Religion/spirituality as a stress coping mechanism for international students

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A dissertation submitted to Auckland University of Technology in fulfilment of the requirements for the degree of Master of Health Science (MHSc)

2009

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Attestation of Authorship

"I Penny Chai, hereby declare that this submission is my own work and that, to the best of my knowledge and belief, it contains no material previously published or written by another person (except where explicitly defined in the acknowledgements), nor material which to a substantial extent has been submitted for the award of any other degree or diploma of a university or other institution of higher learning."

Signature:

Date:

Acknowledgements

I would like to thank my supervisor, Dr. Chris Krägeloh, for his patience, guidance, support and helpful analysis of the data, without which I would not have been able to complete this dissertation with a clear understanding and value of the whole research.

I would like to thank my secondary supervisor, Dr. Daniel Shepherd for his support; and David Parker from Te Tari Āwhina for helping me with proof-reading.

I would like to thank the lecturers who allow me to recruit participants during their lecture times, and lastly, the participants for their involvement in the study.

Abstract

The purpose of this study was to examine if religion/spirituality acts as a stress coping mechanism for a sample of international tertiary students who are often subjected to significant stressors related to acculturation and being away from their families. A sample of 515 domestic students and 151 international students at a New Zealand university were given a set of questionnaires to complete: the quality of life inventory including the additional special module about spirituality/religion/personal belief, both developed by the World Health Organization in collaboration with many member states; and the perceived level of stress scale and the ways of coping skills inventory. Results showed that there was no significant difference on religious/spiritual beliefs/personal belief total scores between international and domestic students. Nevertheless, when the data were analyzed by ethnicity, Asian students were significantly more religious/spiritual and used religion as one of the coping styles compared to European students. Therefore, the results confirmed that religion/spirituality functions as a coping mechanism for Asian students. Furthermore, the results support the main effect hypothesis, where religion/spirituality is beneficial for tertiary students, regardless of their level of stress.

Introduction

Individuals often look for spiritual or religious guidance when they are seeking to understand the meaning and purpose of their life, and there is increasing evidence that religious involvement is associated with better health (for a review, see Koenig, McCullough, & Larson, 2001). Religion or spirituality can be important to an individual throughout life, although it might play a different role in different life stages. Children generally inherit their parents' religion as research has shown a strong relationship between parental religiosity and their children's religious activities (De Vaus, 1983). Adolescents often struggle to find a sense of significance and purpose in life, and their attitudes towards religion may become more critical and negative (Tamminen, 1991). Older generations, on the other hand, who have a higher risk of developing chronic illness, might rely more on religion to cope with illness and search for meaning in life. Therefore, religion can provide a sense of direction and meaningfulness in life's challenges (Merrill, Read, & LeCheminant, 2009). However, there are various interpretations of religion and spirituality in the literature (Speck, Higginson, & Addington-Hall, 2004). According to Pargament (1997), an individual can be spiritual without being religious, or religious without being spiritual. Due to the fact that there is an overlapping meaning between religiousness and spirituality (Zinnbauer, Pargament, & Scott, 1999), and given the differences in religious denominations, the present study will use the term religion/spirituality (Peterson & Webb, 2006).

Religion provides a diverse variety of benefits for people and it serves different purposes for different people (Pargament, 1997). In fact, people look to religion for more than one thing in life, including search for self, community, a better world, physical health and wellbeing. One of the benefits of religion is that it defines an individual by offering a set of beliefs, rituals, symbols and traditions, and therefore can provide a sense of identity and community to its members (Hammond, 1988). Within their spiritual communities, people can seek out a sense of intimacy and belongingness. Thus, religious involvement can alleviate feelings of loneliness and disconnectedness (Pargament, 1997). People who are involved in religious activities have access and opportunities to develop social networks with people who share a similar worldview.

Therefore, it is not surprising to find out that more than 90% of Americans living in the United States have a belief in God (Kroll & Sheehan, 1989). However, it is unsure if these people turn to religion for some purposes or maybe a result of adopting the religious tradition from their family. In New Zealand, the International Social Survey Programme conducted a nationwide mail survey on religion in 2008 (Gendall & Healey, 2009). The results showed that 70% of New Zealanders have spiritual or religious beliefs, with 50% of New Zealanders believing in God, and 20% not believing in a personal God but believing in a higher power of some kind.

Religion can promote lifestyles among its members that have positive effects on health and longevity (George, Ellison, & Larson, 2002). For example, Mormons are prohibited from consuming alcohol, smoking and having sex outside of marriage, and the religion also provides guidelines for diet, amount of sleep and time spent with family; and Seventh-Day Adventists are taught to be vegetarians. Most religions teach their members to respect and to take care of their bodies (George et al., 2002).

As a result, it is not surprising to find that a substantial number of studies have investigated the links between religion or spirituality and health. Research has shown that religious involvement is associated with better physical health, mental health and longer survival of chronic diseases (George et al., 2002). Research also found that attendance at religious services is strongly related to physical health, mental health and mortality in various long-term illness samples, including poor elderly in ill health (Zuckerman, Kasl, & Ostfeld, 1984) caregivers of Alzheimer's patients (Wright, Pratt, & Schmall, 1985), prostate cancer patients (Tate & Forchheimer, 2002) and leukaemia patients (O'Connor, Guilfoyle, Breen, Mukhardt, & Fisher, 2007). People who attend religious services once a week more typically have fewer illnesses, recover more rapidly from illness, and live longer than people who attend less frequently (Gardner & Lyon, 1982). Part of the explanation for this protective effect is that people who frequently attend religious activities increase their social contacts more over time than those who are less active (Strawbridge, Cohen, Sheman, & Kaplan, 1997).

Religious practice is also linked to greater happiness, life satisfaction and general well-being. According to a review article by Gartner, Larson and Allen (1991), weekly church attendance and religious commitment are associated with increased physical health and longevity, increased marital satisfaction, lower suicide rates, less substance abuse and various aspects of psychological well-being, such as

lower anxiety and increased self-esteem. Koenig, McCullough and Larson (2001) also reviewed 100 studies that statistically examined the relationship between religiousness and well-being. Of these studies, 79% reported at least one positive correlation between religious involvement and greater happiness, life satisfaction, morale or positive affect. Furthermore, Myers and Diener (1995) reported that individuals who are happy with their life are more likely to have a meaningful religious faith than individuals who experience low levels of happiness over a long period of time. Therefore, religion or spirituality can help people increase their physical health as well as psychological and emotional well-being.

Another suggested benefit of religion is its function as a coping mechanism in times of stress (Krok, 2008). Religion serves three roles in the coping processes. Firstly, it offers meaning to life. Geertz (1966) believes that meaning giving is the most essential function of religion. The belief that the world is meaningful, predictable and manageable, can help people perceive stress as less threatening and thus enables them to cope with it more efficiently and to be less likely to experience stress-related illness (Antonovsky, 1987). Secondly, it provides people with a greater sense of control over situations. Research shows that those who have higher levels of spirituality are better able to fulfil their greatest potential and have a better sense of control over stressful situations than those who have lower levels of spirituality (Richards & Bergin, 1977). Thirdly, it builds self-esteem. Evidence shows that participation in religion is associated with higher levels of self-esteem and self-efficacy, and thus religious people are able to heal at a faster rate and are able to establish better health (Ellison, 1993).

The literature on stress and coping has grown enormously over the past two decades. Lazarus and Folkman (1984, p. 141) defined as "[c]onstantly changing cognitive and behavioural efforts to manage specific external and/or internal demands that are appraised as taxing or exceeding the resources of the person". Studies have examined people's responses to stressors such as chronic illness, diagnosis of a life-threatening illness and natural disasters (Carver, 1997). In general, there are three types of coping styles. The first, termed problem-focused coping, aims to solve the problem or attempts to alter the situation. This style emphasises the importance of the task, planning or attempts to solve the problem (e.g. "I have been trying to take action to solve my problem"). The second, termed emotion-focused coping, aims to manage the emotional distress that is associated with the situation. The responses of this style

include emotional responses (e.g. "I have been expressing my negative feelings"). The third, termed avoidance, aims to avoid the stressful situations. An individual may search for activity to take his or her attention away from stress or may use self-blaming as a means to reduce stress (e.g. "I have been blaming myself for the mistakes I made").

Numerous studies have examined the relationship between religion/spirituality and coping, and support the view that many individuals search for religious/spiritual guidance during stressful events. Religion/spirituality provides resources for people to cope with situations that are perceived as threatening or harmful. Pargament, Olsen, Reilly, Falgout, Ensing and Van Haitsma (1992) conducted a study of members of US Midwestern churches who had experienced a significant negative event over the past year. They found that the members were more likely to turn to religion in coping when the event was appraised as harmful, unmanageable, a threat to their well-being or others and a challenge. Therefore, during times of stress or crisis, religious practices are often used as resources for coping (Pargament, 2002). For example, O'Connor et al. (2007) explored the relationship between spiritual well-being, psychological adjustment and the quality of life of patients who were diagnosed with leukaemia. The research demonstrated a significant positive relationship between spiritual well-being and quality of life. On the other hand, spiritual well-being was negatively correlated with cognitive avoidance, fatalism and hopelessness/helplessness. This might indicate that those who perceived meaning and purpose in their lives were more likely to fight their illness and had a strong faith in a better life, which in turn contributed to a better quality of life.

During times of stress, individuals with strong religiousness may have greater access to concrete forms of religious coping methods (e.g. prayer, meditation, religious appraisals), which may make a strong impact on their health (Pargament, 1997). Pargament (1997) proposed a distinction between two forms of religious coping, which are the "positive" and "negative" religious coping. Individuals who use positive religious coping have a faith in God (or a higher power). They believe that God loves, cares for, and strengthens one's ability. They believe that they work with God to manage and cure illness. Individuals who use negative religious coping believe that illness is a result of sin; they feel that they were punished or abandoned by God (Pargament, 1997). Pargament, Smith, Koenig and Perez (1998) identified

positive and negative patterns of religious coping methods in samples of people coping with the Oklahoma City bombing, college students coping with major life stressors and elderly hospitalised patients coping with serious medical illnesses. They found that negative religious coping (e.g. spiritual discontent, punitive religious reframing) was associated with higher levels of distress and psychosomatic symptoms than positive coping. Other studies suggest that positive religious coping is associated with better mental and physical health, while negative religious coping is associated with negative psychological health, such as depression and anxiety (e.g. Koenig, Pargament, & Nielsen, 1998; Pargament, 1997).

Although empirical studies consistently indicate that religiousness is related to the reduction of the likelihood of a negative health outcome, not all studies supported the effectiveness of religiousness. For example, Strawbridge, Shema, Cohen, Roberts, and Kaplan (1998) reported mixed results when examining the effects of religion on coping with life stressors. They reported that although personal and organizational religiousness reduced the effects of depression for non-family stressors, such as financial difficulties, neighbourhood problems and health problems, personal religiousness exacerbated the impact of child problems on depression, and organizational religiousness exacerbated the effects of family problems, such as abuse, care giving and marital problems on depression. They suggested that religious stigma and blame, and unrealistic expectations from religious groups regarding family problems (e.g. homecare for older relatives over institutionalization) raise conflicts with the values emphasised by religion. Thus, they may feel more at fault themselves compared to non-religious persons.

Furthermore, religion may moderate the effects of stress for some groups and not for others. Park, Cohen, and Herb (1990) examined the roles of religious coping and intrinsic religious commitment on depression. They found that individuals who are intrinsically committed to religion (who have no motive apart from the religion itself) and use religious coping can moderate the effects of uncontrollable negative life events. But this result was only observed for Protestant and not for Catholics. In addition, Siegel and Kuykendall (1990) reported that men who cope religiously were protected from the detrimental effects of stress caused by the death of a close family member, but this effect was not observed for women.

Theoretical considerations for religious/spiritual support and well-being

As mentioned above, a substantial number of studies have suggested that religion/spirituality is an effective coping strategy to moderate the effect of stress (e.g. Kim & Seidlitz, 2002; Krok, 2008). One possible explanation for this effect is that religion/spirituality creates a social support network that serves to buffer the effects of stressful life events (Koenig et al., 1998). Numerous studies indicate that people with spouses, friends and family members who provide psychological and material resources are in better health than those with fewer supportive social contacts (e.g. Broadhead et al., 1983; Cohen & Wills, 1985). Therefore, the researchers suggested that social support is a causal contributor to well-being (Cohen & Wills, 1985).

The relationship between social support and well-being can be explained by two different models, which are the *main effects hypothesis* and the *stress-buffering hypothesis* (Cohen & Wills, 1985). The main effects hypothesis states that social support has a beneficial impact on well-being, regardless of the person's level of stress. Therefore, the more social support an individual has, the better the quality of life, and this relationship is linear. The stress-buffering hypothesis, on the other hand, proposes that social support is positively related to quality of life primarily in individuals under high stress. Social support has not much beneficial effect on quality of life for individuals with no or little stress. However, social support serves as a buffer against the detrimental effects of stressful events for individuals under high stress (Cohen & Wills, 1985). The perceptions of support are not limited solely to relationships with other people, but also could be extended to relationships with God (Spilka & Mullin, 1977). *Spiritual support* is a personal support perceived by an individual's relationship with God.

A growing number of findings tend to support the stress-buffering hypothesis, where social support is beneficial for individuals with high levels of life-event stress, such as unemployment, financial difficulties, marital conflicts and parental problems (Cohen & Wills, 1985). Several studies have examined the buffering effects of religious involvement on the effects of stress and their findings are consistent with a stress-buffering role for religious/spiritual support (e.g. Maton, 1989; Wright et al., 1985). For example, Maton (1989) examined the role of spirituality on coping and adjustment for a sample of recently bereaved parents (higher stress) and parents who had lost a child more than two years ago (lower stress). Results showed that spiritual support was related to depression and self-esteem more strongly for the high life

stress parents than for the lower stress parents. In their second study on first year university students, those who had experienced three of more life stress events were grouped into a high-stress category and those who had experienced two or fewer life stress events were grouped into a low-stress category. Results indicated that spiritual support was positively related to personal-emotional adjustment to university for high-stress students but not significantly related for the low-stress students.

Another explanation of the ability of religion/spirituality to buffer against the deleterious effects of stress is that it may provide individuals with the motivation to enhance their self-esteem, which may then influence their reaction to stress (Maltby, Lewis, & Day, 1999). Maton (1989) proposed two major pathways through which spiritual support may have an influence on well-being for high life stress individuals. First, the *cognitive mediation pathway*, where spiritual support provides individuals with positive cognitive appraisal to the meaning of negative events (e.g. redefining the stressors as benevolent and potentially beneficial), thus reducing the negative stress response and enhancing emotional adjustment. Second, the *emotional support pathway*, where spiritual support provides reassurance and comfort through God's love and care. This perception will enhance self-esteem and reduce the negative effect of life stressors on individuals who would otherwise be emotionally vulnerable.

Krok (2008) investigated the role played by spirituality in coping and the relationship between spiritual dimensions and coping styles. The results showed that individuals with high spirituality tended to deal with stressful events through efforts aimed at solving the problem. They were also striving for social resources and willing to receive social support from other people. This finding is consistent with Maton's (1989) view of the cognitive mediation pathway in that spiritual beliefs provide positive appraisal to the meaning of a negative event.

Religion/spirituality and coping for international tertiary students

Most studies on the role of religion/spirituality on stress coping have focused on elderly populations, while several have examined its effects in younger people or students. Studies that did regard a younger group generally replicated the positive effects of spirituality. For example, Wallace and Forman (1998) found that religiosity in high school students living in United States was positively associated with health-promoting behaviours and less engagement in risky behaviours. Graham, Furr, Flowers and Burke (2001) examined the relationships between religion, spirituality

and the ability to cope with stress in post-graduate counselling students. The results showed that religion/spirituality was positively correlated with the students' ability to cope with stress. This finding suggests that counselling students are identifying religion/spirituality as an important component of coping with stress.

Similar results were obtained by Kim and Seidlitz (2002) in a context of non-European students. Their study examined the relationship of spirituality with emotional and physical adjustment to daily stress in Korean college students. The findings illustrated that, when controlling for stress, spirituality buffered the adverse effects of stress on negative affect and physical adjustment regardless of religious affiliation.

Tertiary education is a stressful phase for many students as they go through the process of adapting to a new educational and social environment. The stressors in a university setting include time-management challenges, changes in sleeping habits, new responsibilities, increases in academic workload, financial difficulties, and challenges in social activities (Ross, Niebling, & Heckert, 1999). This may be particularly so for international students, who may encounter additional stress given that they have more difficulties adjusting to a different culture and may be required to learn a new language, in addition to academic preparation (Misra & Castillo, 2004).

Since 1995, the total number of international students had almost doubled and has reached 2.7 million globally (Ministry of Education, 2008). In New Zealand, the international student population has been growing steadily for 30 years. In recent years, the international student market has become one of the most successful export industries in New Zealand (Ministry of Education, 2008). In April 2009, there were 50,739 foreign fee-paying students studying in New Zealand. Seventy-three percent of these foreign fee-paying students came from Asian regions. The majority of them are from China, followed by South Korea and Japan (Ministry of Education, 2008). International students experience a range of difficulties common to immigrants, such as insufficient access to one's culture or heritage and loneliness. Experiences of acculturation could cause a substantial amount of stress to international students, especially to those who are in the transition from very different cultural backgrounds.

Language barrier is probably the most prevalent problem for most international students in New Zealand. When studying in a foreign country, international students with non-English speaking backgrounds find it difficult to cope with certain academic subjects. This is because they have to learn to adapt within a

short time to a different educational system that requires different study and social skills (Khoo, Abu-Rasain, & Hornby, 1994). They also require extra time to process reading comprehension. Due to their often limited vocabulary, they commonly have difficulties articulating their knowledge well for assignments and exams (Lin & Yi, 1997). In addition, international students have difficulty understanding lecturers, which may at times be due to difficulty adjusting to the various accents of the lecturers, along with different teaching styles. This may discourage them from participating in class discussions (Lin & Yi, 1997), which in turn, can create frustration in both lecturers and students.

International students are often under immense external and internal pressure to succeed, and to live up to the expectations of family and friends back home. When failure occurs, international students feel shame and therefore isolate themselves from their family and friends (Lin & Yi, 1997). The expectation of perfectionism in their studies can often bring about disappointment, resentment and deep feelings of loss in the face of reality (Barletta & Kobayashi, 2007). This may also develop a lack of confidence, depression and social isolation when subjected to adjustment problems, particularly if they had been highly successful in their home countries (Mori, 2000). Psychological distress is reported especially among those who fail to succeed academically (Essandoh, 1995).

One of the common problems experienced by international students is loneliness. It may be the first time for many of them to leave their own families. Due to the lack of familiar means of communication and traditional social support, many of these students experience stressful life changes and cultural adjustment (Leong & Mallinckrodt, 1992). Research has shown that although international students wish to interact more with the local community, the amount of interaction with it is generally low (Ward, Bochner, & Furnham, 2001). English language proficiency was a leading factor contributing to the lack of interaction between international students and New Zealand students (Noels, Pon, & Clement, 1996).

The adjustment difficulties that international students encountered in their academic environment may lead to psychological distress. Depression is among the most common psychological problems for international students who seek help from university counselling services (Nilsson, Berkel, Flores, & Lucas, 2004). About 30% of Asian international students who sought counselling scored above the cut-off point on indicators of clinical depression (Wei et al., 2007). Furthermore, Furr, Westefield,

McConnell, and Jenkins (2001) found that more than 50% of university students had depressive symptoms soon after the commencement of their studies. Janca and Hetzer (1992) found that international students had higher psychiatric morbidity rates compared to their domestic counterparts. Encountering a new culture may be perceived as a process of increased difficulties and hardship for some international students. Cultural differences may be one of the factors that greatly influences the quality of life and overseas experience for international students. Differences in food, language, climate, customs, communication, and identity issues associated with loss or change in status are important issues for international students (Alexander, Klein, Workneh, & Miller, 1981). This is particularly salient for the differences between individualistic and collectivistic cultures. The adjustment problems are usually aggravated when one is unable to find a cultural fit between one's cultural framework and the practices of the host society (Ward, Leong, & Low, 2004).

International students are often found to be reluctant to use mental health services, despite the fact that they tend to experience more problems than students in general and some may urgently need psychological assistance (Pedersen, 1991). The stigma of mental health in some cultures has prevented international students from using the services. For example, many students from Asian countries only seek professional psychological help when they have exhausted their support system. Therefore, they are often in crisis when they do reach out to the counsellors (Lin & Yi, 1997). In addition, in many cultures, students and their families will feel a sense of shame because having a mental illness supposedly reflects hereditary flaws or inadequate child parenting (Mori, 2000). Therefore, they will try to deny the existence of mental illness in order to avoid losing face (Flaskerud, 1986). Consequently, more detailed understanding of the manner in which international students cope with stress is important. Counsellors need to modify present counselling practices to become more culturally relevant, and thus increase the utilisation of counselling services, on campus, for international students.

To investigate the link between religion/spirituality and quality of life in international students in New Zealand, Hsu, Krägeloh, Shepherd and Billington (2009) utilised a sample of 218 domestic and 164 international university students. Participants were given the quality of life inventory, WHOQOL-BREF, and an additional special module about spirituality/religion/personal beliefs (WHOOQOL-SRPB), both developed by the World Health Organization. Results showed that

international students rated themselves as significantly more religious, more actively participating in a religious community and having stronger spiritual beliefs than domestic students, but rated their personal beliefs as less strong. These findings are consistent with previous research indicating that immigrants to a Western country have higher levels of religiousness than locals (King, Weich, Nazroo, & Blizard, 2006). The study found significant differences in self-rated physical and environmental quality of life but not social nor psychological quality of life between domestic and international students. However, religion/spirituality was significantly correlated with psychological and social quality of life for international students which, as Hsu et al. (2009) argued, could indicate that international students might use religion/spirituality to cope with their stress in response to stressors of acculturation. Therefore, this finding is consistent with the stress-buffering effects of religion/spirituality.

One of the limitations of their study is that level of stress was not assessed. Therefore, their conclusions about the stress-buffering effects of religion/spirituality on international students were relying on links to secondary data. Second, the length of residence in New Zealand was not recorded in this research. Research found that psychological and socio-cultural adjustment problems were greatest at entry to the new culture, and decreased over time (Ward, Okura, Kennedy, & Kojima, 1998). Therefore, the duration of residency could be a factor affecting one's quality of life. Third, due to data processing error, no gender data of the participants were available. Previous research has shown that there are gender differences in both quality of life and levels of religion/spirituality (Krok, 2008).

Assessment of Quality of life - WHOQOL-BREF and religion/spirituality - WHOQOL-SRPB

One of the aims of this study was to examine the link between religion/spirituality and quality of life in international students as part of replication of Hsu et al. (2009). This study also utilised the same quality of life instruments as in Hsu et al., (2009). Quality of life in this study is defined as "an individual's perceptions of their position in life, in the context of the culture and value systems in which they live and in relation to their goals, expectations, standards and concerns" (WHOQOL Group, 1998, p. 551). The quality of life instrument is an ideal tool for international comparisons because of the advantage that it has been developed, used,

and validated cross-culturally in many different countries in the world (WHOQOL Group, 1995). WHOQOL-BREF is a 26-item, short form of the original WHOQOL-100 scale that was developed for pragmatic reasons and has been shown to have similar psychometric properties to the WHOQOL-100 (WHOQOL Group, 1998). In this present study, WHOQOL-BREF was used to evaluate an individual's quality of life in four domains: physical, psychological, social, and environmental quality of life.

An additional module WHOQOL-SRPB was also utilised in this study. WHOQOL-SRPB examines an individual's personal beliefs, religion and spirituality and how these affect one's quality of life. Religion/spirituality could help individuals to cope with difficulties in their lives, by attributing meaning to spiritual and personal questions, and providing the person with a sense of well-being (WHOQOL Group, 1995). For many people, religion, personal beliefs and spirituality are a source of comfort, well-being, security, meaning, sense of belonging, purpose and strength. The items of this module were developed internationally in 18 countries, from focus groups with people from different religious and non-religious belief systems. Therefore, this instrument is suitable for the present research because it has been validated cross-culturally and it is also relevant to different types of religious denominations as well as personal and spiritual beliefs (Hsu et al., 2009). In addition to that, the SRPB module was developed to evaluate quality of life because spiritual, religious and personal beliefs were seen as relevant to people's health-related quality of life (Fleck & Skevington, 2007).

The present study

The main purpose of the present study was to examine whether religion/spirituality acts as a stress coping mechanism for international students in a systematic replication of the exploratory study by Hsu et al. (2009). The present study addresses directly some of the limitations mentioned by Hsu et al., such as that the lack of data on the gender, ethnicity and year of residency of the participants. Additional assessments include perceived level of stress and skills of coping with stress to test some of the potential confounding variables that were not addressed by Hsu et al. (2009). This study also expands on the work of Hsu et al. (2009) in that it aims to directly investigate whether international students use religion/spirituality as a coping mechanism, instead of relying on secondary data. Previous research generally showed that religion/spirituality buffers the negative impact of stressors, however the

majority of the research focused on elderly populations or people with long term illness. The present study explores whether the buffering effect of religion/spirituality can be found in international student populations who are prone to stressors due to acculturation. Furthermore, the present study aimed to collect information from a larger sample size to enable some detailed theoretical investigation, such as the stress-buffering hypothesis. An accumulation of findings supports the stress-buffering hypothesis where spiritual support buffers the negative effect of stress for high stress individuals, such as bereaved parents (Maton, 1989) and cancer patients (Jenkins & Pargament, 1988), but very few studies focused on the perceived levels of stress for tertiary education students. Therefore, we are testing the stress-buffering hypothesis, whether religion/spirituality will buffer the negative impact of perceived levels of stress for tertiary students in their quality of life.

The present study has several hypotheses. First, we expect to reproduce the Hsu et al. (2009) finding that domestic students will have better quality of life than international students; and the former will perceive lower levels of stress compared to their counterparts. We also expect that international students, mainly those who come from non-Western cultures, will score higher on the level of religion/spirituality than domestic students (King et al., 2006). Second, we hypothesise that religion/spirituality can function as a stress coping mechanism for international students, thus alleviating the negative effects of acculturation and transition to a new country. Third, to test the stress-buffering hypothesis, we predict that in the face of stressful conditions, students with higher levels of religion/spirituality are buffered from negative impacts of stress, and have a higher quality of life. However, students with low levels of spirituality are more likely to experience negative effects of stress and thus a lower quality of life. Finally, the assessment of the skills of coping with stress will allow us to examine the contributions of adaptive and maladaptive coping strategies between international and domestic students.

The results of the study may therefore be of use for education providers to understand the needs of international students, allowing them to evaluate existing programs, in order to offer better services. International students are known to be generally reluctant to use counselling and guidance services (Mori, 2000), and a more detailed understanding of stress coping mechanisms of international students might help increase the uptake of these services by international students.

Method

Participants

Participants in this study were 679 undergraduate students (494 females and 179 males) attending classes at Auckland University of Technology in Auckland, New Zealand. Students were recruited across various faculties such as business, psychology, English language and postgraduate study. Their age ranged from 17 to 58 (M= 22.82, SD=6.88). Participants were categorised into two groups based on their student status which is either international or domestic student. An international student is defined as any current university student who was currently paying international tuition fees and was currently engaging in tertiary studies in New Zealand. A domestic student is defined as any current university student who was currently paying domestic tuition fees and was currently engaging in tertiary studies in New Zealand. There are a total of 515 domestic and 151 international students. No exact measures of response rates are available, but were estimated to be approximately 70%.

Instruments

Quality of Life: The WHOQOL-BREF

The WHOQOL-BREF questionnaire (WHOQOL Group, 1998) is a cross-culturally validated questionnaire developed by the World Health Organization (WHO). The Australian version of WHOQOL-BREF (Murphy, Herrman, Hawthorne, Pinzone, & Evert, 2000) was utilised in this study due to the fact that a New Zealand version had to date not been developed. The WHOQOL-BREF is a self-report questionnaire for assessing one's health-related quality of life in the past two weeks prior to filling in the questionnaire. Questions in the 26-item instrument represent four separate domains of quality of life: physical health (7 items), psychological wellbeing (6 items), social relationships (3 items), and environment (8 items). There are also two additional items addressing general quality of life ("How would you rate your quality of life?") and general health ("How satisfied are you with your health?").

Items are rated on a 5-point Likert scale where "1" indicates low and negative perceptions and "5" indicates high and positive perceptions. For example, an item in the environment domain asks "How healthy is your physical environment?" and the

available responses are "1" ("not at all"), "2" ("a small amount"), "3" ("a moderate amount"), "4" ("a great deal") and "5" ("an extreme amount"). Items 3, 4, and 26 are negatively worded and are therefore reverse scored.

The raw scores of WHOQOL-BREF need to be transformed in order to conform to the format in which population norms are presented (Murphy et al., 2000). The scores were transformed in the following fashion: The sum of the scores from all items within a particular domain was subtracted by the lowest possible score on the domain. This was then divided by the range of the highest possible and lowest possible score and then multiplied by 100 to yield a final score between 0 to 100. No domain scores were calculated when a certain numbers of items were not answered. For example, for the physical domain, at least five items need to be answered; at least two items for social relationships domains; at least 4 items for psychological wellbeing domain and at least six items for environmental domain. When the minimum numbers of items for each domain were completed, the score was calculated by giving the average value of the items. Therefore the WHOQOL-BREF is a multidimensional scale with a summary score for each domain.

WHOQOL-SRPB

The WHOQOL-SRPB Questionnaire (WHOQOL SRPB Group, 2002, 2006) was designed to assess a person's perception of quality of life from a spiritual, religious and personal belief (SRPB) perspective. This questionnaire consists of 32 items which cover eight facets with four items each. The facets are 1) spiritual connection, 2) meaning of life, 3) awe, 4) wholeness, 5) spiritual strength, 6) inner peace 7) hope, and 8) faith. For example, one question in the facet *spiritual connection* asks "To what extent does any connection to a spiritual being help you to tolerate stress?" and one question in the facet *meaning of life* asks "To what extent do you find meaning in life?" Each facet score was determined by the average of all the individual facet items. In addition to the eight facets, there are also four additional questions that address the extent to which a person has religious, spiritual or personal beliefs. These are "To what extent do you have religious beliefs?"; "To what extent do you consider yourself to be part of a religious community?"; "To what extent do you have spiritual beliefs?", and "To what extent do you have strong personal

beliefs?" At least three items need to be answered for each facet. When one item was missing, the score was calculated by giving the average value of the other items.

Stress

The 14-item Perceived Stress Scale (PSS) (Cohen, Kamarck, & Mermelstein, 1983) was used to assess the perceived level of stress that participants experienced in their daily life during the past month. The scale was developed and found to be reliable and valid when used among college populations and correlated with life-event scores, with a coefficient alpha reliability of 0.84 in a sample of 322 first year college students (Cohen et al., 1983). The items were rated on a 5-point Likert Scale (1= never and 5= very often). Examples items are "In the last month, how often have you felt nervous and stressed"? "In the last month, how often have you been able to control irritations in your life?". The average rating of the 14 items was used to indicate the level of perceived stress. Categorised stress levels are as below: less than 20 were categorised as low stress; 20 to 35 were categorised as moderate stress and 36 and above were categorised as high stress (Cohen et al., 1983). In this scale, when more than two items were missing, the result was excluded from our data. If less than two items were missing, the score was calculated as the average value of the other items.

Coping

The 28-item Brief COPE (Carver, 1997) was used to measure individual differences in various coping styles. It consists of two items on each of 14 scales. The scale includes items measuring various strategies, such as self-distraction, active coping, denial, substance use, use of emotional or instrumental support, disengagement, venting, positive reframing, planning, humor, acceptance, religion and self-blame. In an attempt to avoid confusion with the rest of the questionnaires, the initial 4-point scale was modified to a 5-point Likert Scale ("1"= "I usually don't do this at all" and "5"= "I usually do this a lot").

At the end of this questionnaire, a number of short demographic variable are collected, such as student's status (domestic or international), age, gender, length of residence, ethnicity, health status and religious denomination. Six different versions

of questionnaires (with different orders of subtests) were utilised in an attempt to control for order effects.

Procedure

The author approached students during regular lectures. Permission was obtained from each lecturer before approaching students. At the end of a lecture, the researcher gave a brief presentation of the nature of this study, and students were invited to participate by filling in a questionnaire. The aim of this study was explained, and any questions were answered. A strong emphasis was placed upon ensuring participants' confidentiality, anonymity, and their right to withdraw from the study at any time. A drop-off box was provided for students to submit their completed questionnaires in order to protect their confidentiality. The study was approved by the Auckland University of Technology Ethics Committee.

Data analysis

Statistical analyses were performed using Statistical Package for Social Sciences (SPSS) Version 14 (SPSS, 2005). The data from the WHOQOL-BREF and WHOQOL-SRPB were analysed according to the WHOQOL-BREF and WHOQOL-SRPB user manuals (Murphy et al., 2000; WHOQOL SRPB Group, 2006). A series of chi-square tests were conducted to investigate potential demographic differences for international and domestic students on gender, ethnicity and religious denomination. Independent sample *t-* test or an analysis of covariance when controlling for other variables were conducted to compare both student groups on WHOQOL-BREF domain scores, perceived level of stress (PSS) and types of coping skills (Brief COPE). A principle components factor analysis was also conducted to extract factors on Brief COPE. A multiple linear regression was conducted to explore the influence of years of residency on WHOQOL-BREF domain scores for international students. Since responses were on an ordinal scale, group differences on single question items were analysed using nonparametric Mann–Whitney U tests. Partial correlations between the total score on the PSS and each of the individual WHOQOL-BREF domain scores were conducted while controlling for age and gender. Two-factor analyses of variance, when controlling for other variables, were conducted to examine the effect and interaction of ethnicity (European versus Asian)

and student status on PSS, Brief COPE, and to test the stress-buffering hypothesis. For all parametric analyses, probability values below 0.05 were considered statistically significant.

Results

This questionnaire was completed by 712 undergraduate students attending classes at Auckland University of Technology. Of the total number of returned questionnaires, 46 questionnaires were invalid due to pages missing or questionnaires being insufficiently completed, such as when more than three items on at least three sub-scales were not answered. Out of the 666 valid questionnaires, 515 were from domestic students, while 151 were from international students. The average age was 22.8, with a standard deviation of 6.8.

With a mean age of 24.32 years, international students were significantly older than domestic students who had a mean age of 22.35 years (t (660) = -3.14, $p<.01$). The number of domestic female students (n = 404) was more than domestic male students (n = 110). On the other hand, international students had a more balanced gender ratio, however the number of female students (n= 84) was more than male students (n=67). There was a significant difference in the gender proportions between domestic and international students (chi-square test, χ^2 = 31.53, df =1, $p<.01$)

Table 1 shows the self-reported ethnicity of the respondents by student status. The largest ethnicity group in the NZ domestic students was European (51.60%), followed by Asian (15.37%); while the largest ethnicity group in the international students was Asian (48.10%), followed by European (25.96%). In the "mixed" ethnicity, the two most frequent combinations were European/Maori (n = 17) and European/Asian (n = 3).There was a significant difference in the distribution of ethnicity between domestic and international students (chi-square test, χ^2 = 86.98, df =8, $p <.01$).

Table 2 shows the mean WHOQOL-BREF domain scores and standard deviations by student status. Specifically, domestic students scores were significantly higher for the physical (t (664) = 2.82, $p<.01$) and environmental domains (t (664) = 3.34, $p<.01$).

Because the mean age and gender propotion of international and domestic students differed significantly, age and gender as variables were controlled as co-variates when comparing the mean domain scores of the WHOQOL-BREF. The differences between domestic and international students were only significant for the physical and environmental domains (ANOVA, $p <.01$). Also, there was no significant difference on age and gender effect for all domains of WHOQOL-BREF.

Table 1
Ethnicity by student status.

	New Zealand domestic		International	
	N	%	N	%
European	225	51.60	34	25.96
Asian	67	15.37	63	48.10
Pasifika	37	8.49	4	3.10
Indian	34	7.80	10	7.63
Mixed	23	5.28	3	2.30
Maori	20	4.59	0	0
African	8	1.83	4	3.10
Middle East	7	1.61	10	7.63
Other	15	3.44	3	2.30
Total	436		131	

Table 2
Means and standard deviations of the WHOQOL-BREF Domains by student status.

	Domestic students			International students		
Domain	N	M	SD	N	M	SD
Physical	515	69.24	13.61	151	65.56**	15.61
Psychological	515	64.22	15.60	151	62.39	15.70
Social	514	67.06	21.32	149	63.98	20.23
Environmental	515	67.55	13.77	151	63.25 **	14.48

** significant at $p<.01$

The mean length of residency since arriving in New Zealand for international students was 1.8 years; while the median score was 1 year. To explore whether the number of years residency for international students had an influence on their quality of life, a multiple linear regression was conducted for each WHOQOL domain, while controlling for age and gender. Using the hierarchical method, Table 3 showed that the number of years that international students were already residing in New Zealand did not significantly predict scores on physical $F (3,145) = 1.240$, $p>.05$, psychological $F (3,145) = 0.319$, $p>.05$, social $F (3,143) = 0.870$, $p>.05$ and environmental quality of life $F (3,145) = 0.027$, $p>.05$. As with the ANCOVA analyses shown above, age and gender were not significant predictors of any of the WHOQOL domain scores.

Table 3
Standardised beta coefficients for years of residency for international students in the linear regression.

WHOQOL domains	Beta coefficients	p
Physical		
Year of residence	-0.122	0.140
Age	0.930	0.270
Gender	0.000	0.996
Psychological		
Year of residence	0.017	0.836
Age	0.063	0.458
Gender	0.064	0.452
Social		
Year of residence	-0.014	0.871
Age	0.028	0.743
Gender	0.136	0.111
Environmental		
Year of residence	-0.019	0.818
Age	0.004	0.962
Gender	0.014	0.873

The numbers of students identifying themselves as members of various religious communities are shown in Table 4. Only 47% of domestic participants reported belonging to a religious affiliation; which 39.42% were Christian; while, 51% of international participants reported belonging to a religious affiliation; which 26.50% were Christian, 13.25% were Muslim and 8.61% were Buddhist. There was a significant difference in the distribution of religious denominations between domestic and international students (chi-square test, $\chi^2 = 64.80$, df =4, $p <.01$)

Table 4
Religious denomination by student status

	New Zealand domestic		International	
Religious denomination	N	%	N	%
Christian	203	39.42	40	26.5
Hindu	19	3.69	2	1.3
Muslim	8	1.55	20	13.3
Buddhist	6	1.17	13	8.6
Other	9	1.75	3	2.0
No religious affiliation	270	52.43	73	48.3

To investigate if gender has an influence on the level of religion/spiritual beliefs/ personal beliefs, a *t*-test was performed. The result shows that there is no significant difference between males (n = 177) and females (n=490) on the total

SRPB scores (t = 1.58, df =139, p >.05). Table 5 shows the mean WHOQOL-SRPB facet scores and standard deviations by student status. The result shows that there was no significant difference on religious/spiritual beliefs/ personal belief total scores between international and domestic students (Mann-Whitney U, p>.05). International students had significantly higher scores than domestic students in *peace* (Mann-Whitney U, p<.05) and *faith* (Mann-Whitney U, p<.05) facets but for none of the other domains. The latter, on the other hand, scored significantly higher in the *awe* (Mann-Whitney U, p<.05) facet than international students (Table 5).

Table 5
Means and standard deviations of the WHOQOL-SRPB facets and the total score by student status.

SRPB facet	Domestic students			International students		
	N	M	SD	N	M	SD
Connection	514	2.81	1.33	150	2.93	1.21
Meaning	514	3.86	0.85	150	3.82	0.79
Awe	514	3.57	0.79	151	3.50 *	1.10
Wholeness	514	3.28	0.85	151	3.39	0.80
Strength	514	3.05	1.21	150	3.18	1.06
Peace	514	3.21	0.89	151	3.41*	0.82
Hope	512	3.64	0.74	151	3.66	0.76
Faith	513	2.91	1.35	151	3.20 *	1.19
Total	514	26.32	6.48	149	27.08	5.80

* significant at p<.05

Unlike Hsu et al., (2009), while controlling for age and gender, the result showed that there was no significant difference between international and domestic students in religious beliefs (F (1,651) =1.29, p =.26), being part of a religious community (F (1,652) =1.11, p=.29 and having spiritual beliefs (F (1,654) =0.13, p =.91). However, a replication was found when looking at personal beliefs, where domestic students rated their extent of strong personal beliefs significantly higher than international students (F (1,653) =7.87, p=.005). To provide more understanding of the result, a further investigation was conducted.

European versus Asian

The following analyses explored the extent of spiritual/religious/personal beliefs by ethnicity. European respondents were compared with Asian respondents, as these two ethnicities were clearly the largest groups in the present sample, with

45.68% of respondents and 22.92%, respectively. Asian students had higher total scores of religion/spiritual/beliefs/personal beliefs compared to European students (F (1,428) =10.01, p=.002), while controlling for student status, age and gender as covariates. Table 6 shows the mean WHOQOL-SRPB facet scores and standard deviations between European and Asian students. Table 6 shows that Asian students had significantly higher scores than European students in *connection* (Mann-Whitney U, p<.01), *inner strength* (Mann-Whitney U, p<.01), *peace* (Mann-Whitney U, p<.01) and *faith* (Mann-Whitney U, p<.01) facets.

The findings also showed out that while controlling for student status, age and gender; Asian students were significantly more religious (F (1,429) = 13.02, p<.000), more actively participating in a religious community (F (1, 430) = 23.68, p<.000) and having stronger spiritual beliefs (F (1,431) = 14.00, p<.000) than European students. There was no significant difference on personal beliefs between European and Asian students (F (1,431) = .406, p=.524).

Table 6
Means and standard deviations of the WHOQOL-SRPB facets, the total score and additional SRPB items between European and Asian students.

SRPB facet	European students			Asian students		
	N	M	SD	N	M	SD
Connection	307	2.38	1.31	138	3.00**	1.12
Meaning	308	3.76	0.84	138	3.77	0.84
Awe	308	3.50	0.79	138	3.41	0.74
Wholeness	308	3.20	0.88	138	3.31	0.75
Strength	308	2.71	1.20	137	3.18**	0.98
Peace	308	3.11	0.89	138	3.31**	0.78
Hope	307	3.64	0.74	138	3.55	0.70
Faith	307	2.49	1.33	138	3.31**	1.04
Total	306	24.69	6.30	137	26.85**	5.64
Spiritual belief	302	2.63	1.38	135	3.14**	1.22
Personal belief	302	3.85	1.04	135	3.55	1.03
Religious person	301	2.11	1.32	134	2.69**	1.12
Religious community	301	1.92	1.31	135	2.60**	1.30

**significant at p<.01

Levels of Perceived Stress

Students' scores on PSS ranged from 5 to 49 with a mean of 26.60 (SD=6.89) and a median of 27.00. According to Cohen et al., (1983), scores below 20 were in the low category, as reported by 18 students (2.82 %), while 585 (91.98 %) were in the moderate category, and 36 (5.63 %) were in the high stress category (above 36).

Table 7 shows a partial correlation which was conducted between the PSS and WHOQOL-BREF, while controlling for age and gender. All correlations are significant with *p*<.01.

Table 7
Partial correlation between individual domain scores of the WHOQOL-BREF and PSS while controlling for age and gender.

	Total score of stress scale	Physical	Psychological	Social relationship	Environment
Total score of stress scale	1				
Physical	-.468**	1			
Psychological	-.569**	.532**	1		
Social relationship	-.321**	.351**	.550**	1	
Environment	-.402**	.568**	.546**	.445**	1

**p<.01

PSS Differences between student statuses

With a mean score of 27.03, domestic students (n = 487) reported higher stress levels than international students (n = 143) who had a mean score of 25.29. However, when conducting an ANCOVA controlling for age and gender as co-variates, there was no significant difference between domestic and international students on perceived level of stress (F(1,622) = 2.80, *p* >.05).

PSS Differences between ethnicity and student status

There were a total of 256 domestic European, 65 domestic Asian students, 34 international European, and 65 international Asian students in the present sample. A two-way ANCOVA was conducted in order to examine the effect and interaction of ethnicity and student status on level of stress. The result shows that, when controlling for age and gender, Asian students reported perceived higher stress levels than European students $F(1,416)=6.03$, *p*=.014; domestic students also reported perceived higher stress level than international students $F(1,416)=4.97$, *p*=.026. There was an interaction effect between ethnicity and student status $F (1,416) =4.65$, *p*=.032. The mean stress value of domestic European students (m = 26.67) was relatively similar to the mean stress value of domestic Asian students (m = 26.51); while the mean stress score for international European students (m = 22.12) was much lower than international Asian students (m = 26.37). Therefore, this result showed that European international students were significantly less stressed than the rest of the groups.

Factor Analysis of Brief COPE

Due to the high degree of intercorrelation among some of the brief COPE subscales, it was postulated that a principle components factor analysis (PCA) would demonstrate a more parsimonious model of coping. The PCA extracted nine factors with eigenvalues greater than 1. The Kaiser-Meyer Olkin (KMO-test) is greater than 0.5; the Bartlett's test of sphericity is significant, which demonstrate that the assumptions of the PCA were satisfied.

Table 8 compares the original factor structure of Carver (1997) with that extracted by the PCA of the present data set. As opposed to Carver, who reported that the 28 items map onto 14 factors in total, the PCA of the present study extracted only nine factors. Items 1-8 were now described by one factor instead of four, and items 13-16, as well as 25-28 were described by a single factor each, instead of two factors.

Item number 21 (I've been saying things to let my unpleasant feelings escape) was loaded onto two factors to similar extents, which are Factor 7 and Factor 9. It was decided to allocate this item to Factor 9 ("Venting") since this item made more sense in this factor and since Carver (1997) also included this item in his original venting subscales. These nine factors were created and were used in the following analyses as measures of individual differences in coping strategies.

In order to examine the effect and interaction of student status (international and domestic students) and European and Asian ethnicities, on each of the Brief COPE strategy factors, a two-factor ANOVA was used. Table 9 shows the mean and F score of coping styles between European and Asian students; and domestic and international students. When controlling for stress as a co-variate, findings revealed that Asian students utilised religion ($p<.01$), self distraction ($p<.01$) and denial ($p<.05$) significantly more than European students. When examining the effect of student status on Brief COPE, international students utilised significantly more denial ($p<.05$), self-blame and behaviour disengagement ($p<.01$) coping strategies than domestic students. Stress was a significant covariate for all of coping strategies except for religion and support coping.

Table 8

Comparison of the factor structure of Carver (1997) and that extracted in the current study.

	Carver (1997)		Current Study	
Items	Factor	Name	Factor	Name
1,2	1	Active Coping	1	Acceptance and Active Coping
3,4	2	Planning	1	Acceptance and Active Coping
5,6	3	Positive Reframing	1	Acceptance and Active Coping
7,8	4	Acceptance	1	Acceptance and Active Coping
9,10	5	Humor	2	Humor
11,12	6	Religion	3	Religion
13,14	7	Using Emotional Support	4	Support Coping
15,16	8	Using Instrumental Support	4	Support Coping
17,18	9	Self-Distraction	5	Self-Distraction
19,20	10	Denial	6	Denial
21,22	11	Venting	7	Venting
23,24	12	Substance Abuse	8	Substance Abuse
25,26	13	Behaviour Disengagement	9	Self-blame and behaviour disengagement
27,28	14	Self-Blame	9	Self-blame and behaviour disengagement

Table 9

The mean and F score of coping strategies between ethnicity (i.e. European versus Asian) and student status (i.e. domestic versus international)

	European	Asian		Domestic	International	
	Mean	Mean	F	Mean	Mean	F
Acceptance and Coping	28.77	29.00	0.02	28.95	28.82	0.43
Humor	6.04	5.77	1.22	5.98	5.79	0.36
Religion	4.16	5.73	21.96**	5.13	5.45	1.47
Support Coping	12.72	13.14	0.14	13.06	13.05	1.08
Self-Distraction	6.28	6.86	7.25**	6.40	6.40	0.01
Denial	3.44	4.30	4.80*	3.81	4.43	4.33*
Venting	5.07	5.20	0.05	5.15	5.28	2.03
Substance Abuse	3.42	2.95	1.44	3.33	2.93	0.09
Self-blame and behaviour disengagement	8.15	8.65	0.00	8.32	8.91	15.16**

*significant at $p<.05$

**significant at $p<.01$

Testing the stress-buffering hypothesis

        A two-factor ANOVA was performed to examine the effect of spirituality and stress on university students' psychological quality of life. Stress level were categorised into high stress (scores above 36) and low stress (scores below 20) according to the criteria by Cohen et al. (1983). Low spirituality was defined as total SRPB scores being more than one standard deviation below the overall mean, and high spirituality as more than one standard deviation above the mean. This criterion, rather than a more stringent one, was used for SPRB to maintain a sufficiently large sample size. Results show that there was no significant interaction between spirituality and stress level, F (1, 147) =1.64, p=.202. However, there was a main effect of both spirituality F (1, 147) =8.06, p=.005 and stress F (1, 147) =167.34, p<.000. The positive effects of spirituality on psychological quality of life were therefore independent of the negative effect of stress on psychological quality of life (Figure 1).
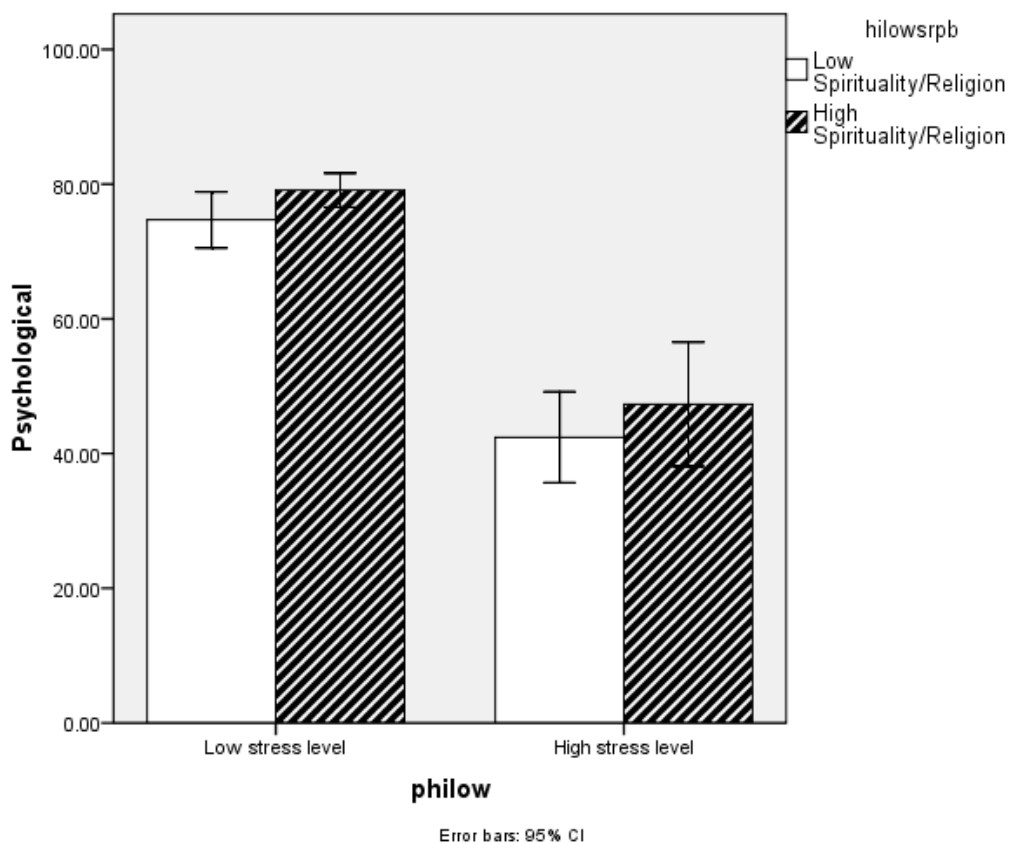

Figure 1. Error bars of the perceived stress to psychological well-being for groups with low and high religion/spirituality for the university students.

Discussion

The present study compared international and domestic university students in New Zealand on self-reported quality of life, level of religion/spirituality, perceived level of stress and the use of coping methods. The purpose of the present study was to provide a systematic replication of the exploratory study by Hsu et al., (2009), addressing a number of the limitations mentioned by the authors. One of the limitations of Hsu et al.'s (2009) study is that gender data, years of residency in New Zealand data and perceived levels of stress were not assessed. Hsu et al. (2009) found that international students reported higher levels of spiritual, religious, and personal beliefs than domestic students. Although international students did not have significantly lower levels of psychological and social quality of life than domestic students, Hsu et al. (2009) speculated that this was the result of international students utilising religion/spirituality to cope with stress of acculturation. This speculation was based on the wealth of secondary data that international students experience substantial amount of stress, but stress levels within their sample were not assessed. Hsu et al. (2009) did also not specifically enquire whether religion/spirituality was actually used to a larger extent by international students as a coping mechanism.

The present study examined the effect of religion/spirituality by collecting detailed demographic information, including gender, ethnicity, years of residency in New Zealand, as well as by assessing the perceived level of stress experienced by the participants and the specific strategies used to cope with such stress. In addition, by including a sufficiently large sample size, the study aimed to provide a test of the stress-buffering hypothesis, which predicts that religion/spirituality would buffer the negative impact of a high perceived level of stress for tertiary students in their quality of life.

An instrument of quality of life – The WHOQOL-BREF

As the present study was partly a replication of Hsu et al. (2009), it was expected to confirm their finding that international students have lower physical and environmental quality of life than domestic students when controlled for gender and age as covariates (Table 2).

The present study found that there was no significant difference on social quality of life domain between international and domestic students. It is well-

documented that international students, who are away from home, need to cope with additional acculturative stressors to adapt to a new culture and social environment, in addition to adjustment to new academic environments in a tertiary education setting (Mori, 2000). International students commonly reported difficulties forming friendships with local peers, which could lead to decreases in both physical and psychological well-being (Ward, 2006). Klineberg and Hull (1979) conducted a study with over 2,500 international university students in 11 countries. Results showed that, regardless of their country of origin, most of the regular contact that international students had was with friends from the same nationality. The majority of students (57%) indicated that their best friend was either from the same nationality or another international student. A national survey of international students in New Zealand also revealed a low percentage of intercultural friendships, where 35% admitted they had no local friends (Ward & Masgoret, 2004). The percentage was the highest in Chinese students. Studies found that international students experience greater difficulties and have less satisfying relationships than domestic students (Furnham & Tresize, 1981). The concern was even higher in students from South, East and Southeast Asia (Trice & Elliott, 1993). However, in both Hsu et al. (2009) and in the current study, international students did not have significantly lower quality of life in the social domain. This may suggest that the samples have either been sufficiently acculturated or that they are content with having friends from the same nationality or with other international students (e.g. Furnham & Alibhai, 1985; Ward & Masgoret, 2004).

The present study replicated the finding that international students obtained lower scores in the physical quality of life domain compared to domestic students, which supports the suggestion that this may be the result of adjustment problems to a different culture lifestyle. Krämer, Prüfer-Krämer, Stock, and Tshiananga (2004) conducted a study of international students in Germany and found that female international students were less likely to engage in physical activity than domestic female students; and both female and male international students smoked more than domestic students. Therefore, the lower scores on physical quality of life may be explainable as a negative consequence of adaptation to a Western lifestyle (Williams, 1993). Furthermore, Mori (2000) suggested that many international students do not distinguish between emotional distress and somatic illness; therefore, they may associate their psychological problems with physiological disorders. Because most international students are unfamiliar with the process of counselling, they usually

expect concrete advice or medication from general practitioners to "cure" their emotional problems (Mori, 2000). Consequently, international students may have lower physical quality of life due to their tendency to attribute their psychological problems to physiological illness.

The present study also replicated the finding by Hsu et al. (2009) that international students experience lower environmental quality of life than domestic students. Hsu et al. (2009) suggested that this may be linked to dissatisfaction of international students with their living arrangements. Vissing and Diament (1997) found that approximately 20% of university students reported feeling distress with their housing arrangements. Both McFedries' (2001) and Aston's (1996) studies suggested that homestays were often a source of significant distress for students in New Zealand. Aston (1996) found that almost half (46%) of the Asian students changed their homestays, due to problems with homestay families and location of premises. Poor quality of accommodation has been associated with lower measures of mental health (Evans, Chan, Wells, & Saltzman, 2000). Khawaja and Dempsey (2008) found that the majority of international students resided in rented accommodation because they were unable to find suitable housing due to limited residential halls and lack of housing in the private sector. The lower scores on environmental quality of life therefore might be explainable as a dissatisfaction of living arrangements and the immediate environment in New Zealand.

As in the study by Hsu et al. (2009), the present study did not find lower quality of life in the psychological domain in international students. These findings are not consistent with those of Furr et al. (2001) and Janca and Hetzer (1992). It is possible that international students in the present sample have adapted and acculturated adequately. This result is supported by Khawaja and Dempsey's (2007) study in Australia. Their result showed that international students did not exhibit higher than usual levels of anxiety, depression, somatisation or interpersonal difficulties. In addition, the high percentage of international students who were diagnosed with depression and anxiety reported by Janca and Heyzer (1992) was not found in Khawaja and Dempsey's (2007) study.

The perceived level of stress (PSS) scale

Hsu et al. (2009) acknowledged that their speculations about the stress buffering effects of religion/spirituality for international students relied solely on links

to secondary data. Unlike Hsu et al., the present study directly assessed stress levels in international and domestic students by using the perceived level of stress scale (PSS). Domestic students scored higher on the perceived level of stress scale than international students, but this result was not significant after controlling for age and gender. Although previous studies have indicated that international students experience additional stressors, in this study they did not appear to perceive more stress than domestic students. It is possible that international students, who tend to come from relatively high socio-economic status backgrounds, do not experience the same degree of financial worries as the majority of domestic students (Wang, 1999). Research shows that the majority of university domestic students have problems meeting their financial commitments (Roberts, Golding, Towell, & Weinreib, 1999). First-year university students have been commonly reported as being stressed by the task of managing money (Tyrrell, 1992). Khawaja and Dempsey (2008) found that the majority of international students obtained financial support from their parents, while the majority of domestic students received financial support through part-time employment. In addition, international students in the present sample may have integrated relatively successfully, thus overcoming some of the stressors related to acculturation (Berry, 1997).

Research found that adjustment problems were greatest at entry to the new culture, and decreased over time (Ward, et al., 1998b). However, the present result showed that the number of years that international students were already residing in New Zealand was not significantly correlated with scores on physical, psychological, social and environmental quality of life (Table 4). This is inconsistent with previous findings (Ward, et al., 1998). One possible explanation is that the process of adaptation may be different depending on the cultural origins of the students. Greater identification with host nationals within the first month of arrival was associated with fewer socio-cultural adjustment problems at six months (Ward et al., 2001). In the present sample, European international students who need to adapt to a similar western culture in New Zealand might easily integrate to life in New Zealand culture, and thus experience less adjustment problems. On the other hand, Asian international students, who come from an eastern cultural background, may experience more difficulties in cross-cultural adjustment. Therefore, due to the inconsistency of the adaptation process among different ethnicities of international students, it is difficult to reach a conclusion that year of residency has an influence on their quality of life. In

addition, in this sample, the mean score of the number of years that international students were residing in New Zealand was 1.8 years. Ward et al. (1998) suggested that psychological and socio-cultural adjustment problems were greatest at entry to the new culture, and decreased over time. However, they only observed the pattern of adaptation for one year. Perhaps international students in this sample may have been already adjusted well after one year; therefore this could be one of the reasons of a different finding with Ward et al. (1998).

Religion/spiritual beliefs/personal beliefs scale –WHOQOL-SRPB

There was a significant difference in the distribution of religious denominations between domestic and international students. The largest religious group of domestic students were Christian (39.4%), while 26.5% of international students were Christian, followed by Muslim (13.3%) and Buddhist (8.6%). In addition, when looking at the gender differences on the level of religious/spirituality, gender analyses did not reveal a significant difference between women and men in total scores of religion/spirituality. This is inconsistent with the previous research considering women to be more religious than men (Krok, 2008).

Contrary to Hsu et al. (2009), the present study did not find a significant difference between self-rated religion/spirituality of international and domestic students. In addition, the result also showed that there was no significant difference between international and domestic students in religious beliefs, being part of a religious community, and having spiritual beliefs. However, as in the study by Hsu et al., domestic students rated their extent of strong personal beliefs significantly higher than international students.

When examining the WHOQOL-SRPB facet scores, international students had significantly higher scores than domestic students in the *peace* and *faith* facets, but for none of the other facets (Table 5). O'Connell and Skevington (2005) conducted focus groups on assessing the importance of the SRPB facets. Both *peace* and *faith* were considered important for people who were religious, but not so for those who were agnostic or atheist. Interestingly, these were contrary to the present finding that international students did not report stronger religious beliefs than domestic students. To provide a further understanding of our research findings, a further analysis on ethnicity was conducted.

A Cultural Perspective- European and Asian students in WHOQOL-SPRB

European students were compared to Asian students as these two ethnicities were by far the largest groups in the present sample. Results showed that Asian students had higher total scores on the WHOQOL-SRPB than European students. The findings also indicated that Asian students rated themselves as more religious, more actively participating in a religious community, and as having stronger spiritual beliefs than European students, but less strongly in having personal beliefs.

Furthermore, WHOQOL-SRPB facet scores showed that Asian students had significantly higher scores than European students in *spiritual connection, spiritual strength*, *inner peace* and *faith* facets. These findings confirmed the qualitative results from focus groups that *spiritual connection*, *faith* and *inner peace* were rated as highly important for religious individuals (O'Connell & Skevington, 2005). *Spiritual strength* was judged as important for coping and overcoming difficulties for all individuals in the focus group. In particular, religious individuals believed that their spiritual strength came from their faith in God or through prayer (O'Connell & Skevington, 2005). This is consistent with previous research that individuals search for spiritual guidance, using religious/spiritual resources for coping during stressful events (Pargament, 2002).

In the study by Hsu et al. (2009), ethnicity data were not collected, therefore it is unknown what percentage of Asian students they had in their sample. In addition, their definition of international students was different from the present study. Hsu et al. (2009) defined an international student as any current university student who did not have New Zealand citizenship and was not born in New Zealand, and who was currently engaging in tertiary studies in New Zealand. On the other hand, the present study defined an international student as any current university student who was currently paying international tuition fees and was currently engaging in tertiary studies in New Zealand. Therefore, in Hsu et al. (2009), the international students sample may include overseas-born Asian migrants in New Zealand, whereas the present study could have had a higher proportion of Asian students in the domestic category, due to the fact that many Asian students possess permanent residency and therefore qualify for domestic fees.

Over the last two decades, the number of Asians living in New Zealand has increased to almost 240,000, or 6.4% of the total population, largely as a result of

migration (Ho, 2008). It is important to note that the majority of Asian residents were not born in New Zealand. Between the censuses of 1986 and 2006, the percentage of Asians born overseas increased from 55.6 % to 79.3 % (Statistics New Zealand, 2008). As a result, it is reasonable to assume that the majority of Asians sampled by Hsu et al. (2009) would have been classified as international students. However, in the present study, half of our Asian sample is domestic students (Table 1). Therefore, the present research broadens the previous findings obtained by Hsu et al., (2009). It points to the unique impact of cultural forces on the level of religion/spirituality. In other words, levels of religion/spirituality are probably not elevated in international tertiary students, as Hsu et al. originally reported, but may instead be only elevated in Asian students, regardless of their student status.

Furthermore, many studies have posited that religion is particularly salient for Asian immigrants in Western countries. These immigrants connect to religion because religious communities provide social benefits such as social recognition to them (George, 1998). In addition, religious centres provide a place for social networks to grow (Zhou, Bankston III, & Kim, 2002). This is consistent with a national survey in England that Asians immigrants were more likely to have a religious life view compared to White groups (King et al., 2006). In New Zealand, according to the 2001 Census, most of the Asians are religious and very diverse in their religious affiliation. Half of the Chinese immigrants reported to be a member of a religious faith, with one quarter being Christian and nearly one in seven being Buddhist. Within the Indian population, Hinduism is the most popular religion, followed by Christianity and Islam. Seven out of ten Koreans were Christians; where 70% of Cambodians and half of Vietnamese groups were Buddhist (Statistics New Zealand, 2008). Therefore, it is not surprising to find that Asians in our sample, regardless of the student status, seek for religion to settle into a new society.

PSS differences across ethnicity

Cultural factors may also have a significant impact on stress appraisal and coping styles. The present results showed that there was no significant difference on perceived level of stress between domestic European and domestic Asian students when controlled for age and gender. However, Asian international students reported significantly higher stress levels than European international students. This result is consistent with previous findings that international students of Asian origin

experience a range of difficulties such as challenges learning a new language, insufficient access to one's culture of heritage and loneliness (Misra & Castillo, 2004). Experiences of acculturation could cause a substantial amount of stress to international students especially those who are in the transition from eastern cultural backgrounds (Khawaja & Dempsey, 2008)

Very often, international students of Asian origin with a collectivistic orientation may not seek support due to a culture that promotes inhibition and restraint (Khawaja & Dempsey, 2008). This is consistent with previous studies that report that international students are generally reluctant to use support services available on campuses (Mori, 2000; Pedersen, 1991). A lack of supportive structures might attenuate their capacity to deal with stressors and thus have profound effects on their ability to cope with daily hassles.

As mentioned before, the problems experienced by international students might be different depending on the cultural origins and destination of the students. For example, cultural distance, the extent of the dissimilarity of the two cultures in terms of language, religion and cultural factors, varies with the degree of acculturation difficulties experienced. The general finding is that the greater the cultural differences, the less positive the socio-cultural adaptation (Ward & Kennedy, 1992). Berry (1997) suggested that individuals who have a greater cultural distance need to learn about the other culture; perhaps large differences induce negative attitudes towards the host culture and thus may create conflict and lead to poor adaptation. European international students in our sample, who are likely to have a relatively small cultural distance to New Zealand, have sufficient linguistic and cultural skills, and thus may have less socio-cultural adaptation problems than Asian international students. Henderson, Milhouse and Cao (1993) found that 97% of Asian students studying in the United States identified that the lack of English language proficiency was the most serious problem encountered. The present result is also consistent with those of the similar studies in the world, where international students, particularly Asians, are subjected significant stress due to acculturation.

Brief COPE

It is not surprising to find differences of coping style between domestic and international students. When examining the effect of student status on Brief COPE scores, international students utilised significantly more denial, self-blame and

behaviour disengagement coping strategies than domestic students. This finding is consistent with studies which indicate that international students' approach to dealing with difficulties was generally maladaptive (Bjork, Cutherbertson, Thurman, & Lee, 2001; Leong & Lau, 2001). For example, in Berno and Ward's (1998) study of international students in NZ, an avoidant coping style, which encompasses behavioural disengagement, denial, and venting of emotions, was associated with greater psychological adjustment problems.

The present finding suggested that, when controlling for stress as a co-variate, Asian students utilised religion, self distraction and denial significantly more than European students. This result is consistent with a study of Asian international students in New Zealand conducted by Jose, Liu and Ward (2004). They found that these students used more spiritual and avoidance coping mechanisms and used less substance abuse than did European students.

Leong and Lau (2001) suggested that Asians have a tendency to use repression and avoidance. Similarly, Bjork et al., (2001) found that Asians utilised passive coping strategies such as avoidance, withdrawal, resignation, and acceptance of fate. Chataway and Berry (1989) examined the relationship between coping style, academic satisfaction, and psychological adjustment with Hong Kong Chinese undergraduates studying at a Canadian university. They found that students who relied on self-blame, wishful thinking, and withdrawal were less content with the management of their problems; and those who employed a detached coping style experienced greater psychological distress and psychosomatic symptoms. This suggests that maladaptive coping resources during time of adjustment may lead to negative psychological illness (Berry, 1980). Furthermore, Wei et al., (2008) did a study on Asian international students in the United States and found that high levels of avoidance coping were associated with depressive symptoms on Asian international students.

Perhaps due to limited social resources, Asian students maybe more likely to use avoidance coping to cope with acculturation stressors and push away depressed feelings. However, the frequent use of avoidance to deal with stress may increase the negative consequences of psychological illness. Psychological disturbance may regarded as highly disgraceful in some Asian cultures, which arouses feelings of shame in these students. In order to save face, Asian students may keep feelings to

themselves and not burden others with problems (Constantine, Okazaki, & Utsey, 2004).

Asian students in our sample tended to utilise some maladaptive coping styles (i.e. self distraction and denial) as suggested, but they did not appear to have significantly higher levels of stress compared to European students. Asian students also tended to use religion as a coping style, maybe these students reduce their stress level by utilising religious resources to deal with stress. Therefore, this present study confirms that religion/spirituality acts as a stress coping strategy for Asian students. This finding is consistent with Pargament (1997) and Kim and Seidlitz (2002) that religion/spirituality functions as a coping mechanism in times of stress. People rely on their religious/spiritual resources to cope with stress. For example, prayer and faith in God have been acknowledged as the most common coping resources (Graham et al., 2001). The results extend the literature to a non-Western population, which often has been neglected in the psychology of religion.

Stress-buffering hypothesis of religion/spirituality

In addition to investigating whether religion/spirituality acts as a stress-coping mechanism for international students by addressing the specific limitations of the study by Hsu et al. (2009), the relatively large sample size of the present study also enabled an investigation in tertiary education students of the stress-buffering hypothesis, a fundamental theory of the relationship between stressfulness of situations, level of religious/spiritual beliefs and effects on quality of life. According to the stress-buffering hypothesis (Cohen & Wills, 1985), as stress levels increase, those who cope by using religion/spiritual belief are better protected from the detrimental effects of stress than those who are less religious/spiritual. Religion/spirituality has no beneficial effect on quality of life for the individuals with no or little stress. In other words, religion/spirituality serves as a buffer from the effects of stress for individuals with higher levels of stress.

Contrary to the previous findings (Maton, 1989; Wright et al., 1985), the present study did not find an interaction between level of religion/spirituality and stress, which did not support the stress-buffering hypothesis (Figure 1). The result showed that religion/spirituality might have buffered the effect of stress for individuals under high levels of stress to a similar extent as for those under low levels of stress. In other words, religion/spirituality is equally beneficial to individuals

regardless of the level of stress. The result also indicated that a greater level of religion/spirituality is associated with a higher quality of life; also a lower level of stress is associated with a higher quality of life. The positive effects of religion/spirituality on quality of life were not increased in students who experienced larger amounts of stress on quality of life. Therefore, the present findings support the "main effect" hypothesis, where spirituality has beneficial on quality of life, regardless of the person's level of stress.

Pargament (1997) reviewed 30 research studies investigating the model of religious involvement in coping and found that 73% of the studies offer at least partial support for the stress-buffering hypothesis and 66% of the studies also yield at least partial support for the main effect hypothesis. For instance, in one study of elderly black Americans, higher levels of religiousness were associated with greater personal control, regardless of the numbers of negative life events they had experienced in the past month (Krause & Van Tran, 1989). Empirical research has reported mixed findings regarding the relationship between religion/spirituality and well-being, as not all studies supported the effectiveness of religiousness (e.g. Strawbridge et al., 1998). This indicates that the relationship is complex and it depends on the type of religious coping, type of group and type of stressful event under study.

In the present study, a perceived level of stress was assessed in a sample of tertiary students. Therefore, the severity of stress experienced may not have been large enough to support the stress-buffering hypothesis. Studies which reported a positive relationship between religiosity and well-being for high stress samples include caregivers of Alzheimer's patients (Wright et al., 1985), cancer patients (Jenkins & Pargament, 1988); bereaved parents (Maton, 1989), and poor elderly in ill health (Zuckerman et al., 1984). The type of stress experienced for these samples must have undoubtedly been of higher severity than the type of stress experienced by most tertiary students, which might explain the differences in the findings.

Limitations

Several limitations of the current study should be noted. First, the data were collected by self-report measures, such as Brief COPE and PSS, and maybe the answers were affected by retrospective biases. Even though the scales used in the study had been used previously in cross-cultural settings, their utility in international student populations is yet to be formally established. For example, Hsu et al. (2009)

was the first to utilise the WHOQOL instrument together with the SRPB module in the international students' context.

Second, the majority of the participants came from the Faculty of Health and Environmental Sciences of a single institution, and thus may not adequately represent the average tertiary student in New Zealand. This may result in a fairly homogenous sample. Future studies should examine international and domestic students at various universities across New Zealand. Third, acculturative stress experienced in the present international sample appeared to have been relatively low. Often, international students (especially from Asian countries) tend to spend one year in foundation courses or general English courses before they commence their university studies. Future studies should examine the students enrolled in those courses, since they might be more likely to experience acculturative stress shortly after their arrival in the country.

Fourth, the sample size for high and low stress groups was too small. Out of 639 participants, only 90 (13.2%) were categorised as highly stressed, and 61 (9.3%) were categorised as having low levels of stress, while the rest (n = 485) were categorised into medium stress levels (71.3%). Insufficient sample size may explain the lack of a statistical interaction in the present study. Future studies could examine the life-event stress encountered by students, which might increase the severity of stress experience and perhaps sample more respondents in high and low stress groups. Fifth, the language barrier may act as a hindrance for the international students. The current study employed only English-language versions of all the scales used in the study, while the majority of international students were from Asian countries with varying levels of fluency in English. Future studies should try qualitative methods like interviews and/or focus groups using English as well as the international students' native languages. Perhaps the participants will provide more valid responses if the questionnaires were provided in different languages.

Implications

In the face of these current findings, this study may provide practical benefit for education providers. It may assist counsellor educators to recognise the importance of addressing religion/spirituality in their courses (Graham et al., 2001). Very often, counsellors may be reluctant to address the religion/spirituality issues with the client because they are not the main themes in various settings (Kelly, 1994).

Counsellors need to be more aware of the importance of religion/spirituality, which may be a vital component of a client's mental life, especially when it comes to coping with stress. The present findings have important implications for counsellors when dealing with clients from different cultural or religious backgrounds. Coming from a culture that promotes inhibition and restraints, Asian students are often reluctant to utilise counselling services (Mori, 2000). Therefore, providing a counselling service or psycho-educational group that is culturally appropriate may adequately address the different needs of Asian students in terms of religion/spirituality. This might lead to increase utilisation of these support services on campus and thus help them to enhance their capacity to deal with stressors.

In addition, the present findings suggest the importance of tailoring suitable interventions that focus on teaching more adaptive coping strategies to students. Previous research suggested that cultural forces significantly affect one's coping mechanisms. Cross (1995) suggested that direct coping strategies such as active coping and planning, are highly acceptable in individualist cultures, while indirect coping strategies, such as acceptance and positive reinterpretation and growth, may be more adaptable in collectivist cultures. Ward, Leong and Kennedy (1998) explored the ways of coping in a collectivist setting in international students in Singapore. Results indicated that indirect coping strategies predicted lower levels of perceived stress, which, in turn predicted fewer symptoms of depression. Direct coping, in contrast, did not exert a direct affect on perceived stress. Ward et al. (1998a) suggested that international students have limited resources, therefore cognitive reframing strategies may be more effective in reducing stress. The present findings suggest that teaching more adaptive coping such as acceptance, positive reinterpretation and growth may promote psychological well-being for Asian students.

Furthermore, an implementation of prevention programmes such as a pre-departure counselling and training, as well as realistic goal setting with international students prior to and after arriving in New Zealand, is recommended for education providers.

Summary

In summary, the present study confirmed previous findings of the benefit of religion/spirituality on psychological well-being on university samples. The results of the present study extend the findings obtained by Hsu et al. (2009) that

religion/spirituality act as stress coping mechanism such as acculturative pressures experienced by Asian students. Although Asian students tended to utilise dysfunctional coping strategies, such as self-distraction and denial, they also tend to utilise religion as a coping strategy, which may serve to buffer the effect of stress. Although there are limitations, this study provides further insight into the cross-cultural perspective of the importance of religious/spiritual beliefs and coping styles of international students in New Zealand. Furthermore, the present study is consistent with the main effect hypothesis, where religion/spirituality is beneficial for tertiary students, regardless of their level of stress.

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Participant Information Sheet

AUT UNIVERSITY
TE WĀNANGA ARONUI O TAMAKI MAKAU RAU

Date Information Sheet Produced:

23 March 2009

Project Title:

Spirituality as stress coping mechanism for international students

Invitation:

My name is Penny Chai. I would like to invite you to participate in a study, which forms the basis of my Master Dissertation. Participation is voluntary and anonymity is guaranteed. Thank you very much for considering to participate!

What is the purpose of this research?

We are currently investigating how religion, spirituality, and personal believes might help students deal with stress. This questionnaire will provide the data for our research. It explores a number of themes, including your thoughts and experiences about the spirituality relate to coping stress.

Why have I been chosen to participate in this research?

We have randomly selected classes at AUT for distribution of the questionnaire. We are interested in coping mechanisms of stress in international students, but domestic students are also being invited to participate for comparative purposes.

What happens in this research?

I will distribute a questionnaire. All is required of you is to answer the questions by putting a circle around the answer that best suits you. When answering, your first impulse is often the best one. If you decide to participate, please return to completed questionnaire into the drop-off box, so that we can ensure that you answers are truly anonymous.

What are the benefits?

It is hoped that the findings of the study will give us more detailed understanding of how students deal with those things that cause stress in life. This could provide some very useful information for student services to help provide better support for students.

What will be the risks involved?

If you have experience discomfort or embarrassment when answering this questionnaire, you are free to withdraw at any stage during the completion of the survey, without questions asked. In the unlike event that you experience distress as a result of this survey, please visit AUT counselling services.

How will my privacy be protected?

If you agree to participate, your responses will be totally anonymous and confidential. Participants cannot be identified from their responses. The data can only be used to categorise answers by calculating statistics, such as percentages and proportions. Your anonymity is therefore completely assured at all times throughout the project.

What are the costs of participating in this research?

Altogether the questionnaire should take between 15 and 20 minutes to complete.

How do I agree to participate in this research?

By completing and returning the questionnaire below, you are expressing your consent to participate in this study. You are under no obligation to do so as your participation in this study is completely voluntary. You are also free to withdraw at any stage during the completion of the survey, without questions asked. Please feel free to keep this page for your own record.

Will I receive feedback on the results of this research?

Findings of the current study will be available on website www.whoqol.org.nz or on request by contacting the researcher or the project supervisor (please see contact details below).

What do I do if I have concerns about this research?

Any concerns regarding the nature of this project should be notified in the first instance to the Project Supervisor, Dr Chris Krägeloh, chris.krageloh@aut.ac.nz, (09)921-9999 extension 7103

Concerns regarding the conduct of the research should be notified to the Executive Secretary, AUTEC, Madeline Banda, *madeline.banda@aut.ac.nz*, 921 9999 ext 8044.

Who do I contact for further information about this research?

Researcher Contact Details:
For further information about this research, you could also contact Dr. Rex Billington, (secondary supervisor), rex.billington@aut.ac.nz, (09) 921-9999 extension 7894, or Penny Chai (researcher) at ygw0108@aut.ac.nz.

Approved by the Auckland University of Technology Ethics Committee on *19 February 2009*, AUTEC Reference number *09/21*.

AUT UNIVERSITY

TE WĀNANGA ARONUI O TAMAKI MAKAU RAU

By completing this questionnaire, you are consenting to participate in this study

We are interested in how people respond when they confront difficult or stressful events in their lives. There are lots of ways to try to deal with stress. This questionnaire asks you to indicate what *you* generally do and feel, when *you* experience stressful events. Obviously, different events bring out somewhat different responses, but think about what you *usually* do when you are under a lot of stress. Although some of the questions are similar, there are differences between them and you should treat each one as a separate question.

Please keep in mind that there are no right or wrong answers. We ask about what *you* do rather than what "most people" do.

Example:

	I haven't been doing this at all	I've been doing this rarely	I've been doing this for sometimes	I've been doing this often	I've been doing this a lot
I've been thinking hard about what steps to take	1	2	3	④	5

You would circle the number 4 if you have often been thinking hard about what steps to take.

	I haven't been doing this at all	I've been doing this rarely	I've been doing this for sometimes	I've been doing this often	I've been doing this a lot
I've been thinking hard about what steps to take	①	2	3	4	5

but if you have not been thinking hard about what steps to take, you would circle 1.

Thank you for your help.

Please read each questions and assess your thoughts and behaviour when you confront difficult or stressful events in your lives. Please circle the number on the scale for each question that gives the best answer for you.

	I haven't been doing this at all	I've been doing this rarely	I've been doing this for sometimes	I've been doing this often	I've been doing this a lot
1. I've been concentrating my efforts on doing something about the situation I'm in.	1	2	3	4	5
2. I've been taking action to try to make the situation better.	1	2	3	4	5
3. I've been trying to come up with a strategy about what to do.	1	2	3	4	5
4. I've been thinking hard about what steps to take.	1	2	3	4	5
5. I've been trying to see it in a different light, to make it seem more positive.	1	2	3	4	5
6. I've been looking for something good in what is happening.	1	2	3	4	5
7. I've been accepting the reality of the fact that it has happened.	1	2	3	4	5
8. I've been learning to live with it.	1	2	3	4	5
9. I've been making jokes about it.	1	2	3	4	5
10. I've been making fun of the situation.	1	2	3	4	5
11. I've been trying to find comfort in my religion or spiritual beliefs.	1	2	3	4	5
12. I've been praying or meditating.	1	2	3	4	5
13. I've been getting emotional support from others.	1	2	3	4	5
14. I've been getting comfort and understanding from someone.	1	2	3	4	5
15. I've been trying to get advice or help from other people about what to do.	1	2	3	4	5
16. I've been getting help and advice from other people.	1	2	3	4	5
17. I've been turning to work or other activities to take my mind off things.	1	2	3	4	5

	I haven't been doing this at all	I've been doing this rarely	I've been doing this for sometimes	I've been doing this often	I've been doing this a lot
18. I've been doing something to think about it less, such as going to movies, watching TV, reading, daydreaming, sleeping or shopping.	1	2	3	4	5
19. I've been saying to myself "this isn't real".	1	2	3	4	5
20. I've been refusing to believe that it has happened.	1	2	3	4	5
21. I've been saying things to let my unpleasant feelings escape.	1	2	3	4	5
22. I've been expressing my negative feelings.	1	2	3	4	5
23. I've been using alcohol and other drugs to make myself feel better.	1	2	3	4	5
24. I've been using alcohol and other drugs to help me get through it.	1	2	3	4	5
25. I've been giving up trying to deal with it.	1	2	3	4	5
26. I've been giving up the attempt to cope.	1	2	3	4	5
27. I've been criticizing myself.	1	2	3	4	5
28. I've been blaming myself for things that happened.	1	2	3	4	5

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.

	Never	Almost never	Sometimes	Fairly often	Very often
1. In the last month, how often have you been upset because of something that happened unexpectedly?	1	2	3	4	5
2. In the last month, how often have you felt that you were unable to control the important things in your life?	1	2	3	4	5
3. In the last month, how often have you felt nervous and "stressed"?	1	2	3	4	5
4. In the last month, how often have you dealt successfully with irritating life hassles?	1	2	3	4	5
5. In the last month, how often have you felt that you were effectively coping with important changes that were occurring in your life?	1	2	3	4	5
6. In the last month, how often have you felt confident about your ability to handle your personal problems?	1	2	3	4	5
7. In the last month, how often have you felt that things were going your way?	1	2	3	4	5
8. In the last month, how often have you found that you could not cope with all the things that you had to do?	1	2	3	4	5
9. In the last month, how often have you been able to control irritations in your life?	1	2	3	4	5
10. In the last month, how often have you felt that you were on top of things?	1	2	3	4	5
11. In the last month, how often have you been angered because of things that happened that were outside of your control?	1	2	3	4	5
12. In the last month, how often have you found yourself thinking about things that you have to accomplish?	1	2	3	4	5
13. In the last month, how often have you been able to control the way you spend your time?	1	2	3	4	5
14. In the last month, how often have you felt difficulties were piling up so high that you could not overcome them?	1	2	3	4	5

This assessment asks how you feel about your quality of life, health, & other areas of your life. Please answer all the questions. If unsure about which response to give to a question, please choose the one that appears most appropriate. This can often be your first response. Please keep in mind your standards, hopes, pleasures and concerns. We ask that you think about your life in the **last two weeks.**

	Very poor	Poor	Neither Poor nor Good	Good	Very Good
1. How would you rate your quality of life?	1	2	3	4	5

	Very Dissatisfied	Fairly Dissatisfied	Neither Satisfied nor Dissatisfied	Satisfied	Very Satisfied
2. How satisfied are you with your health?	1	2	3	4	5

The following questions ask about how much you have experienced certain things in the **last two weeks.**

	Not at all	A Small amount	A Moderate amount	A great deal	An Extreme amount
3. To what extent do you feel that physical pain prevents you from doing what you need to do?	1	2	3	4	5
4. How much do you need any medical treatment to function in your daily life?	1	2	3	4	5
5. How much do you enjoy life?	1	2	3	4	5
6. To what extent do you feel your life to be meaningful?	1	2	3	4	5
7. How well are you able to concentrate?	1	2	3	4	5
8. How safe do you feel in your daily life?	1	2	3	4	5
9. How healthy is your physical environment?	1	2	3	4	5

	Not at all	Slightly	Somewhat	To a great extent	Completely
10. Do you have enough energy for every day life?	1	2	3	4	5
11. Are you able to accept your bodily appearance?	1	2	3	4	5
12. Have you enough money to meet your needs?	1	2	3	4	5
13. How available to you is the information you need in your daily life?	1	2	3	4	5

	Not at all	Slightly	Somewhat	To a great extent	Completely
14. To what extent do you have the opportunity for leisure activities?	1	2	3	4	5

	Not at all	Slightly	Moderately	Very	Extremely
15. How well are you able to get around physically?	1	2	3	4	5

The following questions ask you to say how good or satisfied you have felt about various aspects of your life over the **last two weeks**.

	Very Dissatisfied	Fairly Dissatisfied	Neither Satisfied nor Dissatisfied	Satisfied	Very Satisfied
16. How satisfied are you with your sleep?	1	2	3	4	5
17. How satisfied are you with your ability to perform your daily living activities?	1	2	3	4	5
18. How satisfied are you with your capacity for work?	1	2	3	4	5
19. How satisfied are you with yourself?	1	2	3	4	5
20. How satisfied are you with your personal relationships?	1	2	3	4	5
21. How satisfied are you with your sex life?	1	2	3	4	5
22. How satisfied are you with the support you get from your friends?	1	2	3	4	5
23. How satisfied are you with the conditions of your living place?	1	2	3	4	5
24. How satisfied are you with your access to health services?	1	2	3	4	5
25. How satisfied are you with your transport?	1	2	3	4	5

	Never	Infrequently	Sometimes	Frequently	Always
26. How often do you have negative feelings such as blue mood, despair, anxiety, depression?	1	2	3	4	5

The following questions ask about your **spiritual, religious, or personal beliefs** and how these beliefs have affected your quality of life. These questions are designed to be applicable to people coming from many different cultures and holding a variety of spiritual, religious or personal beliefs. If you follow a particular religion, such as Judaism, Christianity, Islam or Buddhism, you will probably answer the following questions with your religious beliefs in mind. If you do not follow a particular religion, but still believe that something higher and more powerful exists beyond the physical and material world, you may answer the following questions from that perspective. For example, you might believe in a higher spiritual force or the healing power of Nature. Alternatively, you may have no believe in a higher, spiritual entity, but you may have strong personal beliefs or followings, such as beliefs in a scientific theory, a personal way of life, a particular philosophy or a moral and ethical code.

While some of these questions will use words such as spirituality please answer them in terms of your own personal belief system, whether it is religious, spiritual or personal.

Please remember that we asked you about your life in the **last two weeks.**

	Not at all	A little	A moderate amount	Very much	An extreme amount
1. To what extent does any connection to a spiritual being help you to get through hard times?	1	2	3	4	5
2. To what extent does any connection to a spiritual being help you to tolerate stress?	1	2	3	4	5
3. To what extent does any connection to a spiritual being help you to understand others?	1	2	3	4	5
4. To what extent does any connection to a spiritual being provide you with comfort/ reassurance?	1	2	3	4	5
5. To what extent do you find meaning in life?	1	2	3	4	5
6. To what extent does taking care of other people provide meaning of life for you?	1	2	3	4	5
7. To what extent do you feel your life has a purpose?	1	2	3	4	5
8. To what extent do you feel you are here for a reason?	1	2	3	4	5
9. To what extent do you feel inner spiritual strength?	1	2	3	4	5
10. To what extent can you find spiritual strength in difficult times?	1	2	3	4	5
11. To what extent does faith contribute to your well-being?	1	2	3	4	5
12. To what extent does faith give you comfort in daily life?	1	2	3	4	5
13. To what extent does faith give you strength in daily life?	1	2	3	4	5

	Not at all	A little	A moderate amount	Very much	An extreme amount
14. To what extent do you feel spiritually touched by beauty?	1	2	3	4	5
15. To what extent do you have feelings of inspiration/ excitement in your life?	1	2	3	4	5
16. To what extent are you grateful for the things in nature that you can enjoy?	1	2	3	4	5
17. How hopeful do you feel?	1	2	3	4	5
18. To what extent are you hopeful about your life?	1	2	3	4	5
19. To what extent are you able to experience awe from your surroundings? (e.g. nature, art, music)	1	2	3	4	5
20. To what extent do you feel any connection between your mind, body and soul?	1	2	3	4	5
21. To what extent do you feel the way you live is consistent with what you feel and think?	1	2	3	4	5
22. How much do your beliefs help you to create coherence between what you do, think and feel?	1	2	3	4	5
23. How much does spiritual strength help you to live better?	1	2	3	4	5
24. To what extent does your spiritual strength help you to feel happy in life?	1	2	3	4	5
25. To what extent do you feel peaceful within yourself?	1	2	3	4	5
26. To what extent do you have inner peace?	1	2	3	4	5
27. How much are you able to feel peaceful when you need to?	1	2	3	4	5
28. To what extent do you feel a sense of harmony in your life?	1	2	3	4	5
29. To what extent does being optimistic improve your quality of life?	1	2	3	4	5
30. How able are you to remain optimistic in times of uncertainty?	1	2	3	4	5
31. To what extent does faith help you to enjoy life?	1	2	3	4	5
32. How satisfied are you that you have a balance between mind, body and soul?	1	2	3	4	5

	Not at all	A little	A moderate amount	Very much	An extreme amount
33. To what extent do you have spiritual beliefs?	1	2	3	4	5
34. To what extent do you have strong personal beliefs?	1	2	3	4	5
35. To what extent do you consider your self to be a religious person?	1	2	3	4	5
36. To what extent do you consider yourself to be part of a religious community?	1	2	3	4	5

If so, which religious community are you a part of? _____

ABOUT YOU

What is your student status? □ Domestic students

□ International students

What is your age? ___

What is your gender? □ Male □ Female

How long have you been residing in New Zealand? _____

What is your ethnicity? _____

How is your health?

Very poor	Poor	Neither poor nor good	Good	Very good

Do you have a health problem(s) at the moment? □ Yes □ No

If yes, please write it down _____

Is there any area that is important to your quality of life that is not covered in this questionnaire?

_____
_____
_____
_____
_____

Do you have any comments about the questionnaire?

_____
_____
_____
_____
_____
_____
_____
_____
_____

THANK YOU FOR YOUR HELP