkbox"/> Extremely
-------------------------------------	-----------------------------------	-------------------------------------	-------------------------------	------------------------------------

6. I am afraid that other people will find fault with me.

<input type="checkbox"/> Not at all	<input type="checkbox"/> Slightly	<input type="checkbox"/> Moderately	<input type="checkbox"/> Very	<input type="checkbox"/> Extremely
-------------------------------------	-----------------------------------	-------------------------------------	-------------------------------	------------------------------------

7. Other people's opinion of me does not bother me.

<input type="checkbox"/> Not at all	<input type="checkbox"/> Slightly	<input type="checkbox"/> Moderately	<input type="checkbox"/> Very	<input type="checkbox"/> Extremely
-------------------------------------	-----------------------------------	-------------------------------------	-------------------------------	------------------------------------

8. When I am talking to someone, I worry about what they may be thinking of me.

<input type="checkbox"/> Not at all	<input type="checkbox"/> Slightly	<input type="checkbox"/> Moderately	<input type="checkbox"/> Very	<input type="checkbox"/> Extremely
-------------------------------------	-----------------------------------	-------------------------------------	-------------------------------	------------------------------------

9. I am usually worried about what kind of impression I make

<input type="checkbox"/> Not at all	<input type="checkbox"/> Slightly	<input type="checkbox"/> Moderately	<input type="checkbox"/> Very	<input type="checkbox"/> Extremely
-------------------------------------	-----------------------------------	-------------------------------------	-------------------------------	------------------------------------

10. If I know someone is judging me, it has little effect on me.

<input type="checkbox"/> Not at all	<input type="checkbox"/> Slightly	<input type="checkbox"/> Moderately	<input type="checkbox"/> Very	<input type="checkbox"/> Extremely
-------------------------------------	-----------------------------------	-------------------------------------	-------------------------------	------------------------------------

11. Sometimes I think I am too concerned with what other people think of me

<input type="checkbox"/> Not at all	<input type="checkbox"/> Slightly	<input type="checkbox"/> Moderately	<input type="checkbox"/> Very	<input type="checkbox"/> Extremely
-------------------------------------	-----------------------------------	-------------------------------------	-------------------------------	------------------------------------

12. I often worry that I may say or do the wrong things.

<input type="checkbox"/> Not at all	<input type="checkbox"/> Slightly	<input type="checkbox"/> Moderately	<input type="checkbox"/> Very	<input type="checkbox"/> Extremely
-------------------------------------	-----------------------------------	-------------------------------------	-------------------------------	------------------------------------

**Psychology Department.**

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**Revised: 08/31/07**

*Webpage 4:*

Thank you for your participation

The aim of this study is to examine what university students worry about, how stressed they are, and how they feel about social situations. Comparisons will be made across genders, age-groups, ethnic groups and schools of study. The results of this study will contribute to our understanding of student life, and will be delivered to university service providers, including University Counselling.

The study involves two components: the questionnaire that you have just completed, and voluntary discussion groups to be held at a later date. Discussion groups will provide an opportunity for students to talk about their concerns in an open and receptive environment. Students who participate in either the questionnaire or discussion groups will not be asked to provide their name, and so will remain anonymous.

If you wish to receive a summary of my results, or have any additional queries, please write to my e-mail address:

[jdr5@waikato.ac.nz](mailto:jdr5@waikato.ac.nz)

James D. Richards

## Appendix G

### Discussion Group Recruitment E-mail

My name is James Richards, a masters student at the University of Waikato. I am writing this e-mail to you because you have participated in my online student survey, and indicated that you would be interested in receiving information about the discussion groups mentioned on the survey website.

The discussion groups will involve a small number of people (approximately 10-12 per session), will take approximately ONE HOUR, and will take place on UNIVERSITY PREMISES. The groups are open to full- and part-time students, and they invite participants to give their views on worry, stress and social concerns.

Information gathered at the discussion groups will be treated as CONFIDENTIAL, and the names of those attending will NOT be reported in my thesis. Discussion groups will be recorded on a dictaphone, but recordings will be available only to myself and my thesis supervisors where necessary (Dr. Jo Thakker and Professor Jane Ritchie). Upon completion of my thesis, ALL RECORDINGS WILL BE ERASED.

Discussion group participation DOES NOT affect your chances of winning one of the \$200 electronic goods vouchers offered for completion of the web survey, but lunch will be provided to all those attending the group.

Students have the right to WITHDRAW from the group at ANY TIME, for ANY REASON. If for any reason the student wishes to have their discussion group information excluded from my thesis AFTER THE GROUP HAS CONCLUDED, they may contact me via my university e-mail address, and I will ensure that the data is removed.

CONSENT FORMS will be provided at the beginning of discussion groups, providing a written outline of the student's rights as a research participant.

If students have any complaints about the way that the groups operate, they may be addressed to either Dr. Jo Thakker (University ext. 8609), Professor Jane Ritchie (University ext. 8402) or to the convenor of the Research and Ethics Committee, Dr. Robert Isler (University ext. 8401)

**THE GROUPS: PLEASE REPLY TO THIS E-MAIL IF YOU WISH TO PARTICIPATE, AND INDICATE WHICH OF THE FOLLOWING YOU WOULD BE INTERESTED IN ATTENDING:**

**GROUP 1: MALE STUDENT GROUP**

**GROUP 2: FEMALE STUDENT GROUP**

**GROUP 3: MIXED GROUP (BOTH MALE AND FEMALE PARTICIPANTS)**

**TIMES: WHICH OF THE FOLLOWING TIMES WOULD BE MOST CONVENIENT FOR YOU?**

**Tuesday 18th September: 1pm-2pm or 2pm-3pm?**

**Wednesday 19th September: 1pm-2pm or 2pm-3pm?**

**Thursday 20th September: 2pm-3pm or 3pm-4pm?**

**LUNCH WILL BE PROVIDED FOR ALL ATTENDEES - PLEASE INDICATE IF YOU HAVE ANY SPECIFIC DIETARY REQUIREMENTS (e.g. vegetarian, vegan, gluten free)**

**Please be aware that space is limited, and I may not be able to accommodate all who wish to participate. Discussion groups will be finalised on Friday 14th of September - an e-mail detailing the time, place, and number of people attending each group will be sent on Friday evening.**

Thank you all for your participation.

Regards

James D. Richards.

## Appendix H

## Discussion Groups: Research Participation Consent Form

University of Waikato  
Psychology Department  
**CONSENT FORM**

<b>PARTICIPANT'S COPY</b>
---------------------------

Research Project:

Name of Researcher:

Name of Supervisor (if applicable):

I have received an information sheet about this research project or the researcher has explained the study to me. I have had the chance to ask any questions and discuss my participation with other people. Any questions have been answered to my satisfaction.

I agree to participate in this research project and I understand that I may withdraw at any time. If I have any concerns about this project, I may contact the convenor of the Research and Ethics Committee (Dr Robert Isler, phone: 838 4466 ext. 8401, e-mail r.isler@waikato.ac.nz)

Participant's Name: \_\_\_\_\_ Signature: \_\_\_\_\_ Date: \_\_\_\_\_

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University of Waikato  
Psychology Department  
**CONSENT FORM**

<b>RESEARCHER'S COPY</b>
--------------------------

Research Project:

Name of Researcher:

Name of Supervisor (if applicable):

I have received an information sheet about this research project or the researcher has explained the study to me. I have had the chance to ask any questions and discuss my participation with other people. Any questions have been answered to my satisfaction.

I agree to participate in this research project and I understand that I may withdraw at any time. If I have any concerns about this project, I may contact the convenor of the Research and Ethics Committee.

Participant's Name: \_\_\_\_\_ Signature: \_\_\_\_\_ Date: \_\_\_\_\_

## Appendix I

## Discussion Groups: Sample Demographic Information Sheet

WORRY, STRESS AND SOCIAL CONCERNS  
DISCUSSION GROUPMALE GROUP: THURSDAY 20<sup>th</sup> SEPTEMBER

Age Group: Under 21

21-30 yrs

31-40 yrs

41 yrs +

Gender: Male

Female

Other?

Ethnicity: \_\_\_\_\_

School of Study: \_\_\_\_\_

## Appendix J

## Official University of Waikato Demographic Data for 2007

**UNIVERSITY OF WAIKATO ENROLLED STUDENTS AS AT 29-Apr-07****by Age Band**

Enrolment Year	2007
Age Group	
20 & under	3,354
21 to 30	4,755
31 to 40	1,101
41 & over	1,146
Total	10,356

**by Ethnicity**

Enrolment Year	2007
First Ethnicity	
Chinese	1,477
Fijian	75
Indian	264
Cook Island Maori	59
New Zealand Maori	2,047
Niuean	23
No response	4
NZ European/European/Pakeha	5,047
Other	728
Other Asian	384
Other Pacific Islander	45
Samoan	120
Tokelauan	7
Tongan	76
Total	10,356

**by Gender**

Enrolment Year	2007
Gender	
F	6,140
M	4,216
Total	10,356

**by School of Study**

Enrolment Year	2007
School	
Faculty of Arts and Social Sciences	2,321
Language Institute	163
School of Computing and Mathematical Sciences	637
School of Education	1,966
School of Law	831
School of Maori and Pacific Development	444
School of Science and Engineering	1,118
Waikato Management School	2,876

## Appendix K

### Discussion Group Content Analysis: Worry – Illustrative Quotes

#### Academic: Workload/time management

University workload was an issue for most students, but some more than others:

**Participant D** (Male, < 21, Computing and Mathematical Sciences, NZ European) said: “I’ve found it quite good this year. Even with the amount of ‘work’ work that I’ve been doing, I’ve been all right. But I see why some people worry a lot more.”

Regarding self-discipline, students commented:

**Participant A** (Male, 31-40, Faculty of Arts and Social Sciences, NZ-Scandinavian-Maori): I do think that the work specifics intensify at each level, as you graduate between levels. At the same token I think, or I’m trusting, that we are self-disciplined to some extent, beyond that which we were during undergrad.”

**Participant B** (Male, 21-30, Arts and Social Sciences, NZ European): “...my discipline for the workload dramatically improved throughout.”

#### Academic: Quality of Teaching

Getting value for money in the classroom was raised as a worry concern:

**B**: “...from my perspective, I look back on my degree so far and it’s like some papers have been really valuable, and others have been like, well, I didn’t really learn anything new there and I should have taken something else.”

#### Academic: Working to the University’s Timetable

Another source of worry was trying to work to an inflexible schedule:

**D**: “...I find that sometimes I’m choosing papers based on their timetabling. I have done that several times: I pick papers that I have to do and then the optional paper; it may be something I don’t want to do or something completely random, just because it fits in well.”

#### Financial: Earning Enough Money to Be Comfortable

When asked what the biggest worries were for students, one discussion group participant gave a blunt, yet informative reply:

**Participant M** (Male, < 21, Management, Pakeha): “Money!”

The idea that students can study and have enough money for the things that other young people can afford was scorned by two participants:

**Participant F** (Female, 21-30, Arts and Social Sciences, European – Polish) said: “You’re supposed to be mega rich and have a big screen TV and be studying at uni as well.”

**Participant G** (Female, 21-30, Management, Pakeha) added: “And have enough money to go travelling.”

*Relationships: with Family*

One participant noted difficulties with family relationships:

**Participant H** (Female, 41+, Law, Maori): “I mean, you still maintain relationships with family... but I find it’s easier to maintain... relationships with people who are still studying.”

*Relationships: at University*

Some students perceived barriers to getting acquainted with classmates:

**Participant O** (Male, 31-40, Law, British) said: “Year one papers, we’re all in together. It’s a complete hot house. You’ve got to get on with everybody. You make or break reputations... to give you an example, I dated another student. I went through hell on Earth because of that, because word got round.”

**C**: “Also, I think actually being on campus, it’s reasonably difficult just in terms of 12 week courses, to forge new relationships with people.”

**B**: “...if you want to change the direction of your degree as you go through, you go in and out of groups. A lot of people I was friends with in first and second year I don’t really see that much, now.”

But a discussion group participant commented that it was easier to forge relationships with people on campus than outside of the university:

**H**: “You naturally gravitate towards certain people and, if they’re involved with the University or with tertiary study in any way, I think it’s a natural direction to go in because they understand, and you do the same things...”

Others have noted difficulties with cultural issues:

**Participant I** (Female, 31-40, Science and Engineering, Maori): “[I have experienced] significant issues related to kaupapa Maori; disregard of Maori issues in the department that I’m in presently...”

And issues regarding the learning environment:

**I**: “[There are] high levels of stress from competition amongst peers.”

Others found differences with staff from undergraduate to graduate study:

**Participant R** (Male, 21-30, Management, People’s Republic of China) stated: “From my experience, when I was going undergraduate I found that the teachers are quite strict. Since I started my BMS (Honours) I found that the teachers are really nice. They mark assignments and essays really [quickly].”

*Relationships: with Non-University Students*

Difficulties were perceived with forging relationships with people from outside of university due to a lack of understanding:

**D:** “For somebody who works, Friday nights and the weekends you can do whatever you want... often you can’t do that if you’re a uni student; you have to sit down and work.”

*Role Conflict: Work/Study Conflicts*

The difficulties of working and studying simultaneously were underscored:

**B:** “It’s tough only getting a few hours sleep every night, after having to work at night-time and then having classes and doing assignments.”

**C:** “...something I’ve found quite hard... is trying to find a part-time job that fits in with a timetable that changes ever semester.”

**G:** “How much time do you spend on your uni work? How much time do you spend working?”

*Study Expectations: Self Expectations*

A striking statement made by a discussion group participant outlined all of the things students expect themselves to achieve:

**F:** “...you expect yourself to work full-time, study and get As, be there for all your friends, drink all weekend and get up on Monday. You know, you’ve got to be Wonder Woman or Wonder Man.”

*Study Expectations: Family Expectations*

Pressures from familial expectations were raised:

**Participant J** (Female, 21-30, Arts and Social Sciences, Maori/Pakeha): “A lot [of pressure] comes from whanau, as well, and particularly if you’re seen as a person who’s going to do this, and do this well. If you’re not quite getting there then there’s this, not necessarily criticisms, but there’s a form of judgment placed on you.”

Particularly where financial aid is concerned:

**Participant K** (Female, 21-30, Science and Engineering, Pakeha): “If, say, a community of your family has set aside money for you, then the expectations are greater.”

## Appendix L

### Discussion Group Content Analysis: Stress – Illustrative Quotes

#### Academic: Quality of Teaching

Concerns about the quality of teaching were stressful for some students:

**Participant F** (Female, 21-30, Arts and Social Sciences, European – Polish) said: “...when you write a 3,000 word assignment and all you get it a single comment at the bottom... she [the lecturer] basically just hadn’t even read it.”

#### Academic: Cultural Issues

Cultural difficulties were mentioned by several students:

**Participant H** (Female, 41+, Law, Maori): “...there are many people who are non-white who do have difficulty and I imagine that it will affect their stress levels.”

#### Academic: Language Barriers

Language barriers were considered to be an impediment by overseas students:

**Participant N** (Female, 31-40, Arts and Social Sciences, Latin American): “...there are people that, they don’t feel comfortable working with people with an accent... sometimes I make mistakes when I say something. I don’t do that when I’m writing because I have the chance to review; at this stage I write better than what I talk... On the phone I just have the feeling that they listen to the accent and that’s it... [they think that] if you don’t speak properly, you are stupid.”

#### Financial: Unexpected Bills

Unexpected bills were among the biggest financial stressors for discussion group participants:

**Participant B** (Male, 21-30, Arts and Social Sciences, NZ Europeans) said: “...a lot of it, for me, is those events that can incur those costs that you just can’t afford.”

#### Relationships: at University

Relationships with university peers were emphasised as a stressor by a participant:

**Participant E** (Male, 31-40, Arts and Social Sciences, NZ European/Maori): “The main thing that causes me stress is interactions with other people, basically; getting on with other people at social events, that sort of thing.”

#### Role Conflict: Work/study Conflicts

A student who studies at and works for the university simultaneously stated:

**Participant J** (Female, 21-30, Arts and Social Sciences, Maori/Pakeha): “There has to be a balance. For someone like myself, I mean I want to do a PhD, I want to teach a very small amount [and] I want to do research because I realise that unless I do the research, I will always be at the bottom of the heap.”

Further, it was remarked that unforeseen circumstances can make the balancing act between work and study extremely difficult:

**Participant Q** (Female, 41+, Arts and Social Sciences, No Ethnicity Specified): “Work. Trying to fit work in so you can support yourself while you study.”

**Participant P** (Female, 21-30, Arts and Social Sciences, Kiwi): “...at the same time you’re trying to balance three assignments at once and your boss is ringing you up saying ‘can you please come into work because this drama has happened?’”

## Appendix M

### Discussion Group Content Analysis: Social Anxiety – Illustrative Quotes

#### Interactions with Family: Obligations

A participant outlined the breadth of his perceived obligation to do well at university:

**Participant L** (Male, 21-30, Arts and Social Sciences, Samoan): "...it's one, your own family, at a different level from your partner, but it's their family too."

#### Interaction with University Peers: Interdisciplinary Segregation

With respect to meeting people from different schools of study, a first-year student remarked:

**Participant C** (Male, 21-30, Arts and Social Sciences, NZ European): "...there are still a few people I know from school who are studying here, and... there are a few people I got to know in tutorials and things like that... but there's not really people, just random other people, from other schools."

Another student elaborated his experiences of interdisciplinary divide:

**Participant B** (Male, 21-30, Arts and Social Sciences, NZ European): "...[there are] those that I might have shared first and second year papers with, but mainly first year, that have gone – taken a different path on their degree – and you sort of see them around from time to time, but it's not as close a friendship."

#### Interaction with University Peers: Cultural Issues

One student commented that lack of cultural understanding was problematic:

**Participant G** (Female, 21-30, Management, Pakeha): "It's been... a learning curve for me to come to uni and work with Maori in groups, because I didn't understand their cultural needs and no-one told me... it's like I should [just] know, but I don't."

Another student commented that she felt as though people made cultural presumptions, based on her appearance:

**Participant K** (Female, 21-30, Science and Engineering, Pakeha): "...I do look completely white, you know, I've got blonde hair and blue eyes... and although I have an understanding of... Maori things, nobody thinks I do."

#### Interactions with University Peers: Isolation

A student remarked that she had been experiencing social problems in her department:

**Participant I** (Female, 31-40, Science and Engineering, Maori): "Because I made my complaint, I've been ostracised."

Interactions with University Peers: Mature Student Issues

One student perceived a great deal of social stigma attached to being a mature student:

**Participant O** (Male, 31-40, Law, British): "...throw in the 'mature student' as well and that puts even more pressure on. You know, 'what have you been doing? You're such a loser [because] it's taken you this long to get this far.'"

Interaction with University Peers: Younger Student Issues

A participant commented that she found it difficult to interact with mature students:

**Participant F** (Female, 21-30, Arts and Social Sciences, European – Polish): "...they'll look at you and speak to you as if you were stupid. They'll call you 'Missy' and tell you that what you're wearing is inappropriate.

Another student stated:

**Participant J** (Female, 21-30, Arts and Social Sciences, Maori/Pakeha): "...the young ones feel as though they're not being listened to."

Interactions with Non-University Peers: Social Expectations

Interactions with people from outside of university were viewed as problematic by some students due to social conventions and expectations:

**K**: "All of these societal norms are placed on you. You should be, you know, getting into a house."

Language Barriers: Being Perceived as Stupid Due to Inability to Speak Perfect English

A student commented that she leapt to an unfair conclusion due to language barriers with a classmate:

**Participant Q** (Female, 41+, Arts and Social Sciences, No Ethnicity Specified): "...In one of my papers, in an education paper I did, I worked with a Chinese woman... because I couldn't understand her very well, and she hadn't been here very long and she giggled a lot, I made the assumption that she wasn't very bright... I'm not proud of that assumption that I made... [and] I [later] found out that she was a plastic surgeon."

Racial Stigma: Prejudice Based on Racial Affiliation

Regarding unfair racial assumptions, a student commented:

**Participant P** (Female, 21-30, Arts and Social Sciences, Kiwi): "At my work, just to use this as an example, we've had a lot of shoplifting happen and it's always been a certain type of [person] who has stolen... it's horrible because the first time it happened I was really, really angry and every person who came into the shop I felt [suspicious of], you know, if they looked like that kind of person... and then I thought 'no, that's wrong, I'm not going to do that'..."