A GROWING EXPERIENCE

THE HEALTH AND WELL-BEING OF INTERNATIONAL STUDENTS AT THE UNIVERSITY OF MELBOURNE

Doreen A. Rosenthal
V. Jean Russell
Garry D. Thomson

March, 2006

This project was funded by a grant from The University of Melbourne to Professor Doreen Rosenthal and Garry Thomson.

The report was prepared and written by Dr Jean Russell.

Professor Doreen Rosenthal is the Director, Key Centre for Women’s Health in Society, The University of Melbourne.

Dr Jean Russell is an Associate Professor and Principal Fellow, Centre for Post-Compulsory Education and Life-Long Learning, The University of Melbourne.

Garry Thomson is the Director, Academic Services (Health, Counselling and Disability Services), The University of Melbourne.
# LIST OF CONTENTS

**Executive Summary**  
1

**Implications: Improving the experience of international students**  
9

**Introduction**  
13

**International students in Australia**  
13
**Academic issues and international students**  
14
**Psychological and social adjustment**  
15
**Factors influencing adjustment**  
16
**Meeting international students’ needs**  
19
**The present study**  
20

**Method**  
23

**Sample**  
23
**Instrument**  
25
**Procedure**  
26
**Measures**  
26
**Statistical analysis**  
27

**Results**  
28

**Well-being Domain 1: Relating to others while living in Australian society**  
28
**Social connectedness**  
28
**Cultural adaptation and stressors**  
37

**Well-being Domain 2: Living and studying in Melbourne**  
42
**Living arrangements**  
43
**Finances**  
46
**Paid work**  
49
**Lifestyle balance**  
51
**Abuse and distress**  
57

**Well-being Domain 3: Health and health-related behaviour**  
61
**Physical health**  
61
**Mental health**  
64
**Health-related behaviour**  
75

**Use of university health and counselling services**  
95
**Health service**  
95
**Counselling service**  
99
**Other services**  
104
**Sources of information**  
104

**Three styles of adaptation**  
105
Discussion

International students’ self-perceptions of health and well-being

Group differences in perceptions of health and well-being

Well-being in life domains: Perceptions, predictors, influences

Relating to others while living in Australian society

Living and studying in Melbourne

Health and health-related behaviour

Use of university health and counselling services

Drawing the threads together

References

Attachments

1. Classification of countries of origins
2. Questionnaire
3. Scales

Acknowledgements

We wish to express our gratitude to the following people:

- The international students who responded to the questionnaire and provided the data upon which this study has been based. We hope the knowledge and understanding we have gained through your contributions will have a positive impact on the well-being of international students through improved university strategies and services.
- Ms Lin Martin, former Vice Principal and Academic Registrar, who supported the project proposal and provided funding for its realisation.
- Mr Phillip Robilliard, Deputy Manager (Support), Student Management Systems, Student Administration, The University of Melbourne, who drew the sample for the study.
- Members of the Advisory Group:
  - Melbourne University Overseas Student Services (MUOSS): Wei Yee Thum
  - University of Melbourne Postgraduate Students’ Association (UMPA): Ashley Carver
  - International Student Support Services: Judith Heron
  - Centre for the Study of Higher Education: Craig McInnis
- Ms Anne Kok, who provided administrative support for the project.
EXECUTIVE SUMMARY

1. International student enrolments
International students at the University of Melbourne form a large and important segment of the student population. Between 2000 and 2004 international student numbers increased by 88 per cent, with international students (the majority from Asian countries) constituting 22 per cent of the total enrolment in 2004. The university aims to increase this to 28 per cent by 2007. University and faculty academic support structures and services have been established, institutional monitoring is undertaken and research programs have been carried out, all aimed at ensuring that the needs of international students are being met.

2. The challenges of adaptation
There are many challenges for students who undertake university studies in another country. Much of the research literature focuses on the academic adjustments that international students face, particularly students from Asian countries studying in English-speaking countries. Accompanying academic adjustment issues are the psychological and social aspects of acculturation, sometimes conceived of as being sufficiently stressful to lead to problems of physical and psychological health. Factors said to influence positive adjustment include the students’ linguistic and sociolinguistic skills, cultural distance between home and host countries, students’ involvement in supportive networks, and length of time in the host country.

3. Study focus and research questions
The focus of the study is on the health and well-being of international students. Well-being is seen to be the broader concept of the two. It is measured subjectively, using students’ self-perceptions of emotional, cognitive and behavioural states. Well-being here concerns students’ satisfactions, judgments and emotional responses to the challenging situation of being an international student in Melbourne. Two processes are integral to well-being in such a situation: adaptation (diminishing reaction over time) and coping (the general strategy or approach used for managing the situation).

Three domains of students’ lives have been investigated: students’ ways of relating to others while living in Australian society, their experiences of living and studying in Melbourne, and their health and health-related behaviour here compared with at home. In addition, a related area - students’ use and perceptions of the university health and counselling services – has been explored.

The following research questions were established for the study:

- What are international students’ self-perceptions of their health and well-being?
- What group differences are there in students’ self-perceptions of their health and well-being?
- Which factors predict positive student self-perceptions?
- What use do students make of the university health and counselling services and how do they evaluate them?

4. Study sample
A sample of one-third of the international student population at the University Melbourne was drawn. A postal survey was sent to these students in semester 1,
2005, with a reply-paid envelope included for confidential response. The survey sought information about demographics, perceived connectedness, cultural stressors, physical health, lifestyle and behaviour, risk-taking, relationships, mental health, and use of university health and counselling services. The achieved sample of 979 responses represents a reply rate of 43.9 per cent. There is close similarity between the achieved sample and the population in terms of main demographic characteristics.

Because this study was designed as an exploratory study to obtain baseline data about the health and well-being of international students at The University of Melbourne, comparative data on domestic students were not collected. Had domestic students been included, the questionnaire content would have had to differ. It is anticipated that a comparative study will be undertaken in the future, based on the knowledge gained from the present study. It is thought preferable that such a study be undertaken in semester 2, rather than semester 1, when first-year students have had a little more time to gain experience in their role as international students living and studying in Melbourne.

5. Positive perceptions of the majority
The vast majority of international students in the present study have indicated by their responses that they have a sound sense of social, physical and psychological well-being. They experience positive affect and satisfaction in relation to the main domains of their life in Melbourne and their approaches to coping and adaptation are positive and effective. There is, nevertheless, a minority of students whose sense of well-being is weaker and whose approaches to coping and adaptation are less effective.

6. Relating to others while living in Australian society
A sense of connectedness in Melbourne, having caring, supportive people who know them, listen to them and give them help when needed, is fundamental to students’ well-being. About 70 per cent of students have a considerable to strong sense of connectedness, while only a small percentage of students (3.5 to 6 per cent) indicate that they feel quite isolated. People to whom students can go for help are seen to be more readily available than those who care for them personally and with whom they can discuss their problems.

Patterns of social mixing with co-culturals and with Australians, belonging to organisations and capacity to contact a caring family at will are all positively related to students’ sense of connectedness. The level of student social interaction with Australians is low. It is a challenge to an organisation such as a university, as well as to individual international students, to develop approaches that establish the kind of more personal support and social interaction that international students lack.

The average level of cultural stress is below the mid-point of the scale. Students discriminate quite noticeably among the factors that contribute to the feelings of dislocation, strangeness and discomfort that constitute cultural stress. They experience reasonably strong feelings of homesickness and moderate feelings of loneliness and diminished importance. Least strong are feelings of discrimination and lack of safety in Melbourne. A factor that compounds cultural stress is the strong perceived need to do well for the sake of the student’s family.
Apart from homesickness, the aspect of cultural stress that provokes the strongest reaction from students in the present study concerns the feeling of belonging at the university. About 53 per cent of students in the sample report feeling a lack of belonging to a considerable or great degree, with students from Asian countries feeling this significantly more than other students. This is, again, a form of connectedness that needs to be worked on, but one that is quite specific to the university.

7. Living and studying in Melbourne
Most students (83 per cent) are satisfied with their living arrangements in Melbourne, particularly those who have been here for some time and those living with their family or partner. Least satisfied are students who do not live alone or with family, friends, or other students, but with ‘others’. A smaller majority of students (71.3 per cent) are satisfied with their financial support, though this does not stop some of these students worrying. Most students draw financial support from more than one source, especially from their families. Family financial support increases students’ feeling of stress, because of the need to do well in order to meet family expectations. Most students feel that they have achieved a reasonable balance in terms of their social life (72 per cent) and their nutrition (77 per cent), but not in relation to study.

Only half of the students feel they have achieved a good balance between study and other activities. Some 17 per cent of those who feel they have not got the balance right are of concern. They feel overwhelmed by the amount of university work and their inability to cope. The more they feel unable to cope with the amount of university work, the less balanced they feel their lives to be in terms of study, the more time they want to devote to study, and the more they feel that study dominates all their waking hours. While assistance in study skills is given to students, perhaps some further, different types of assistance are needed, combining more general life-coping strategies with specific study skills and approaches.

For some international students, an unfortunate aspect of living and studying in Melbourne can be the experience of perceived abuse. The lowest incidence is for physical abuse (2.9 per cent), with slightly higher levels of sexual harassment (8.4 per cent), and still higher rates for verbal abuse (28.8 per cent) and exclusion (46.7 per cent). The sources of abuse, the location (on or off campus) and the intentions (discriminatory or not) are unknown. Students who report having been abused have stronger perceptions of cultural discrimination. Considerable distress can be associated with experiences of abuse, especially for female students.

Abuse constitutes a significant threat to students’ well-being. It would be beneficial to know much more about this situation – its link with discrimination, with cultural background and gender, the sources of abuse, the on-campus/off-campus locations of abuse events, and the effects of abuse on students’ lives.

8. Health and health-related behaviour
The majority of students (64.7 per cent) have very positive perceptions of their general physical health; the vast majority of students (82.3 per cent), report that they are as healthy here as they were at home, or even healthier. A major consideration for students’ well-being is the effect that health has on their studies. The majority of students (81.9 per cent) see little or no interference. Students who do not view their
health positively and/or believe it to be worse in Australia are more likely to judge their health to have a negative effect on their studies.

Relative to the norms for the Depression, Anxiety and Stress (DASS) scales students in the present study have slightly elevated levels of depression, anxiety and stress, with anxiety being the dimension showing the greatest difference. The nature of the sample of students in the present study and cultural relativities must be taken into account. However, given the conceptual basis of the Anxiety scale – a prolonged period of coping with demands for high achievement that are extremely important for the person to meet if self-esteem is to be maintained – it makes sense that international students would have higher than average levels of anxiety. On a fourth measure of psychological well-being, global self-esteem, the majority of students (about 85 to 86 per cent), indicate that they have positive views of themselves as individuals.

Comparisons of health-related behaviours (sexual activity, drug and alcohol use, gambling and smoking) at home and in Australia show that behavioural changes have taken place since arrival in Australia. For some, these behaviours have increased, for others they have decreased. There are some concerns arising from the data in this area. Of the 38 per cent of students who indicate that they are sexually active, only half say they always use condoms. While a low rate of pregnancy, termination and STIs is reported, it is possible that not all students provided relevant information. Rates of soft and hard drug use (7.5 and 2.9 per cent respectively), and smoking (8 per cent) are relatively low. Slightly more students are involved in gambling (11.8 per cent). The injection of drugs and sharing of needles/fits is not reported to be a problem. Alcohol consumption is much more common (65.4 per cent), with some binge drinking patterns being seen in the information provided by a small number of students. Of concern is a tendency for the very few students with heavy involvement in these behaviours to deny that they constitute a problem for them. These behaviours inter-correlate strongly, forming a tightly-knit cluster. Self-harm is another form of health-related behaviour that indicates a lack of well-being. Few students report deliberately hurting themselves (3.6 per cent) or doing something because it might harm or kill them (2.4 per cent), but many more report having suicidal thoughts (9.8 per cent). The rate of suicidal ideation is of particular concern.

9. Use of university health and counselling services
International students are high users of the university health service. They make greater use of the health service than the counselling service, as do domestic students. However, it appears that international students make a proportionately greater use of medical services compared with counselling services than domestic students do. Cultural attitudes to mental health could account for this.

A higher percentage of students feel the need of health compared with counselling services (41.2 per cent and 27.6 per cent respectively). Not all students who perceive the need for help act on that need, with the gap between perceived need and action being greater for the counselling service. If students’ appraisal of their need is realistic, then this is a concern. Friendship with other students who are known to have used a particular service themselves is a key factor in students’ acting on a perceived need and seeking help.

Rosenthal, Russell & Thomson, 2006
The most common reason given for not seeking help when needed is the view that the problem was not sufficiently important. Other reasons centre on lack of information of different types. Culturally-based perceptions also seem to contribute to students’ failure to seek help. Students who did seek help from health and counselling services reported positive perceptions of the help they received.

10. Key factors that predict well-being
The word ‘predictor’ is being used here in a statistical and not a causal sense. Any interpretation of the role played by predictors in the different aspects of well-being is speculative. Some interpretations can be suggested, particularly where findings from relevant research are available but, in terms of the present study and its data, they remain speculative.

A strong sense of connectedness is fundamental to students’ well-being. Students’ level of connectedness is positively related to their perceptions in all domains of their life in Melbourne. Level of connectedness is also a significant predictor of students’ satisfaction with aspects of daily life and health, such as living arrangements, financial support, lifestyle balance, and with their levels of self-esteem and depression.

A low level of cultural stress is also fundamental to students’ well-being. Students’ level of cultural stress is negatively related to their perceptions of well-being in all domains of their life in Melbourne. Its most powerful role as a predictor lies in the domain of physical and mental health. Cultural stress is a very strong, positive predictor of depression, anxiety and stress. It also predicts perceived health interference in study. In addition, it acts as a predictor in other domains, though to a lesser extent. To reduce students’ level of cultural stress would be to enable students to experience a greater sense of well-being in a multitude of ways.

Depression is a consistent predictor of lack of well-being. In the domain of living and studying in Melbourne, it is negatively associated with students’ satisfaction with living arrangements, finance and lifestyle balance. High levels of depression predict a weak sense of well-being in each of these three aspects of living and studying in Melbourne. In the domain of health, depression is a negative predictor of self-esteem and a positive predictor of drug use, alcohol use and self-harm. Its strength as a predictor is highest for self-esteem and self-harm. Anxiety and stress play less consistent roles as predictors; when they do contribute significantly to prediction of dimensions of well-being, they are negative predictors.

Perceived academic progress contributes significantly to the prediction of well-being in several domains. Stronger perceptions of academic progress predict higher levels of connectedness, lower levels of cultural stress, better balance between study and other activities, lower levels of abuse and associated distress, lower levels of depression and general stress, stronger global self-esteem, and lower involvement in self-harm behaviour.

Involvement in risk-taking behaviours is a common predictor of aspects of psychological well-being; the Perceptions of Drug Use and Perceptions of Alcohol Use scales are significant positive predictors of depression, anxiety and stress.
Perceived drug and alcohol use, together with involvement in gambling/smoking, are consistent predictors of health-related behaviours. Each pair of these behaviours predicts the third, thus the three form a tightly-knit, interdependent cluster of risky behaviours. Alcohol use also acts as a significant positive predictor of self-harm. In addition, the Perceptions of Gambling/Smoking scale is a strong negative predictor of condom use.

Various measures relating to cultural background, such as country category, coming from an Asian country, speaking a LOTE off campus, act as significant predictors of well-being in the different domains. One or more of these measures has contributed significantly to the prediction of connectedness, cultural stress, satisfaction with living arrangements and financial support, perceived health interference in study, drug use, alcohol use, and using university health services when in need. The Cultural Stress scale, which is pervasive in its influence, also acts as an indicator of cultural background.

One variable that is particularly important in predicting students’ use of the university health and counselling services is friendship with others who have used these services. Other variables that contribute to the prediction of dimensions of well-being in the different domains are sporadic in their contributions: years of enrolment, course type, gender, age, and participation in a Foundation Studies program.

11. Group differences in well-being

Time in Australia: Differences based on the number of years of enrolment are few and focus on aspects of sociocultural, not psychological, adaptation. The number of years of secondary schooling in Australia seems unrelated to well-being. Students from Asian countries who have participated in a Foundation Studies program seem to gain a stronger sense of connectedness, particularly with co-culturals, but at the same time they seem to experience less confidence and greater stress than their counterparts in adapting to life and study in Australia. Perhaps the reasons for self-selecting into the program can account for this latter point.

Age: Older students seem to have a stronger sense of well-being than younger students in most domains.

Gender: Female students show higher levels of psychological distress than male students, while male students are more involved in risky health-related behaviours.

Relationships: Group differences on the basis of marital status are mainly concerned with social activity, experience of cultural stress, other forms of psychological distress and sexual behaviour. Parents who have a child living with them in Australia have a stronger sense of connectedness in Melbourne and a lower level of cultural stress than those who do not.

Course of study: The undergraduate/postgraduate variable is confounded with age and tends to produce similar results. There are significant differences in students’ sense of well-being, based on the faculty in which students are enrolled. Some of these differences are probably related to the number and country origin of international students in the different faculties. Other factors, such as length of course, course type, approaches to teaching and learning, and course requirements, would also be
influential. Different patterns of faculty-based student perceptions can be seen in the data, providing specific and different challenges for the various faculties.

*Cultural background:* Several variables provide differing measures related to cultural background. On the basis of these, two general patterns of cultural adaptation can be seen in the data. Both patterns show areas of strength as well as concern.

The first pattern is associated with Asian countries, though differences among those Asian countries can be seen as well. The main elements of the pattern are higher social interaction with co-culturals and lower interaction with Australians, high involvement in religious groups by students from Muslim countries, higher cultural stress and stress from family expectations, lower involvement in paid work for students from wealthier areas, higher levels of depression and anxiety, lower levels of self-esteem, and lower use of drugs and alcohol.

The second pattern is associated with English-speaking, European and westernised countries. It is characterised by lower social interaction with co-culturals and higher interaction with Australians, greater involvement in university clubs but lower participation in national, cultural and religious groups, lower cultural stress resulting from trying to meet family expectations, higher satisfaction with living arrangements but lower satisfaction with the level of financial support, a stronger sense of lifestyle balance, fewer worries about poor health interfering with work, higher levels of self-esteem, a greater number of sexual partners while in Australia, and higher use of drugs and alcohol.

*Perceived academic progress:* Students who feel their academic progress is as good as or better than expected have a significantly stronger sense of well-being than those who feel their progress is worse than expected. This difference is to be found in virtually every aspect of each domain investigated.

### 12. Three styles of adaptation to life and study in Australia

A three-category typology of styles of adaptation has been developed on the basis of student responses across the domains investigated. The majority of students, 59 per cent, exhibit a **positive, connected** style of adaptation; these students have a sound sense of well-being. A substantial minority of students, 34 per cent, are **unconnected and stressed** in their approach, while a very small group, 7 per cent, have a **distressed and risk-taking** mode of adaptation. The latter two groups of students are the ones whose well-being is in need of strengthening. With appropriate support, these students could have much more satisfying and productive experiences as university students in Australia.

Some validation of the interpretation of the typology is provided by the predicted differences that were found in students’ satisfaction, psychological states and behaviour in different domains, based on their styles of adaptation: perceived need and actual use of university health and counselling services, social mixing, belonging to organisations, satisfaction with living arrangements, level of self-esteem, and level of stress associated with the need to do well academically for the sake of the family.
Typologies need to be approached with caution. However, this classification of general styles of student adaptation to university life offers potentially useful information for those concerned with assisting students and targeting their needs.

It is also suggested that the typology could well apply to all university students, whether domestic or international. While the challenge of adapting to university life is generally much less for domestic students, they still confront cultural changes requiring adaptation. These could include the change from school to university life and from living at home in rural, interstate or New Zealand locations to living in Melbourne. Domestic students also include many first and second generation citizens from a range of other cultures. It would be interesting to see whether domestic students show evidence of the same three modes of adaptation to university life and life in Melbourne.
IMPLICATIONS:
IMPROVING THE EXPERIENCE OF
INTERNATIONAL STUDENTS

1. Improving students’ sense of connectedness

Connectedness is a dimension of international students’ experience that is fundamental to their sense of well-being. It has positive associations with well-being in each of the domains of student life that have been investigated in this study. The stronger students’ connectedness, the lower their sense of cultural stress. Cultural stress is another dimension of international student experience that has pervasive associations with well-being, but in this case the associations are negative ones. To bring about improvement in students’ sense of connectedness would be to enable students to experience increased well-being in a multitude of areas.

The aspect of connectedness that students are most in need of is that supplied by people who care about them at a personal level. They indicate they have reasonable access to people who can provide information and related types of help. What they lack is contact with people who know them as individual human beings, who care about them personally and with whom they can talk at a personal level.

There is a particular challenge for the university in the fact that 53 per cent of the students feel they do not really belong at the university to a considerable or great degree. This figure will undoubtedly have been inflated by the number of first year students who had been enrolled for only two to three months when the data were collected. Nevertheless, strengthening the feeling of belonging in the university would increase students’ overall sense of connectedness.

Connections with co-culturals are much stronger for most international students than connections with Australians. This is especially true for students from Asian countries. Connectedness can be strengthened through contact with either co-culturals or Australians, however increasing the amount of contact with Australians would bring with it many additional benefits for international students.

This is regarded as the most important challenge arising from the study. How can international students’ sense of connectedness be strengthened?

2. Achieving balance between study and other aspects of life

About 50 per cent of the international students in the sample feel that they have achieved little or no balance between studying and other aspects of life. The less balanced they feel their lives to be, the less they feel they can cope with the amount of university work they have. The more time they want for study, the more they feel that work is dominating their waking hours, and the less well they feel they are achieving academically. Perceived academic progress is a dimension that is associated with a sense of well-being in all domains of life that have been investigated. This is not
HEALTH AND WELL-BEING OF INTERNATIONAL STUDENTS

surprising, given that it lies at the centre of the purpose of being an international student.

The links between lifestyle balance, coping and perceived academic progress create a cyclical pattern that increases stress and anxiety and is unlikely to improve academic performance, let alone a sense of well-being. While assistance in study skills is given to students, perhaps some further, different types of assistance are needed, combining more general life-coping strategies with specific study skills and approaches.

An additional aspect of this might be helping students to develop strategies to cope with the significant stress they experience as a result of the need to fulfil family expectations of them.

3. Faculties and student well-being

For most international students, the faculty is a key point of contact. The faculties differ in size, including class size, the number of international students enrolled, the relative representation from different country categories, the predominance of undergraduate or graduate courses, length of courses, the main approaches to teaching and learning, the different student activity requirements such as clinical, practical or performance work. All of these factors can influence student interaction, student and staff interaction and the faculty-related acculturation of students.

The data indicate that students’ sense of well-being differs from faculty to faculty. Many of the factors listed above might help to account for these differences.

However, the data from this study provide faculties with important feedback. Where dimensions of well-being are shown to be lower than average, there is an indication of the need for further consideration of strategies that will strengthen students’ sense of connectedness, reduce the level of cultural stress, and improve students’ perceptions of their quality of life and study in Melbourne. Faculties need different strategies, depending on their size, the composition of the international student body, and the nature of students’ work.

Faculties seem to be the likely locus for the achievement of improved student connectedness.

4. Use of university health and counselling services

Many international students have not sought help from university health and counselling services, even when they felt they needed such help. A common reason given for this is that they felt the problem was not important enough, a reason that could be explored further in order to gain a better understanding.

At the same time, students are much more likely to seek help if they have friends who have already used these services. This suggests that some other factors are operating, a view that is reinforced by the factors that predict student use of these services when in need.

Rosenthal, Russell & Thomson, 2006
The information friends can provide concerns not only factual matters about location of services, hours of opening, and absence of fees, but also the more subjective aspects that are likely to intimidate the inexperienced, such as what to expect, how clients are treated and how helpful the service is. If we are looking for a means of increasing the proportion of international students who actually seek help when in need of it, then the power of the friendship network would seem to be something to be harnessed.

5. Styles of adaptation

Based on the typology of styles of international student adaptation that has been developed in this study, the conclusion has been drawn that the majority of students exhibit a positive and connected approach to living and studying in Melbourne. Just over 40 per cent of students, however, are coping less well. Of these, some 34 per cent are unconnected and stressed in their approach and some 7 per cent exhibit a distressed and risk-taking style of adaptation. With appropriate support, these students could have much more satisfying and productive experiences as university students.

The pattern of the unconnected and stressed student is a familiar one to those within the university. It is a pattern which, in an extreme form, means that students experience their university life as unpleasant, even painful, and possibly achieve well below their capacity. Assisting these students in particular to develop positive, adaptive coping strategies for life and study and improving their sense of connectedness would be very beneficial for the individuals concerned, as well as for the university.

There is a possibility that the typology of styles of adaptation is generic in nature, thus applying to all university students, whether international or domestic. While the challenge of adapting to university life is generally much less for domestic students, they still confront cultural changes requiring adaptation. It would be useful to see whether domestic students exhibit the same three styles of adaptation to university life and life in Melbourne as do international students, and whether they also need assistance to develop positive, confident, adaptive coping strategies.

6. Further investigation of specific areas

The results of the study indicate the need for deeper investigation of some specific aspects of international student experiences. Qualitative as well as quantitative methods of research need to be involved in these investigations. On the basis of better knowledge, appropriate strategies could be developed to improve students’ well-being.

- **Abuse** constitutes a significant threat to students’ well-being. It would be valuable to know much more about this situation – its link with discrimination, with cultural background and gender, the sources of abuse, the on-campus/off-campus locations of abuse events, and the effects of abuse on students’ lives.

- **Condom use** by sexually active students is not universal. In fact only 50 per cent indicate that they always use condoms. A high percentage of students are thus
placing themselves and their partners at risk. There are few demographic or situational variables that help us to understand this situation. Further exploration of this issue and of strategies that would prove to be effective in increasing condom use by international students is desirable.

- **Self-harm** behaviour is a clear indication of lack of well-being, whether it takes the form of people deliberately hurting themselves, doing something because it might harm or kill them, or having suicidal thoughts. The present study has collected some evidence about self-harm behaviour, but much more detailed information and deeper understanding are needed, particularly in relation to suicidal ideation and action.

- **Increased alcohol consumption** since arrival in Australia has been acknowledged by just over 25 per cent of the international students in this study. There are also some indications of heavy, episodic or binge drinking. Investigation of this issue would provide more detailed information and understanding.

7. A follow-up study

A second study of the health and well-being of international students in two years’ time is thought advisable as a means of tracking changes and improvements. The follow-up study could incorporate a sample of domestic students to provide a basis for comparison.
INTRODUCTION

Most international students arriving in Australia to undertake university courses encounter more complexities and challenges than the average Australian student commencing a tertiary course, particularly if the international student’s first language is not English and the home country culture is strikingly different from Australian culture. Everyday living - accomplishing what are routine, automatic tasks at home or even basic social interactions - becomes more a matter of conscious effort and careful planning. There is challenge in learning to interpret the accents, the local colloquial usage, the intonation patterns, the allusions, the figures of speech that are heard and the gestures, body language and facial expressions that are seen. There may be challenge in the food that is eaten, the housing that can be obtained (and retained over time), the weather, clothing, banking and money, bureaucracies, the attitudes of local people, the part-time work that can be found, and the loneliness that is experienced when away from family and friends.

It is not surprising that the physical and psychological well-being of many students can be affected by such adjustment challenges (Ward, Bochner & Furnham, 2001). Nor is it surprising that, for many, adjustment challenges are intensified by the learning environments they encounter within their courses of study. Different styles of learning and teaching, different attitudes to the authority of lecturer and text, different modes of teacher-student interaction, different criteria for assessment – all of these contribute. International students, often the brightest and most highly motivated, who have perhaps studied formal English for many years, find themselves not as well acquainted with the less formal language-in-use or sociolinguistic skills needed in the lecture, tutorial, laboratory or clinical/placement setting. To feel that you are perceived as a ‘problem’ instead of as an accomplished and promising student would be a shock indeed.

INTERNATIONAL STUDENTS IN AUSTRALIA

In recent years the growth in numbers of international students enrolled in Australian universities, both onshore and off-shore, has been marked. In 2000, there were 95,607 overseas student enrolments, some 13.7 per cent of total university enrolments. By 2004, there were 228,555 overseas student enrolments, representing 24.2 per cent of total enrolments. In other words, overseas students constituted one in every four student enrolments in Australian universities in 2004 (DETYA, 2001; DEST, 2005). In 2004 education services continued to be Australia’s third largest services export; it was the seventh largest individual export for all goods and services (IDP Education Australia, 2004).

The University of Melbourne has participated in this growth. Between 2000 and 2004, the number of international students enrolled in its courses rose from 4,902 to 9,215, a growth of 88 per cent in four years. In 2004, international students constituted 22 per cent of the total enrolment (DETYA, 2001; DEST, 2005). A continuing increase in international student enrolments is anticipated, with the university’s 2004 Strategic Plan (University of Melbourne, 2004) setting a target for international participation of 28 per cent of total enrolments by 2007.
Accompanying the growth in international student enrolments in Australian universities has been an increase in awareness of the range of student needs that must be met, the development of strategies to meet those needs, and the conduct of research to strengthen both understanding and strategy. This has been particularly important at the University of Melbourne, where almost all overseas students have onshore course enrolments. Off-shore enrolments have grown from zero in 2000 to only 80 in 2004 (DETYA, 2001; DEST, 2005).

The needs of international students vary, of course, since those enrolled at the university are ethnically and culturally diverse and drawn from a wide range of countries throughout the world, reflecting the heterogeneity of Australian international students in general. In 2005, for example, international students attending the University of Melbourne have come from some 115 different countries, spread across all parts of the globe. Again reflecting the Australian situation generally, the strongest representation is to be found in students from various parts of Asia, particularly the People’s Republic of China (PR China), Malaysia, Singapore, Indonesia and Hong Kong (see Table 1, Method section). In drawing attention to the heterogeneity of the international student population, one must not forget that domestic students are also ethnically and culturally diverse, with many being of Asian-born migrant or refugee origin (Hawthorne, Minas & Singh, 2004).

ACADEMIC ISSUES AND INTERNATIONAL STUDENTS

The focus of concern in Australian universities in recent years, as well as in the research literature generally, has been on meeting the academic needs of international students, especially those of students from Asian countries. Several issues, generally arising from the perceptions and experience of university staff, have received attention. The chief of these is the appropriateness of the level of students’ English language proficiency for the demands of successful participation in study in Australian universities. Concerns about language proficiency encompass aspects of oral and written receptive and expressive language, as well as more general, linguistically-based communication skills (Faculty of Education and Asialink, 2004; Hawthorne, et al., 2004; Littlemore, 2001; Wang, 1998).

A second issue concerns perceived differences in expectations about approaches to teaching and learning. The Asian student is typically characterised as passive and compliant in class, accustomed to didactic, expository presentations from authoritative teachers, having a focus on the correct answer, dealing with the concrete rather than the abstract, and concerned with the memorisation and reproduction of work, thus being unprepared for what is construed as the Australian approach of interactive and informal discussion, problem-based learning, critical, abstract thinking, and student independence and self-regulation (Chan, 1999; Ho, 2001; Hoare, 2004; Leung, 2001).

Aspects of such stereotypes of pedagogical differences are being challenged now, with greater subtleties and complexities being seen, as well as differences being discerned among approaches of various Asian countries (Biggs & Watkins, 2001).

---

1 Source: Student Management Systems, Student Administration, The University of Melbourne, 3 March, 2005
Chan, 1999; Clarke, 2004; Kelly & Ha, 1998). One example is the role of rote learning. This was earlier conceived as memorisation without understanding but is now seen as the process by which deeper understanding, as well as retention of information, is achieved (Biggs & Watkins, 2001; Lee, 1996). Another is the out-of-class relationship between student and teacher. The expectation of the Asian student is of a much friendlier, more student-centred, personal, supportive and interactive approach on the part of the teacher outside the classroom than is the case in Australian settings (Volet & Renshaw, 1995; Biggs & Watkins, 2001; Zhang, 2006). The absence of such expected out-of-class interactions with and support from tutors and lecturers in Australian universities can lead to disappointment and disillusionment on the part of Asian international students.

International students’ perceptions of their learning and teaching experiences provide another source of information. In a recent study of the experience of first year students in Australian universities, more students in the international sample (about half of whom came from South-East Asia) reported having difficulty in comprehending course material and coping with the workload, as well as feeling discomfort about participating in class discussions. International students sought advice and assistance from academic staff more frequently than domestic students, even though they were less likely to believe staff to be approachable. They were also more critical of the teaching they received (Krause, Hartley, James & McInnes, 2005).

Of the 903 international students who responded to a survey of those completing their course of study in 2004 at the University of Melbourne (approximately 85 per cent from Asian countries), about 24 per cent indicated that they had initial difficulties with English writing skills and about 22 per cent problems with fluent English oral expression, although by the end of their course this situation had changed for many undergraduate and higher degree (research) students. Those undertaking postgraduate coursework degrees tended to perceive continuing difficulties in these areas, possibly because of the shorter duration of these programs (Daroesman, Looi & Butler, 2005).

PSYCHOLOGICAL AND SOCIAL ADJUSTMENT

Related to concerns about the academic needs of international students have been the issues of adjustment, issues that can have an impact on academic performance. Adjustment for the sojourner, the relatively short-term visitor to a new culture who comes for purposes other than permanent settlement, encompasses the types of experience outlined at the outset of this report (Church, 1982). Oberg (1960) is credited with coining the term ‘culture shock’ for the anxiety resulting from the sudden loss of all familiar signs and symbols of everyday life. The international student is regarded as a prime example of the sojourner.

Many researchers extended the notion of the anxiety response to include a range of other symptoms, such as irritability, impatience, loss of appetite, poor sleep, somatic and psychosomatic complaints, loss of self-esteem, depression, stress, pessimism, frustration, loneliness, homesickness, fear and alienation (Church, 1982; Mori, 2002). Sandhu & Asrabadi (1994) believe there is a general consensus that international students are a high-risk group who have more psychological problems than their peers in the USA, attributing this to the relative lack of resources of international students. However, empirical data to support such assertions is said to be in short supply. In
the words of Sandhu & Asrabadi (1994), “… research conducted on the psychological problems of international students is isolated, sporadic, inconsistent, varied, and desultory in nature” (p.436). A simple enumeration of the range of possible negative symptoms of culture shock also leaves open the question of how the process of adjustment might be conceptualised and how the indices of it might be measured.

Ward (Ward, 1997; Ward & Low, 2004; Ward & Rana-Deuba, 1999) believes these symptoms to have been conceptualised originally within a framework of psychopathology or mental illness. In her view, only in infrequent and extreme cases would such a conceptualisation be appropriate. She maintains that the forms of psychological distress experienced by most sojourners can be better conceptualised within the more recent framework of stress and coping strategies, a framework that brings to the fore the more positive and adaptive aspects of the transition experience.

Any life change, whether welcome or unwelcome, is likely to result in stress and require coping strategies to be brought into play. Moving to another country, especially one with a radically different culture, involves many significant life changes, so the experience of psychological stress and use of coping strategies to deal with the stress must be expected. Research and anecdotal evidence from international students supports the view that successful coping strategies influence positive adaptation, the reduction of psychological distress, a sense of psychological or emotional well-being, satisfaction and better academic performance (Daroesman et al., 2005; Grey, 2002; Minas, 2004; Struthers, Perry & Menec, 2000), although, as Ward asserts, maladaptive coping strategies can have pathological consequences.

Ward claims that psychological adaptation is not the only form of adjustment that can be distinguished in the experience of sojourners. A second aspect of adaptation concerns the acquisition of social skills and behaviours that allow the sojourner to perform the tasks of everyday life with ease, to negotiate university requirements, teaching-learning approaches, housing, banking, and transport, to operate competently within the culture. This, according to Ward, can be thought of as sociocultural adaptation (Ward & Kennedy, 1999), and is best viewed within a social learning paradigm. Adaptation is seen in the movement from the experience of social difficulties to the experience of social competence. According to Ward, these two domains of adjustment, the psychological and the socio-cultural, are interrelated but conceptually and empirically distinct, with each being predicted by different variables and developing in different ways over time. Assessment of sociocultural adaptation focuses on social competences and difficulties, while assessment of psychological adaptation involves measurement of well-being or negative mood states such as depression.

FACTORs INFLUENCING ADJUSTMENT

Factors that influence the sojourner’s adjustment to the host culture are also considered in the literature. These include background variables such as the difference between the culture of origin and host culture, language proficiency, gender, age, education level, status, self-esteem, and prior cross-cultural experience. In addition, there are situational variables such as length of stay, the information and support provided, social interaction with host nationals, networking with co-culturals,
academic or professional performance and physical health. Needless to say, there are strong interactions among many of these variables.

Time is an important dimension in the process of adjustment for sojourners such as international students, with discomfort usually reducing as the new culture becomes more familiar. It has been suggested, however, that the process might not be one of gradual and continuing improvement over time, even allowing for the expected ups and downs of the annual academic cycle. Some, such as Adler (1975), have proposed that sojourners go through stages in their adjustment to the host country, with these including an initial time of excitement and elation, a subsequent period of discomfort as the realities of living within a different culture become apparent, and a later time when a level of acculturation has been achieved. In contrast, Ward and her associates (Ward, Okura, Kennedy & Kojima, 1998; Ward & Rana-Dueba, 1999) see the greatest adjustment challenges and difficulties to be in the initial period of time in the new culture for both psychological and sociocultural adjustment, with sociocultural problems then decreasing gradually and levelling out, but psychological distress showing a different pattern of variability over time. Length of stay is an important variable to be considered in relation to international students’ sense of well-being.

Another variable held to be of particular importance to the process of adjustment is the cultural distance between the sojourner’s culture of origin and the host culture, in other words the degree of difference or similarity between the two cultures (Ward et al., 2001), with greater distance implying more difficulty in adjustment. Several cultural classification systems have been proposed, with component categories being based on perceived underlying characteristics of cultural values, beliefs and behaviours. The best known of these is the set of dimensions delineated by Hofstede (1997). He defined four dimensions: power distance (acceptance by the less powerful in the society that power is distributed unevenly), masculinity/femininity (competition versus nurturance), uncertainty avoidance (tendency to be threatened by the unknown or uncertain) and individualism/collectivism (the focus of concern is on oneself and one’s task as opposed to personal relationships and lifelong loyalty to strong and protective family or other groups).

Australian and Asian cultures tend to fall at opposite ends of each of these four dimensions, with particularly strong differentiation being found on the individualism/collectivism dimension. This cultural dimension has been used to explain some of the difficulties Asian international students have experienced in their approaches to learning in Australia (Faculty of Education and Asialink, 2004). Ward (1997; Ward & Rana-Deuba, 1999) argues that cultural distance, together with language competence, length of stay in the new culture, and the amount of contact with host nationals, typically influences sociocultural adaptation, whereas psychological adjustment is influenced by other factors, such as personality and social support.

The degree of social interaction that the sojourner establishes within the host country is also considered an important variable in adjustment, with stronger social interaction being seen as conducive to a more positive process of adaptation. Initially such social interaction was defined in terms of interaction with host nationals. The variables that affect the likelihood of this occurring are many, for example verbal and non-verbal communication skills, cultural attitudes and stereotypes, cultural expectations and
norms of friendship, anxiety and threat to self-esteem, and perceived status differences (Church, 1982). While achieving a satisfying level of social interaction with host nationals is undoubtedly a challenging process, it does provide international students with the opportunity for developing an understanding of and adaptation to the new culture (Li & Gasser, 2005). The level of social interaction between sojourners and host nationals has generally been found to be low, with sojourners wanting to have more interaction with locals than they experience (Church, 1982; James & Devlin, 2001; Daroesman et al., 2005).

Another form of social interaction that has been considered is participation in networks of co-culturals, a more comfortable, familiar and less stressful approach that provides security, support, connection and a means of sharing knowledge about the new culture (Al-Sharideh, 1998; Carr, Koyama, & Thiagarajan, 2003; Church, 1982). If, however, this becomes the sole form of social interaction or develops into an enclave of intolerance towards the new culture, then adaptation to the new culture will be inhibited. The critical issue is to achieve an optimal balance between interaction and identification with the home and host cultures. Berry (1997) argues that sojourners who adopt an integrative acculturation strategy, valuing both the original and the new cultures and maintaining relations with both groups, will experience a low level of adjustment stress. On the other hand, those who maintain a relationship with their own culture only - who do not value or relate to the new, keeping themselves separate from it - these are the sojourners who will experience high levels of acculturation stress.

A high proportion of international students attending Australian universities fall into the late adolescent/early adult age group. In 2004, 12.1 per cent of international students enrolled in Australian universities were aged 19 or under, while a further 49.1 per cent were aged between 20 and 24. Most of these students would belong to the 57.9 per cent of international students who were enrolled in undergraduate degrees (DEST, 2005). An even stronger representation of young international students enrolled in undergraduate degree is to be found at the University of Melbourne this year. A total of 75.7 per cent of all international student enrolments are of students aged 24 or below, with 15.8 per cent being aged 19 or under. Some 74 per cent of all international students in 2005 are enrolled in undergraduate degrees².

Adolescence is often portrayed as a time of experimentation, of trying out new ways of thinking, behaving, believing, interacting, presenting oneself - a time for working out and developing one’s adult identity (Erikson, 1965). Undergraduate students who arrive at the university after the structured and regulated life of a school student experience much greater freedom to make their own choices, to control and organise their own lives, and so to test out different ways of being. For international students entering universities in a new culture, this is also true. The freedom from structure, however, is magnified by their movement away from home, family and familiar society. In these circumstances, there might well be young international students entering university for the first time who experiment with different behaviours, ranging from the more superficial, such as adopting different clothing and hair colouring, to ones with potentially more serious consequences.

---
² Source: Student Management Systems, Student Administration., The University of Melbourne, 3 March, 2005

Rosenthal, Russell & Thomson, 2006
At the same time, there are protective factors as well as risk factors operating in the environments of international students. Protective factors include connectedness to family, although at a distance, and belief in their pro-social values (Benard, 1996; Catalano & Hawkins, 1996), a feeling of belonging to and experience of support from the educational institution and its staff (Benard, 1996; Resnick, Bearman, Blum, Bauman, Harris, Jones, Tabor, Beuhring, Sieving, Shew, Ireland, Bearinger, & Udry, 1997), involvement with pro-social peers and belief in their values (Catalano & Hawkins, 1996), emotional support from a wider family group or trusted others (Marcus & Swisher, 1992), a supportive, cohesive, reinforcing external community (Benard, 1996; Catalano & Hawkins, 1996), as well as individual characteristics such as high self-esteem (Resnick et al., 1997), a strong sense of purpose, motivation, self-efficacy3, personal agency and control4 (Benard, 1996). It is thought that international students who have been selected by their families or government to study in Australia, who are also financed by their families or government during their stay, as a high proportion are (Krause et al., 2005), and who are conscious of expectations of them, are likely for the most part to be capable and motivated students.

MEETING INTERNATIONAL STUDENT NEEDS

There have been many responses to the needs of international students at both government and institutional levels. Because the size and composition of the population of international students in Australia is changing rapidly, the monitoring of these changes is important for policy-makers, education providers and researchers. The Australian government makes specific information available about the international student population in its annual higher education statistics collection. It also collects information about levels of course satisfaction and graduate employment prospects through the Graduate Destination Survey and the Course Experience Questionnaire. The recent example of the national report on the first year experience of students in Australian universities (Krause et al., 2005) is an example of such investigations. At the state level, the Victorian Auditor General has conducted a performance audit to assess the impact of international student programs in Victorian universities on student access, academic standards, institutional finances and systems of regulation and monitoring (Auditor General, Victoria, 2002).

At the institutional level, monitoring of international students’ needs and their satisfaction with their university experience is very important. At the University of Melbourne, for example, the Evaluation Cycle includes a triennial survey of final year international students on their experience of the university, with a focus on academic issues, but also tapping into broader personal, social and cultural issues (for example, Daroesman et al., 2005). Other student surveys included in the cyclic evaluation process, such as the survey of the quality of university’s administrative and support

---

3 “Perceived self-efficacy refers to beliefs in one’s capabilities to organize and execute the courses of action required to produce given attainments.” (Bandura, 1997:3).

4 Whereas perceived self-efficacy refers to belief in one’s capacity to undertake the actions necessary to complete a task successfully, control beliefs concern whether the environment is seen to respond to those actions, so that the task outcome is actually perceived to be caused by or attributed to those actions. People who believe that they are active agents in producing outcomes, rather than outcomes being the result of chance or fate or something else, are more likely to take action. Thus, for example, a student’s belief that academic success is contingent on his/her own behaviour is likely to lead to appropriate goal-directed action by the student (Rotter, 1996; Weiner, 1986).
services for students (for example, Daroesman, Looi, Smyth & Douglas, 2004) seek responses from all students, but permit the perceptions of international and domestic students to be distinguished.

Other institutional research contributes to knowledge about international student needs and the ways of best meeting those needs. The focus of such research has largely concerned students’ academic needs. The Faculty of Education at the University of Melbourne, in association with Asialink, completed an investigation last year into issues in learning and teaching students from Asia (Faculty of Education and Asialink, 2004). This provided an overview of critical pedagogical issues and university responses, including individual faculty responses, for this major group of international students. Within the Faculty of Medicine, Dentistry and Health Sciences, domestic and international Asian students are strongly represented. In spite of excellent year 12 results, many were found to be facing difficulties with the course, both in relation to its problem-based learning approach and in terms of students’ communication styles in clinical settings. An account of the Faculty’s research on this issue since 1997 and the impressive model of support for international students that has been developed is given in Hawthorne et al. (2004).

The university has responded to the investigations of student needs at the institutional level. Its infrastructure for supporting international students is well-developed. A glance at the university website, for example, is sufficient to indicate the provision for prospective, current and departing students of information about Australia, Melbourne and the university, advice about cultural and academic adjustment, availability of administrative assistance, access to language, academic and support services, orientation and departure programs, and many other matters. Assistance is also provided to help academic and general staff improve their capacity to meet the expectations of the increasingly culturally diverse local and international student population.

THE PRESENT STUDY

Well-being is seen as a broader, more encompassing concept than health, one which includes health as a sub-component (Danna & Griffin, 1999). It is, in essence, a self-evaluative concept; evidence of it is drawn from the self-perceptions and self-appraisals of the people being studied. In their study of achievement goals and student well-being, Kaplan and Maehr (1999:337) defined well-being as “a phenomenological organization of students’ emotional, cognitive, and behavioural experiences”.

Well-being is thus subjectively established; it is in fact sometimes termed ‘subjective well-being’. In a major review of the area of subjective well-being, Diener and his colleagues defined the components of subjective well-being: “Subjective well-being is a broad category of phenomena that includes people’s emotional responses, domain satisfactions, and global judgments of life satisfaction” (Diener, Suh, Lucas and Smith, 1999:277). Emotional responses include pleasant affect (such as contentment, happiness, pride) and unpleasant affect (such as anxiety, depression, stress, guilt and shame). Domain satisfactions refer to perceptions of areas of life such as work, family, health, leisure, finances, friends and self. Life satisfaction concerns general, global perceptions of satisfaction with past, current and future life.
Earlier studies of well-being focused on the part played by external, usually demographic, variables in well-being. In his 1967 review, Wilson summed up the correlates of ‘avowed happiness’ in his description of a happy person as a ‘young, healthy, well-educated, well-paid, extroverted, optimistic, worry-free, religious, married person with high self-esteem, high job morale, modest aspirations, of either sex and of a wide range of intelligence’ (Wilson, 1967:294). Since then, it has become clear that external variables account for a relatively small amount of the variance in reported well-being (Diener et al., 1999). What is important is to look at the interaction of the person and the situation – how the individual perceives a situation and how he or she interacts with that situation.

It is inevitable that there are events, contexts or transitions that challenge the person and the person’s well-being in life – the death of a loved one, illness, winning the lottery or losing a limb (Diener et al., 1999), intergenerational family conflict (Lee, Su & Yoshida, 2005), unemployment (McKee-Ryan, Song, Wanberg, & Kinicki, 2005), work stress (Danna & Griffin, 1999; Siu, Spector, Cooper, & Lu, 2005), working in a foreign country (Stahl & Caligiuri, 2005), or becoming an international student (Constantine, Anderson, Berkel, Caldwell, & Utsey, 2005; Constantine, Kindaichi, Okazaki, Gainor & Baden, 2005). It is the way in which people respond to such situations that is important for their well-being. This brings to the fore two concepts that are now central to theories of well-being. The first is the concept of adaptation or diminishing reaction to the situation over time. The second is the concept of coping, the general strategy or approach adopted to manage or deal with the situation. Coping strategies are usually categorised as problem, control-focused approaches aimed at mastering the underlying cause of the stressful situation or emotional, symptom-focused approaches that direct effort towards controlling the emotional responses to the situation (Lazarus & Folkman, 1984).

A considerable body of knowledge has been built up at The University of Melbourne and in the research literature about international students’ perceptions of their academic challenges and experiences, together with some related aspects of their experiences during their stay in a new culture. Less is known about the physical and mental health and well-being of international students.

As the discussion of the literature indicates, assumptions and assertions have been made about the psychological anxiety, stress and depression experienced by international students. To what extent do students experience these symptoms? How does the physical health of the international students prior to translocation compare with physical health here, in the perception of students? What use do students make of the university health and counselling services? Do they use university medical services more readily than counselling services as the literature suggests (Church, 1982; Lee & Mixon, 1995; Mori, 2000)? Is there an increase in international students’ risk-taking behaviour when in Australia? Are they vulnerable to experiences of harm, discrimination and abuse, as a recent report suggests (Deumert, Marginson, Nyland, Ramia & Sawir, 2004)? To what extent do international students feel they are able to establish a balanced and healthy lifestyle while studying in Melbourne? Does connectedness to the university and/or a support network in Melbourne act as a protective factor? These are some of the questions that the study sought to explore.
The domains or areas of life satisfaction investigated in the study are
- relating to others while living in Australian society: social connectedness, cultural stress, stress from home;
- living and studying in Melbourne: living arrangements, finances, paid work, lifestyle balance, experience of abuse and distress;
- health and health-related behaviour: physical health, mental health, health-related behaviour.

The following demographic and situational variables have been included in the study: age, gender, marital status, presence of a child in Australia, number of years enrolled, number of years of secondary education in Australia, completion of a Foundation Studies program, country-of-origin category, Asian country of origin, English-speaking when growing up, speaking a language other than English outside the university, faculty, type of course, and perceived academic progress.

The aim of the present study was to establish baseline data on the health and well-being of international students at the University of Melbourne. On the basis of this knowledge, it was anticipated that recommendations could be developed that would add to the provision already being made for the learning and experiences of international students at the university.

The following research questions were established for the study:
1. What are international students’ self-perceptions of their health and well-being?
2. What group differences are there in students’ self-perceptions of their health and well-being?
3. Which factors predict positive student self-perceptions?
4. What use do students make of the university health and counselling services and how do they evaluate them?
METHOD

SAMPLE

A sample was drawn from international students with confirmed enrolments in undergraduate or postgraduate courses at The University of Melbourne in early March 2005. All international students, exclusive of Study Abroad students, formed the pool (n=8,053) from which the sample was to be drawn. The pool of potential respondents was further refined by the decision to exclude any students who had not given the University an Australian flagged address, because of the practical difficulties involved in mailing questionnaires to overseas addresses and receiving responses within the established time-line.

A pool of 6,828 international students was thus established. The country representation in this flagged address file was considered by Student Management Systems to be representative of the country representation in the permanent address file. Every third international student from an alphabetical listing of family names was selected from this pool into the sample, resulting in a sample size of 2,276.

From this total sample of 2,276 an achieved sample of 979 responses was obtained. When the number of return-to-sender items (n=44) is taken into account, this represents a response rate of 43.9 per cent.

The achieved sample was checked for its comparability on major variables with the total population of international students enrolled at the University of Melbourne. Data concerning the age, gender, course type, faculty, and country of origin of the university’s international student population were provided by Student Management Systems. As can be seen in Table 1, the achieved sample characteristics are closely aligned with those of the university's international student population.

Categorising the countries of origin of students was necessary because of the wide range of countries represented in the university population (n=115) and in the achieved sample (n=58). The system of categorisation is largely that used by Deumert et al. (2004). This allows independent representation of countries that have high student enrolments at the university, as well as grouped representation of countries with similar cultural characteristics but small enrolments at the university. Use of this system also allows for comparison of results between the present study and the study of Deumert et al., (2004). The system of country categorisation used in the present study is set out in Attachment 1.

---

5 The researchers are very grateful for the expertise and the willing assistance of Mr Phillip Robilliard, Deputy Manager (Support), Student Management Systems, Student Administration, who undertook this task.
6 'Study Abroad' students were excluded from the sample because they are engaged in only a one or two semester program at The University of Melbourne for which they obtain credit towards a degree at their home institution.
7 A 'flagged address' is the one the University student administration uses for all mail communications to students during the academic year.
8 The only difference is that Deumert et al. (2004) differentiate between Laos/Cambodia/Vietnam and Other South East Asia/Pacific countries. These two categories have been combined in this study because only Vietnam (and not Laos or Cambodia) was represented in the achieved sample.
Table 1  Comparison of the achieved sample and the population of international students at The University of Melbourne, March 2005

<table>
<thead>
<tr>
<th>Variable</th>
<th>Achieved sample: Percentage</th>
<th>University population: Percentage</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Age</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Below 20</td>
<td>18.8</td>
<td>15.8</td>
</tr>
<tr>
<td>20-24</td>
<td>57.0</td>
<td>59.9</td>
</tr>
<tr>
<td>25-29</td>
<td>13.1</td>
<td>13.8</td>
</tr>
<tr>
<td>30-34</td>
<td>6.4</td>
<td>5.6</td>
</tr>
<tr>
<td>35(+)</td>
<td>3.9</td>
<td>4.9</td>
</tr>
<tr>
<td>Missing</td>
<td>0.8</td>
<td>-</td>
</tr>
<tr>
<td><strong>Gender</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Male</td>
<td>35.4</td>
<td>42.7</td>
</tr>
<tr>
<td>Female</td>
<td>64.0</td>
<td>57.3</td>
</tr>
<tr>
<td>Missing</td>
<td>0.6</td>
<td>-</td>
</tr>
<tr>
<td><strong>Course type</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Undergraduate</td>
<td>70.8</td>
<td>74.0</td>
</tr>
<tr>
<td>Postgraduate (Coursework)</td>
<td>18.9}</td>
<td></td>
</tr>
<tr>
<td>Postgraduate (Research)</td>
<td>9.3}</td>
<td>26.0</td>
</tr>
<tr>
<td>Other</td>
<td>0.7</td>
<td>-</td>
</tr>
<tr>
<td>Missing</td>
<td>0.3</td>
<td>-</td>
</tr>
<tr>
<td><strong>Faculty (Total)</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Architecture</td>
<td>5.7</td>
<td>6.6</td>
</tr>
<tr>
<td>Arts</td>
<td>13.0</td>
<td>11.1</td>
</tr>
<tr>
<td>Economics/Commerce</td>
<td>25.6</td>
<td>27.0</td>
</tr>
<tr>
<td>Education</td>
<td>4.2</td>
<td>4.9</td>
</tr>
<tr>
<td>Engineering</td>
<td>15.9</td>
<td>16.8</td>
</tr>
<tr>
<td>Land/Food Resources</td>
<td>1.3</td>
<td>2.1</td>
</tr>
<tr>
<td>Law</td>
<td>2.8</td>
<td>4.8</td>
</tr>
<tr>
<td>Medical/Dental/Health Sciences</td>
<td>12.5</td>
<td>11.0</td>
</tr>
<tr>
<td>Melbourne Business School</td>
<td>0.8</td>
<td>0.7</td>
</tr>
<tr>
<td>Music</td>
<td>1.4</td>
<td>1.1</td>
</tr>
<tr>
<td>School of Graduate Studies</td>
<td>-</td>
<td>0.1</td>
</tr>
<tr>
<td>Science</td>
<td>12.2</td>
<td>11.6</td>
</tr>
<tr>
<td>Veterinary Science</td>
<td>1.8</td>
<td>1.3</td>
</tr>
<tr>
<td>Victorian College of the Arts</td>
<td>1.2</td>
<td>0.9</td>
</tr>
<tr>
<td>Missing</td>
<td>1.5</td>
<td>-</td>
</tr>
<tr>
<td><strong>Country of origin categories</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td>P.R. China</td>
<td>22.9</td>
<td>22.5</td>
</tr>
<tr>
<td>Hong Kong</td>
<td>8.2</td>
<td>7.1</td>
</tr>
<tr>
<td>India</td>
<td>1.6</td>
<td>1.9</td>
</tr>
<tr>
<td>Indonesia</td>
<td>9.8</td>
<td>8.7</td>
</tr>
<tr>
<td>Malaysia</td>
<td>23.0</td>
<td>20.7</td>
</tr>
<tr>
<td>Singapore</td>
<td>11.5</td>
<td>13.5</td>
</tr>
<tr>
<td>UK/US/Canada</td>
<td>3.9</td>
<td>4.6</td>
</tr>
<tr>
<td>Other East Asia</td>
<td>4.4</td>
<td>4.5</td>
</tr>
<tr>
<td>Other S.E. Asia/Pacific</td>
<td>5.1</td>
<td>4.9</td>
</tr>
<tr>
<td>Middle East/North Africa</td>
<td>1.1</td>
<td>1.5</td>
</tr>
<tr>
<td>Other Africa</td>
<td>1.4</td>
<td>2.2</td>
</tr>
<tr>
<td>Europe</td>
<td>2.7</td>
<td>2.4</td>
</tr>
<tr>
<td>Latin America</td>
<td>0.7</td>
<td>0.9</td>
</tr>
<tr>
<td>Other South Asia</td>
<td>1.3</td>
<td>1.8</td>
</tr>
<tr>
<td>Missing</td>
<td>2.3</td>
<td>2.8</td>
</tr>
</tbody>
</table>
The sample does vary from the population on the variable of gender. A higher percentage of female students responded to the questionnaire, proportional to their representation in the university population. This is not unexpected. Females tend to be more compliant than males in their responsiveness to survey requests. A recent example is to be found in the study of the experience of first year students in Australian universities (Krause et al., 2005), where 66 and 34 per cent of females and males responded to the survey, compared with their respective representation (57 and 43 per cent) in the commencing undergraduate population. These figures are very similar to the gender representation in the current sample and population. Care will be taken in reporting results to consider possible gender differences.

Because this study was designed as an exploratory study to obtain baseline data about the health and well-being of international students at The University of Melbourne, comparative data on domestic students were not collected. Had domestic students been included, the questionnaire content would have had to differ. It is anticipated that a comparative study will be undertaken in the future, based on the knowledge gained from the present study. It is thought preferable that such a study be undertaken in semester 2, rather than semester 1, when first-year students have had a little more time to gain experience in their role as international students living and studying in Melbourne.

INSTRUMENT

The research instrument used in the study was a questionnaire developed specifically for the purposes of the project. Areas to be included in the questionnaire were selected on the basis of the information needed to address the research questions. Relevant sections of the research literature, including health-related questionnaires used in other settings, were consulted in the process of the questionnaire construction (Church, 1982; Hakim, 2004; McInnes, Griffin, James & Coates, 2001; Patton, Bond, Butler & Glover, 2003; Reininger, Evans, Griffin, Valois, Vincent, Parra-Medina, Taylor & Zullig, 2003; Rosenberg, Schooler, Schoenbach & Rosenberg, 1995; Sanhu & Asrabadi, 1994; Smith, Agius, Dyson, Mitchell & Pitts, 2003; Women’s Health Australia, 2002). It was estimated the questionnaire would take a maximum of 30 minutes to complete. A copy of the questionnaire is contained in Attachment 2.

The draft questionnaire was presented for discussion to a meeting of the Advisory Group9 that had been established to assist in the development of the project and in the consideration of findings and recommendations. Suggestions from Advisory Group members were used to refine the questionnaire. A few additional modifications were made as a result of piloting the questionnaire with a small number (n=13) of University of Melbourne international students, both male and female, ranging in age, faculty and course type.

The questionnaire consisted of seven sections:

Section A: Demographic and related information: age, gender, marital status, course type, faculty, year of course, perceived academic progress, length of enrolment, studies in Australia prior to enrolment, children, country of origin, English language use.

---

9 Membership of the Advisory Group consisted of representatives of the University of Melbourne Postgraduate Students’ Association, Melbourne University Overseas Student Services, International Student Support Services, the Centre for the Study of Higher Education, and the project researchers.
Section B: 27 items, rated on a four-point scale, concerning perceptions of connectedness to the university and life in Melbourne, to home, experience of cultural stressors, perceptions of self and own health, lifestyle and behaviour.

Section C: Living in Melbourne: 10 items concerning accommodation, financial support, balance between study, work and leisure, nutrition.

Section D: 28 items, rated on a four-point scale, continuing the exploration of areas in Section B.

Section E: Health and well-being: 30 items concerning physical health, relationships, risk-taking behaviour (sex, smoking, drinking, drugs, gambling, self-harm), abuse by others.

Section F: Mental health: anxiety, stress and depression.

Section G: University services: perceived need for and use of university health, counselling and other services, evaluation of services, sources of information about services.

PROCEDURE

Following approval of the research project by the university's Human Research Ethics Committee in August 2004, materials were prepared for mail-out to students. The intended date for mailing was delayed from September 2004 until March 2005 at the request of the university administration.

The questionnaire was mailed to the student sample, using envelope labels generated by Student Management Systems for the purpose. In addition to the questionnaire, the envelope contained a covering letter from the university's Vice Principal and Academic Registrar and the chief researchers, a plain language statement and a reply-paid envelope for the return of the completed questionnaire. Students receiving the questionnaire could choose whether or not to respond. Questionnaire responses were anonymous.

The initial mailing of questionnaires to the student sample took place in the week commencing 11 April 2005, with a return date of 27 April. A second mailing of the questionnaire was made in the week commencing 21 April, with a return date of 11 May. The purpose of the second mailing was to urge those who had not responded to the first mailing to complete the questionnaire at that point, thus increasing the response rate. Since questionnaire responses were anonymous, the second mailing had to go to all students in the sample. A colourful warning slip was included in the second mailing, to indicate that the questionnaire was intended only for students who had not replied to the first mailing. The strategy of having a second mailing was successful, with an additional 274 responses being received.

MEASURES

Responses to individual questionnaire items, outlined in the description of the questionnaire, provided a range of measures for baseline analysis. In addition, a preliminary analysis of the data was undertaken in order to aggregate items into scales, thus creating compact measures that could be used in more complex analyses. Exploratory factor analysis and reliability scaling were used to establish the soundness of these scales.
The names of these scales and the dimension measured by each are set out below, together with the percentage variance explained, range of factor loadings and the coefficient of reliability. Details of the scales are provided in Attachment 3.

*Connectedness* scale: Students’ perception of the support available to them in Melbourne: three items (69.2 per cent of variance explained; item factor loading range: .82 to .84; alpha=0.78)

*Cultural Stress* scale: Perceived discomfort of students in a culturally unfamiliar setting: eight items (36.3 per cent of variance explained; item factor loading range: .51 to .70; alpha=0.75)

*Perceptions of Drug Use* scale: Students’ relative use of drugs at home and here, together with evaluation of own and friends’ drug use: seven items (52 per cent of variance explained; item factor loading range: .59 to .83; alpha=0.84)

*Perceptions of Alcohol Use* scale: Students’ relative use of alcohol at home and here, together with evaluation of their alcohol use: four items (57.1 per cent of variance explained; item factor loading range: .59 to .84; alpha=0.74)

*Perceptions of Gambling and Smoking* scale: Students’ relative gambling and smoking behaviour at home and here, together with evaluation of their gambling and smoking: five items (52.2 per cent of variance explained; item factor loading range: .60 to .85; alpha=0.77)

*Abuse and Distress* scale: Students’ experience of physical, verbal and sexual abuse in Australia, and the resultant distress experienced: three items (75.0 per cent of variance explained; item factor loading range: .82 to .91; alpha=0.87)

*Health Service Evaluation* scale: Students’ perception of the quality of service they received: four items (66.5 per cent of variance explained; item factor loading range: .66 to .88; alpha=0.83)

*Counselling Service Evaluation* scale: Students’ perception of the quality of service they received: four items (73.4 per cent of variance explained; item factor loading range: .70 to .92; alpha=0.88)

In addition, items constituting the *Depression, Anxiety and Stress Scales* (DASS), developed by Lovibond and Lovibond (1995) were included in the questionnaire. The short form of the DASS was used for the purpose of this project (seven items per scale). Alpha values given by the authors for a normal (i.e. non-clinical) Australian sample are *Depression*: 0.81, *Anxiety*: 0.73; *Stress*: 0.81. Alpha values for the sample of students participating in the present study are higher: *Depression*: 0.88, *Anxiety*: 0.81; *Stress*: 0.86

**STATISTICAL ANALYSIS**

The Statistical Package for the Social Sciences 12.0.1 was used to analyse the data. A range of statistical tests was used, including various descriptive statistics, inferential statistics and multivariate analyses.
RESULTS

WELL-BEING DOMAIN 1: RELATING TO OTHERS WHILE LIVING IN AUSTRALIAN SOCIETY

SOCIAL CONNECTEDNESS

The questionnaire responses provide information about the people with whom students mix socially, whether students join clubs or other organisations, their links with home, and the extent to which they have personal and emotional support available in Melbourne.

Connectedness

Central to the concept of connectedness is the knowledge that there are people who know the individual person, care, listen and provide help when needed. Three items in the questionnaire tap into this central concept. Table 2 presents the results. Although there are strong, positive associations in meaning between the three items (Spearman correlations for each pair of items are between +0.5 and +0.6, p<.001, two-tailed), students also discriminate amongst them. People to whom one can go for help (B6) seem more readily available than people who relate to students at a more personal level – those who care (B22) and those with whom one can discuss one’s problems (D9). The means and standard deviations of these items suggest this. A repeated measures analysis of variance confirms that responses to item B6 are significantly more positive than those for items B22 and D9\textsuperscript{10}.

Table 2  

<table>
<thead>
<tr>
<th>Items</th>
<th>Mean</th>
<th>SD</th>
<th>0</th>
<th>1</th>
<th>2</th>
<th>3</th>
</tr>
</thead>
<tbody>
<tr>
<td>B6. There are people here in Melbourne I can ask for help if I needed it. (n=977)</td>
<td>2.2</td>
<td>0.8</td>
<td>3.5</td>
<td>18.2</td>
<td>37.4</td>
<td>40.9</td>
</tr>
<tr>
<td>B22. There are people here in Melbourne who care about me. (n=976)</td>
<td>2.0</td>
<td>0.9</td>
<td>6.0</td>
<td>23.5</td>
<td>37.5</td>
<td>33.0</td>
</tr>
<tr>
<td>D9. There are people here in Melbourne I can talk to about my problems. (n=979)</td>
<td>1.9</td>
<td>0.9</td>
<td>5.9</td>
<td>27.9</td>
<td>35.6</td>
<td>30.5</td>
</tr>
<tr>
<td>Connectedness scale score (n=975)</td>
<td>2.02</td>
<td>0.7</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Over 90 per cent of students indicate that they have someone or some people in Melbourne who can provide help, caring and support (ratings of 1 to 3). Of these, about 70 per cent feel they have considerable to strong support. There is also a small group who consider themselves quite isolated (rating of 0): 34 who feel there is no-one from whom they can seek help, 59 without someone who cares about them and 58 who have no-one with whom to discuss their problems. These are not the same

\textsuperscript{10} F(2, 1948)=44.50, p<.001

Russell, Rosenthal & Thomson, 2006
individuals in each case. In fact, there are only 9 respondents who give a rating of zero to all three items, indicating a feeling of great isolation in Melbourne.

These three items form a scale, the Connectedness scale. Few demographic or situational variables produce differences in scores on this scale and most of those that do are not strong differentiators. No significant differences were found on the basis of age, gender, marital status, course type, number of years here in secondary education, or country category. Students from Asian countries who had completed a Foundation Studies program had a significantly stronger sense of connectedness than students from Asian countries who had not\textsuperscript{11}. However, there was not a significant difference between all students who had completed a Foundation Studies program and those who had not.

The following variables differentiate significantly among students in regard to their scores on the Connectedness scale.

- Students who spoke some English while growing up have a significantly higher score on the Connectedness scale than those who do not\textsuperscript{12}.
- Those who speak a LOTE outside the university have a significantly lower level of connectedness than those who do not\textsuperscript{13}.
- Students from PR China have a lower level of connectedness than students from other countries\textsuperscript{14}.
- Students who feel they are doing better with their academic studies than expected have a higher level of connectedness than those who are not doing as well as they had expected\textsuperscript{15}.
- There is a main effect for faculty, with students enrolled in the Melbourne Business School (MBS) having a significantly lower level of connectedness than students enrolled at the Victorian College of the Arts (VCA)\textsuperscript{16}.
- Of the students who have children, those whose children are in Australia with them have a higher score on the Connectedness scale, than those whose children are not here\textsuperscript{17}.
- The longer students have been enrolled, the stronger their sense of connectedness\textsuperscript{18}.

These seven variables were entered into a multiple linear regression analysis to determine which variable or combination of variables best predict(s) students’ level of connectedness. The model that was achieved provides a significant prediction of the Connectedness scale score ($F(3, 955) = 12.77, p < .001$). It consists of three predictors: some use of English when growing up (positive predictor), perceived academic progress (positive predictor), and use of a LOTE when off campus (negative predictor). Table 3 presents the results. The word ‘predictor’ is being used here in a statistical sense. A predictor indicates that it is associated with a certain amount of variation in the aspect of well-being that is being predicted. This might, for example,

\textsuperscript{11} t=2.11, 844 df, p<.05, two-tailed (ES=.32) Note: Effect size was calculated by dividing the difference between the group means by the pooled standard deviation.
\textsuperscript{12} t=4.44, 965 df, p<.001, two-tailed (ES=.21)
\textsuperscript{13} t=3.75, 967 df, p<.001, two-tailed (ES=.25)
\textsuperscript{14} t=2.51, 951 df, p<.05, two-tailed
\textsuperscript{15} F(2, 958)=6.06, p<.01 (ES: $\eta^2$=.012)
\textsuperscript{16} F(12, 948)=2.11, p<.05 (ES: $\eta^2$=.026)
\textsuperscript{17} t=2.07, 53 df, p<.05, two-tailed (ES=.57)
\textsuperscript{18} $\rho$=+0.07, p<.05, two-tailed
HEALTH AND WELL-BEING OF INTERNATIONAL STUDENTS

be the result of a uni-directional influence, a causal relationship, an interactive relationship, or the influence of a third variable on both.

However, the total amount of variance in the Connectedness scale score explained by the model is very small, only 3.9 per cent \( (R^2=.039) \). This suggests that individual, personal factors might be better predictors of students’ perceived connectedness and social isolation in Melbourne than the demographic variables used in this analysis.

Table 3 Significant predictors of students’ Connectedness scale score

<table>
<thead>
<tr>
<th>Model</th>
<th>Unstandardised Coefficients</th>
<th>Standardised Coefficients</th>
<th>t</th>
<th>95% C.I. for B</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>B</td>
<td>S.E.</td>
<td>Beta</td>
<td></td>
</tr>
<tr>
<td>Spoke some English</td>
<td>-.17</td>
<td>.05</td>
<td>-.12</td>
<td>-3.53***</td>
</tr>
<tr>
<td>LOTE off campus</td>
<td>.13</td>
<td>.05</td>
<td>.08</td>
<td>2.50*</td>
</tr>
<tr>
<td>Perceived academic progress</td>
<td>-.12</td>
<td>.04</td>
<td>-.11</td>
<td>-3.49**</td>
</tr>
</tbody>
</table>

*p<.05   **p<.01   ***p<.001

Social Mixing

Social interaction provides a potential source of connectedness. Table 4 presents a summary of student responses to items concerning social mixing within and outside the university.

Table 4 Social mixing within and outside the university

<table>
<thead>
<tr>
<th>Items</th>
<th>Percentage ratings</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Mean</td>
</tr>
<tr>
<td>B1 At the university, I mix socially with other international students. (n=976)</td>
<td>1.8</td>
</tr>
<tr>
<td>D3 At the university, the people I mix with socially have a cultural background similar to my own. (n=977)</td>
<td>1.9</td>
</tr>
<tr>
<td>B7. Outside the university, the people I mix with socially have a cultural background similar to my own. (n=978)</td>
<td>2.2</td>
</tr>
<tr>
<td>D11. At the university, the people I mix with socially are Australian. (n=977)</td>
<td>1.0</td>
</tr>
<tr>
<td>D17. Outside the university, the people I mix with socially are Australian. (n=978)</td>
<td>0.9</td>
</tr>
</tbody>
</table>

Both the means and the percentages using each of the four points of the rating scale indicate that most students mix socially with people whose cultural background is similar to their own. This is true both within the university environment and outside that context; some 67.4 per cent of students see their social contacts within the university to be of similar cultural background, while 76.7 per cent see this to be true.
outside the university setting. These figures also indicate that social mixing outside the university is more culturally constrained than it is within the university. The difference between individuals’ ratings on these two items (D3 and B7) is statistically significant.  

Social mixing with Australians is relatively uncommon. Some 29.6 per cent of respondents have no social contact with Australians on the campus, and 39.4 per cent have none outside the university setting. Only about 20 per cent of respondents have a reasonable degree of social contact with Australians in either context (ratings of 2 or 3). Once again, the difference in social mixing between the two settings is quite large; significantly less social contact with Australians takes place off the campus than on the campus.

Table 5 Perceived relationships between mixing with culturally similar people and Australians

<table>
<thead>
<tr>
<th>Items</th>
<th>D3</th>
<th>B7</th>
<th>D11</th>
<th>D17</th>
</tr>
</thead>
<tbody>
<tr>
<td>D3 At the university, the people I mix with socially have a cultural background similar to my own, ( (n=977) )</td>
<td>-</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>B7. Outside the university, the people I mix with socially have a cultural background similar to my own, ( (n=978) )</td>
<td>+0.61***</td>
<td>-</td>
<td></td>
<td></td>
</tr>
<tr>
<td>D11. At the university, the people I mix with socially are Australian, ( (n=977) )</td>
<td>-0.26***</td>
<td>-0.21***</td>
<td>-</td>
<td></td>
</tr>
<tr>
<td>D17. Outside the university, the people I mix with socially are Australian, ( (n=978) )</td>
<td>-0.31***</td>
<td>-0.27***</td>
<td>+0.66***</td>
<td>-</td>
</tr>
</tbody>
</table>

*** Spearman correlation is significant at the .001 level, two-tailed.

The pattern of students’ responses shows that they tend to see mixing with people of similar cultural background as an alternative to mixing socially with Australians. The correlations between the two sets of items are significant but negative, as Table 5 indicates. If the responses of students from Asian and non-Asian countries are separated, however, the situation alters. Students from Asian countries see a negative relationship between mixing with co-culturals and Australians, while students from non-Asian countries see no relationship between them. The numerical dominance of students from Asian countries in the sample ensures the negative correlations seen in Table 5.

Regardless of students’ pattern of social interaction with co-culturals and/or Australians, the potential that social mixing has for strengthening connectedness in Melbourne seems to be realised. There is a significant, positive correlation between students’ Connectedness scale score and their rating on each of the items in Table 4. All but one (item D3) are significant at the .001 level. The strongest association is with item D11 – mixing with Australians at the university.

---

19 \( t=12.07, 975 \) df, \( p<.001 \), two-tailed
20 \( t=3.92, 976 \) df, \( p<.001 \), two-tailed
21 \( \rho=\pm0.15, p<0.001 \), two-tailed; Connectedness and B1: \( \rho=\pm0.15, p<0.001 \), two-tailed; Connectedness and B7: \( \rho=\pm0.15, p<0.001 \), two-tailed; Connectedness and D3: \( \rho=\pm0.08, p<0.05 \), two-tailed; Connectedness and D11: \( \rho=\pm0.28, p<0.001 \), two-tailed; Connectedness and D17: \( \rho=\pm0.24, p<0.001 \), two-tailed.

Russell, Rosenthal & Thomson, 2006
Some demographic and situational variables distinguish consistently and significantly among students in terms of their social mixing patterns.

- The older the students the less likely they are to mix with people of culturally similar background and the more likely they are to mix socially with Australians\(^{22}\).
- There is a significant main effect for course type on all four variables, with undergraduate students giving strongest endorsement for mixing with culturally similar people and postgraduate (research) students giving the weakest endorsement. The opposite is the case for social mixing with Australians: postgraduate (research) students give the highest score and undergraduate students the lowest score\(^{23}\).
- Students from Asian countries who completed Foundation Studies mix more with those of similar cultural background than students from Asian countries who did not undertake Foundation Studies. On the other hand, students from Asian countries who completed Foundation Studies mix less with Australians than students from Asian countries who did not undertake Foundation Studies\(^{24}\).
- Asian students mix more with those of similar cultural background than non-Asian students, and they mix less with Australians than non-Asian students\(^{25}\).
- Off-campus LOTE speakers mix more with those of similar cultural background than non-LOTE-speaking students, and they mix less with Australians than non-LOTE-speaking students\(^{26}\).

There are obvious associations between some of these variables, particularly the last three: students who complete Foundation Studies, students from Asia, and students who speak LOTE off-campus. Almost all students in the sample who complete Foundation Studies come from Asian countries (99 per cent); 95.1 per cent of students who speak LOTE off the campus are Asian students. The variables of student age and course type are also associated with whether or not students are from Asian countries, with about 95 per cent of younger students and undergraduate students being from Asian countries.

It is possible to see whether students from different parts of Asia are contributing more than others to these effects by examining students’ patterns of social mixing based on category of country of origin. There is a significant main effect for country category on all four items concerned with social contact with co-culturals and Australians\(^{27}\). At the university, students with the highest social contact with co-culturals come from Malaysia, Hong Kong, Indonesia, PR China and Singapore, while those with the lowest come from India, Europe and South Asia. Students from

\(^{22}\) Age and D3: \(\rho=0.27, \ p<.001, \ \text{two-tailed}\); age and B7: \(\rho=-0.22, \ p<.001, \ \text{two-tailed}\); age and D11: \(\rho=+0.11, \ p<.001, \ \text{two-tailed}\); age and D17: \(\rho=+0.18, \ p<.001, \ \text{two-tailed}\).

\(^{23}\) D3: \(F(2,964)=45.14, \ p<.001\) (ES: \(\eta^2=.086\)); B7: \(F(2,965)=33.15, \ p<.001\) (ES: \(\eta^2=.06\)); D11: \(F(2,964)=15.94, \ p<.001\) (ES: \(\eta^2=.03\)); D17: \(F(2,965)=15.91, \ p<.001\) (ES: \(\eta^2=.03\)).

\(^{24}\) D3: \(t=5.12, \ 685.6 \ \text{df}, \ p<.001, \ \text{two-tailed}\) (ES=.38); B7: \(t=4.40, \ 846 \ \text{df}, \ p<.001, \ \text{two-tailed}\) (ES=.32); D11: \(t=3.42, \ 632.3 \ \text{df}, \ p<.001, \ \text{two-tailed}\) (ES=.25); D17: \(t=4.52, \ 846 \ \text{df}, \ p<.001, \ \text{two-tailed}\) (ES=.31).

\(^{25}\) D3: \(t=7.18, \ 113.3 \ \text{df}, \ p<.001, \ \text{two-tailed}\) (ES=.81); B7: \(t=4.73, \ 109.9 \ \text{df}, \ p<.001, \ \text{two-tailed}\) (ES=.58); D11: \(t=5.54, \ 109.8 \ \text{df}, \ p<.001, \ \text{two-tailed}\) (ES=.69); D17: \(t=7.04, \ 111.8 \ \text{df}, \ p<.001, \ \text{two-tailed}\) (ES=.82).

\(^{26}\) D3: \(t=6.67, \ 575.8 \ \text{df}, \ p<.001, \ \text{two-tailed}\) (ES=.33); B7: \(t=5.10, \ 553.5 \ \text{df}, \ p<.001, \ \text{two-tailed}\) (ES=.36); D11: \(t=6.78, \ 555.9 \ \text{df}, \ p<.001, \ \text{two-tailed}\) (ES=.48); D17: \(t=7.27, \ 540.6 \ \text{df}, \ p<.001, \ \text{two-tailed}\) (ES=.52).

\(^{27}\) D3: \(F(13,941)=14.29, \ p<.001\) (ES: \(\eta^2=.165\)); B7: \(F(13,941)=8.86, \ p<.001\) (ES: \(\eta^2=.109\)); D11: \(F(13,940)=8.16, \ p<.001\) (ES: \(\eta^2=.101\)); D17: \(F(13,941)=9.52, \ p<.001\) (ES: \(\eta^2=.116\))
the UK/USA/Canada, India, South Asia and Europe mix most with Australians, while students from Hong Kong, Latin America, PR China and Indonesia do so the least.

Off-campus, the picture is similar. Students from Malaysia, Indonesia, Hong Kong and Singapore mix most with co-culturals, while students from South Asia, Latin America, India and Europe do so the least. Students from the UK/USA/Canada, Europe and India mix most with Australians, while students from Hong Kong, Indonesia and Malaysia do so the least.

Other demographic variables produce little or less consistent difference in social mixing patterns of students. Female students tend to mix more with co-culturals and less with Australians than males, but this tendency reaches significance only on item D11 (mixing with Australians on the campus)\(^{28}\). Single students mix more with culturally similar people than partnered students do, while partnered students tend to mix more with Australians than single students do\(^{29}\).

Students who feel their academic progress is better than expected mix with Australians significantly more than those whose progress is about the same or not as good as expected\(^{30}\), but patterns of social mixing with co-culturals are not differentiated by perceived academic progress. The number of years enrolled at the university does not seem to be related linearly to social mixing patterns, nor does the number of years of secondary education in Australia.

There are some differences based on faculty. There is a significant main effect for faculty on the extent to which students mix socially at the university with others of similar cultural background\(^{31}\). Students in at the Victoria College of the Arts and in Veterinary Science mix least with co-culturals, while students in Medicine, Dentistry and Health Sciences, Economics and Commerce, Land and Food Resources, and Engineering mix most with co-culturals. Faculty responses seem to relate to some extent to the proportion of Asian students among the international students in each faculty. Off-campus, the situation is different, with faculty-based responses altering both in strength and in rank order. There is no significant difference in social mixing patterns off campus based on faculty.

There is a significant main effect for faculty on the extent to which students mix socially with Australians both at the university and off the campus\(^{32}\). Students in the Economics and Commerce faculty mix least with Australians, while students at the VCA have most social contact with Australians. Again, faculty composition is important, with international students in Economics and Commerce being mainly from Asian countries and those at the VCA being mainly from western countries.

**Organisations and Activities**

One means of developing social connections is through the joining of clubs, societies, or other organisations. Students responded to three items concerned with this. Table 6 presents this information.

\(^{28}\) D11: \(t=3.16, 969 \text{ df}, p<.01, \text{ two-tailed (ES=.20)}\)

\(^{29}\) D3: \(t=4.31, 230.7 \text{ df}, p<.001, \text{ two-tailed (ES=.37)}\); B7: \(t=2.50, 967 \text{ df}, p<.05, \text{ two-tailed (ES=.21)}\); D11: \(t=1.84, 966 \text{ df}, \text{ n.s.}\); D17: \(t=2.39, 967 \text{ df}, p<.05, \text{ two-tailed (ES=.21)}\).

\(^{30}\) D11: \(F(2,960)=9.34, p<.001 (\text{ES}=0.019)\); D17: \(F(2,961)=7.97, p<.001 (\text{ES}=0.016)\).

\(^{31}\) D3: \(F(12,949)=3.98, p<.001 (\text{ES}=0.048)\)

\(^{32}\) D11: \(F(12,949)=5.59, p<.001 (\text{ES}=0.066)\); D17: \(F(12,950)=3.13, p<.001 (\text{ES}=0.038)\)
However, joining organised groups, whether they are on or off the campus, does not seem to be characteristic of the majority of respondents. Approximately 50 per cent indicate that they have not joined in such activities at all.

There is some difference between the response to students’ involvement in university, national and cultural clubs and the response to their involvement in religious groups. The standard deviation for item B8 is higher, indicating a greater diversity of perceptions among students. Although about 50 per cent of students say they are not involved in social contact through religious practice at all, some 13.3 per cent indicate that they are ‘very much’ involved. This is a much higher percentage than the 7.5 or 7.7 per cent who are ‘very much’ involved in other types of clubs and activities.

Table 6  Involvement in organisations and activities

<table>
<thead>
<tr>
<th>Items</th>
<th>Percentage ratings</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Mean</td>
</tr>
<tr>
<td></td>
<td>0</td>
</tr>
<tr>
<td></td>
<td>Not at all</td>
</tr>
<tr>
<td>D24. I am involved in organised university activities (eg. clubs, sport) other than my studies. (n=978)</td>
<td>0.8</td>
</tr>
<tr>
<td>D2. I am an active member of a national/cultural club or association. (n=978)</td>
<td>0.7</td>
</tr>
<tr>
<td>B8. I mix socially with people I met here through the practice of my religion. (n=973)</td>
<td>0.9</td>
</tr>
</tbody>
</table>

Nevertheless, it cannot be said that belonging to clubs or organisations provides international students with a common form of social connection during their stay in Australia. Those who do, however, have significantly higher levels of connectedness in Melbourne. All three items in Table 6 have significant, positive correlations with the Connectedness scale\(^{33}\). The strongest relationship is between connectedness and social interaction with people students have met through the practice of religion.

There are some differences in students’ involvement in organised activities, clubs and associations, based on demographic variables, the most consistent and significant of these being gender, marital status and course type. The variables of age and perceived academic progress also produce some differences, as do faculty and cultural background.

- Male students are significantly more involved than females\(^{34}\).
- Single students have significantly more involvement than students with partners\(^{35}\).
- Postgraduate research students are significantly less likely to be involved than undergraduate and postgraduate (coursework) students\(^{36}\).
- Younger students are more likely to be involved in organised activities than older students, especially at the university\(^{37}\).

\(^{33}\) Connectedness and D24: $\rho=+0.11$, $p<.01$, two-tailed; Connectedness and D2: $\rho=+0.13$, $p<.001$, two-tailed; Connectedness and B8: $\rho=+0.17$, $p<.001$, two-tailed.

\(^{34}\) D24: $t=2.71$, 970 df, $p<.01$, two-tailed (ES=.18); D2: $t=3.16$, 627.4 df, $p<.01$, two-tailed (ES=.22); B8: $t=2.81$, 965 df, $p<.01$, two-tailed (ES=.19).

\(^{35}\) D24: $t=4.37$, 270.7 df, $p<.001$, two-tailed (ES=.33); D2: $t=2.04$, 967 df, $p<.05$, two-tailed (ES=.17); B8: $t=2.40$, 252.3 df, $p<.05$, two-tailed (ES=.19).

\(^{36}\) D24: $F(2,965)=6.75$, $p<.01$ (ES:$\eta^2=.014$); D2: $F(2,965)=3.44$, $p<.05$ (ES:$\eta^2=.007$); B8: $F(2,960)=4.86$, $p<.01$ (ES:$\eta^2=.01$)

Russell, Rosenthal & Thomson, 2006
Students whose perceived academic progress is better than expected are more likely to be involved in off-campus and religious activities than other students. There is a significant main effect for faculty on all three items concerning involvement in organised activities. MBS students have the highest involvement in organisations both on and off the campus, but the lowest involvement in religious practices. Veterinary Science students have high club involvement on campus but the lowest involvement off campus, as well as low involvement in religious groups. Land and Food Resources students have very low involvement in activities on and off campus, but the highest involvement in religious practices. There is also a significant main effect for country category on all three items; countries with high and low ratings vary according to item. Malaysian students have the highest involvement in on-campus clubs, while Indian students have the lowest. Latin American students have the highest participation in off-campus associations, with European students having the least. Indonesian students are most strongly involved in religious practices; Latin American students are the least involved. Students from Asian/non-Asian countries are not significantly different in their participation in on-campus clubs, but students from Asian countries are significantly more involved in off-campus clubs and religious groups than other students.

Students who speak a LOTE off campus are significantly less likely to be involved in campus organisations, but significantly more likely to be involved in religious practices than non-LOTE-speaking students.

There are no consistent, significant differences in student involvement in clubs and associations based on years of enrolment, completion of Foundation Studies, or number of years in secondary schooling in Australia.

Connection to Home and Family

The connection to home and family can provide an important source of personal and emotional support for the international student. Students generally have strong links to home, as Table 7 indicates.

The mean ratings for the first three items in Table 7 are close to the maximum rating available on the scale, with the lower standard deviations indicating much less diversity of student perceptions on these items than on those in Tables 4 and 6. On each of these three items, over 90 per cent of respondents have positive views of their connections with home and the support they receive from family.

37 Age and D24: ρ=-0.14, p<.001, two-tailed; age and D2: ρ=-0.01, n.s.; age and B8: ρ=-0.10, p<.01, two-tailed.
38 D24: F(2,961)=2.50, n.s.; D2: F(2,961)=9.98, p<.001 (ES: η²=.02); B8: F(2,956)=3.03, p<.05 (ES: η²=.006)
39 D24: F(13,941)=1.88, p<.05 (ES: η²=.023); D2: F(12,950)=2.87, p<.01 (ES: η²=.035); B8: F(12,945)=1.94, p<.05 (ES: η²=.024)
40 D24: F(13,941)=2.90, p<.001 (ES: η²=.039); D2: F(13,941)=1.94, p<.05 (ES: η²=.026); B8: F(13,936)=6.27, p<.001 (ES: η²=.08)
41 D24: t=0.65, 953 df, n.s.; D2: t=2.70, 953 df, p<.01, two-tailed (ES=.32); B8: t=4.71, 125.2 df, p<.001, two-tailed (ES=.44)
42 D24: t=2.39, 611.2 df, p<.05, two-tailed (ES=.17); D2: t=0.92, 970 df, n.s.; B8: t=2.68, 965 df, p<.01, two-tailed (ES=.19).
Table 7
Students’ connections to home and family

<table>
<thead>
<tr>
<th>Items</th>
<th>Percentage ratings</th>
<th></th>
<th></th>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Mean</td>
<td>SD</td>
<td>0</td>
<td>1</td>
<td>2</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>Not at all</td>
<td>To some degree</td>
<td>To a considerable degree</td>
</tr>
<tr>
<td>B11. My family is interested to know how I’m getting on with my studies. (n=978)</td>
<td>2.5</td>
<td>0.7</td>
<td>0.9</td>
<td>8.1</td>
<td>30.0</td>
</tr>
<tr>
<td>D4. My family care about whether I am happy and well here. (n=977)</td>
<td>2.7</td>
<td>0.6</td>
<td>0.3</td>
<td>4.5</td>
<td>20.9</td>
</tr>
<tr>
<td>B3. I can contact my family at home as much as I need to. (n=976)</td>
<td>2.6</td>
<td>0.6</td>
<td>1.1</td>
<td>5.9</td>
<td>20.5</td>
</tr>
<tr>
<td>D7. I return home to visit as often as I need to. (n=976)</td>
<td>1.5</td>
<td>1.0</td>
<td>20.8</td>
<td>33.7</td>
<td>25.3</td>
</tr>
</tbody>
</table>

The response to the fourth item (D7) is different. Students vary considerably in their capacity to return home to visit whenever they feel they need to. Finance is a significant concern here. The more students worry whether they have enough money to live on (B21), the less likely they are to feel they can return home at will, while the more they feel they have enough financial support for their needs (B26), the more likely they are to feel they can return home when necessary. Overall, young single female undergraduate students from Asian countries (especially Singapore) find it easiest to return home whenever they feel the need.

Home and family provide students with a sense of connectedness in Melbourne, even though there might be considerable geographical distance separating student and family. There are significant, positive correlations between each item in Table 7 and the Connectedness scale. The strongest of these correlations is between students’ capacity to contact family at home as frequently as necessary (item B3) and their sense of connectedness.

Measures within each of the three areas of potential social connection (social mixing, involvement in organisations, and home and family) correlate significantly and positively with the Connectedness scale, as shown earlier. When these correlations are examined for Asian and non-Asian students separately, however, a different pattern of relationships emerges. These correlations are set out in Table 8.

---

\[43\] \(\rho=-0.17, p<.001,\) two-tailed.
\[44\] \(\rho=+0.23, p<.001,\) two-tailed.
\[45\] \(\rho=-0.32, p<.001,\) two-tailed.

Gender: \(t=4.80, 968\) df, \(p<.001,\) two-tailed.
Marital status: \(t=3.87, 965\) df, \(p<.001,\) two-tailed.
Course type: \(F(2,963)=58.19, p<.001.\)
Asian: \(t=3.68, 951\) df, \(p<.001,\) two-tailed.
Country category: \(F(13,939)=4.69, p<.001.\)

\[46\] Connectedness and B11: \(\rho=+0.13, p<.001,\) two-tailed; Connectedness and D4: \(\rho=+0.22, p<.001,\) two-tailed; Connectedness and B3: \(\rho=+0.23, p<.001,\) two-tailed; Connectedness and D7: \(\rho=+0.12, p<.001,\) two-tailed;
Table 8  Correlations between the Connectedness scale and other measures of social connectedness for students from Asian and non-Asian countries

<table>
<thead>
<tr>
<th>Item</th>
<th>All students (n=978)#</th>
<th>Students from Asian countries (n=859)</th>
<th>Students from non-Asian countries (n=96)</th>
</tr>
</thead>
<tbody>
<tr>
<td>B1 At the university, I mix socially with other international students.</td>
<td>+0.15***</td>
<td>+0.19***</td>
<td>-0.04</td>
</tr>
<tr>
<td>D3 At the university, the people I mix with socially have a cultural background similar to my own.</td>
<td>+0.08*</td>
<td>+0.12**</td>
<td>-0.04</td>
</tr>
<tr>
<td>B7. Outside the university, the people I mix with socially have a cultural background similar to my own.</td>
<td>+0.15***</td>
<td>+0.17***</td>
<td>+0.11</td>
</tr>
<tr>
<td>D11. At the university, the people I mix with socially are Australian.</td>
<td>+0.28***</td>
<td>+0.25***</td>
<td>+0.42***</td>
</tr>
<tr>
<td>D17. Outside the university, the people I mix with socially are Australian.</td>
<td>+0.24***</td>
<td>+0.22***</td>
<td>+0.38***</td>
</tr>
<tr>
<td>D24. I am involved in organised university activities (eg. clubs, sport) other than my studies.</td>
<td>+0.11**</td>
<td>+0.11**</td>
<td>+0.07</td>
</tr>
<tr>
<td>D2. I am an active member of a national/cultural club or association.</td>
<td>+0.13***</td>
<td>+0.16***</td>
<td>-0.06</td>
</tr>
<tr>
<td>B8. I mix socially with people I met here through the practice of my religion.</td>
<td>+0.17***</td>
<td>+0.20***</td>
<td>+0.05</td>
</tr>
<tr>
<td>B11. My family is interested to know how I’m getting on with my studies.</td>
<td>+0.12***</td>
<td>+0.11**</td>
<td>+0.19</td>
</tr>
<tr>
<td>D4. My family care about whether I am happy and well here.</td>
<td>+0.22***</td>
<td>+0.21***</td>
<td>+0.30***</td>
</tr>
<tr>
<td>B3. I can contact my family at home as much as I need to.</td>
<td>+0.23***</td>
<td>+0.24***</td>
<td>+0.22*</td>
</tr>
<tr>
<td>D7. I return home to visit as often as I need to.</td>
<td>+0.13***</td>
<td>+0.14***</td>
<td>+0.04</td>
</tr>
</tbody>
</table>

# Some students did not indicate their country of origin. Spearman correlations are significant at the * .05 level, ** .01 level, *** .001 level.

Interacting socially with both co-culturals and Australians is positively related to a sense of connectedness for students from Asian countries, while for students from non-Asian countries only social mixing with Australians is related to connectedness. Involvement in clubs, association and especially in religious groups is positively related to a sense of connectedness for students from Asian countries, but is not important in this regard for other international students. Students’ sense of connectedness in both groups is greater if they know their family cares about their well-being and if they can contact them when they need to, but only for students from Asian countries is the ability to return home as often as necessary also related to a sense of connectedness.

CULTURAL ADAPTATION AND STRESSORS

Responses to the questionnaire provide information about students’ experience of cultural stress in its different forms. Other aspects of living in Melbourne, such as accommodation, finance, paid work, lifestyle balance, and experience of abuse, have the potential to add to the general level of stress, whether culturally engendered or not. So, too, does the student’s knowledge of the situation at home. Of particular concern in this area is the experience of students from Asian countries, whose culture is considerably different from that of Australia.
Cultural Stress

Eight questionnaire items measured students’ feelings of dislocation, strangeness and discomfort living within the Australian culture in Melbourne. Table 9 presents the results. Feelings of homesickness are to be expected, regardless of the degree of similarity or difference between the cultural background of international students and the Australian culture. Two of the three items with the highest ratings in this group describe these feelings – missing the familiar way of life at home (B13) and the sadness of being apart from loved ones (D16). Average ratings of Asian and non-Asian students did not differ significantly on these items.

The third item with a high average rating (B23) focuses on the students’ sense of feeling at home or belonging within the University of Melbourne context. There is a narrower distribution of individual ratings on this item, with most ratings falling into the middle two categories, 1 and 2. Comparison of the standard deviations of items B23, B13 and D16 also indicates the difference in distributions. On item B23 there is a statistically significant difference between the responses of students from Asian countries and other students; students from Asian countries feel significantly less at home in the university (mean=1.6) than other students (mean=1.2). This could be in part due to factors other than culture that are correlated with the Asian/non-Asian dichotomy. For example, students from Asian countries have a lower average age (22.5 compared with 26.9 years), are predominantly undergraduate students (75 per cent compared with 40.6 per cent) and a higher percentage are single (86 per cent compared with 55.2 per cent).

Table 9 Experience of cultural stress in Melbourne

<table>
<thead>
<tr>
<th>Items</th>
<th>Mean</th>
<th>SD</th>
<th>0 Not at all</th>
<th>1 To some degree</th>
<th>2 To a considerable degree</th>
<th>3 Very much</th>
</tr>
</thead>
<tbody>
<tr>
<td>B13. I miss the familiar way of life in my own country. (n=974)</td>
<td>1.6</td>
<td>1.0</td>
<td>9.9</td>
<td>39.7</td>
<td>26.6</td>
<td>23.8</td>
</tr>
<tr>
<td>D16. It’s hard being away from the people I love. (n=977)</td>
<td>1.6</td>
<td>1.0</td>
<td>15.0</td>
<td>34.2</td>
<td>27.9</td>
<td>22.8</td>
</tr>
<tr>
<td>D15. It is lonely for me here in Melbourne. (n=977)</td>
<td>1.1</td>
<td>1.0</td>
<td>29.7</td>
<td>38.1</td>
<td>21.0</td>
<td>11.3</td>
</tr>
<tr>
<td>B15. I feel less important here than at home. (n=974)</td>
<td>1.3</td>
<td>1.0</td>
<td>27.1</td>
<td>32.0</td>
<td>26.5</td>
<td>14.4</td>
</tr>
<tr>
<td>D20. People treat me differently because of my cultural background. (n=978)</td>
<td>0.9</td>
<td>0.9</td>
<td>36.0</td>
<td>40.9</td>
<td>17.1</td>
<td>6.0</td>
</tr>
<tr>
<td>B18. I feel uncomfortable in the Australian culture. (n=973)</td>
<td>0.8</td>
<td>0.8</td>
<td>42.4</td>
<td>41.9</td>
<td>13.1</td>
<td>2.6</td>
</tr>
<tr>
<td>D22. I don’t feel safe here in Melbourne. (n=978)</td>
<td>0.6</td>
<td>0.7</td>
<td>52.7</td>
<td>37.2</td>
<td>8.0</td>
<td>2.1</td>
</tr>
<tr>
<td>B23 I (don’t) feel I really belong here at the university. (Reversed item) (n=973)</td>
<td>1.5</td>
<td>0.8</td>
<td>11.2</td>
<td>35.7</td>
<td>42.0</td>
<td>11.1</td>
</tr>
<tr>
<td><strong>Cultural Stress scale score</strong> (n=960)</td>
<td><strong>1.2</strong></td>
<td><strong>0.5</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Two items receive moderate ratings from students. These items focus on students’ feelings of loneliness and diminished status in Melbourne. The distributions of ratings on the two items are similar. While students from Asian/non-Asian countries

---

Note: t=3.56, 948 df, p<.001, two-tailed

Russell, Rosenthal & Thomson, 2006

38
do not differ significantly in their sense of feeling less important in Australia than at home (B15), students from Asian countries have a significantly stronger sense of loneliness in Melbourne than other students\(^{48}\). Again, factors correlated with home country culture might help account for this difference.

The cultural stress items that produce the least concern in students are ones that might be thought more typical of culture shock – discrimination, discomfort and even feelings of lack of safety. Mean ratings on these three items (D20, B18 and D22) are below 1.0 on the four point scale, with very few students agreeing that they experience these situations or feelings most of the time (i.e. a rating of 3). Safety, in particular, is not seen as an issue. About 90 per cent of the students indicate that they have little or no concern at all about safety in Melbourne and only 2 per cent have a high level of concern. Female students feel significantly less safe than male students\(^{49}\). Asian students (mean=0.63) are significantly more likely to feel some concern about their safety in Melbourne than non-Asian students (mean=0.35)\(^{50}\), though the level of concern of both groups is still quite low.

The eight items set out in Table 9 form a scale, the *Cultural Stress* scale. Most variables that produce differences in students’ scores on this scale relate, not surprisingly, to the cultural background of the students, although some other demographic variables do differentiate among students. No significant differences were found on the basis of gender, faculty\(^{51}\), number of years enrolled at the university, number of years in secondary education in Australia or completion of Foundation Studies.

The following variables distinguish significantly among students in terms of their scores on the *Cultural Stress* scale.

- Younger students tend to have a higher level of cultural stress, though the relationship between age and cultural stress is borderline\(^{52}\).
- Single students have a significantly higher *Cultural Stress* scale score than students with partners\(^{53}\).
- There is a main effect for course type, with undergraduate students experiencing the highest level of cultural stress and postgraduate research students the lowest level\(^{54}\).
- Students who feel their academic progress is not as strong as expected experience a significantly higher level of cultural stress than those who believe they are doing better than expected or as well as expected\(^{55}\).
- Those students who have a child living with them in Australia are less culturally stressed than those who have children but not in Australia with them\(^{56}\).

\(^{48}\) \(t=2.13, \text{df}=952, p<.05, \text{two-tailed}\)
\(^{49}\) \(t=2.13, \text{df}=970, p<.05, \text{two-tailed}\)
\(^{50}\) \(t=3.69, \text{df}=120.9, p<.001, \text{two-tailed}\)
\(^{51}\) There were, however, noticeable differences in scale scores among faculties with the MBS having the highest average scale score (mean=1.59) and the Law faculty (mean=0.97) and VCA (mean=1.07) the lowest.
\(^{52}\) Spearman correlation: \(\rho=-0.05, p=.11, \text{two-tailed}\); Pearson correlation: \(r=-0.07, p<.05, \text{two-tailed}\); cross tabulation of age category and *Cultural Stress* scale score: \(\chi^2=10.05, \text{df}=8, p=.26\)
\(^{53}\) \(t=2.14, \text{df}=951, p<.05, \text{two-tailed (ES}=.19)\)
\(^{54}\) \(F(2, 948)=3.04, p<.05 (\text{ES};\eta^2=.006)\)
\(^{55}\) \(F(2, 944)=13.10, p<.001 (\text{ES};\eta^2=.027)\)
\(^{56}\) \(t=2.10, \text{df}=53, p<.05, \text{two-tailed (ES}=.58)\)
There is a significant main effect for students’ country category, with pair-wise comparisons showing that students from English-speaking countries (UK, USA and Canada) and from Europe are significantly less culturally stressed than students from PR China, Hong Kong and sub-Sahara Africa. Students from Asian countries have significantly higher scores on the Cultural Stress scale than other students, as do students who did not speak any English when growing up and students who speak a LOTE when off the campus.

These eight variables, together with age, were entered into a multiple linear regression analysis to determine which variable or combination of variables best predict(s) students’ level of cultural stress. It proved necessary to remove the variable concerned with having a child living with the student in Australia because this reduced the number of cases in the analysis to 46, a clearly inadequate representation of the sample. The model that was achieved provides a significant prediction of the Cultural Stress scale score (F(2,924)=30.22, p<.001). It consists of two predictors: use of a LOTE when off campus (positive predictor – associated with higher cultural stress) and perceived academic progress (negative predictor – associated with lower cultural stress). Table 10 presents the results.

Table 10: Significant predictors of students’ Cultural Stress scale score

<table>
<thead>
<tr>
<th>Model</th>
<th>Unstandardised Coefficients</th>
<th>Standardised Coefficients</th>
<th>t</th>
<th>95% C.I. for B</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>B</td>
<td>S.E.</td>
<td>Beta</td>
<td><strong>p&lt;.001</strong></td>
</tr>
<tr>
<td>LOTE off campus</td>
<td>-.22</td>
<td>.04</td>
<td>-.19</td>
<td>-6.10***</td>
</tr>
<tr>
<td>Perceived academic progress</td>
<td>.13</td>
<td>.03</td>
<td>.16</td>
<td>4.87***</td>
</tr>
</tbody>
</table>

However, the total amount of variance in the Cultural Stress scale score explained by the model is small, only 6.1 per cent ($R^2$=.061). This suggests that individual, personal factors might be better predictors of students’ perceived level of cultural stress than the demographic variables used in this analysis.

It is interesting to see that there are significant relationships between the Cultural Stress scale score and students’ pattern of social mixing, for example. Cultural stress is positively related to social interaction with co-culturals; the higher the level of cultural stress the greater the interaction with co-culturals. However, the lower the level of cultural stress, the greater the social mixing with Australians – a negative relationship.

---

57 $F(13,925)=3.11$, $p<.001$ (ES:$\eta^2=.042$)
58 $t=2.74$, 937 df, $p<.05$, two-tailed (ES=.30)
59 $t=2.74$, 952 df, $p<.01$, two-tailed (ES=.17)
60 $t=5.99$, 954 df, $p<.001$, two-tailed (ES=.39)
61 Having a child living with the student in Australia was a significant predictor of cultural stress (negative: $B=.12$), together with LOTE off campus and perceived academic progress, for the sample of 46.
62 D3: $\rho=.011$, $p<.001$, two-tailed. B7: $\rho=.09$, $p<.01$, two-tailed.
63 D11: $\rho=-.28$, $p<.001$, two-tailed. D17: $\rho=-.23$, $p<.001$, two-tailed.

Russell, Rosenthal & Thomson, 2006
Stress from Home

It is not only the experience of cultural stress that challenges the international student. Problems that arise at home can increase the level of stress experienced by students who are living at some distance from home for a protracted period. These might be personal or family problems, or they might be problem situations at a national level. Five questionnaire items tap into students’ experience of such stressors. The results are displayed in Table 11.

Table 11  The experience of stress from home

<table>
<thead>
<tr>
<th>Items</th>
<th>Mean</th>
<th>SD</th>
<th>0 (Not at all)</th>
<th>1 (To some degree)</th>
<th>2 (To a considerable degree)</th>
<th>3 (Very much)</th>
</tr>
</thead>
<tbody>
<tr>
<td>B24. Things that are happening in my home make it hard for me to keep my mind on my studies. (n=976)</td>
<td>0.7</td>
<td>0.8</td>
<td>46.6</td>
<td>37.7</td>
<td>12.2</td>
<td>3.5</td>
</tr>
<tr>
<td>B27. I am stressed by the need to do well for the sake of my family. (n=974)</td>
<td>1.4</td>
<td>1.0</td>
<td>20.8</td>
<td>33.1</td>
<td>28.2</td>
<td>17.9</td>
</tr>
<tr>
<td>D8. The situation in my home country means it will be difficult for me when I return home. (n=975)</td>
<td>0.6</td>
<td>0.9</td>
<td>60.2</td>
<td>23.8</td>
<td>11.3</td>
<td>4.7</td>
</tr>
<tr>
<td>D19. I worry about problems my family at home is experiencing. (n=977)</td>
<td>0.9</td>
<td>0.9</td>
<td>39.4</td>
<td>34.7</td>
<td>18.3</td>
<td>7.6</td>
</tr>
<tr>
<td>D25. I am not getting on well with my family at home. (n=975)</td>
<td>0.3</td>
<td>0.7</td>
<td>79.7</td>
<td>12.9</td>
<td>4.8</td>
<td>2.6</td>
</tr>
</tbody>
</table>

From the average ratings of these five items it can be seen that one issue produces a higher level of stress than any of the others. Students are significantly more stressed by the need to do well for the sake of their families than they are about other types of problems stemming from home. Their mean rating on item B27 is, for example, significantly higher than the next most highly rated item, worry about problems being experienced by families at home (D19). A noticeably higher percentage of students gives the highest rating on the scale to item B27 than to other items, indicating that they feel stressed about the need to do well “very much or most of the time”.

There are significant group differences in students’ reported level of stress resulting from the need to do well for the sake of the family. These differences centre on three areas: maturity, academic matters and country of origin.

- The older the student, the lower the stress level.
- Single students and undergraduate students are more stressed about this issue than others.
- Students whose academic progress is felt to be worse than expected are more stressed by perceived family expectations than those whose progress is thought to be better than expected.
- There is a main effect for faculty, with the VCA, the Education and the Arts Faculty students having low scores and students in Music, MBS and Veterinary Science having high scores.

---

64 t=13.46, 972 df, p<.001, two-tailed
65 t=-0.19, p<.001, two-tailed
66 t=5.97, 239.2 df, p<.001, two-tailed (ES=.50)
67 F(2,961)=21.14, p<.001 (ES:η²=.042)
68 F(2,957)=3.89, p<.05 (ES:η²=.008)

Russell, Rosenthal & Thomson, 2006
Students from Asian countries\(^{70}\), those who speak a LOTE off campus\(^{71}\) and students from Asian countries who completed a Foundation Studies program\(^{72}\) are significantly more stressed about family expectations than their counterparts. There is a main effect for country category\(^{73}\), with pair-wise comparisons showing students from UK/USA/Canada and Europe to be significantly less stressed than those from Hong Kong, Malaysia and Singapore.

There are also significant correlations between respondents’ ratings on item B27 and the Connectedness and Cultural Stress scales. Students with higher levels of stress about family expectations have lower scores on the Connectedness scale\(^{74}\) and higher scores on the Cultural Stress scale\(^{75}\). The more stressed the student is, the higher their scores on three scales yet to be discussed - the Depression\(^{76}\), Anxiety\(^{77}\) and Stress\(^{78}\) scales.

Some students display concern about problem situations in their home country, but the mean ratings and distributions of responses on items B24 and D8 suggest that such issues are stressful for a minority of international students.

**Connectedness and Cultural Stress**

There is a strong, significant negative relationship between the Connectedness and Cultural Stress scales\(^{79}\). The stronger the students’ perception that they have care and support in Melbourne, the lower the level of cultural stress they experience. Each scale accounts for approximately 15 per cent of the variance in the other (\(R^2=.153\)). The relationships of these two scales to third variables, such as students’ stress resulting from the need to do well for the sake of the family (item B27), reflects this negative correlation. Students’ ratings on item B27 are lower for students with a sound sense of connectedness, but higher if students are experiencing strong cultural stress.

**WELL-BEING DOMAIN 2: LIVING AND STUDYING IN MELBOURNE**

There are aspects of living and studying in Melbourne that are common potential stressors for young people, whether living at home or living away from home, but particularly for students whose home is in another country. International students were asked in the questionnaire about their experiences and perceptions concerning housing or living arrangements, finance, work other than study, balance of lifestyle, and also about any experience of abuse in Melbourne.

---

\(^{69}\) F(12,939, 2.35, p<.01 (ES: \(\eta^2=.027\)) Post hoc tests show the difference between the VCA and Music students to be statistically significant.

\(^{70}\) t=4.82, 119.6 df, p<.001, two-tailed (ES=.50)

\(^{71}\) t=2.61, 967 df, p<.01, two-tailed (ES=.18)

\(^{72}\) t=2.33, 843 df, p<.05, two-tailed (ES=.17)

\(^{73}\) F(13,938)=2.72, p<.01 (ES: \(\eta^2=.036\))

\(^{74}\) \(\rho=-0.12\), p<.001, two-tailed

\(^{75}\) \(\rho=+0.31\), p<.001, two-tailed

\(^{76}\) \(\rho=+0.37\), p<.001, two-tailed

\(^{77}\) \(\rho=+0.34\), p<.001, two-tailed

\(^{78}\) \(\rho=+0.34\), p<.001, two-tailed

\(^{79}\) r=-0.39, p<.001, two-tailed
LIVING ARRANGEMENTS

Students on average are quite satisfied with their living arrangements. As Table 12 shows, the average satisfaction rating is 2.2 on a scale of 0 to 3; over 80 per cent of respondents give a positive rating on item B2. Some 16 to 17 per cent of respondents (n=163), however, are less happy about their living arrangements. It is interesting to note that, of the university services (other than health and counselling) which students specify using, the housing service is the one most frequently mentioned.

Table 12  
Satisfaction with living arrangements

<table>
<thead>
<tr>
<th>Percentage ratings</th>
<th>Mean</th>
<th>SD</th>
</tr>
</thead>
<tbody>
<tr>
<td>Not at all</td>
<td>2.5</td>
<td>0.8</td>
</tr>
<tr>
<td>To some degree</td>
<td>14.2</td>
<td></td>
</tr>
<tr>
<td>To a considerable degree</td>
<td>44.1</td>
<td></td>
</tr>
<tr>
<td>Very much</td>
<td>39.2</td>
<td></td>
</tr>
</tbody>
</table>

B2. I am satisfied with my living arrangements here. (n=976)  

Satisfaction varies with type of accommodation. As Table 13 indicates, the majority of students live with friends or other students. Smaller percentages live with family members/partners or on their own, while some 53 respondents live with others who are neither friends, nor students nor family members.

Table 13  
Satisfaction with living arrangements based on type of accommodation

<table>
<thead>
<tr>
<th>Type of accommodation</th>
<th>Alone</th>
<th>With friends/students</th>
<th>With family/partner</th>
<th>With others</th>
</tr>
</thead>
<tbody>
<tr>
<td>Number (n=977)</td>
<td>162</td>
<td>507</td>
<td>255</td>
<td>53</td>
</tr>
<tr>
<td>Percentage</td>
<td>16.5</td>
<td>51.8</td>
<td>26.0</td>
<td>5.4</td>
</tr>
<tr>
<td>Mean rating of satisfaction</td>
<td>2.16</td>
<td>2.16</td>
<td>2.37</td>
<td>1.87</td>
</tr>
</tbody>
</table>

Students living with family members/partners are the ones most satisfied with their living arrangements, whilst those living with others are clearly the least satisfied. A univariate analysis of variance shows that there is a main effect for type of living arrangement on level of satisfaction\(^80\); students living with others are significantly less happy than other students about their living arrangements.

The number of changes in accommodation that a student makes might be an indicator of dissatisfaction and difficulty with housing. Table 14 presents information about the number of accommodation changes made by respondents, together with the level of satisfaction with living arrangements for each category. Apart from the very small group who have changed living arrangements more than six times during their studies in Australia, there is little difference in the mean satisfaction rating of other students. A univariate analysis of variance shows that there is not a significant main effect on satisfaction based on number of changes. There is, however, a significant positive

\(^80\) F(3,971)=8.39, p<.001

Russell, Rosenthal & Thomson, 2006
HEALTH AND WELL-BEING OF INTERNATIONAL STUDENTS

correlation between number of changes and number of years of enrolment\(^81\), as might be expected.

Table 14 Frequency of accommodation change and level of satisfaction

<table>
<thead>
<tr>
<th>Number of accommodation changes</th>
<th>Not at all</th>
<th>1-3 times</th>
<th>4-6 times</th>
<th>More than 6 times</th>
</tr>
</thead>
<tbody>
<tr>
<td>Number (n=975)</td>
<td>395</td>
<td>516</td>
<td>58</td>
<td>6</td>
</tr>
<tr>
<td>Percentage</td>
<td>40.3</td>
<td>52.7</td>
<td>5.9</td>
<td>0.6</td>
</tr>
<tr>
<td>Mean rating of satisfaction</td>
<td>2.22</td>
<td>2.19</td>
<td>2.21</td>
<td>1.67</td>
</tr>
</tbody>
</table>

An examination of demographic variables that might differentiate among respondents’ level of satisfaction with living arrangements (item B2) was undertaken. No significant differences were found on the basis of age, gender, marital status, faculty\(^82\), years of secondary schooling in Australia, Asian/non-Asian country of origin, or, if a parent, having a child living/not living with the student in Australia.

The following significant differences were found.
- Students who felt they were doing less well academically than they had expected are significantly less satisfied with their living arrangements than those who felt they were doing as well as or better than expected\(^83\).
- The same is true of students who speak a LOTE off campus compared with those who do not\(^84\).
- The longer a student has been enrolled, the more positive are the student’s feelings about his/her accommodation\(^85\).
- Students from Asian countries who have completed a Foundation Studies program are significantly happier with their living arrangements than students from Asian countries who have not\(^86\).
- The same is true of respondents who spoke some English while growing up, compared with those who did not\(^87\).
- There is a significant main effect for country category, with students from PR China being significantly less satisfied with their accommodation than students from Singapore\(^88\). A higher than average percentage of Singaporean students live with family/partner and a lower percentage than average live with others. The opposite is the case for students from PR China.

There is also a significant relationship between satisfaction with living arrangements and students’ experiences of connectedness and cultural stress in Melbourne. The higher the Connectedness scale score, the more satisfied the students are with their

\(^{81}\) \(\rho=+0.32, p<.001,\) two-tailed
\(^{82}\) MBS students registered the lowest level of satisfaction (mean=1.63) and VCA the highest level of satisfaction (mean=2.50).
\(^{83}\) \(F(2, 960)=9.26, p<.001\) (ES:\(\eta^2=.019\))
\(^{84}\) \(t=3.56, 968\) df, \(p<.001\), two-tailed (ES=.23)
\(^{85}\) \(\rho=+0.11, p<.01,\) two-tailed
\(^{86}\) \(t=3.16, 846\) df, \(p<.01,\) two-tailed (ES=.22)
\(^{87}\) \(t=2.92, 967\) df, \(p<.01,\) two-tailed (ES=.18)
\(^{88}\) \(F(13,940)=2.64, p<.01\) (ES:\(\eta^2=.035\))
living arrangements\(^89\). However, the higher the Cultural Stress scale score, the less satisfied they are\(^90\). Other indicators of well-being or the lack of it are associated with satisfaction in living arrangements. Students with the highest level of satisfaction with their accommodation (rating 3) have significantly lower levels of depression\(^91\), anxiety\(^92\) and stress\(^93\), than those who have little satisfaction (rating of 1).

Statistically significant variables were entered into a multiple linear regression analysis to determine which variable(s) best predict students’ satisfaction with living arrangements. The resultant model provides a significant prediction of satisfaction (F(6,932)=34.21, p<.001). It consists of six predictors, representing both demographic factors and dimensions of well-being: participation in a Foundation Studies program (positive), country category, number of years of enrolment (positive), Connectedness (positive), Cultural Stress (negative) and Depression (negative) scale scores. Table 15 presents the results.

Table 15 Significant predictors of students’ satisfaction with living arrangements

<table>
<thead>
<tr>
<th>Model</th>
<th>Unstandardised Coefficients B</th>
<th>S.E.</th>
<th>Standardised Coefficients Beta</th>
<th>t</th>
<th>95% C.I. for B Lower Upper</th>
</tr>
</thead>
<tbody>
<tr>
<td>Connectedness scale</td>
<td>.27</td>
<td>.03</td>
<td>.25</td>
<td>7.74***</td>
<td>.20 .33</td>
</tr>
<tr>
<td>Cultural Stress scale</td>
<td>-.22</td>
<td>.05</td>
<td>-.16</td>
<td>-4.45***</td>
<td>-.32 -.13</td>
</tr>
<tr>
<td>Depression scale</td>
<td>-.12</td>
<td>.04</td>
<td>-.10</td>
<td>-2.85**</td>
<td>-.21 -.04</td>
</tr>
<tr>
<td>Years of enrolment</td>
<td>.04</td>
<td>.02</td>
<td>.06</td>
<td>2.06*</td>
<td>.00 .07</td>
</tr>
<tr>
<td>Foundation Studies</td>
<td>-.13</td>
<td>.05</td>
<td>-.08</td>
<td>-2.52*</td>
<td>-.22 -.03</td>
</tr>
<tr>
<td>Country category</td>
<td>.02</td>
<td>.01</td>
<td>.07</td>
<td>2.49*</td>
<td>.00 .03</td>
</tr>
</tbody>
</table>

*p<.05   **p<.01   ***p<.001

The amount of variance in satisfaction with living arrangements that is associated with these six predictors is 18.0 per cent (R\(^2\)=.180). If the three demographic variables alone were used as predictors, the amount of variance accounted for by the model would be 2.8 per cent.

FINANCES

\(^{89}\) ρ=+0.36, p<.001, two-tailed
\(^{90}\) ρ=-0.31, p<.001, two-tailed
\(^{91}\) F(3,956)=19.27, p<.001
\(^{92}\) F(3,954)=6.54, p<.001
\(^{93}\) F(3,952)=9.37, p<.001
Adequacy of financial support is a considerable concern for many of those engaged in tertiary study, whether domestic or international students. Questionnaire respondents have indicated their perceptions of the adequacy of their financial support, also giving information about the sources of that support.

Table 16 presents the results of three questionnaire items tapping into students’ perceptions of the adequacy of their financial support. The majority of respondents are not particularly worried about whether they have enough money to live on during their studies in Melbourne (B21 - 64.7 per cent) and feel they have sufficient financial support for their needs (B26 – 71.3 per cent). Nevertheless, there are substantial numbers of students who are worried (n=344, 155 of whom are very worried) and who do not feel they have adequate financial support (n=279, 68 of whom have very serious concerns).

As one might expect, there is a significant negative correlation between worrying about money and believing one’s financial support to be adequate. Worrying about the adequacy of one’s financial support, however, does not necessarily mean that one’s financial support is thought to be inadequate. As the percentage ratings of items B21 and B26 show, the distributions of responses on the two items are not mirror images of one another. More students worry about their finances than believe their finances to be insufficient. Of the 155 respondents who worry ‘very much’, only 101 feel that their financial support is completely or nearly inadequate. Worrying about finances is positively and significantly related to students’ levels of depression, anxiety and stress, the relationship with depression being the strongest of the three and with anxiety the weakest.

Respondents who are significantly more likely to consider their financial support adequate (B26) are those who

Russell, Rosenthal & Thomson, 2006
• are enrolled in undergraduate courses\(^{98}\);
• are progressing as well as or better than expected academically\(^{99}\);
• have been enrolled for a greater length of time\(^{100}\);
• completed a Foundations Studies program\(^{101}\);
• come from an Asian country\(^{102}\).

There are also significant main effects for faculty and country category\(^{103}\).

A significant positive correlation exists with the *Connectedness* scale\(^{104}\). While there is a significant correlation with the *Cultural Stress* scale as well, the correlation is negative\(^{105}\). There are also significant negative correlations between perceived adequacy of finances and the *Depression*\(^{106}\), *Anxiety*\(^{107}\) and *Stress*\(^{108}\) scales, though the strength of these associations is noticeably lower here than with worry about finances.

Statistically significant variables were entered into a multiple linear regression analysis to determine which variable(s) best predict students’ perceived adequacy of financial support. The resultant model provides a significant prediction of satisfaction (F(5,929)=16.74, p<.001). It consists of five predictors representing both demographic factors and dimensions of well-being: number of years of enrolment (positive), course type (negative), Asian country of origin (positive), *Connectedness* (positive) and *Depression* (negative) scales. Table 17 presents the results.

The amount of variance in perceived adequacy of financial support that is associated with these five predictors is only 8.3 per cent (\(R^2=.083\)). This is a comparatively small percentage. If the three demographic variables alone were used as predictors, the amount of variance accounted for by the model would be even less: 2.6 per cent.

<table>
<thead>
<tr>
<th>Table 17</th>
<th>Significant predictors of perceived adequacy of financial support</th>
</tr>
</thead>
</table>

\(^{98}\) F(2,959)=6.93, p<.01 (ES: \(\eta^2=.014\))

\(^{99}\) F(2,955)=4.56, p<.05

\(^{100}\) \(\rho=+0.11\), p<.01, two-tailed

\(^{101}\) t=2.04, 956 df, p<.05, two-tailed

\(^{102}\) t=2.69, 110.7df, p<.01, two-tailed (ES=.32)

\(^{103}\) Faculty: F(12, 938)=1.79, p<.05 (ES: \(\eta^2=.024\)) Post hoc comparisons among faculties are not significant; the Land and Food Resources faculty has the highest rating (mean=2.17), while MBS (mean=1.0) has the lowest. Country category: F(13,937)=2.19, p<.05 (ES: \(\eta^2=.029\)). Post hoc comparisons among country categories are not significant; Other Africa has the highest rating (mean=2.21), while Latin America (mean=1.0) has the lowest.

\(^{104}\) \(\rho=+0.23\), p<.001, two-tailed

\(^{105}\) \(\rho=-0.38\), p<.001, two-tailed

\(^{106}\) \(\rho=-0.17\), p<.001, two-tailed

\(^{107}\) \(\rho=-0.09\), p<.01, two-tailed

\(^{108}\) \(\rho=-0.14\), p<.001, two-tailed
One means of improving their financial situation is for students to undertake paid work, within the permitted limits. A univariate analysis of variance reveals a significant main effect for concern about finances (B21) on desire to undertake more paid work (B14)\(^{109}\), with those who worry most (rating of 3) being significantly more likely to want to increase their hours of paid work than other respondents. However, there is not a one-to-one correspondence between worry and desire for more paid work, as the relatively small though significant correlation between the two items indicates\(^{110}\).

Students obtain financial support for their studies from a variety of sources, mostly drawing on more than one type of source. Table 18 presents information about the sources of funding that respondents identified, when given the opportunity to specify more than one category of financial support.

Family resources form the most common source of financial support for international students, with 84.6 per cent of respondents identifying this as a source of support. In most cases, these students obtain financial support from other sources as well. Some 28 per cent of them (n=232), for example, also depend on income from paid work, while 20.4 per cent (n=169) draw on their own and/or partner’s savings in addition to being given family support.

### Table 18  
Sources of financial support

<table>
<thead>
<tr>
<th></th>
<th>Family</th>
<th>Savings</th>
<th>Work</th>
<th>Scholarship: Home country</th>
<th>Scholarship: Australia</th>
<th>Scholarship: Organisation</th>
<th>Other</th>
</tr>
</thead>
<tbody>
<tr>
<td>Number</td>
<td>828</td>
<td>217</td>
<td>266</td>
<td>71</td>
<td>130</td>
<td>9</td>
<td>11</td>
</tr>
<tr>
<td>Percentage of total sample</td>
<td>84.6</td>
<td>22.2</td>
<td>27.2</td>
<td>7.3</td>
<td>13.3</td>
<td>0.9</td>
<td>1.1</td>
</tr>
</tbody>
</table>

In only 86 cases are students entirely dependent on family for financial support. These students are significantly less worried about having sufficient money to live on.

\(^{109}\) F(3,970)=21.29, p<.001

\(^{110}\) \(\rho=+0.24\), p<.001, two-tailed

Russell, Rosenthal & Thomson, 2006
than those dependent on family plus other sources\textsuperscript{111}. They are significantly more confident that their financial resources are adequate\textsuperscript{112}. At the same time they are not significantly more stressed by the need to meet family expectations (item B27)\textsuperscript{113}.

As a whole group, however, those who draw support from families are significantly more stressed by the need to do well for the sake of their families\textsuperscript{114}. Their average rating on item B27 is 1.52 on the 0 to 3 scale, compared with a mean of 0.76 for those not drawing on family financial support.

Whether students draw on family resources or not, they rely on multiple sources of financial support in almost every case. Apart from the 86 students who are supported by family alone, there are only 9 other students who draw on one source of financial support alone, whether it be savings, work, a form of scholarship or something else such as a loan.

There are differences to be seen in students’ concern about their financial situation, based on the source(s) of their financial support. Students who rely wholly or in part on their savings or paid work or ‘other’ sources (mostly loans) for their financial support are significantly more concerned about their financial situation than those who do not, while students who draw financial support from an Australian scholarship are significantly less concerned than those who do not\textsuperscript{115}.

**PAID WORK**

Engagement in paid work has become a common part of the life of the domestic university student in Australia. International students also draw financial support from paid work. Some 268 respondents (27.4 per cent of the sample) have paid employment. The average number of hours in paid work per week for these students is 10.7. Table 19 shows the distribution of hours worked by those who have paid employment.

<table>
<thead>
<tr>
<th></th>
<th>1-5 hours</th>
<th>6-10 hours</th>
<th>11-15 hours</th>
<th>16(+) hours</th>
</tr>
</thead>
<tbody>
<tr>
<td>Number of students (n=268)</td>
<td>56</td>
<td>104</td>
<td>50</td>
<td>58</td>
</tr>
<tr>
<td>Percentage of those in paid work</td>
<td>20.9</td>
<td>38.8</td>
<td>18.7</td>
<td>21.6</td>
</tr>
</tbody>
</table>

\textsuperscript{111} t=3.20, 108.1 df, p<.01, two-tailed  
\textsuperscript{112} t=2.51, 821 df, p<.05, two-tailed  
\textsuperscript{113} t=0.16, 824 df, n.s.  
\textsuperscript{114} t=5.86, 887 df, p<.001, two-tailed  
\textsuperscript{115} Savings: B21: t=4.66, 434 df, p<.001, two-tailed. B26: t=3.32, 420.5 df, p<.001, two-tailed.  
Paid work: B21: t=2.49, 550.1 df, p<.05, two-tailed. B26: t=2.13, 537.9 df, p<.05, two-tailed.  
Australian scholarship: B21: t=3.02, 246.5 df, p<.01, two-tailed. B26: n.s.
Some demographic factors differentiate among respondents who engage in paid work and those who do not. The strongest distinction is based on category of country of origin.

- A higher than expected percentage of students in the 25-29 and 30-34 age categories are employed, while a smaller than expected percentage of students in the below 20 age group are in paid work\textsuperscript{116}.
- A higher than expected percentage of students in postgraduate courses are in paid work, while a smaller than expected percentage of students in undergraduate courses are employed\textsuperscript{117}.
- More students than expected in the Economics and Commerce Faculty undertake paid work, while fewer than expected from the Engineering, Science, and Medicine/Dentistry/Health Sciences Faculties do so\textsuperscript{118}.
- More students than expected from PR China, UK/USA/Canada, South East Asia and the Pacific, and from Other South Asian countries are employed, while fewer than expected from Hong Kong, Malaysia, Singapore, and the Middle East/North Africa are in paid work\textsuperscript{119}.
- Students who spoke some English when growing up\textsuperscript{120} and students from Asian countries who completed a Foundation Studies program\textsuperscript{121} are also under-represented in the group engaged in paid work.

There are no significant differences in Connectedness and Cultural Stress scale scores of those who have/do not have paid work, nor in their scores on the Depression, Anxiety or Stress scales.

Students already undertaking paid employment are significantly more likely than others to want an increased number of hours of paid work (item B14)\textsuperscript{122}. Although those engaged in paid work tend to be more worried about their financial situation and less confident of the adequacy of their financial resources than those not in paid work, there is not a significant statistical difference between the ratings of the two groups on these two issues (items B21 and B26).

Many students are also engaged in unpaid work. Of the 108 students who indicate this, 106 specified the hours of unpaid work per week that they undertake. This information is set out in Table 20. The average number of hours of unpaid work per student per week is 7.2. Students were not asked to specify the forms of unpaid work in which they engaged.

\textsuperscript{116} \chi^2=22.60, 4 df, p<.001
\textsuperscript{117} \chi^2=17.38, 2 df, p<.001
\textsuperscript{118} \chi^2=27.33, 12 df, p<.01
\textsuperscript{119} \chi^2=55.94, 13 df, p<.001
\textsuperscript{120} \chi^2=7.83, 1 df, p<.01
\textsuperscript{121} \chi^2=4.80, 1 df, p<.05
\textsuperscript{122} t=5.22, 973 df, p<.001, two-tailed
Table 20  Hours of unpaid work per week undertaken by students

<table>
<thead>
<tr>
<th></th>
<th>1-5 hours</th>
<th>6-10 hours</th>
<th>11-15 hours</th>
<th>16-20 hours</th>
</tr>
</thead>
<tbody>
<tr>
<td>Number of students (n=106)</td>
<td>67</td>
<td>28</td>
<td>4</td>
<td>7</td>
</tr>
<tr>
<td>Percentage of those doing unpaid work</td>
<td>63.2</td>
<td>26.4</td>
<td>3.8</td>
<td>6.6</td>
</tr>
</tbody>
</table>

Being engaged in paid work does not prevent students from also doing unpaid work. In fact, there is a slightly greater tendency for those in paid work to be also engaged in paid work. The association between engagement in paid and unpaid work is not significant\(^{123}\).

Students most likely to engage in unpaid work are those with later year enrolments (years 4 to 6)\(^{124}\), from English-speaking or European countries\(^{125}\), who do not speak a LOTE when off campus\(^{126}\). Students under-represented in the group of students doing unpaid work are first year students, and students from India, South East Asia and the Pacific, Middle East and North Africa, Other Africa, Latin America and Other South Asia country categories.

**LIFESTYLE BALANCE**

One of the challenges of the full-time student is being able to achieve a reasonable balance between study and other activities, between solitary time and social life, between sedentary and physical activities, as well as being able to maintain nutritional balance. For many international students, cultural factors add to the challenge of achieving and maintaining balance in these aspects of living.

Respondents are more or less evenly divided in their perceptions of the balance achieved between studying and other activities. Table 21 shows that approximately half of them rate item D14 at the positive end of the scale (ratings 2 and 3) and about half at the negative end of the scale. The mean rating of 1.5 represents the midpoint in the 0 to 3 scale.

This perception is supported by the average number of hours that students report having spent studying in the week prior to completion of the questionnaire – a total of 33.3 hours, when class and private study hours are combined (Table 22).

Table 21  Balance between study and other activities

\(^{123}\) \(\chi^2=1.05\), 1 df, n.s.  
\(^{124}\) \(\chi^2=16.81\), 5 df, p<.01  
\(^{125}\) \(\chi^2=38.31\), 13 df, p<.001  
\(^{126}\) \(\chi^2=6.28\), 1 df, p<.05
HEALTH AND WELL-BEING OF INTERNATIONAL STUDENTS

<table>
<thead>
<tr>
<th>Items</th>
<th>Mean</th>
<th>SD</th>
<th>0 Not at all</th>
<th>1 To some degree</th>
<th>2 To a considerable degree</th>
<th>3 Very much</th>
</tr>
</thead>
<tbody>
<tr>
<td>D14. I think the balance between studying and other activities in my life is about right. (n=978)</td>
<td>1.5</td>
<td>0.8</td>
<td>6.6</td>
<td>43.8</td>
<td>40.2</td>
<td>9.4</td>
</tr>
<tr>
<td>D12. I would like to spend more time studying. (n=979)</td>
<td>1.9</td>
<td>0.9</td>
<td>9.2</td>
<td>21.8</td>
<td>40.0</td>
<td>29.0</td>
</tr>
<tr>
<td>B16. Most of my waking hours are spent in studying. (n=977)</td>
<td>1.7</td>
<td>0.9</td>
<td>8.0</td>
<td>35.2</td>
<td>38.3</td>
<td>18.5</td>
</tr>
<tr>
<td>B20. I have more work to do for my university studies than I can cope with. (n=974)</td>
<td>1.2</td>
<td>0.9</td>
<td>22.9</td>
<td>45.5</td>
<td>22.8</td>
<td>8.8</td>
</tr>
</tbody>
</table>

Table 22  Average hours spent in various types of activity in the preceding week

<table>
<thead>
<tr>
<th>Classes (n=968)</th>
<th>Private study (n=961)</th>
<th>Physical activity (n=955)</th>
<th>Social/Leisure Activities (n=952)</th>
<th>Work (n=955)</th>
<th>Sleep (n=951)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Number of hours</td>
<td>14.9</td>
<td>18.4</td>
<td>4.0</td>
<td>12.6</td>
<td>3.6</td>
</tr>
</tbody>
</table>

There is a stronger view expressed by students that they would like to spend more time than they do in studying (D12), as the mean rating of 1.9 indicates. One question of interest is whether students who are not very happy with the balance they have achieved (ratings of 0 or 1) are concerned because they are spending too little or too much time in studying. A cross tabulation of student responses on item D14 and D12 shows the presence of both of these reactions in the data\textsuperscript{127}. More students than expected with ratings of 0 or 1 on item D14 are strongly of the view that they want to spend more time studying (rating 3), while another group larger than expected definitely believe they should not spend more time studying (rating 0). The former group (n=169) is larger than the latter group (n=53).

Two other items help illuminate perceptions of the balance achieved between study and other activities: the dominance of study (B16) and capacity to cope with the amount of study (B20). The mean rating on item B16 indicates a tendency towards agreement that most of students’ waking hours are spent in study (mean=1.7), but students are less in agreement with the notion that the amount of university work is overwhelming them (mean=1.2). Nevertheless, it is noticeable that nearly one third of respondents find their coping skills challenged (ratings of 2 or 3).

Students’ perceptions of whether they are coping with the amount of university work relate strongly to their views about balance, the need for more study time and the dominance of study in their lives. Statistically significant correlations between items indicate that the more students feel overwhelmed by the amount of university work, the less balanced they feel their lives to be\textsuperscript{128}, the more time they want for study\textsuperscript{129} and the stronger they feel the dominance of study over their waking hours\textsuperscript{130}. Students who feel their academic progress is worse than expected have significantly

\textsuperscript{127}χ²=32.23, 9 df, p<.001
\textsuperscript{128}r=-0.19, p<.001, two-tailed
\textsuperscript{129}r=+0.15, p<.001, two-tailed
\textsuperscript{130}r=+0.14, p<.001, two-tailed
stronger perceptions that they are unable to cope with their university work than students who feel their progress is about the same as or better than expected\(^{131}\).

A second aspect of lifestyle balance concerns time spent alone as opposed to time spent in social activity. Students are significantly more positive about this aspect of balance than they are about balance between study and other activities, as the result of a paired-samples \(t\) test indicates\(^{132}\). As Table 23 shows, some 72.4 per cent of respondents have a positive view (ratings 2 or 3) of this aspect of their lives.

Table 23  Balance between time spent alone and in social activity

<table>
<thead>
<tr>
<th>Items</th>
<th>Mean</th>
<th>SD</th>
<th>0 Not at all</th>
<th>1 To some degree</th>
<th>2 To a considerable degree</th>
<th>3 Very much</th>
</tr>
</thead>
<tbody>
<tr>
<td>B12. I think the balance between the time I spend with others and the time I spend alone is about right. (n=977)</td>
<td>1.9</td>
<td>0.8</td>
<td>4.6</td>
<td>23.0</td>
<td>48.1</td>
<td>24.3</td>
</tr>
<tr>
<td>D6. I would like to spend more time in social and/or leisure activities. (n=974)</td>
<td>1.9</td>
<td>0.8</td>
<td>4.8</td>
<td>24.8</td>
<td>43.5</td>
<td>26.8</td>
</tr>
</tbody>
</table>

At the same time, students in general would like to spend more time in social activity; the mean rating on item D6 is the same as for item B12 and the distribution of ratings across the four-point scale is similar for the two items. What of the 27.6 per cent of students who are not particularly satisfied with their lifestyle balance in regard to social activity? Are they dissatisfied because they have too much or too little social life? A cross tabulation of student responses on item B12 and D6 shows once again the presence of both of these reactions in the data\(^{133}\), with the group believing they need to spend more time in social interaction being larger.

Table 22 indicates that the average number of hours per week spent in exercise or physical activity is not high. Would students like to undertake more activity of this sort? Table 24 presents the results. The response indicates that students’ wish for more time to be spent in exercise is at about the same level as their desire for greater social activity. There is a statistically significant, positive correlation between these two items\(^{134}\).

Table 24  Desire for more exercise and physical activity

<table>
<thead>
<tr>
<th>Items</th>
<th>Mean</th>
<th>SD</th>
<th>0 Not at all</th>
<th>1 To some degree</th>
<th>2 To a considerable degree</th>
<th>3 Very much</th>
</tr>
</thead>
<tbody>
<tr>
<td>B9. I would like to spend more time in physical activities and exercise. (n=976)</td>
<td>1.9</td>
<td>0.9</td>
<td>6.0</td>
<td>24.3</td>
<td>42.1</td>
<td>27.6</td>
</tr>
</tbody>
</table>

Once again, the perceptions of those who feel overwhelmed by university work are of interest. Statistically significant correlations between items indicate that the more
students feel overwhelmed by the amount of university work, the less social balance they feel their lives have\textsuperscript{135}, the more they want to increase the time spent in social activity\textsuperscript{136} and to a lesser extent in exercise or physical activity\textsuperscript{137}.

Students are quite positive about the perceived nutritional balance in their diet, as the mean rating of 2.1 on item D5 indicates (Table 25). More than three-quarters of the respondents give a positive response (ratings 2 or 3) to this item.

One factor involved in students’ perception of their nutritional balance is the number of meals they report eating per day. Students who eat fewer than three meals per day are significantly less positive in their rating on item D5 (mean=1.7) than those who eat three meals (mean=2.3) or more than three meals (mean=2.2) per day\textsuperscript{138}. Another factor is the source of student meals. Students who include home-cooked meals in their diet (n=805) have a more positive perception of their nutritional balance than those who do not\textsuperscript{139}. The reverse is true of students who obtain some of their meals from fast food sources (n=297); these students are significantly less positive\textsuperscript{140}. Students who eat at cafés or restaurants for some of their meals (n=405) do not differ significantly in their perceptions from those who do not\textsuperscript{141}.

Table 25

<table>
<thead>
<tr>
<th>Items</th>
<th>Percentage ratings</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Mean</td>
</tr>
<tr>
<td>D5. My diet provides a balance of carbohydrates (eg. rice, noodles, bread), proteins (eg. eggs, meat, fish, chicken), vegetables, fruits and dairy products (eg. milk, yoghurt, butter), (n=977)</td>
<td>2.1</td>
</tr>
</tbody>
</table>

There is also a small but significant relationship between students’ perception of their nutritional balance and their perception of their financial resources. The more positive students are about the adequacy of their financial resources\textsuperscript{142} and the less they worry about them\textsuperscript{143}, the stronger their perception of their nutritional balance.

Finally, balance in study, social life and nutrition inter-correlate positively and significantly, as Table 26 indicates. The strongest correlation is between perceived balance in study and social life.

\textsuperscript{135} \textit{r}=-0.19, \textit{p}<.001, two-tailed
\textsuperscript{136} \textit{r}=+0.18, \textit{p}<.001, two-tailed
\textsuperscript{137} \textit{r}=+0.08, \textit{p}<.05, two-tailed
\textsuperscript{138} F(2,973)=45.58, \textit{p}<.001
\textsuperscript{139} t=6.69, 968 df, \textit{p}<.001, two-tailed
\textsuperscript{140} t=5.23, 966 df, \textit{p}<.001, two-tailed
\textsuperscript{141} t=1.39, 969 df, n.s.
\textsuperscript{142} \textit{r}=+0.16, \textit{p}<.001, two-tailed
\textsuperscript{143} \textit{r}=-0.11, \textit{p}<.01, two-tailed
Students’ perceptions of lifestyle balance are positively associated with their perceived levels of connectedness in Melbourne and negatively associated with their perceived levels of cultural stress. There are significant positive correlations between all three types of lifestyle balance and scores on the Connectedness scale and significant negative correlations with scores on the Cultural Stress scale. The association between connectedness and lifestyle balance is the stronger of the two. There are also significant negative correlations between each type of lifestyle balance and the Depression, Anxiety and Stress scales. These correlations are presented in Table 27.

### Table 27 Correlations between Connectedness, Cultural Stress and lifestyle balance

<table>
<thead>
<tr>
<th>Items</th>
<th>Connectedness scale</th>
<th>Cultural Stress scale</th>
<th>Depression scale</th>
<th>Anxiety scale</th>
<th>Stress scale</th>
</tr>
</thead>
<tbody>
<tr>
<td>D14. I think the balance between studying and other activities in my life is about right.</td>
<td>+0.26***</td>
<td>-0.15***</td>
<td>-0.26***</td>
<td>-0.17***</td>
<td>-0.20***</td>
</tr>
<tr>
<td>B12. I think the balance between the time I spend with others and the time I spend alone is about right.</td>
<td>+0.31***</td>
<td>-0.23***</td>
<td>-0.24***</td>
<td>-0.21***</td>
<td>-0.21***</td>
</tr>
<tr>
<td>D5. My diet provides a balance of carbohydrates (eg. rice, noodles, bread), proteins (eg. eggs, meat, fish, chicken), vegetables, fruits and dairy products (eg. milk, yoghurt, butter).</td>
<td>+0.24***</td>
<td>-0.15***</td>
<td>-0.24***</td>
<td>-0.16***</td>
<td>-0.19***</td>
</tr>
</tbody>
</table>

*** Spearman correlations are significant at the .001 level, two-tailed.

Few demographic or situational variables differentiate among students’ perceived level of balance between study and other activities. The strongest differentiator is students’ perception of their academic progress. Students who feel they are not doing as well academically as expected judge their balance in this area to be significantly worse than those who feel they are doing as well as or better than expected\textsuperscript{144}. There is a small but significant difference favouring students who spoke some English when growing up\textsuperscript{145} and a main effect for faculty\textsuperscript{146}, with students enrolled in the MBS having the lowest rating on item D14 and those from the VCA having the highest, although specific post hoc comparisons for faculty are not significant.

Perceived academic progress also differentiates significantly among students’ estimation of the level of social balance in their lives. Again, it is the students who

\textsuperscript{144} F(2, 961)=36.37, p<.001 (ES: η\textsuperscript{2}=0.07)

\textsuperscript{145} t=2.22, 968 df, p<.05, two-tailed (ES=.14)

\textsuperscript{146} F(12,950)=2.0, p<.05 (ES: η\textsuperscript{2}=0.025)

Russell, Rosenthal & Thomson, 2006
feel that they are not doing as well academically as expected who perceive significantly less social balance in their lives than those who feel they are doing as well as or better than expected\textsuperscript{147}. There is also a significant difference favouring students who spoke some English when growing up\textsuperscript{148} and a main effect for country category\textsuperscript{149}, with students from countries in the Middle East and North Africa having the lowest rating on item B12 and those from European countries having the highest, although specific post hoc comparisons for country category are not significant.

More factors are relevant to perceptions of nutritional balance. Once again, perceived academic progress differentiates significantly among students’ views of their lifestyle balance, this time in relation to nutrition. Students who see themselves to be achieving better than expected academically have significantly stronger perceptions of their nutritional balance than those who feel they are doing as well as expected; these in turn have a significantly higher rating on item D5 than students who believe they are doing less well they expected academically\textsuperscript{150}. There is a significant main effect for faculty\textsuperscript{151}, with MBS students having the lowest scores on item D5 and students from the VCA and from Medicine, Dentistry and Health Sciences having the highest, although specific post hoc comparisons for country category are not significant.

Several variables differentiate among students’ perceptions of nutritional balance on the basis of culture: students from Asian countries\textsuperscript{152}, students who spoke some English when growing up\textsuperscript{153}, students who speak a LOTE when off campus\textsuperscript{154} have significantly lower scores on item B12 than their counterparts. There is also a main effect for country category\textsuperscript{155}, with lowest scores for students from the Middle East and North Africa and also Hong Kong, while students with the highest scores are from Latin America, UK/USA/Canada, and European countries, although specific post hoc comparisons for country category are not significant. Another set of variables differentiates level of nutritional balance on the basis of maturity: students who are older\textsuperscript{156}, partnered\textsuperscript{157}, and who are enrolled in postgraduate courses\textsuperscript{158} have significantly higher levels of nutritional balance than their counterparts.

An overview of the factors that differentiate among the different aspects of lifestyle balance focuses attention on the importance of students’ perceived academic progress. In each of the three areas, students who see themselves to be doing less well academically than expected have significantly less positive views than others of the lifestyle balance they have achieved. Psychological dimensions are also important in students’ perceptions of well-being in this area.

In order to investigate the variables which act as predictors of lifestyle balance, a multiple linear regression analysis was carried out in one of these areas – the perceived balance between study and other aspects of life. Statistically significant

\textsuperscript{147} F(2,960)=13.75, p<.001 (ES: $\eta^2=.028$)
\textsuperscript{148} t=3.03, 968 df, p<.01, two-tailed (ES=.20)
\textsuperscript{149} F(13,941)=1.80, p<.05 (ES:$\eta^2=.024$)
\textsuperscript{150} F(2, 960)=13.22, p<.001 (ES:$\eta^2=.027$)
\textsuperscript{151} F(12,949)=1.98, p<.05 (ES:$\eta^2=.024$)
\textsuperscript{152} t=2.37, 953 df, p<.05, two-tailed (ES=.26)
\textsuperscript{153} t=2.49, 968 df, p<.05, two-tailed (ES=.17)
\textsuperscript{154} t=4.66, 970 df, p<.001, two-tailed (ES=.31)
\textsuperscript{155} F(13,941)=2.52, p<.01 (ES:$\eta^2=.034$)
\textsuperscript{156} $\rho=+.09$, p<.01, two-tailed
\textsuperscript{157} t=2.36, 967 df, p<.05, two-tailed
\textsuperscript{158} F(2,964)=3.69, p<.05
variables that differentiated student responses about perceived balance in study were entered into the analysis to determine which variable(s) best predict students’ responses on the variable. The resultant model provides a significant prediction of perceived study balance (F(3,939)=54.20, p<.001). It consists of three predictors: perceived academic progress (positive), Connectedness (positive) and Depression (negative) scale scores. Table 28 presents the results.

Table 28  Significant predictors of perceived balance between study and other things

<table>
<thead>
<tr>
<th>Model</th>
<th>Unstandardised Coefficients B</th>
<th>S.E.</th>
<th>Standardised Coefficients Beta</th>
<th>t</th>
<th>95% C.I. for B</th>
</tr>
</thead>
<tbody>
<tr>
<td>Connectedness</td>
<td>.21</td>
<td>.03</td>
<td>.21</td>
<td>6.60***</td>
<td>.15 - .28</td>
</tr>
<tr>
<td>Depression</td>
<td>-.21</td>
<td>.04</td>
<td>-.17</td>
<td>-5.22***</td>
<td>-.29 - -.13</td>
</tr>
<tr>
<td>Perceived</td>
<td>-.22</td>
<td>.04</td>
<td>-.20</td>
<td>-6.38***</td>
<td>-.29 - -.15</td>
</tr>
<tr>
<td>academic</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>progress</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

The amount of variance in perceived balance between study and other activities that is associated with these three predictors is 14.8 per cent (R^2=.148). Each predictor accounts for approximately the same percentage of variance.

**ABUSE AND DISTRESS**

Students’ experience of abuse while in Australia was explored through the questionnaire - physical abuse, verbal abuse, sexual abuse, and exclusion - together with students’ reaction to that abuse. Such instances of abuse might be experienced as culturally motivated and discriminatory, but the questionnaire items do not specify this. The questions tap into all experiences of abuse, whether they occur within or between cultural groups.

Incidents of abuse add to the stress that international students experience when they live in another culture. Table 29 presents a summary of the number and percentage of respondents who have experienced abuse while living in Australia. The most common forms of abuse are exclusion and verbal abuse, with about one-third of students having experienced exclusion and more than a quarter of students having been verbally abused. Rates of physical abuse are lower than those of sexual harassment.

Gender is significantly associated with rates of abuse. Women report higher than expected rates of physical abuse\cite{159} and sexual harassment\cite{160}, while men report higher than expected rates of verbal abuse\cite{161}. The gender difference is particularly

\footnotesize
\begin{itemize}
\item \cite{159} \chi^2\text{=}5.20, 1 df, p<.05 \\
\item \cite{160} \chi^2\text{=}28.23, 1 df, p<.001 \\
\item \cite{161} \chi^2\text{=}3.97, 1 df, p<.05 \\
\end{itemize}
noticeable in relation to sexual harassment. The gender difference in students’ experience of exclusion is not statistically significant.

Table 29  

<table>
<thead>
<tr>
<th></th>
<th>Total</th>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Yes</td>
<td>No</td>
<td>Yes</td>
<td>No</td>
<td>Yes</td>
<td>No</td>
</tr>
<tr>
<td>Physical abuse</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Number</td>
<td>27</td>
<td>897</td>
<td>4</td>
<td>322</td>
<td>23</td>
<td>569</td>
</tr>
<tr>
<td>Percentage</td>
<td>2.9</td>
<td>97.1</td>
<td>1.2</td>
<td>98.8</td>
<td>3.9</td>
<td>96.1</td>
</tr>
<tr>
<td>Verbal abuse</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Number</td>
<td>266</td>
<td>657</td>
<td>106</td>
<td>216</td>
<td>159</td>
<td>437</td>
</tr>
<tr>
<td>Percentage</td>
<td>28.8</td>
<td>71.2</td>
<td>32.9</td>
<td>67.1</td>
<td>26.7</td>
<td>73.3</td>
</tr>
<tr>
<td>Sexual harassment</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Number</td>
<td>78</td>
<td>848</td>
<td>6</td>
<td>318</td>
<td>72</td>
<td>525</td>
</tr>
<tr>
<td>Percentage</td>
<td>8.4</td>
<td>91.6</td>
<td>1.9</td>
<td>98.1</td>
<td>12.1</td>
<td>87.9</td>
</tr>
<tr>
<td>Exclusion</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Number</td>
<td>314</td>
<td>651</td>
<td>102</td>
<td>240</td>
<td>210</td>
<td>407</td>
</tr>
<tr>
<td>Percentage</td>
<td>32.5</td>
<td>67.5</td>
<td>29.8</td>
<td>70.2</td>
<td>34.0</td>
<td>66.0</td>
</tr>
</tbody>
</table>

The level of students’ distress varies according to the type of abuse, as Table 30 indicates. A repeated measures analysis of variance shows these differences to be statistically significant\textsuperscript{162}, with the highest average level of distress being in response to physical abuse, as a result of the very high level of distress to this recorded by female students. Women report a higher level of distress than men in response to abuse generally, with the differences being statistically significant for physical abuse and exclusion. Those who have experienced abuse feel significantly less safe than others in Melbourne\textsuperscript{163}, with female victims again feeling significantly less safe than male victims\textsuperscript{164}.

Table 30  

<table>
<thead>
<tr>
<th></th>
<th>All students</th>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Males</td>
<td>Females</td>
<td></td>
</tr>
<tr>
<td>Physical abuse *\textsuperscript{165}</td>
<td>2.9</td>
<td>2.0</td>
<td>3.0</td>
</tr>
<tr>
<td>Verbal abuse</td>
<td>2.4</td>
<td>2.3</td>
<td>2.5</td>
</tr>
<tr>
<td>Sexual harassment</td>
<td>2.4</td>
<td>2.3</td>
<td>2.4</td>
</tr>
<tr>
<td>Exclusion *\textsuperscript{166}</td>
<td>2.5</td>
<td>2.4</td>
<td>2.6</td>
</tr>
</tbody>
</table>

*The difference between males and females is significant at the .05 level.

Although students were not asked to indicate whether they perceived incidents of abuse to be based on cultural discrimination, an indirect indication of this can be obtained. One of the items in the Cultural Stress scale concerns students’ perception of being treated differently here because of their cultural background (D20). If students interpret incidents of abuse as culturally-based, it is expected that those who

\textsuperscript{162} F(3,498)=19.68, p<.001  
\textsuperscript{163} t=4.12, 922 df, p<.001, two-tailed  
\textsuperscript{164} t=2.04, 452 df, p<.05, two-tailed  
\textsuperscript{165} t=2.34, 25 df, p<.05, two-tailed  
\textsuperscript{166} t=2.46, 226.9 df, p<.05, two-tailed
have experienced abuse will give significantly higher ratings on this item than those who have not experienced abuse. Table 31 presents the results. For all four forms of abuse, students who have experienced abuse have significantly stronger perceptions of discriminatory treatment than those who have not. Gender is not a factor in this difference.

Table 31  Difference in perceived cultural discrimination based on abuse experience

<table>
<thead>
<tr>
<th></th>
<th>Abuse experienced</th>
<th>No abuse</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Rating on D20</td>
<td>Rating on D20</td>
</tr>
<tr>
<td></td>
<td>Mean</td>
<td>SD</td>
</tr>
<tr>
<td>Physical abuse ** 167</td>
<td>1.5</td>
<td>1.1</td>
</tr>
<tr>
<td>Verbal abuse *** 168</td>
<td>1.3</td>
<td>1.0</td>
</tr>
<tr>
<td>Sexual harassment ** 169</td>
<td>1.2</td>
<td>1.0</td>
</tr>
<tr>
<td>Exclusion *** 170</td>
<td>1.3</td>
<td>0.9</td>
</tr>
</tbody>
</table>

The difference in perceived discrimination is significant at: ** the .01 level  *** .001 level.

The standard deviations of the two sets of ratings differ. Those who have experienced abuse have higher standard deviations than those who do not, indicating greater diversity in perceptions among the former group. This might point to differences in seriousness of abuse events or differences in interpretation or both.

Category of country of origin is not associated with rates of abuse to any great degree. The chi-square analyses show no such association for rates of physical abuse or of sexual harassment. Significant associations are found for rates of verbal abuse 171 and for exclusion 172. Malaysian and Singaporean students report higher than expected rates of verbal abuse, while students from PR China report lower than expected rates. The same result is found for exclusion, although in this case students from UK/US/Canada and Europe also report lower than expected rates of exclusion. When comparisons are made between students from Asian countries and others, the only significant difference found is for the rate of exclusion. Asian students have a higher than expected rate and others a lower rate than expected 173.

Some students have experienced multiple forms of abuse. The Abuse and Distress scale provides a compact measure of students’ experience in this area. It includes experience and response to all forms of abuse except exclusion 174. The average score on this scale is 1.37 on a four-point scale (1 to 4), with a standard deviation of 0.66. It

167 t=2.90, 27 df, p<.01, two-tailed
168 t=7.50, 413.7 df, p<.001, two-tailed
169 t=2.70, 923 df, p<.01, two-tailed
170 t=9.37, 521.4 df, p<.001, two-tailed
171 χ²=23.50, 13 df, p<.05
172 χ²=22.86, 13 df, p<.05
173 χ²=3.30, 1 df, p<.05
174 Exclusion does not inter-correlate sufficiently with the other three forms of abuse to form part of the scale. This suggests the incidence and responses to exclusion are of a different order from those concerning physical, verbal and sexual abuse.

Russell, Rosenthal & Thomson, 2006 59
is noted that only those students who have responded to all six items constituting the scale (n=163) are included in this average scale score.

Few demographic variables distinguish among students’ scores on the Abuse and Distress scale. Those that do are

- gender, with women having significantly higher scale scores than men\(^{175}\);
- perceived academic progress, with students doing less well academically than expected having significantly higher scale scores than those doing better than expected\(^{176}\);
- faculty, with the lowest scale scores being for Land and Food Resources, Music and the VCA, while the highest is for Veterinary Science, with post hoc comparisons showing the scale score for the Arts Faculty being significantly higher than that for the Engineering Faculty\(^{177}\);
- years of enrolment: the longer the enrolment, the higher the scale score\(^ {178}\).

The Abuse and Distress scale shows a small but significant negative correlation with the Connectedness scale\(^ {179}\), but does not relate significantly to the Cultural Stress scale. It also relates positively and significantly to the Depression\(^ {180}\), Anxiety\(^ {181}\) and Stress\(^ {182}\) scales.

In order to determine which variable or combination of variables best predicts students’ Abuse and Distress scale score, the above eight variables, together with item D20, were entered into a multiple linear regression analysis. The model that was achieved provides a significant prediction of the Abuse and Distress scale score (F(5,152)=10.57, p<.001). It consists of five predictors: gender, perceived academic progress, years of enrolment and perceived cultural discrimination (D20) and the Stress scale. Table 32 presents the results.

It is not easy to label these variables simply as positive or negative predictors, because the interpretation depends on the way in which variables have been coded. Women students, students with perceived lower-than-expected academic progress, students enrolled for a longer time and students who perceive higher levels of cultural discrimination and general stress are predicted to have higher Abuse and Distress scale scores.

The total amount of variance in the Abuse and Distress scale score explained by the model is 25.8 per cent (\(R^2=.258\)). This is much higher than the percentage explained in the Connectedness or the Cultural Stress scales. Had demographic variables alone been used as predictors, only 13.8 per cent of the variance would have been accounted for.

\(^{175}\) \(t=3.52,\ 161\ \text{df},\ p<.001,\ \text{two-tailed}\ (ES=.55)\)
\(^{176}\) \(F(2,155)=4.17,\ p<.05\ (ES: \eta^2=.051)\)
\(^{177}\) \(F(12,149)=2.60,\ p<.01\ (ES: \eta^2=.173)\)
\(^{178}\) \(r=-0.16,\ p<.05,\ \text{two-tailed}\)
\(^{179}\) \(r=-0.18,\ p<.05,\ \text{two-tailed}\)
\(^{180}\) \(r=+0.24,\ p<.01,\ \text{two-tailed}\)
\(^{181}\) \(r=+0.16,\ p<.05,\ \text{two-tailed}\)
\(^{182}\) \(r=+0.29,\ p<.001,\ \text{two-tailed}\)
HEALTH AND WELL-BEING OF INTERNATIONAL STUDENTS

Table 32 Significant predictors of students’ Abuse and Distress scale score

<table>
<thead>
<tr>
<th>Model</th>
<th>Unstandardised Coefficients</th>
<th>Standardised Coefficients</th>
<th>t</th>
<th>95% C.I. for B</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>B</td>
<td>S.E.</td>
<td>Beta</td>
<td></td>
</tr>
<tr>
<td>Gender</td>
<td>.34</td>
<td>.10</td>
<td>.25</td>
<td>3.55**</td>
</tr>
<tr>
<td>Perceived discrimination (D20)</td>
<td>.20</td>
<td>.06</td>
<td>.26</td>
<td>3.53**</td>
</tr>
<tr>
<td>Perceived academic progress</td>
<td>.16</td>
<td>.07</td>
<td>.16</td>
<td>2.27*</td>
</tr>
<tr>
<td>Years of enrolment</td>
<td>.07</td>
<td>.03</td>
<td>.14</td>
<td>2.05*</td>
</tr>
<tr>
<td>Stress scale</td>
<td>.17</td>
<td>.08</td>
<td>.17</td>
<td>2.26*</td>
</tr>
</tbody>
</table>

*p<.05  **p<.01  ***p<.001

WELL-BEING DOMAIN 3: HEALTH AND HEALTH-RELATED BEHAVIOUR

PHYSICAL HEALTH

Most students evaluate their general state of physical health positively, as Table 33 indicates. Close to 65 per cent of respondents rate their physical health as being ‘good’ or ‘excellent’. Students were also asked to make a judgment about their health in the current year relative to what it had been when they lived at home. Again, most students give a positive evaluation, with 82.3 per cent believing they are as healthy as or healthier than they had been at home.

There is a statistically significant association between the two ratings183. A higher than expected number of students who see their health to be generally poor or fair, judge their health to be worse here, while more than expected of those who judge their health to be generally excellent, deem their health to be better here.

183 \( \chi^2 = 174.11, 6 \text{ df}, p<.001 \)

Russell, Rosenthal & Thomson, 2006
HEALTH AND WELL-BEING OF INTERNATIONAL STUDENTS

Table 33  General and relative state of physical health

<table>
<thead>
<tr>
<th>General state of physical health</th>
<th>Relative state of physical health</th>
</tr>
</thead>
<tbody>
<tr>
<td>Categories</td>
<td>Number of students</td>
</tr>
<tr>
<td>Poor</td>
<td>25 2.6</td>
</tr>
<tr>
<td>Fair</td>
<td>320 32.7</td>
</tr>
<tr>
<td>Good</td>
<td>510 52.1</td>
</tr>
<tr>
<td>Excellent</td>
<td>123 12.6</td>
</tr>
</tbody>
</table>

There are statistically significant relationships between students’ perceptions of health and their perceived connectedness and cultural stress in Melbourne. The more positive students’ evaluation of their general health, the higher their scores on the Connectedness scale\(^{184}\). Students who feel their health here is about the same or better than at home also have higher scores on the Connectedness scale than those who feel their health is worse here\(^{185}\). The opposite relationship holds for health and cultural stress. The more positive students’ evaluation of their general health, the lower their scores on the Cultural Stress scale\(^{186}\). Students who feel their health here is about the same or better than at home also have lower scores on the Cultural Stress scale than those who feel their health is worse here\(^{187}\).

A pertinent issue is whether students feel their health has had an adverse effect on their university studies during the year. About 82 per cent of students indicate (Table 34) that there has been little or no interference with their studies arising from health problems. Table 34 also shows that only 5.3 per cent (n=52) of students think there has been a strongly adverse effect.

Table 34  Effect of physical health on studies

<table>
<thead>
<tr>
<th>Items</th>
<th>Percentage ratings</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Mean</td>
</tr>
<tr>
<td>B4. During this year, my physical health has interfered with my studies. (n=975)</td>
<td>0.7</td>
</tr>
</tbody>
</table>

Not surprisingly, students who judge themselves to be in poor physical health feel their health interferes strongly with their studies (see Table 33). The result of a univariate analysis of variance shows that students who rate their health as poor, give

\(^{184}\) \(\rho=+0.18, p<.001\), two-tailed
\(^{185}\) \(F(2,970)=10.20, p<.001\)
\(^{186}\) \(\rho=-0.22, p<.001\), two-tailed
\(^{187}\) \(F(2,955)=29.23, p<.001\)
HEALTH AND WELL-BEING OF INTERNATIONAL STUDENTS

a significantly higher rating on item B4 than other students, while students who judge their health to be fair have a significantly higher score on item B4 than those who feel their health is good or excellent 188. Table 33 also indicates that students who think their health is worse in Australia than at home feel that their health interferes much more with their studies than do other students. This is a statistically significant difference 189.

Some demographic and situational factors differentiate among students’ ratings on the extent to which health interferes with their studies.

- Perceived academic progress differentiates among student ratings on item B4, with those who feel they are not progressing as well as expected seeing significantly more interference than other students 190.
- Another set of variables that produces differences in ratings on item B4 concern cultural background. Students from Asian countries 191, students who speak a LOTE off campus 192, and students who spoke no English when growing up 193, all see significantly more health interference in their studies than their counterparts.
- Country category also produces a significant main effect on item B4 194, with the lowest ratings being for students from Latin America, UK/USA/Canada, European countries and Singapore, and the highest being for South East Asia and the Pacific, Other East Asian countries, PR China and sub-Sahara Africa. The pairwise comparison of Singapore and PR China is significant at the .05 level.

Higher levels of cultural stress, though not connectedness, are also significantly related to stronger perceptions of health interference with study 195, as are levels of depression 196, anxiety 197 and stress 198.

Statistically significant variables that differentiate student responses about perceived interference of health in study were entered into a multiple linear regression analysis to determine which variable(s) best predict students’ responses on this variable. The resultant model provides a significant prediction of perceived health interference in study (F(4,933)=40.75, p<.001). It consists of four predictors: Cultural Stress (positive) and Anxiety (positive) scale scores, use of a LOTE off campus (positive) and perceived general health (negative). Table 35 presents the results.

---

188 F(3,970)=35.25, p<.001
189 F(2,970)=61.99, p<.001
190 F(2,958)=5.42, p<.01 (ES: \(\eta^2=0.011\))
191 t=2.88, 127.2 df, p<.01, two-tailed (ES=.30)
192 t=4.70, 777 df, p<.001, two-tailed (ES=.29)
193 t=2.85, 844.2 df, p<.01, two-tailed (ES=.19)
194 F(13,938)=2.73, p<.01 (ES: \(\eta^2=0.036\))
195 \(\rho=+0.21\), p<.001, two-tailed
196 \(\rho=+0.27\), p<.001, two-tailed
197 \(\rho=+0.26\), p<.001, two-tailed
198 \(\rho=+0.24\), p<.001, two-tailed
Table 35  Significant predictors of perceived health interference in study

<table>
<thead>
<tr>
<th>Model</th>
<th>Unstandardised Coefficients</th>
<th>Standardised Coefficients</th>
<th>95% C.I. for B</th>
</tr>
</thead>
<tbody>
<tr>
<td>Cultural Stress scale</td>
<td>B: .11</td>
<td>Beta: .07</td>
<td>t: 2.04*</td>
</tr>
<tr>
<td></td>
<td>S.E.: .06</td>
<td></td>
<td>Lower: .00</td>
</tr>
<tr>
<td>Anxiety scale</td>
<td></td>
<td></td>
<td>Upper: .22</td>
</tr>
<tr>
<td>LOTE off campus</td>
<td>B: -.16</td>
<td>Beta: -.09</td>
<td>t: -2.83**</td>
</tr>
<tr>
<td></td>
<td>S.E.: .06</td>
<td></td>
<td>Lower: -.28</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>Upper: -.05</td>
</tr>
<tr>
<td>Perceived general health</td>
<td>B: -.29</td>
<td>Beta: -.23</td>
<td>t: -7.13***</td>
</tr>
<tr>
<td></td>
<td>S.E.: .04</td>
<td></td>
<td>Lower: -.37</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>Upper: -.21</td>
</tr>
</tbody>
</table>

*p<.05  **p<.01  ***p<.001

The amount of variance in perceived health interference in study that is associated with these four predictors is 14.9 per cent ($R^2=.149$).

One other question that arises is whether students use the university health service differentially, based on their evaluations of their general physical health. The results are counter-intuitive. If students who deem their general health to be ‘poor’ feel the need to visit the university health service, a smaller than expected number of them act on that need, whereas more than expected of those who judge their general health to be ‘good’ or excellent’ do visit the health service when they need help. A similar difference in help-seeking behaviour exists between students who think their health is ‘worse’ here and those who see their health to be ‘about the same’ as at home.

MENTAL HEALTH

Depression, Anxiety and Stress (DASS) Scales

Three scales were used to measure students’ psychological health: the Depression, Anxiety and Stress Scales (DASS), developed by Lovibond and Lovibond (1995). Item results and scale scores for each of these scales are presented in Tables 36, 37 and 38. In these tables, results that are presented for items and scales have been calculated in the same way that other four-point ratings and scales have been calculated, with unit weighting for each item response and the total being divided by the number of items in the scale to produce the scale score. This allows these ratings and scale scores to be compared with those on other scales in the questionnaire. A comparison of the Depression, Anxiety or Stress average scale score with, for example, the Cultural Stress scale score shows that cultural stress is much more characteristic of the respondents than depression, anxiety or stress.

Scale scores based on the DASS21 scoring system are also provided in each table, together with the normative sample means and standard deviations. In each case, the

\[
\chi^2=8.0, 3 \text{ df, p}<.05
\]

\[
\chi^2=12.83, 2 \text{ df, p}<.01
\]
The means of the present sample are a little higher than those of the normative sample. The difference is greatest for the Anxiety scale.

Table 36  
**Depression scale**

<table>
<thead>
<tr>
<th>Items</th>
<th>Mean</th>
<th>SD</th>
<th>0</th>
<th>1</th>
<th>2</th>
<th>3</th>
</tr>
</thead>
<tbody>
<tr>
<td>F3. I couldn’t seem to experience any positive feeling at all. (n=974)</td>
<td>0.7</td>
<td>0.7</td>
<td>48.9</td>
<td>39.2</td>
<td>10.3</td>
<td>1.6</td>
</tr>
<tr>
<td>F5. I found it difficult to work up the initiative to do things. (n=975)</td>
<td>1.0</td>
<td>0.9</td>
<td>32.0</td>
<td>39.8</td>
<td>20.4</td>
<td>7.8</td>
</tr>
<tr>
<td>F10. I felt that I had nothing to look forward to. (n=974)</td>
<td>0.6</td>
<td>0.8</td>
<td>61.8</td>
<td>24.5</td>
<td>10.4</td>
<td>3.3</td>
</tr>
<tr>
<td>F13. I felt down-hearted and blue. (n=971)</td>
<td>0.8</td>
<td>0.9</td>
<td>46.1</td>
<td>35.6</td>
<td>13.3</td>
<td>4.9</td>
</tr>
<tr>
<td>F16. I was unable to become enthusiastic about anything. (n=974)</td>
<td>0.6</td>
<td>0.8</td>
<td>55.5</td>
<td>31.2</td>
<td>9.8</td>
<td>3.5</td>
</tr>
<tr>
<td>F17. I felt I wasn’t worth much as a person. (n=973)</td>
<td>0.4</td>
<td>0.7</td>
<td>72.7</td>
<td>18.2</td>
<td>6.8</td>
<td>2.4</td>
</tr>
<tr>
<td>F21. I felt that life was meaningless. (n=976)</td>
<td>0.4</td>
<td>0.7</td>
<td>74.9</td>
<td>18.0</td>
<td>4.0</td>
<td>3.1</td>
</tr>
<tr>
<td>Scale score: Depression (n=963)</td>
<td>0.6</td>
<td>0.6</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Depression scale score (DASS21 scoring)</td>
<td>8.7</td>
<td>8.4</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Depression normative sample statistics (DASS21 scoring)</td>
<td>6.34</td>
<td>6.97</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

The percentage distributions for item ratings on all three scales show that a high percentage of students have given low ratings to items (ratings 0 or 1), while the percentage of students giving the highest item rating of 3 is small. The histograms for the three scales presented in Figure 1 also illustrate the fact that most students have low scores on each of these scales, although a small number do have extreme scale scores that are of concern.

Table 37  
**Anxiety scale**

<table>
<thead>
<tr>
<th>Items</th>
<th>Mean</th>
<th>SD</th>
<th>0</th>
<th>1</th>
<th>2</th>
<th>3</th>
</tr>
</thead>
<tbody>
<tr>
<td>F2. I was aware of dryness in my mouth. (n=972)</td>
<td>1.1</td>
<td>1.0</td>
<td>35.5</td>
<td>31.8</td>
<td>22.6</td>
<td>10.1</td>
</tr>
<tr>
<td>F4. I experienced breathing difficulty (eg. excessively rapid breathing, breathlessness in the absence of physical exertion). (n=974)</td>
<td>0.3</td>
<td>0.6</td>
<td>77.1</td>
<td>16.5</td>
<td>4.7</td>
<td>1.6</td>
</tr>
<tr>
<td>F7. I experienced trembling (eg. in the hands). (n=975)</td>
<td>0.3</td>
<td>0.6</td>
<td>78.1</td>
<td>16.6</td>
<td>3.6</td>
<td>1.7</td>
</tr>
<tr>
<td>F9. I was worried about situations in which I might panic and make a fool of myself. (n=976)</td>
<td>0.9</td>
<td>0.9</td>
<td>42.4</td>
<td>33.7</td>
<td>16.8</td>
<td>7.1</td>
</tr>
<tr>
<td>F15. I felt I was close to panic. (n=973)</td>
<td>0.5</td>
<td>0.8</td>
<td>64.9</td>
<td>23.9</td>
<td>8.2</td>
<td>3.0</td>
</tr>
<tr>
<td>F19. I was aware of the action of my heart in the absence of physical exertion (eg. sense of heart rate increase, heart missing a beat). (n=971)</td>
<td>0.4</td>
<td>0.7</td>
<td>71.8</td>
<td>19.6</td>
<td>6.1</td>
<td>2.6</td>
</tr>
<tr>
<td>F20. I felt scared without any good reason. (n=974)</td>
<td>0.4</td>
<td>0.7</td>
<td>73.1</td>
<td>18.0</td>
<td>6.7</td>
<td>2.3</td>
</tr>
<tr>
<td>Scale score: Anxiety (n=961)</td>
<td>0.5</td>
<td>0.5</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Anxiety scale score (DASS21 scoring)</td>
<td>7.6</td>
<td>7.3</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Anxiety normative sample statistics (DASS21 scoring)</td>
<td>4.70</td>
<td>4.91</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>
### Table 38  
**Stress scale**

<table>
<thead>
<tr>
<th>Items</th>
<th>Mean</th>
<th>SD</th>
<th>0 (Not at all)</th>
<th>1 (To some degree)</th>
<th>2 (To a considerable degree)</th>
<th>3 (Very much)</th>
</tr>
</thead>
<tbody>
<tr>
<td>F1. I found it hard to wind down (relax). (n=968)</td>
<td>1.2</td>
<td>0.9</td>
<td>22.7</td>
<td>41.3</td>
<td>24.8</td>
<td>11.1</td>
</tr>
<tr>
<td>F6. I tended to over-react to situations. (n=965)</td>
<td>0.8</td>
<td>0.8</td>
<td>40.6</td>
<td>39.9</td>
<td>14.7</td>
<td>4.8</td>
</tr>
<tr>
<td>F8. I felt that I was using a lot of nervous energy. (n=965)</td>
<td>0.7</td>
<td>0.9</td>
<td>53.0</td>
<td>28.9</td>
<td>13.6</td>
<td>4.4</td>
</tr>
<tr>
<td>F11. I found myself getting agitated. (n=970)</td>
<td>0.7</td>
<td>0.8</td>
<td>52.6</td>
<td>33.1</td>
<td>11.0</td>
<td>3.3</td>
</tr>
<tr>
<td>F12. I found it difficult to relax. (n=977)</td>
<td>1.0</td>
<td>0.9</td>
<td>37.5</td>
<td>38.1</td>
<td>16.6</td>
<td>7.9</td>
</tr>
<tr>
<td>F14. I was intolerant of anything that kept me from getting on with what I was doing. (n=968)</td>
<td>0.7</td>
<td>0.8</td>
<td>45.5</td>
<td>39.0</td>
<td>12.3</td>
<td>3.2</td>
</tr>
<tr>
<td>F18. I felt that I was rather touchy (oversensitive). (n=974)</td>
<td>0.8</td>
<td>0.9</td>
<td>47.5</td>
<td>32.4</td>
<td>15.0</td>
<td>5.0</td>
</tr>
<tr>
<td><strong>Scale score: Stress</strong> (n=959)</td>
<td><strong>0.8</strong></td>
<td><strong>0.6</strong></td>
<td><strong>11.7</strong></td>
<td><strong>8.9</strong></td>
<td><strong>10.11</strong></td>
<td><strong>7.91</strong></td>
</tr>
</tbody>
</table>

**Stress scale score (DASS21 scoring)**

**Stress normative sample statistics (DASS21 scoring)**

---

**Figure 1**  
Distributions of scores on each of the DASS scales
Guidelines for the rating of severity of scores, based on the normative sample, have been established for the DASS scales. Using these guidelines, it is possible to classify student scale scores on a continuum from normal to extremely severe. The results are presented in Table 39. Just as the means of the three scales are slightly higher than the means of the normative sample, so too the distributions of scale scores in the present sample are skewed compared with the distributions of the normative sample.

However, there is need for great caution in interpreting these data. The scales were normed on an Australian sample drawn from a range of white and blue collar occupations, including some university students, with an age range of 17 – 69 years. In particular, cultural differences will have affected present results in an unknown way. The most useful approach is to look at the relative distributions of scores on the three scales for the international student sample. From this it can be seen that anxiety presents a greater challenge to this group than either depression or stress.

Table 39   Classification of students’ scale scores according to degree of severity

<table>
<thead>
<tr>
<th></th>
<th>Normal (Normative sample: 78%)</th>
<th>Mild (Normative sample: 9%)</th>
<th>Moderate (Normative sample: 8%)</th>
<th>Severe (Normative sample: 3%)</th>
<th>Extremely severe (Normative sample: 2%)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Depression scale (n=963) Number Percentage</td>
<td>594</td>
<td>61.7</td>
<td>132</td>
<td>13.7</td>
<td>145</td>
</tr>
<tr>
<td>Anxiety scale (n=961) Number Percentage</td>
<td>548</td>
<td>57.0</td>
<td>103</td>
<td>10.7</td>
<td>169</td>
</tr>
<tr>
<td>Stress scale (n=959) Number Percentage</td>
<td>656</td>
<td>68.4</td>
<td>108</td>
<td>11.3</td>
<td>109</td>
</tr>
</tbody>
</table>

Factors differentiating among students in terms of their levels of depression seem to focus on maturity, connectedness and cultural stress, and progress with studies.
- There is a significant negative correlation with age, indicating in general the younger the student the higher the level of depression\(^{201}\).
- Single students have a significantly higher score on the Depression scale than students with partners\(^{202}\).
- Undergraduate students have a significantly higher Depression scale score than postgraduate students (whether coursework or research)\(^{203}\).
- Students who feel their academic progress is below expectation have significantly higher levels of depression than other students doing as well as or better than expected\(^{204}\).
- Students who undertook a Foundation Studies program have a significantly higher Depression scale score than those who did not\(^{205}\).

---

\(^{201}\) \(\rho=-0.15, p<.001\), two-tailed
\(^{202}\) \(t=2.73, 953 \text{ df}, p<.01\), two-tailed (ES=.23)
\(^{203}\) \(F(2,950)=6.42, p<.01\) (ES: \(\eta^2=.013\))
\(^{204}\) \(F(2,938)=20.08, p<.001\) (ES: \(\eta^2=.043\))
\(^{205}\) \(t=2.09, 596.1 \text{ df}, p<.05\), two-tailed (ES=.17)
There was a main effect for country category, with students from European and Latin American students having the lowest Depression scale scores, and students from India, Hong Kong, Other Africa and Malaysia having the highest. There are also significant correlations between the Depression scale and other scales already discussed.

- A significant negative correlation exists between the Connectedness and the Depression scales, indicating that the stronger the connectedness of the student in Melbourne, the lower the level of depression.
- A strong, significant positive correlation exists between the Cultural Stress and the Depression scales, indicating that the stronger the student’s experience of cultural stress in Melbourne, the higher the level of depression. In particular, a significant main effect on depression for level of stress experienced by students in trying to meet family expectations (item B27, one of the items of the Cultural Stress scale) exists, with significant increases in the Depression scale score for each successive rating level (0 to 3) on item B27.
- There are also significant positive correlations between the Depression scale and the Abuse and Distress scale, as well as with three scales that are discussed in the subsequent section of results concerning health-related behaviour: the Perceptions of Drug Use scale, the Perceptions of Alcohol Use scale, and the Perceptions of Gambling and Smoking scale.

In order to determine the best predictors of the Depression scale, all of the above twelve variables were entered into a multiple linear regression analysis. The model achieved provides a significant prediction of the Depression scale ($F(3,153)=19.81, p<.001$). It consists of three predictors: the Cultural Stress, the Abuse and Distress, and the Perceptions of Drug Use scales. Table 40 presents the results. All three are positive predictors, that is, an increase in cultural stress, perceived drug use, and abuse and associated distress predicts an increase in level of depression.

Table 40 Significant predictors of students’ Depression scale score (model 1)

<table>
<thead>
<tr>
<th>Model</th>
<th>Unstandardised Coefficients B</th>
<th>Standardised Coefficients Beta</th>
<th>t</th>
<th>95% C.I. for B Lower</th>
<th>95% C.I. for B Upper</th>
</tr>
</thead>
<tbody>
<tr>
<td>Cultural Stress scale</td>
<td>.49</td>
<td>.44</td>
<td>6.39***</td>
<td>.34</td>
<td>.64</td>
</tr>
<tr>
<td>Perceptions of Drug Use</td>
<td>.44</td>
<td>.18</td>
<td>2.57*</td>
<td>.10</td>
<td>.78</td>
</tr>
<tr>
<td>Abuse and Distress scale</td>
<td>.16</td>
<td>.17</td>
<td>2.48*</td>
<td>.03</td>
<td>.29</td>
</tr>
</tbody>
</table>

*p<.05 **p<.01 ***p<.001

---

$F(13,921)=1.90, p<.05$ (ES: $r^2=.027$)

$r=-.26, p<.001$, two-tailed

$r=.046, p<.001$, two-tailed

$F(3,945)=51.77, p<.001$

$r=.24, p<.01$, two-tailed

$r=.21, p<.001$, two-tailed

$r=.19, p<.001$, two-tailed

$r=.22, p<.001$, two-tailed
The total amount of variance explained by this model is 28 per cent ($R^2=.280$). However, the weakness of the model lies in the comparatively small number of students on which it is based, as a result of the small number who contribute a score on the Abuse and Distress scale (n=163).

If the Abuse and Distress scale is omitted from the regression analysis, a different model results. It consists of six predictors: perceived academic progress, age, and the Cultural Stress, Connectedness, Perceptions of Drug Use, and Perceptions of Alcohol Use scales. This model provides a significant and stronger prediction of the Depression scale ($F(6,928)=67.45$, p<.001). It is a more satisfactory model, being based as it is on a much higher percentage of the sample. The amount of variance explained is 30.4 per cent ($R^2=.304$), higher than for the earlier model. Table 41 presents the results. A high score on the Depression scale is predicted by a high level of cultural stress and high perceived use of drugs and alcohol, lower than expected perceived academic progress, youthfulness, and a low level of connectedness.

Both models have been included in order to indicate that, while the experience of abuse and distress is a predictor of depression for those who have experienced abuse, other factors are significant predictors in its absence. Cultural stress remains the strongest individual predictor in both models.

Table 41 Significant predictors of students’ Depression scale score (model 2)

<table>
<thead>
<tr>
<th>Model</th>
<th>Unstandardised Coefficients B</th>
<th>S.E.</th>
<th>Standardised Coefficients Beta</th>
<th>t</th>
<th>95% C.I. for B Lower</th>
<th>95% C.I. for B Upper</th>
</tr>
</thead>
<tbody>
<tr>
<td>Cultural Stress scale</td>
<td>.44</td>
<td>.03</td>
<td>.39</td>
<td>13.04***</td>
<td>.37</td>
<td>.50</td>
</tr>
<tr>
<td>Perceptions of Alcohol Use scale</td>
<td>.15</td>
<td>.03</td>
<td>.15</td>
<td>5.02***</td>
<td>.09</td>
<td>.21</td>
</tr>
<tr>
<td>Perceptions of Drug Use scale</td>
<td>.34</td>
<td>.07</td>
<td>.14</td>
<td>4.55***</td>
<td>.19</td>
<td>.48</td>
</tr>
<tr>
<td>Perceived academic progress</td>
<td>.11</td>
<td>.03</td>
<td>.12</td>
<td>4.20***</td>
<td>.06</td>
<td>.16</td>
</tr>
<tr>
<td>Age</td>
<td>-.01</td>
<td>.00</td>
<td>-.11</td>
<td>-3.90***</td>
<td>-.02</td>
<td>-.01</td>
</tr>
<tr>
<td>Connectedness scale</td>
<td>-.09</td>
<td>.03</td>
<td>-.11</td>
<td>-3.56***</td>
<td>-.14</td>
<td>-.04</td>
</tr>
</tbody>
</table>

***p<.001
Demographic and situational variables that distinguish among students’ levels of anxiety differ somewhat from those differentiating among levels of depression. While there is still a focus on maturity, cultural stress and connectedness, there is not a focus on academic progress. Instead, cultural measures are more important.

- A significant negative correlation with age indicates that, in general, the younger the student the higher the level of anxiety\(^{214}\).
- Single students have a significantly higher score on the Anxiety scale than students with partners\(^{215}\).
- There is a main effect on anxiety for type of course, with undergraduate students having a higher Anxiety scale score than other students\(^{216}\).
- There is a main effect on anxiety for country category\(^{217}\). Students from Europe and from UK/USA/Canada have the lowest scale scores, while students from Hong Kong, other Africa and Malaysia have the highest. The pair-wise comparison of students from UK/USA/Canada and from Hong Kong is statistically significant.
- Students from Asian countries have a significantly higher Anxiety scale score than those from non-Asian countries\(^{218}\).
- Students who speak a LOTE off campus have a significantly higher level of anxiety than those who do not\(^{219}\).

There are also significant correlations between the Anxiety scale and other scales.

- A significant negative correlation exists between the Connectedness and the Anxiety scales, indicating that the stronger the connectedness of the student in Melbourne, the lower the level of anxiety\(^{220}\).
- A strong, significant positive correlation exists between the Cultural Stress and the Anxiety scales, indicating that the stronger the student’s experience of cultural stress in Melbourne, the higher the level of anxiety\(^{221}\). In particular, a significant main effect on anxiety for level of stress experienced by students in trying to meet family expectations (item B27, one of the items of the Cultural Stress scale) exists, with significant increases in the Anxiety scale score for each successive rating level (0 – 3) on item B27\(^{222}\).
- There are also significant positive correlations between the Anxiety scale and the Abuse and Distress scale\(^{223}\), the Perceptions of Drug Use\(^{224}\) scale, the Perceptions of Alcohol Use\(^{225}\) scale, and the Perceptions of Gambling and Smoking\(^{226}\) scale.

In order to determine the best model of prediction of Anxiety scale scores, these twelve variables were entered into a multivariate linear regression analysis. Five predictors were included in the resultant model that best predicts anxiety levels: cultural stress, coming from an Asian country, perceived drug use, perceived alcohol

\(^{214}\) \(\rho=-0.10, \ p<.01, \text{two-tailed}\)

\(^{215}\) \(t=2.85, 952 \text{ df}, \ p<.01, \text{two-tailed (ES:.23)}\)

\(^{216}\) \(F(2,949)=3.99, \ p<.05 \ (ES: \eta^2=.008)\)

\(^{217}\) \(F(13,920)=1.86, \ p<.05 \ (ES: \eta^2=.025)\)

\(^{218}\) \(t=2.70, 939 \text{ df}, \ p<.01, \text{two-tailed (ES:.29)}\)

\(^{219}\) \(t=3.17, 955 \text{ df}, \ p<.01, \text{two-tailed (ES:.21)}\)

\(^{220}\) \(r=-0.16, \ p<.001, \text{two-tailed}\)

\(^{221}\) \(r=+0.40, \ p<.001, \text{two-tailed}\)

\(^{222}\) \(F(3,944)=43.42, \ p<.001\)

\(^{223}\) \(r=+0.16, \ p<.05, \text{two-tailed}\)

\(^{224}\) \(r=+0.16, \ p<.001, \text{two-tailed}\)

\(^{225}\) \(r=+0.12, \ p<.001, \text{two-tailed}\)

\(^{226}\) \(r=+0.17, \ p<.001, \text{two-tailed}\)
use and age. This model’s capacity to predict is significant at the .001 level (F(5,929)=47.22, p<.001). The amount of variance it explains is 20.3 per cent ($R^2=.203$). The results are presented in Table 42.

Table 42 Significant predictors of students’ Anxiety scale score

<table>
<thead>
<tr>
<th>Model</th>
<th>Unstandardised Coefficients B</th>
<th>Standardised Coefficients Beta</th>
<th>t</th>
<th>95% C.I. for B Lower</th>
<th>Upper</th>
</tr>
</thead>
<tbody>
<tr>
<td>Cultural Stress scale</td>
<td>.37</td>
<td>.39</td>
<td>13.17***</td>
<td>.32</td>
<td>.43</td>
</tr>
<tr>
<td>Perceptions of Drug Use scale</td>
<td>.29</td>
<td>.14</td>
<td>4.13***</td>
<td>.15</td>
<td>.42</td>
</tr>
<tr>
<td>Perceptions of Alcohol Use scale</td>
<td>.07</td>
<td>.09</td>
<td>2.63**</td>
<td>.02</td>
<td>.13</td>
</tr>
<tr>
<td>Age</td>
<td>-.01</td>
<td>-.08</td>
<td>-2.47*</td>
<td>-.01</td>
<td>-.00</td>
</tr>
<tr>
<td>Asian country</td>
<td>-.13</td>
<td>-.08</td>
<td>-2.38*</td>
<td>-.24</td>
<td>-.02</td>
</tr>
</tbody>
</table>

*p<.05  **p<.01  ***p<.001

Gender has not been one of the variables that differentiates between students’ depression or anxiety levels, but it is one of the variables that produce group differences in students’ level of stress.

- Females have significantly higher scores than males on the Stress scale.
- Students who perceive their academic progress to be lower than expected have a significantly higher level of stress than others.
- There is a main effect on stress for country category. Students from Other East Asian countries and from PR China have the lowest scale scores, while students from Hong Kong, Europe and sub-Saharan Africa have the highest. The pair-wise comparison of students from PR China and from Hong Kong is statistically significant.
- Students who speak a LOTE off campus have a significantly higher level of stress than those who do not.

There are also significant correlations between the Stress scale and other scales.

- A significant negative correlation exists between the Connectedness and the Stress scales, indicating that the stronger the connectedness of the student in Melbourne, the lower the level of stress.
- A strong, significant positive correlation exists between the Cultural Stress and the Stress scales, indicating that the stronger the student’s experience of cultural stress in Melbourne, the higher the level of general stress. In particular,

---

227 t=2.12, 951 df, p<.05 (ES=.14)
228 F(2,936)=9.66, p<.001 (ES:η²=.021)
229 F(13,917)=1.73, p=.05 (ES:η²=.026)
230 t=2.04, 952 df, p<.05, two-tailed (ES=.13)
231 r=-0.20, p<.001, two-tailed
232 r=+0.44, p<.001, two-tailed

Russell, Rosenthal & Thomson, 2006 71
significant main effect on stress for item B27 (stress experienced in trying to meet family expectations - one of the items of the Cultural Stress scale) exists, with significant increases in the Stress scale score for each successive rating level (0 – 3) on item B27. There are also significant positive correlations between the Stress scale and the Abuse and Distress scale, the Perceptions of Drug Use scale, the Perceptions of Alcohol Use scale, and the Perceptions of Gambling and Smoking scale.

In order to determine the best predictors of the Stress scale, all of the above ten variables were entered into a multiple linear regression analysis. The model achieved provided a significant prediction of the Stress scale (F(2,154)=26.14, p<.001). It consists of two predictors: the Cultural Stress and the Abuse and Distress scales. Table 43 presents the results. Both are positive predictors, meaning that an increase in cultural stress and in abuse and associated distress predicts an increase in level of stress.

Table 43 Significant predictors of students’ Stress scale (model 1)

<table>
<thead>
<tr>
<th>Model</th>
<th>Unstandardised Coefficients</th>
<th>Standardised Coefficients</th>
<th>t</th>
<th>95% C.I. for B</th>
</tr>
</thead>
<tbody>
<tr>
<td>Cultural Stress scale</td>
<td>.49 (.08)</td>
<td>.42 (.25)</td>
<td>5.96***</td>
<td>.33 - .66</td>
</tr>
<tr>
<td>Abuse and Distress scale</td>
<td>.24 (.07)</td>
<td>.25 (.24)</td>
<td>3.51**</td>
<td>.10 - .37</td>
</tr>
</tbody>
</table>

The total amount of variance explained by this model is 25.3 per cent (R^2=.253). However, as is the case with the Depression scale, the weakness of the model lies in the comparatively small number of students on which it is based, as a result of the small number who contribute a score on the Abuse and Distress scale (n=163).

It was therefore decided to omit the Abuse and Distress scale from the regression analysis. The second model consists of four predictors: perceived academic progress and the Cultural Stress, Perceptions of Drug Use, and Perceptions of Alcohol Use scales. This model also provides a significant and strong prediction of the Stress scale (F(4,932)=70.58, p<.001). It is a more satisfactory model, being based as it is on a much higher percentage of the sample. The amount of variance explained is 23.2 per cent (R^2=.232), slightly less than for the first model. The results are presented in Table 44. A high score on the Stress scale is predicted by a high level of cultural stress, high perceived use of drugs and alcohol, and perception of a lower than expected level of academic progress.
Table 44 Significant predictors of students’ Stress scale (model 2)

<table>
<thead>
<tr>
<th>Model</th>
<th>Unstandardised Coefficients</th>
<th>Standardised Coefficients</th>
<th>t</th>
<th>95% C.I. for B</th>
</tr>
</thead>
<tbody>
<tr>
<td>Cultural Stress scale</td>
<td>.51</td>
<td>.43</td>
<td>14.88***</td>
<td>.44</td>
</tr>
<tr>
<td>Perceptions of Drug Use scale</td>
<td>.31</td>
<td>.12</td>
<td>3.75***</td>
<td>.15</td>
</tr>
<tr>
<td>Perceptions of Alcohol Use scale</td>
<td>.11</td>
<td>.10</td>
<td>3.26**</td>
<td>.04</td>
</tr>
<tr>
<td>Perceived academic progress</td>
<td>.06</td>
<td>.07</td>
<td>2.23*</td>
<td>.01</td>
</tr>
</tbody>
</table>

*p<.05  **p<.01  ***p<.001

Both models have been included in order to indicate that the experience of abuse and distress is a predictor of stress for those who have experienced abuse, but that other factors are significant predictors in its absence.

Self-esteem

An individual’s level of self-esteem can also be an indicator of his or her psychological well-being. Two items are included in the questionnaire to provide measures of students’ self-esteem. The results of student responses are presented in Table 45. On average, students have a strong sense of self-esteem, as the mean rating of 2.3 indicates. About 85 per cent of students give positive ratings of 2 or 3 on each of these two items; 77 per cent (n=754) give positive ratings on both items. A small number of students register low self-esteem on both items; 6.1 per cent (n=60) give ratings of 0 or 1 on both items.

Table 45 Self-esteem

<table>
<thead>
<tr>
<th>Items</th>
<th>Mean</th>
<th>SD</th>
<th>0 Not at all</th>
<th>1 To some degree</th>
<th>2 To a considerable degree</th>
<th>3 Very much</th>
</tr>
</thead>
<tbody>
<tr>
<td>B5. I have a positive view of myself as a person. (n=974)</td>
<td>2.3</td>
<td>0.7</td>
<td>0.8</td>
<td>14.2</td>
<td>41.1</td>
<td>43.9</td>
</tr>
<tr>
<td>D1. As a person, I am as good as most others. (n=975)</td>
<td>2.3</td>
<td>0.7</td>
<td>0.5</td>
<td>13.1</td>
<td>45.8</td>
<td>40.5</td>
</tr>
</tbody>
</table>
The variables that produce or are associated with different levels of student self-esteem focus on maturity (and its correlates), gender, perceived academic progress, and students’ country of origin. The older the student, the higher the self-esteem. Students with partners have significantly higher self-esteem than single students, as do students engaged in postgraduate rather than undergraduate courses.

Male students tend to have significantly higher self-esteem than female students. Students whose perceived academic progress is better than expected have significantly higher levels of self-esteem than other students, as do students from Asian countries who did not undertake a Foundation Studies program.

There is a main effect on self-esteem for country category. Students from Hong Kong give the lowest ratings, while those from Latin American countries have the highest. Several pair-wise comparisons are statistically significant on one or both items. Students from PR China have significantly higher levels of self-esteem than those from Hong Kong or Malaysia on both items. Students from UK/USA/Canada and from European countries have significantly higher scores on item D1 than students from Hong Kong, Indonesia, Malaysia, and Singapore. Not surprisingly, therefore, students who speak a LOTE when off campus tend to have a significantly lower level of self-esteem than those who do not.

Significant correlations between self-esteem and various scales also exist. There is a significant positive correlation with the Connectedness scale and a significant negative correlation with the Cultural Stress, Depression, Anxiety and Stress scales. No consistent, significant correlations are found between self-esteem and the scales concerning abuse, or perceived drug use, alcohol use or gambling and smoking behaviour.

Statistically significant variables that differentiate student responses about self-esteem (item B5) were entered into a multiple linear regression analysis to determine which variable(s) best predict students’ responses on this variable. The resultant model provides a significant prediction of self-esteem (F(5,932)=55.42, p<.001). It consists of five predictors: Connectedness (positive) and Depression (negative) scale scores, perceived academic progress (positive), gender (males more positive) and participation in a Foundation Studies program (negative). Table 46 presents the results.

The amount of variance in self-esteem that is associated with these five predictors is 22.9 per cent (R²=.229). If the three demographic variables alone were used as
predictors, the amount of variance accounted for by the model would be much smaller: 5.7 per cent.

Table 46 Significant predictors of self-esteem

<table>
<thead>
<tr>
<th>Model</th>
<th>Unstandardised Coefficients</th>
<th>Standardised Coefficients</th>
<th>t</th>
<th>95% C.I. for B Lower Upper</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>B S.E.</td>
<td>Beta</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Connectedness scale</td>
<td>.19</td>
<td>.03</td>
<td>.19</td>
<td>6.49***</td>
</tr>
<tr>
<td>Depression scale</td>
<td>-.40</td>
<td>.04</td>
<td>-.33</td>
<td>-10.84***</td>
</tr>
<tr>
<td>Perceived academic progress</td>
<td>-.09</td>
<td>.03</td>
<td>-.08</td>
<td>-2.87**</td>
</tr>
<tr>
<td>Gender</td>
<td>-.14</td>
<td>.04</td>
<td>-.09</td>
<td>-3.17**</td>
</tr>
<tr>
<td>Foundation Studies</td>
<td>.20</td>
<td>.05</td>
<td>.13</td>
<td>4.36***</td>
</tr>
</tbody>
</table>

**p<.01   ***p<.001

HEALTH-RELATED BEHAVIOUR

Sex and Relationships

Information was obtained from the questionnaire about sexual partners, gender of partners, use of condoms, incidence of pregnancy and sexually transmitted diseases (STIs), and experience of distress from relationships.

As Table 47 shows, approximately one-third of students (n=339) indicate that they had had one or more sexual partners prior to their arrival in Australia. The total number with sexual partners in Australia shows a small increase above this level (n=361), with a corresponding small decline in the number of those who have remained celibate while here. However, the gender breakdown shows that the percentage of male students who have had sexual partners here compared with at home is smaller, while the percentage of female students who have had sexual partners here compared with at home is greater.
Age is an important factor. Students who have had sexual partners at home are significantly older than those who have not\textsuperscript{251}; this is also true for male and female students considered as separate groups\textsuperscript{252}. The same pattern of age differentiation is to be found in relation to sexual partners in Australia\textsuperscript{253}. However, it is noticeable that the age gap is smaller in Australia: the average age of students who have had sexual partners in Australia is lower than at home, while the average age of those who do not is higher in Australia than at home.

Table 47 shows the overall changes that have occurred in the presence or absence of sexual partners with changes in location, according to the respondents. However, a cross-tabulation of individual students’ responses shows how many students have actually changed their pattern of sexual behaviour. This cross-tabulation is presented in Table 48.

Table 48  

<table>
<thead>
<tr>
<th>Sexual partner(s) at home</th>
<th>Sexual partner(s)</th>
<th>Yes</th>
<th>No</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Total</td>
<td>Male</td>
<td>Female</td>
</tr>
<tr>
<td>Prior to life in Australia</td>
<td>Number</td>
<td>339</td>
<td>152</td>
</tr>
<tr>
<td></td>
<td>Percentage</td>
<td>35.6</td>
<td>44.4</td>
</tr>
<tr>
<td></td>
<td>Mean age</td>
<td>25.7</td>
<td>26.5</td>
</tr>
<tr>
<td>After coming to Australia</td>
<td>Number</td>
<td>361</td>
<td>132</td>
</tr>
<tr>
<td></td>
<td>Percentage</td>
<td>37.8</td>
<td>38.6</td>
</tr>
<tr>
<td></td>
<td>Mean age</td>
<td>24.5</td>
<td>25.6</td>
</tr>
</tbody>
</table>

Note: 27 students did not respond to the first question; 24 did not respond to the second question. Not all students indicate their gender.

**Table 47**  

<table>
<thead>
<tr>
<th>Prior to life in Australia</th>
<th>Yes</th>
<th>No</th>
</tr>
</thead>
<tbody>
<tr>
<td>Number</td>
<td>Total</td>
<td>339</td>
</tr>
<tr>
<td>Percentage</td>
<td>35.6</td>
<td>44.4</td>
</tr>
<tr>
<td>Mean age</td>
<td>25.7</td>
<td>26.5</td>
</tr>
<tr>
<td>After coming to Australia</td>
<td>Number</td>
<td>361</td>
</tr>
<tr>
<td>Percentage</td>
<td>37.8</td>
<td>38.6</td>
</tr>
<tr>
<td>Mean age</td>
<td>24.5</td>
<td>25.6</td>
</tr>
</tbody>
</table>

Note: 27 students did not respond to the first question; 24 did not respond to the second question. Not all students indicate their gender.

**Age**

\[ t=11.31, 465.4 \text{ df}, p<.001, \text{ two-tailed} \]

**Male**

\[ t=8.49, 220.3 \text{ df}, p<.001, \text{ two-tailed} \]

**Females**

\[ t=7.30, 438.8 \text{ df}, p<.001, \text{ two-tailed} \]

**Total**

\[ t=7.07, 665.7 \text{ df}, p<.001, \text{ two-tailed} \]

\[ t=4.83, 433.7 \text{ df}, p<.001, \text{ two-tailed} \]

\[ t=5.02, 435 \text{ df}, p<.001, \text{ two-tailed} \]
HEALTH AND WELL-BEING OF INTERNATIONAL STUDENTS

As the shaded cells in Table 48 indicate, 9.8 per cent of students who were sexually active at home have changed to being celibate to date in Australia, while 12.1 per cent of those who were not sexually active at home have become sexually active in Australia. A higher percentage of male students than female students belong to the former group, while the reverse is the case for the latter group. The average age of those who have changed from being sexually active to celibate is 25.9 (20.4 per cent are married or partnered), while the group who have become sexually active here is younger, having an average age of 22.2 (40.7 per cent are married or partnered). Students who have/have had sexual partners while in Australia feel more strongly connected in Melbourne and less culturally stressed than others.

Table 49

<table>
<thead>
<tr>
<th>Gender of sexual partner(s) in Australia</th>
<th>Male</th>
<th>Female</th>
<th>Both</th>
<th>No sexual partner</th>
</tr>
</thead>
<tbody>
<tr>
<td>Male</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Number</td>
<td>6</td>
<td>0</td>
<td>0</td>
<td>0</td>
</tr>
<tr>
<td>Percentage</td>
<td>1.7</td>
<td>0</td>
<td>0</td>
<td>0</td>
</tr>
<tr>
<td>Female</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Number</td>
<td>0</td>
<td>90</td>
<td>0</td>
<td>45</td>
</tr>
<tr>
<td>Percentage</td>
<td>0</td>
<td>26.2</td>
<td>0</td>
<td>13.1</td>
</tr>
<tr>
<td>Both</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Number</td>
<td>2</td>
<td>0</td>
<td>6</td>
<td>3</td>
</tr>
<tr>
<td>Percentage</td>
<td>0.6</td>
<td>0</td>
<td>1.7</td>
<td>0.9</td>
</tr>
<tr>
<td>No sexual partner</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Number</td>
<td>5</td>
<td>23</td>
<td>0</td>
<td>164</td>
</tr>
<tr>
<td>Percentage</td>
<td>1.5</td>
<td>6.7</td>
<td>0</td>
<td>47.7</td>
</tr>
</tbody>
</table>

Respondents have also supplied information about the gender of their sexual partners at home and in Australia, making it possible to see whether this represented another aspect of change in sexual activity. Table 49 presents these results for male students and Table 50 for female students.

254 t=3.73, 949 df, p<.001, two-tailed
255 t=3.17, 937 df, p<.01, two-tailed
256 Two male students and 28 female students did not supply information for one or both of these items. Six students did not indicate their own gender. These students are not represented in the data in Tables 49 and 50.
Table 50 Gender of sexual partners of female students (n=599)

<table>
<thead>
<tr>
<th>Gender of sexual partner(s) in Australia</th>
<th>Male</th>
<th>Female</th>
<th>Both</th>
<th>No sexual partner</th>
</tr>
</thead>
<tbody>
<tr>
<td>Male</td>
<td>126</td>
<td>1</td>
<td>3</td>
<td>43</td>
</tr>
<tr>
<td>Number</td>
<td>21.0</td>
<td>0.2</td>
<td>0.5</td>
<td>7.2</td>
</tr>
<tr>
<td>Female</td>
<td>1</td>
<td>4</td>
<td>0</td>
<td>2</td>
</tr>
<tr>
<td>Number</td>
<td>0.2</td>
<td>0.7</td>
<td>0</td>
<td>0.3</td>
</tr>
<tr>
<td>Both</td>
<td>2</td>
<td>1</td>
<td>0</td>
<td>0</td>
</tr>
<tr>
<td>Number</td>
<td>0.3</td>
<td>0.2</td>
<td>0</td>
<td>0</td>
</tr>
<tr>
<td>No sexual partner</td>
<td>82</td>
<td>4</td>
<td>1</td>
<td>329</td>
</tr>
<tr>
<td>Number</td>
<td>13.7</td>
<td>0.7</td>
<td>0.2</td>
<td>54.9</td>
</tr>
</tbody>
</table>

Changes in gender of partners are to be seen in the highlighted cells. The students involved represent a very small minority – only two male students (0.6 per cent) and eight female students (1.4 per cent). Most change is therefore a change in presence or absence of sexual activity, rather than in the gender of sexual partners.

A large number of different sexual partners can be indicative of health-related risk. There is some variation in the number of sexual partners that students indicate they have had since their arrival in Australia, though the vast majority of students (88.2 per cent of male students and 90.7 per cent of female students) have had either none or one sexual partner while in Australia. Table 51 presents the relevant information.

The number of partners might be expected to increase with age and years of enrolment. This is the case for female students. For male students, there is a positive correlation with age but not with years of enrolment. Married/partnered students have a significantly higher average number of partners than singles. This is presumably in large part the effect of the number of singles who are not sexually active. There is a small but significant positive relationship between number of partners and sense of connectedness in Melbourne and a small, significant negative relationship with level of cultural stress.

Table 51 Number of sexual partners in Australia

<table>
<thead>
<tr>
<th></th>
<th>Range</th>
<th>Mean</th>
<th>SD</th>
<th>Percentage with 0-3 partners</th>
</tr>
</thead>
<tbody>
<tr>
<td>Males</td>
<td>0 – 25</td>
<td>0.9</td>
<td>2.5</td>
<td>95.5</td>
</tr>
<tr>
<td>Females</td>
<td>0 – 13</td>
<td>0.6</td>
<td>1.1</td>
<td>98.1</td>
</tr>
</tbody>
</table>

257 Age: ρ=+0.29, p<.001, two-tailed. Years enrolment: ρ=+0.10, p<.05, two-tailed
258 Age: ρ=+0.28, p<.001, two-tailed. Years enrolment: n.s.
259 t=5.28, 878 df, p<.001, two-tailed (ES=.46)
260 ρ=+0.13, p<.001, two-tailed
261 ρ=-0.12, p<.001, two-tailed
Of particular importance to students’ health is the pattern of condom usage by sexually active students. Only about 50 per cent of respondents who saw this question as applicable to them (n=367) indicate that they and their partner always use a condom. Table 52 provides the information for all respondents, as well as for male and female students separately. It is clear that a high proportion of students are putting themselves and their partners at risk. In excess of one quarter of male students indicate that they ‘never’ use a condom, while close to one third of female students ‘sometimes’ use a condom.

Table 52: Pattern of condom usage by sexually active students (n=367)

<table>
<thead>
<tr>
<th>Frequency of condom usage</th>
<th>Males</th>
<th></th>
<th>Females</th>
<th></th>
<th>Total</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Never</td>
<td>Sometimes</td>
<td>Always</td>
<td>Never</td>
<td>Sometimes</td>
</tr>
<tr>
<td>Males</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Number</td>
<td>36</td>
<td>33</td>
<td>68</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Percentage</td>
<td>26.3</td>
<td>24.1</td>
<td>49.6</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Females</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Number</td>
<td>43</td>
<td>71</td>
<td>112</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Percentage</td>
<td>19.0</td>
<td>31.4</td>
<td>49.6</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Total</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Number</td>
<td>80*</td>
<td>104</td>
<td>183*</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Percentage</td>
<td>21.8</td>
<td>28.3</td>
<td>49.9</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

*Because some students did not indicate their gender, the total number is higher than the sum of the number of males and females.

Few demographic or situational factors differentiate significantly among students’ frequency of use of condoms. There is a significant association between condom use and age, as well as between condom use and marital status. Older students and students with partners make less use of condoms. There are some country categories that show variations from the expected levels of condom usage: PR China has a higher than expected percentage who always use condoms, while to a less marked degree students from Indonesia, Other South East Asia and the Pacific Countries, and Europe have slightly higher than expected percentages who ‘never’ use condoms. The Perception of Gambling/Smoking scale score of those who ‘never’ use condoms is significantly higher than those who ‘always’ use them. There was no significant difference in Connectedness and Cultural Stress scale scores based on condom usage.

Multiple linear regression analysis was used to determine whether a significant model of prediction of condom use could be found. A significant model consisting of two predictors resulted (F(2,361)=15.46, p<.001): age and the Perception of Gambling/Smoking scale. Both acted as negative predictors; older students and students with higher scale scores were associated with lower use of condoms. The model is not particularly helpful, however, since it accounts for only 7.9 per cent of the variance in condom usage by students (R^2=0.079). The results are presented in Table 53.

262 The association between gender and condom use is not significant: χ^2=3.66, 2 df, p=.160.
263 χ^2=28.80, 8 df, p<.001
264 χ^2=13.37, 2 df, p<.01
265 χ^2=45.32, 26 df, p<.05
266 F(2,362)=4.81, p<.01
Specific information was sought in relation to pregnancy and incidence of sexually transmitted infections (STIs). Respondents indicate that the incidence of both pregnancy and STIs is low. This information is presented in Tables 54 and 55. During their time in Australia, 18 students or their partners became pregnant (16 married and two single), nine experienced miscarriages, 13 had abortions and eight live births occurred. Only eight cases of STIs were recorded, mostly by women. It is possible that not all incidents of pregnancy or STIs were acknowledged. The number of respondents in Tables 54 and 55 shows that not all students replied to these questions; 32 students did not answer the item concerning pregnancy, although only six omitted the item concerning STIs.

Half of the cases of STIs and 13 of the 18 pregnancies are reported by students who ‘never’ or ‘sometimes’ use condoms. Of the 13 cases of abortion, 9 are reported by students who ‘never’ or ‘sometimes’ use condoms.

**Table 53**  Significant predictors of condom use

<table>
<thead>
<tr>
<th>Model</th>
<th>Unstandardised Coefficients</th>
<th>Standardised Coefficients</th>
<th>t</th>
<th>95% C.I. for B</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>B</td>
<td>S.E.</td>
<td>Beta</td>
<td></td>
</tr>
<tr>
<td>Age</td>
<td>-.04</td>
<td>.01</td>
<td>-.24</td>
<td>-4.66***</td>
</tr>
<tr>
<td>Perceptions of Gambling/Smoking scale</td>
<td>-0.33</td>
<td>.10</td>
<td>-0.18</td>
<td>-3.44**</td>
</tr>
</tbody>
</table>

**Table 54**  Incidence of pregnancy and outcomes (n=947)*

<table>
<thead>
<tr>
<th>Number of students</th>
<th>Pregnant</th>
<th>Miscarriage</th>
<th>Abortion</th>
<th>Stillbirth</th>
<th>Live birth</th>
<th>N/A</th>
</tr>
</thead>
<tbody>
<tr>
<td>Total</td>
<td>18</td>
<td>9</td>
<td>13</td>
<td>0</td>
<td>8</td>
<td>913</td>
</tr>
<tr>
<td>Male</td>
<td>6</td>
<td>2</td>
<td>6</td>
<td>0</td>
<td>2</td>
<td>334</td>
</tr>
<tr>
<td>Female</td>
<td>11</td>
<td>7</td>
<td>7</td>
<td>0</td>
<td>6</td>
<td>604</td>
</tr>
<tr>
<td>Percentage</td>
<td>1.9</td>
<td>0.10</td>
<td>1.4</td>
<td>0</td>
<td>0.8</td>
<td>96.4</td>
</tr>
<tr>
<td>Total</td>
<td>1.8</td>
<td>0.6</td>
<td>1.8</td>
<td>0</td>
<td>0.6</td>
<td>96.4</td>
</tr>
<tr>
<td>Male</td>
<td>1.8</td>
<td>1.2</td>
<td>1.2</td>
<td>0</td>
<td>1.0</td>
<td>96.5</td>
</tr>
<tr>
<td>Female</td>
<td>1.8</td>
<td>1.2</td>
<td>1.2</td>
<td>0</td>
<td>1.0</td>
<td>96.5</td>
</tr>
</tbody>
</table>

* Not all students indicated their gender.
When relationships are not running smoothly, they can be a source of distress for students. Respondents were asked to comment on this issue, through ratings on item B17. The strong majority of students indicate that they have not been unduly upset by relationships with their girlfriends, boyfriends or partners, during their studies in Australia (Table 56). However 13.1 per cent of male students and 17.4 per cent of female students have experienced considerable distress (ratings of 2 or 3). There is a significant gender difference on item B17, with women reporting greater distress than men.\(^{267}\)

### Table 56: Relationships that cause distress

<table>
<thead>
<tr>
<th></th>
<th>Percentage ratings</th>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Mean</td>
<td>SD</td>
<td>0</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Not at all</td>
<td>To some degree</td>
<td>To a considerable degree</td>
<td>Very much</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>B17: My relationship with a girlfriend/boyfriend/partner has upset me during my studies here.</td>
<td>Mean</td>
<td>SD</td>
<td>0</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td></td>
</tr>
<tr>
<td>(n=975)</td>
<td>0.7</td>
<td>0.9</td>
<td>56.4</td>
<td>27.6</td>
<td>9.4</td>
<td>6.6</td>
<td></td>
</tr>
<tr>
<td>Total</td>
<td>Males (n=345)</td>
<td>0.5</td>
<td>0.8</td>
<td>62.0</td>
<td>24.9</td>
<td>9.9</td>
<td>3.2</td>
</tr>
<tr>
<td></td>
<td>Females (n=620)</td>
<td>0.7</td>
<td>0.9</td>
<td>53.4</td>
<td>29.2</td>
<td>9.0</td>
<td>8.4</td>
</tr>
</tbody>
</table>

There are statistically significant relationships between students’ ratings on item B17 and their scores on several scales. The stronger students’ level of distress about relationships, the stronger their level of cultural stress\(^{268}\), general stress\(^{269}\), perceptions of drug use\(^{270}\), alcohol use\(^{271}\), and engagement in gambling and smoking\(^{272}\). A significant correlation was found with Anxiety for women\(^{273}\) but not men. The correlations with Cultural Stress and general Stress were stronger for women than men, while the correlations with drugs, alcohol, smoking and gambling scales were stronger for men than women. In fact the correlation with the Perceptions of Gambling and Smoking scale was significant for male students only. Students who are most distressed (rating of 3) have a significantly lower sense of connectedness\(^{274}\), and significantly higher level of anxiety\(^{275}\), stress\(^{276}\) and depression\(^{277}\) than those who have little distress; they also have a significantly stronger experience of abuse and associated distress\(^{278}\).

---

\(^{267}\) t=3.18, 811.1 df, p<.01, two-tailed (ES=.20)  
\(^{268}\) r=.019, p<.001, two-tailed  
\(^{269}\) r=.021, p<.001, two-tailed  
\(^{270}\) r=.016, p<.001, two-tailed  
\(^{271}\) r=.017, p<.001, two-tailed  
\(^{272}\) r=.011, p<.001, two-tailed  
\(^{273}\) r=.018, p<.001, two-tailed  
\(^{274}\) F(3,965)=4.11, p<.01  
\(^{275}\) F(3,950)=15.52, p<.001  
\(^{276}\) F(3,947)=21.99, p<.001  
\(^{277}\) F(3,952)=24.94, p<.001  
\(^{278}\) F(3,158)=3.71, p<.05
Drugs, Alcohol, Gambling and Smoking

Drugs

Students were asked to indicate their usage of drugs before and since coming to Australia. This provides information not only about the incidence of drug usage, but also about any changes in the pattern of drug usage with relocation to Australia. A distinction was made between soft drugs, such as marijuana, hash and mushrooms, and hard drugs, such as amphetamines, cocaine, heroin and ecstasy. Tables 57 and 58 present the results of cross-tabulations for soft and hard drug usage respectively.

The vast majority of students have not used soft or hard drugs either at home or in Australia: 92.5 per cent of respondents in the case of soft drugs and 97.1 per cent of respondents in the case of hard drugs. Altogether, 53 students acknowledge soft drug use in Australia, compared with 51 at home, while 25 students say they use hard drugs in Australia, compared with 15 at home.

There are indications of changed patterns of drug use accompanying relocation to Australia. Some 28 students (16 males, 11 females) have lowered their level of soft drug use, while another 28 students (7 males, 20 females) have increased their soft drug use. Of particular concern are the five students (1 male, 4 females) who have become frequent users in Australia.

Table 57 Soft drug usage before and since coming to Australia (n=970)

<table>
<thead>
<tr>
<th>Soft drug usage in Australia</th>
<th>Not at all</th>
<th>Seldom</th>
<th>Sometimes</th>
<th>Frequently</th>
</tr>
</thead>
<tbody>
<tr>
<td>Not at all</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Number</td>
<td>897</td>
<td>13</td>
<td>7</td>
<td>0</td>
</tr>
<tr>
<td>Percentage</td>
<td>92.5</td>
<td>1.3</td>
<td>0.7</td>
<td>0</td>
</tr>
<tr>
<td>Seldom</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Number</td>
<td>16</td>
<td>10</td>
<td>5</td>
<td>2</td>
</tr>
<tr>
<td>Percentage</td>
<td>1.6</td>
<td>1.0</td>
<td>0.5</td>
<td>0.2</td>
</tr>
<tr>
<td>Sometimes</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Number</td>
<td>6</td>
<td>1</td>
<td>7</td>
<td>1</td>
</tr>
<tr>
<td>Percentage</td>
<td>0.6</td>
<td>0.1</td>
<td>0.7</td>
<td>0.1</td>
</tr>
<tr>
<td>Frequently</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Number</td>
<td>0</td>
<td>2</td>
<td>3</td>
<td>0</td>
</tr>
<tr>
<td>Percentage</td>
<td>0</td>
<td>0.2</td>
<td>0.3</td>
<td>0</td>
</tr>
</tbody>
</table>

The pattern of change seen in hard drug use is of greater concern. Although few students are involved, eight (2 males, 6 females) have maintained their existing pattern of use, 15 (8 males, 6 females) have increased their use, and only five (2 males, 3 females) have lessened their use. Thirteen students (6 males, 6 females) who did not use hard drugs at home have become hard drug users here. Three students (two males, 1 female) have become frequent users in Australia.

279 The gender of the other student is not recorded.
280 The gender of the other student is not recorded.
281 The gender of the other student is not recorded.
282 The gender of the other student is not recorded.
Students also gave information about their experience of drug-injecting (not for medical purposes) and of sharing needles and/or fits at home and in Australia. Five students, two males and three females, indicate that they had injected drugs before coming to Australia. The same five students acknowledge injecting drugs since their arrival in Australia. Two of these students, both females, indicate that they had shared needles and/or fits both at home and in Australia.

However, four of the five students who acknowledge injecting drugs gave responses to soft and hard drug use that are inconsistent with drug injecting for non-medical purposes and the sharing of needles - they say they are not drug users. Perhaps the questions about drug injecting and sharing of needles were not understood by these students. If their responses are set aside, it would leave one student who acknowledges use of soft and hard drugs, as well as the injection of drugs, but not the sharing of needles.

Table 59

<table>
<thead>
<tr>
<th>Items</th>
<th>Mean</th>
<th>SD</th>
<th>0</th>
<th>1</th>
<th>2</th>
<th>3</th>
</tr>
</thead>
<tbody>
<tr>
<td>D13. I have increased my use of drugs since I began my university studies here. (n=975)</td>
<td>0.09</td>
<td>0.4</td>
<td>94.6</td>
<td>2.8</td>
<td>1.5</td>
<td>1.1</td>
</tr>
<tr>
<td>D23. My involvement in drug use is a problem for me. (n=972)</td>
<td>0.04</td>
<td>0.2</td>
<td>97.2</td>
<td>2.1</td>
<td>0.5</td>
<td>0.2</td>
</tr>
<tr>
<td>D18. My friends often use drugs. (n=979)</td>
<td>0.13</td>
<td>0.5</td>
<td>90.8</td>
<td>6.3</td>
<td>1.9</td>
<td>0.9</td>
</tr>
</tbody>
</table>

Students’ monitoring and evaluation of their own drug use and its effects can play an important part in their behaviour. Three items concerning this were included in the questionnaire for students to rate. Responses to these items are set out in Table 59. The response to item D13 indicates that most students have not increased their use of drugs since coming to Australia. Some have, however: 5.4 per cent of respondents or 53 students, 26 of whom have increased their drug use markedly (ratings 2 or 3).
cross-check of the response to this item compared with responses to questions about soft and hard drug use before and after coming to Australia shows that more students have acknowledged increased drug use on this item. In response to the previous questions, only 36 individuals indicated increased use of soft or hard drugs or both.

Few students believe their involvement in drug use to be a problem for them. Only 27 students (2.4 per cent) indicate even ‘some degree’ of concern, with only 7 of these being concerned to a ‘considerable degree’ or ‘very much’. Perhaps denial is playing a role here.

While most students do not have friends who often use drugs (90.8 per cent), there are 90 students who agree that they have friends who use drugs often. About half of the students who acknowledge using soft or hard drugs in Australia (31 of the 60), even infrequently, have friends who use drugs. This seems a surprisingly low proportion, given the influence that friends can wield in social contexts.

The three items in Table 53, together with the four items concerning soft and hard drug use, form a scale, the Perceptions of Drug Use scale. The average scale score is 0.70 (n=962), a range of 0 to 2.86, and a standard deviation of 0.25.

Few demographic factors differentiate among students’ scores on the Perceptions of Drug Use scale. Those that do tend to indicate that it is students from non-Asian backgrounds have higher levels of drug use than students from Asian countries.

- There is a main effect for country category\(^{284}\) on the scale, with Latin America, Other East Asia, Middle East and North Africa, South East Asia and the Pacific, Other Africa, and Indonesia having the lowest scores and UK/USA/Canada and European countries having the highest. Many pair-wise comparisons of the latter two country categories with others are statistically significant.
- Students from non-Asian countries have significantly higher scores on the Perceptions of Drug Use scale than students from Asian countries\(^ {285}\).
- Students who spoke some English when growing up have significantly higher scale scores than those who did not\(^ {286}\).
- Students who do not speak a LOTE off campus have significantly higher scores on the Perceptions of Drug Use scale than students who do\(^ {287}\).
- There is a main effect for faculty\(^ {288}\) on the scale, with MBS, Land and Food Resources, Medicine, Dentistry and Health Sciences, and Engineering having the lowest scores and VCA and Veterinary Science having the highest. Many pair-wise comparisons of the latter two faculties with others are statistically significant.

The Perceptions of Drug Use scale does not correlate with the Connectedness scale, the Cultural Stress scale, or the Abuse and Distress scale. It does, however, have very strong, positive correlations with the Perceptions of Alcohol Use scale\(^ {289}\), the Perceptions of Gambling and Smoking scale\(^ {290}\), as well as less strong but significant positive correlations with the Depression\(^ {291}\), Anxiety\(^ {292}\) and Stress\(^ {293}\) scales.

\(^ {284}\) F(13, 927)=6.79, p<.001 (ES: \(\eta^2 = .087\))
\(^ {285}\) t=3.41, 97.3 df, p<.01, two-tailed (ES=.64)
\(^ {286}\) t=2.28, 937.6 df, p<.05, two-tailed (ES=.16)
\(^ {287}\) t=2.93, 475.9 df, p<.01, two-tailed (ES=.24)
\(^ {288}\) F(12,930)=3.93, p<.001 (ES: \(\eta^2 = .048\))
\(^ {289}\) r=+.44, p<.001, two-tailed
\(^ {290}\) r=+.42, p<.001, two-tailed
\(^ {291}\) r=+.21, p<.001, two-tailed

Russell, Rosenthal & Thomson, 2006
A multiple linear regression analysis was carried out, using these seven statistically significant variables as potential predictors. The model that best predicts the Perceptions of Drug Use scale contains four predictors: the Perceptions of Alcohol Use scale (positive predictor) and the Perceptions of Gambling and Smoking scale (positive predictor), coming from a non-Asian country, and the Depression scale (positive predictor). This model’s capacity to predict is significant at the .001 level \((F(4,930)=95.90, p<.001)\). The amount of variance it explains is 29.2 per cent \((R^2=.292)\). The results are presented in Table 60.

### Table 60 Significant predictors of the Perceptions of Drug Use scale

<table>
<thead>
<tr>
<th>Model</th>
<th>Unstandardised Coefficients</th>
<th>Standardised Coefficients</th>
<th>t</th>
<th>95% C.I. for B</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>B</td>
<td>S.E.</td>
<td>Beta</td>
<td></td>
</tr>
<tr>
<td>Perceptions of Gambling/Smoking scale</td>
<td>.24</td>
<td>.02</td>
<td>.32</td>
<td>10.51***</td>
</tr>
<tr>
<td>Perceptions of Alcohol Use scale</td>
<td>.10</td>
<td>.01</td>
<td>.25</td>
<td>8.20***</td>
</tr>
<tr>
<td>Depression scale</td>
<td>.04</td>
<td>.01</td>
<td>.09</td>
<td>3.12**</td>
</tr>
<tr>
<td>Asian/non-Asian</td>
<td>.11</td>
<td>.02</td>
<td>.14</td>
<td>4.94***</td>
</tr>
</tbody>
</table>

**p<.01   ***p<.001

### Alcohol

Two questionnaire items were included in order to establish some idea of the degree of alcohol usage by students. These questions concerned the frequency of alcohol consumption and the average amount consumed when drinking. The results for students who responded to both questions are contained in Table 61.

Approximately one third of the respondents (34.6 per cent) say they are non-drinkers and support this by indicating that they do not ever have a drink. Another 9.9 per cent say they are non-drinkers or never drink, but then contradict this by their response to the second question about number of drinks per occasion or frequency of drinking. Whatever the case, the percentage of students who drink is much higher than the percentage using drugs.

Most students, about 80 per cent, fall into the area highlighted in Table 61. These are the students who would seem to be either non-drinkers or moderate drinkers. About 20 per cent of students drink on more than two days a week or consume more than one or two drinks on each occasion. A small number of students appear to display a pattern similar to that of binge drinking, with large numbers of drinks being consumed on an irregular basis.

---

Russell, Rosenthal & Thomson, 2006

---

\(r=+.16, p<.001, \text{ two-tailed}\)

\(r=+.16, p<.001, \text{ two-tailed}\)
Students’ perceptions of their drinking were recorded on items B25 and D10 (Table 62). For three quarters of the respondents there has been no increase in their drinking since they began studying at the university. Of the 25 per cent who have increased their drinking, most (n=139) see this as a relatively small increase. The remaining 111 students feel there has been an appreciable increase in their drinking. There is much less variation in students’ view that alcohol constitutes a problem for them, as the smaller standard deviation indicates. About 94 per cent believe they have no problem at all.

Table 61  Alcohol consumption

<table>
<thead>
<tr>
<th>Frequency</th>
<th>Average number of drinks per occasion</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>None</td>
</tr>
<tr>
<td>Never</td>
<td></td>
</tr>
<tr>
<td>Number</td>
<td>332</td>
</tr>
<tr>
<td>Percentage</td>
<td>34.6</td>
</tr>
<tr>
<td>Rarely</td>
<td></td>
</tr>
<tr>
<td>Number</td>
<td>72</td>
</tr>
<tr>
<td>Percentage</td>
<td>7.5</td>
</tr>
<tr>
<td>Less than once a week</td>
<td></td>
</tr>
<tr>
<td>Number</td>
<td>8</td>
</tr>
<tr>
<td>Percentage</td>
<td>0.8</td>
</tr>
<tr>
<td>1-2 days per week</td>
<td></td>
</tr>
<tr>
<td>Number</td>
<td>2</td>
</tr>
<tr>
<td>Percentage</td>
<td>0.2</td>
</tr>
<tr>
<td>3-4 days per week</td>
<td></td>
</tr>
<tr>
<td>Number</td>
<td>0</td>
</tr>
<tr>
<td>Percentage</td>
<td>0</td>
</tr>
<tr>
<td>Most days</td>
<td></td>
</tr>
<tr>
<td>Number</td>
<td>0</td>
</tr>
<tr>
<td>Percentage</td>
<td>0</td>
</tr>
<tr>
<td>Every day</td>
<td></td>
</tr>
<tr>
<td>Number</td>
<td>0</td>
</tr>
<tr>
<td>Percentage</td>
<td>0</td>
</tr>
<tr>
<td>Total</td>
<td>414</td>
</tr>
<tr>
<td>Number</td>
<td>43.2</td>
</tr>
<tr>
<td>Percentage</td>
<td></td>
</tr>
</tbody>
</table>

Are students’ perceptions of problems with alcohol consistent with the drinking patterns they record? The most striking thing is that none of the 11 students who said they had 9(+) drinks on each drinking occasion feel that they have a particular problem with alcohol (i.e. ratings of 2 or 3 on item D10). Each of these respondents gave a rating of 0 or 1 to item D10. Furthermore, of the 44 who have 5 - 8 drinks per occasion, only four consider that they have a problem with alcohol. The remaining 40 students gave ratings of 0 or 1 to this item.
Table 62  Perceptions of alcohol consumption

<table>
<thead>
<tr>
<th>Items</th>
<th>Mean</th>
<th>SD</th>
<th>0 Not at all</th>
<th>1 To some degree</th>
<th>2 To a considerable degree</th>
<th>3 Very much</th>
</tr>
</thead>
<tbody>
<tr>
<td>B25. I drink more alcohol since I began my university studies here. (n=974)</td>
<td>0.4</td>
<td>0.8</td>
<td>74.3</td>
<td>14.3</td>
<td>7.1</td>
<td>4.3</td>
</tr>
<tr>
<td>D10. My consumption of alcohol is a problem for me. (n=977)</td>
<td>0.1</td>
<td>0.4</td>
<td>93.7</td>
<td>4.3</td>
<td>1.5</td>
<td>0.5</td>
</tr>
</tbody>
</table>

There is a diversity of drinking patterns amongst the 20 students who believe they do have a problem with alcohol consumption (ratings of 2 or 3 on item D10). These range in terms of number of drinks per occasion, from none to 5 to 8 drinks, and in terms of frequency, from never to every day. This provides a useful reminder that observable behaviour (here, the number of drinks and frequency of drinking) is not necessarily aligned with perceptions of situations. An unexpected group of six students who are non-drinkers indicated their consumption of alcohol to be a problem – perhaps an indication that being a non-drinker creates difficulties for them, or that they would prefer an alcohol-free society, or that they are non-drinkers because of a problem with alcohol.

The four items concerning alcohol consumption constitute a scale, the Perceptions of Alcohol Use scale, with a mean of 0.11 (n=954), a range of 0 to 2.8, and a standard deviation of .33.

Cultural differences seem to be the focus of variables that differentiate students with high and low scores on this scale. Students from English-speaking and European backgrounds tend to have higher scores than those from countries with Islamic and Asian cultures.

- There is a main effect for country category, with students from the Middle East and North Africa, Indonesia and Other African countries having the lowest scores and students from UK/USA/Canada and European countries having the highest scores. Many pair-wise comparisons of the latter two country categories with others are statistically significant. Asian countries are located between these two ends of the continuum, many with significantly lower scores than the two highest scoring categories.
- Students from non-Asian countries have significantly higher scores on the Perceptions of Alcohol Use scale than students from Asian countries.
- Students who spoke some English when growing up have significantly higher scale scores than those who did not.
- Students who do not speak a LOTE off campus have significantly higher scores on the scale than students who do.
- The longer students have been enrolled, the higher the scale score.

---

294 F(13,921)=10.43, p<.001 (ES=n²=.128)
295 t=4.77, 107.7 df, p<.001, two-tailed (ES=.61)
296 t=3.59, 901.4 df, p<.001, two-tailed (ES=.24)
297 t=6.78, 604.6 df, p<.001, two-tailed (ES=.47)
298 r=.08, p<.05, two-tailed
HEALTH AND WELL-BEING OF INTERNATIONAL STUDENTS

- There is a main effect on perceived alcohol use for course type, with undergraduates having higher scores than those doing postgraduate coursework degrees.\(^{299}\)
- There is a main effect for faculty\(^{300}\), with Land and Food Resources, Engineering and Education faculties having the lowest scores and Veterinary Science, MBS and the VCA the highest. Pair-wise comparisons of Veterinary Science with Engineering and Economics and Commerce are significant, as are comparisons of Arts (high) with Engineering and Economics and Commerce.

The Perceptions of Alcohol Use scale does not correlate significantly with the Connectedness scale, nor with the Cultural Stress scale. There is a strong, positive correlation with the Perceptions of Drug Use\(^{301}\) scale and the Perceptions of Gambling and Smoking\(^{302}\) scale. Smaller though significant positive correlations also exist with the Abuse and Distress\(^{303}\) scale and the Depression\(^{304}\), Anxiety\(^{305}\) and Stress\(^{306}\) scales.

These ten statistically significant variables were entered into a multiple linear regression analysis to find the best model for the prediction of the Perceptions of Alcohol Use scale. The best model consists of four predictors: the Perceptions of Drug Use scale (positive predictor), the Perceptions of Gambling and Smoking scale (positive predictor), the Depression scale (positive predictor) and speaking English when off campus. The model provides a significant prediction of the Perceptions of Alcohol Use scale (\(F(4,934)=86.74\), \(p<.001\)). The amount of variance it explains is 27.1 per cent (\(R^2=.271\)). Table 63 presents the results.

Table 63

<table>
<thead>
<tr>
<th>Model</th>
<th>Unstandardised Coefficients</th>
<th>Standardised Coefficients</th>
<th>t</th>
<th>95% C.I. for B</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>B</td>
<td>S.E.</td>
<td>Beta</td>
<td></td>
</tr>
<tr>
<td>Perceptions of Drug Use scale</td>
<td>.68</td>
<td>.08</td>
<td>.27</td>
<td>8.50***</td>
</tr>
<tr>
<td>Perceptions of Gambling/Smoking scale</td>
<td>.48</td>
<td>.06</td>
<td>.25</td>
<td>8.04***</td>
</tr>
<tr>
<td>Depression scale</td>
<td>.09</td>
<td>.03</td>
<td>.09</td>
<td>2.94**</td>
</tr>
<tr>
<td>English off campus</td>
<td>.25</td>
<td>.04</td>
<td>.19</td>
<td>6.92***</td>
</tr>
</tbody>
</table>

\(299\) \(F(2,943)=3.64, p<.05\) (ES: \(\eta^2=.008\))

\(300\) \(F(12,929)=3.74, p<.001\) (ES: \(\eta^2=.046\))

\(301\) \(r=+.42, p<.001\), two-tailed

\(302\) \(r=+.39, p<.001\), two-tailed

\(303\) \(r=+.20, p<.05\), two-tailed

\(304\) \(r=+.19, p<.001\), two-tailed

\(305\) \(r=+.12, p<.001\), two-tailed

\(306\) \(r=+.14, p<.001\), two-tailed

Russell, Rosenthal & Thomson, 2006

88
Gambling and smoking

Four items in the questionnaire gathered information about students’ involvement in gambling: their gambling at home and in Australia, any increase in gambling since coming to Australia, and the extent to which gambling is seen as a problem for the individual. Table 64 presents the results concerning the first two items.

According to these results, gambling is not a common activity among students – a little more popular than drugs, but much less so than alcohol. Some 88.2 per cent of the respondents have not been involved in gambling, either at home or in Australia. However, one thing that is noticeable in Table 64 is the sharp increase in the number of students who did not gamble at home, but who have been or are involved in gambling in Australia.

<table>
<thead>
<tr>
<th>Table 64</th>
<th>Involvement in gambling (n=973)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Gambling in Australia</td>
<td>Gambling before coming to Australia</td>
</tr>
<tr>
<td></td>
<td>Yes</td>
</tr>
<tr>
<td>Yes</td>
<td>Frequency</td>
</tr>
<tr>
<td></td>
<td>Percentage</td>
</tr>
<tr>
<td>No</td>
<td>Frequency</td>
</tr>
<tr>
<td></td>
<td>Percentage</td>
</tr>
<tr>
<td>Total</td>
<td>Frequency</td>
</tr>
<tr>
<td></td>
<td>Percentage</td>
</tr>
</tbody>
</table>

The responses to item D28 (Table 65) show that most students believe their gambling behaviour has not altered since they arrived in Australia. Just over 94 per cent (n=918) of students give a rating of zero to this item, leaving about 6 per cent (n=58) who have noted some change, mostly a small degree of change. This means that more students have registered an increase in gambling (from none to some) in Table 64 than they have in their responses to item D28 in Table 65.

<table>
<thead>
<tr>
<th>Table 65</th>
<th>Perceptions of involvement in gambling</th>
</tr>
</thead>
<tbody>
<tr>
<td>Items</td>
<td>Percentage ratings</td>
</tr>
<tr>
<td></td>
<td>Mean</td>
</tr>
<tr>
<td>D28 I have increased my gambling since I came here. (n=976)</td>
<td>.09</td>
</tr>
<tr>
<td>D26. My involvement in gambling is a problem for me. (n=974)</td>
<td>.05</td>
</tr>
</tbody>
</table>
Very few students consider that their involvement in gambling constitutes a problem for them. Fourteen students, however, feel that their gambling is a problem ‘to a considerable degree or a good part of the time’ or ‘very much or most of the time’. Of these 14 students, 12 acknowledge a strong increase in gambling since coming to Australia.

Three questionnaire items were designed to obtain information about students’ smoking behaviour. One question taps into the extent to which students smoke. Another focuses on change in smoking behaviour after arrival in Australia and a third on the extent to which smoking is viewed as a problem for the individual.

Table 66 presents information about the extent of smoking among students. Once again, the vast majority of students do not engage in smoking. Of those who do smoke, most are in the category of least frequent smokers. At the other extreme are nine students who acknowledge smoking about a pack a day. No student smokes more cigarettes per day than this.

Table 66

<table>
<thead>
<tr>
<th>Number of cigarettes</th>
<th>None</th>
<th>1-5</th>
<th>6-15</th>
<th>16-25</th>
<th>26-35</th>
<th>Over 35</th>
</tr>
</thead>
<tbody>
<tr>
<td>Frequency</td>
<td>890</td>
<td>46</td>
<td>22</td>
<td>9</td>
<td>0</td>
<td>0</td>
</tr>
<tr>
<td>(n=967)</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Percentage</td>
<td>92.0</td>
<td>4.8</td>
<td>2.3</td>
<td>0.9</td>
<td>0</td>
<td>0</td>
</tr>
</tbody>
</table>

Table 67 presents information concerning students’ perceptions of their smoking behaviour. The majority of students indicate that their smoking behaviour has not increased since they began their studies in Australia. If we focus on the 4.4 per cent (n=43) who see a marked increase, we find there is no clear pattern in the average number of cigarettes smoked per day; the number varies from 1–5 up to 16–25. In other words, the increase might be from not smoking to smoking or from smoking less heavily to smoking more heavily.

Table 67

<table>
<thead>
<tr>
<th>Percentage ratings</th>
<th>Items</th>
<th>Mean</th>
<th>SD</th>
<th>0 Not at all</th>
<th>1 To some degree</th>
<th>2 To a considerable degree</th>
<th>3 Very much</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>D21. I smoke more heavily since I began my university studies here. (n=977)</td>
<td>0.1</td>
<td>0.5</td>
<td>91.6</td>
<td>4.0</td>
<td>3.1</td>
<td>1.3</td>
</tr>
<tr>
<td></td>
<td>B19. My smoking of cigarettes is a problem for me. (n=975)</td>
<td>0.1</td>
<td>0.5</td>
<td>91.9</td>
<td>4.3</td>
<td>1.7</td>
<td>2.1</td>
</tr>
</tbody>
</table>

Unlike those who drink most heavily, many of those who smoke most frequently do consider that smoking constitutes a problem for them. Six of the nine heaviest smokers believe smoking to be a problem, while 10 of those smoking 6 – 15 cigarettes
a day also give a rating of 2 or 3 on item B19. Of the 46 least frequent smokers, 16 feel their smoking is nevertheless a problem.

It is interesting to compare the students’ perceptions of these four areas of health-related behaviour: drugs, alcohol, gambling and smoking. Table 68 presents students’ perceptions of change and problems in relation to each of these behaviours. This comparison shows that smoking is the only area in which the percentage increase in the behaviour is paralleled by the percentage perceiving a problem to exist.

Table 68  
Student perceptions of four types of health-related behaviour

<table>
<thead>
<tr>
<th>Type of behaviour</th>
<th>No increase (Rating of 0)</th>
<th>Some increase (Rating of 1, 2 or 3)</th>
<th>No problem (Rating of 0)</th>
<th>Some problem (Rating of 1, 2 or 3)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Drugs</td>
<td>94.6</td>
<td>5.4</td>
<td>97.2</td>
<td>2.8</td>
</tr>
<tr>
<td>Alcohol</td>
<td>74.3</td>
<td>25.7</td>
<td>93.2</td>
<td>6.8</td>
</tr>
<tr>
<td>Gambling</td>
<td>94.1</td>
<td>5.9</td>
<td>97.0</td>
<td>3.0</td>
</tr>
<tr>
<td>Smoking</td>
<td>91.6</td>
<td>8.4</td>
<td>91.9</td>
<td>8.1</td>
</tr>
</tbody>
</table>

The three items concerning smoking and the two items measuring students’ perceptions of gambling (items D28 and D26) inter-correlate significantly. Together they form a scale, the *Perceptions of Gambling and Smoking* scale, which has a mean score of 0.11, a range of 0 to 2.8, and a standard deviation of .33.

Only two demographic variables differentiate significantly among students in terms of their scores on this scale. Male students have significantly higher scores on the scale than female students\(^{307}\). There is also a significant main effect for academic progress on perceived gambling and smoking\(^{308}\). Students who perceive their academic progress to be worse than expected have the highest score and those doing as well as expected have the lowest.

The *Perceptions of Gambling and Smoking* scale correlates significantly with four other scales. It correlates negatively with the *Connectedness* scale\(^{309}\); the stronger the student’s sense of connectedness, the lower the perceived gambling and smoking. It correlates strongly, significantly and positively with the *Perceptions of Drug Use* scale\(^{310}\), and the *Perceptions of Alcohol Use* scale\(^{311}\) and to a smaller but still significant extent with the *Cultural Stress*\(^{312}\), *Depression*\(^{313}\), *Anxiety*\(^{314}\) and *Stress*\(^{315}\) scales.

---

\(^{307}\) t=3.24, 541.1 df, p<.01, two-tailed (ES=.24)

\(^{308}\) F(2,943)=3.09, p<.05 (ES;\(\eta^2=.007\))

\(^{309}\) r=-0.09, p<.01, two-tailed

\(^{310}\) r=+0.44, p<.001, two-tailed

\(^{311}\) r=+0.39, p<.001, two-tailed

\(^{312}\) r=+0.14, p<.001, two-tailed

\(^{313}\) r=+0.22, p<.001, two-tailed

\(^{314}\) r=+0.17, p<.001, two-tailed

\(^{315}\) r=+0.19, p<.001, two-tailed
A multiple linear regression analysis, using these six statistically significant variables produced a model that predicts the *Perceptions of Gambling and Smoking* scale significantly ($F(4,934)=89.54$, $p<.001$). The model comprises four significant predictors: the *Perceptions of Drug Use* scale, the *Perceptions of Alcohol Use* scale, the *Cultural Stress* scale (all positive predictors), and being male. It accounts for 27.7 per cent of the variance ($R^2=.277$) in scale scores. The results are presented in Table 69.

Table 69  Significant predictors of the *Perceptions of Gambling and Smoking* scale

<table>
<thead>
<tr>
<th>Model</th>
<th>Unstandardised Coefficients B</th>
<th>Standardised Coefficients Beta</th>
<th>t</th>
<th>95% C.I. for B Lower</th>
<th>95% C.I. for B Upper</th>
</tr>
</thead>
<tbody>
<tr>
<td><em>Perceptions of Drug Use</em> scale</td>
<td>.45</td>
<td>.34</td>
<td>10.92***</td>
<td>.37</td>
<td>.53</td>
</tr>
<tr>
<td><em>Perceptions of Alcohol Use</em> scale</td>
<td>.13</td>
<td>.25</td>
<td>8.06***</td>
<td>.10</td>
<td>.16</td>
</tr>
<tr>
<td><em>Cultural Stress</em> scale</td>
<td>.09</td>
<td>.16</td>
<td>5.55***</td>
<td>.06</td>
<td>.13</td>
</tr>
<tr>
<td>Gender</td>
<td>- .06</td>
<td>-.09</td>
<td>-3.37**</td>
<td>-.10</td>
<td>-.03</td>
</tr>
</tbody>
</table>

**p<.01  ***p<.001

The areas of health-related behaviour in this section have concerned drug use, alcohol consumption, gambling and smoking. These are represented by three scales, the *Perceptions of Drug Use* scale, the *Perceptions of Alcohol Use* scale and the *Perceptions of Gambling and Smoking* scale. It is noticeable in the results of the regression analyses that any one of these scales is significantly predicted by the

Table 70  Relationships between drug use, alcohol consumption, gambling and smoking

<table>
<thead>
<tr>
<th></th>
<th><em>Perceptions of Drug Use scale</em></th>
<th><em>Perceptions of Alcohol Use scale</em></th>
<th><em>Perceptions of Gambling and Smoking scale</em></th>
</tr>
</thead>
<tbody>
<tr>
<td><em>Perceptions of Drug Use scale</em></td>
<td>-</td>
<td></td>
<td></td>
</tr>
<tr>
<td><em>Perceptions of Alcohol Use scale</em></td>
<td>+0.42***</td>
<td>-</td>
<td></td>
</tr>
<tr>
<td><em>Perceptions of Gambling and Smoking scale</em></td>
<td>+0.44***</td>
<td>+0.39***</td>
<td>-</td>
</tr>
</tbody>
</table>

***Pearson correlations are significant at the .001 level, two-tailed
remaining two scales. In each case, although these are not the sole predictors, most of the variance is accounted for by the two scales from this group of three.\textsuperscript{316} The three scales inter-correlate strongly, positively and significantly, as can be seen in Table 70, suggesting that they form a cluster of health-related behaviours that would be worthwhile examining closely.

**Self-harm**

Students’ involvement in self-harm while studying in Australia was explored through their answers to three questions: had they deliberately hurt themselves, or done something because it might harm/kill them, or thought about taking their own life? The results show that a small number of students have engaged in self-harm activity, as Table 71 indicates. It is clear from Table 71 that female students are disproportionately represented among the students who engage in self-harm.

**Table 71** Incidence of self-harm

<table>
<thead>
<tr>
<th>Types of self-harm</th>
<th>Self-harm behaviour</th>
<th>Yes (Gender)</th>
<th>No (Gender)</th>
</tr>
</thead>
</table>
| Deliberately hurt self  
(n=972) | Frequency | 35  
(7M, 28F) | 937  
(339M, 592F) |
| Percentage | 3.6  
(20.0, 80.0) | 96.4  
(36.4, 63.6) |
| Did something to that could harm/kill self  
(n=973) | Frequency | 23  
(3M, 20F) | 950  
(343M, 601F) |
| Percentage | 2.4  
(13.0, 87.0) | 97.6  
(36.3, 63.7) |
| Thought about taking own life  
(n=970) | Frequency | 95  
(23M, 70F) | 875  
(322M, 549F) |
| Percentage | 9.8  
(24.7, 75.3) | 90.2  
(37.0, 63.0) |

Students who have engaged in any of the three forms of self-harm have significantly higher mean scores on most of the scales that have been discussed to date. Table 72 sets out these results. Self-harming students, compared with others, have greater experience of abuse, experience higher levels of cultural stress, less connectedness, greater depression, anxiety and stress, and are more involved in health-related behaviours that are a threat to their well-being. Most of these differences are statistically significant. These results suggest that this is another group of students who need to be studied more closely.

\textsuperscript{316} There is some evidence of multicollinearity in these regression models, but not sufficient to undermine their value.
An aggregated score of the three forms of self-harm was calculated for each student. This provided evidence that some students engaged in multiple forms of self-harm: 13 students gained a score of 3 and 15 gained a score of 2. Almost all of these students are female, single, from Asian countries and perceive their academic progress to be either worse than expected or about the same as expected.

Table 72  Comparison of students who have and have not engaged in self-harm

<table>
<thead>
<tr>
<th>Scales</th>
<th>Deliberately hurt self (n=968)</th>
<th>Did something to that could harm/kill self (n=969)</th>
<th>Thought about taking own life (n=966)</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Yes: Mean</td>
<td>Yes: Mean</td>
<td>Yes: Mean</td>
</tr>
<tr>
<td></td>
<td>No: Mean</td>
<td>No: Mean</td>
<td>No: Mean</td>
</tr>
<tr>
<td>Connectedness scale</td>
<td>1.90</td>
<td>1.84</td>
<td>1.70</td>
</tr>
<tr>
<td></td>
<td>2.02</td>
<td>2.02</td>
<td>2.05***</td>
</tr>
<tr>
<td>Cultural Stress scale</td>
<td>1.47</td>
<td>1.41</td>
<td>1.43</td>
</tr>
<tr>
<td></td>
<td>1.17**</td>
<td>1.17*</td>
<td>1.15***</td>
</tr>
<tr>
<td>Depression scale</td>
<td>1.08</td>
<td>1.32</td>
<td>1.25</td>
</tr>
<tr>
<td></td>
<td>.60**</td>
<td>.60**</td>
<td>.55***</td>
</tr>
<tr>
<td>Anxiety scale</td>
<td>.88</td>
<td>1.18</td>
<td>.94</td>
</tr>
<tr>
<td></td>
<td>.53**</td>
<td>.53**</td>
<td>.50***</td>
</tr>
<tr>
<td>Stress scale</td>
<td>1.33</td>
<td>1.54</td>
<td>1.39</td>
</tr>
<tr>
<td></td>
<td>.82***</td>
<td>.82**</td>
<td>.77***</td>
</tr>
<tr>
<td>Abuse and Distress scale</td>
<td>2.60</td>
<td>2.78</td>
<td>2.53</td>
</tr>
<tr>
<td></td>
<td>1.30**</td>
<td>1.30**</td>
<td>1.23***</td>
</tr>
<tr>
<td>Perceptions of Drug Use scale</td>
<td>.12</td>
<td>.35</td>
<td>.16</td>
</tr>
<tr>
<td></td>
<td>.07</td>
<td>.06</td>
<td>.06*</td>
</tr>
<tr>
<td>Perceptions of Alcohol Use scale</td>
<td>.96</td>
<td>1.23</td>
<td>.86</td>
</tr>
<tr>
<td></td>
<td>.57***</td>
<td>.57**</td>
<td>.56**</td>
</tr>
<tr>
<td>Perceptions of Gambling/Smoking scale</td>
<td>.35</td>
<td>.50</td>
<td>.10**</td>
</tr>
<tr>
<td></td>
<td>.10*</td>
<td>.10</td>
<td>.18</td>
</tr>
</tbody>
</table>

The difference in scale score between those who do and do not harm themselves is significant at the * .05 level, ** .01 level, ***.001 level.

When the results of all students are taken into account, female students have a significantly higher aggregated score than male students, as do students whose perceived academic progress is worse than expected. There is also a main effect for course type on the total self-harm score, with undergraduate students having the highest average score.

Significant demographic and scale variables were entered into a multiple linear regression analysis. The model that was achieved (\(F(2,154)=47.33, \ p<.001\)) contained two significant positive predictors: the Abuse and Distress (\(\beta=.41\)) and the Depression (\(\beta=.15\)) scales. The experience of abuse and its related distress is

---

317 \(t=2.86, 966 \text{ df, } p<.001, \text{ two-tailed (ES=.18)}\)
318 \(F(2,957)=9.41, \ p<.001\)
319 \(F(2,962)=4.40, \ p<.05\)
associated with a substantial proportion of the variance in the total self-harm scores of students who have engaged in self-harm. Altogether the model accounts for 38.1 per cent of the variance ($R^2=.381$). However, this model applies only to the 163 students who have a score on the Abuse and Distress scale; it is not helpful in accounting for the variation in self-harm in the sample as a whole.

The same variables, except for the Abuse and Distress scale, were entered into a second regression analysis. The model achieved for the whole sample was significant ($F(4,934)=35.21$, $p<.001$). It contains four significant predictors: the Depression scale (positive), being female, perceived academic progress (negative) and the Perceptions of Alcohol Use scale (positive). The results are set out in Table 73. While this model has the advantage of being applicable to the sample as a whole, the amount of variance associated with the predictors has been reduced markedly. Only 13.1 per cent of the variance is accounted for by this model ($R^2=.131$).

Table 73 Significant predictors of self-harm

<table>
<thead>
<tr>
<th>Model</th>
<th>Unstandardised Coefficients</th>
<th>Standardised Coefficients</th>
<th></th>
<th>t</th>
<th>95% C.I. for B</th>
</tr>
</thead>
<tbody>
<tr>
<td>Depression scale</td>
<td>.23</td>
<td>.28</td>
<td>8.84***</td>
<td>.18</td>
<td>.28</td>
</tr>
<tr>
<td>Gender</td>
<td>.10</td>
<td>.10</td>
<td>3.24**</td>
<td>.04</td>
<td>.16</td>
</tr>
<tr>
<td>Perceived academic progress</td>
<td>.05</td>
<td>.07</td>
<td>2.13*</td>
<td>.00</td>
<td>.09</td>
</tr>
<tr>
<td>Perceptions of Alcohol Use scale</td>
<td>.11</td>
<td>.13</td>
<td>4.30***</td>
<td>.06</td>
<td>.16</td>
</tr>
</tbody>
</table>

*p<.05  **p<.01  ***p<.001

USE OF UNIVERSITY HEALTH AND COUNSELLING SERVICES

HEALTH SERVICE

Students were asked whether they had felt the need of help from the university health service during the current year. Of the 975 respondents to this question, 41.2 per cent agreed they had needed help. Perceived need of help did not necessarily translate into action. Of the 402 students who said they needed help, 250 or 62.2 per cent actually went to the university health service. In addition, 18 students who had indicated that they did not feel the need for help said that they had visited the health service, in some cases making multiple visits. This apparent contradiction might be due in part to inaccuracies of comprehension, since the majority of these 18 students did not speak English at all when growing up and do not speak English when off campus.

Russell, Rosenthal & Thomson, 2006
they had accessed university health services between course enrolment for 2005 (February) and mid-May.

It is useful to know whether there is a systematic difference between students who choose to make use of university health services and those who choose not to do so when they feel there is a need to obtain medical help.

A range of demographic and other variables was explored to see whether they differentiate significantly between these two groups of students. Fourteen variables differentiate significantly between them:

- those who visited the health service are significantly older than those who did not;
- more students than expected from the Arts, Medical/Dental/Health Sciences and Science Faculties visited the health service, while fewer students than expected from the Economic/Commerce and Engineering Faculties visited;
- fewer students than expected from PR China visited the health service, while more than expected from English-speaking countries, Indonesia, Other South Asia, and Latin American countries visited the service;
- fewer Asian students than expected and more non-Asian students than expected visited the service;
- more students than expected who spoke some English when growing up visited the health service;
- those with poorer perceived general health visited the health service at a lower rate than expected;
- fewer students than expected whose health is perceived to be worse here than at home visited the health service, while more than expected visited the health service if they perceive their health here to be about the same as at home;
- those who visited the health service have a significantly higher score on the Connectedness scale;
- they also have significantly lower scores on the Cultural Stress, Abuse and Distress, Depression, Anxiety, and Stress scales;
- friends’ use of health service: more students than expected with friends who visited the health service and fewer students without such friends visited the service themselves.

Thirteen of these variables were entered into a logistic regression analysis, using the backward likelihood ratio method, in order to determine which variables predicted

\[ t=2.30, 359.7 \text{ df, } p<.05, \text{ two-tailed} \]
\[ \chi^2 = 24.20, 12 \text{ df, } p<.05 \]
\[ \chi^2 = 44.46, 13 \text{ df, } p<.001 \]
\[ \chi^2 = 6.25, 1 \text{ df, } p<.05 \]
\[ \chi^2 = 4.42, 1 \text{ df, } p<.05 \]
\[ \chi^2 = 8.00, 3 \text{ df, } p<.05 \]
\[ \chi^2 = 11.42, 2 \text{ df, } p<.01 \]
\[ t=2.02, 396 \text{ df, } p<.05, \text{ two-tailed} \]
\[ t=3.31, 390 \text{ df, } p<.001, \text{ two-tailed} \]
\[ t=2.64, 51 \text{ df, } p<.05, \text{ two-tailed} \]
\[ t=4.08, 259.6 \text{ df, } p<.001, \text{ two-tailed} \]
\[ t=4.35, 266.5 \text{ df, } p<.001, \text{ two-tailed} \]
\[ t=3.48, 389 \text{ df, } p<.01, \text{ two-tailed} \]
\[ \chi^2 = 29.80, 1 \text{ df, } p<.001 \]

The Abuse and Distress scale score was not used in the analysis because only 77 students gave sufficient responses to the constituent items to receive a score. Inclusion would have reduced the...
students’ decision about whether or not to visit the health service if they felt the need for medical help. The model which best predicts students’ decisions consists of three variables: the use of the health service by students’ friends (positive predictor), the Depression scale score (negative predictor), and students’ country category – PR China (negative predictor). No interactions between these variables proved to be significantly predictive. The model predicts successfully 83.6 per cent of the observed cases of students who do visit the health service, but only 50.0 per cent of those who do not, giving an overall success rate of 70.9 per cent. The model is statistically significant ($\chi^2 = 100.73$, 15 df, $p<.001$). Table 74 presents the results.

Table 74        Significant predictors of students’ decision to visit the health service

<table>
<thead>
<tr>
<th></th>
<th>$\beta$</th>
<th>S.E.</th>
<th>Wald</th>
<th>Odds (Exp($\beta$))</th>
<th>95% C.I. for Exp($\beta$)</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Friends</td>
<td>-1.38</td>
<td>.26</td>
<td>27.46***</td>
<td>.25</td>
<td>.15 - .42</td>
</tr>
<tr>
<td>Depression Scale score</td>
<td>.86</td>
<td>.20</td>
<td>18.54***</td>
<td>2.35</td>
<td>1.59 - 3.48</td>
</tr>
</tbody>
</table>

*p<.05  ***p<.001

Not unexpectedly, students whose friends are known to have used the university health service are themselves more likely to decide to visit that service. This is a strong predictor of student action in this matter. The interpretation of the Depression scale score as predictor is perhaps less obvious. In this case, increases in Depression scale scores are predictive of a lower likelihood of students going to the health service for help.

Of the 14 groups subsumed by the home country category variable, the analysis indicated one that was of particular importance. Being a student from PR China is a significant predictor of not visiting the health service, even though a need for medical help is recognized. Of the 78 students from PR China who felt they needed medical help, only 35.9 per cent actually went there for help, a strikingly lower proportion than for any other category of country. In contrast, 100 per cent of the 20 students from English-speaking countries who felt they needed medical help did attend the university health service.

There is some variation in the frequency of visits individual students have made to the health service, though the predominant pattern is for one or two visits per person. Table 75 presents this information.

Table 75            Frequency of individual student use of university health service

sample size of the logistic regression to a point that made the analysis less than useful. The interesting difference in Abuse and Distress scale scores between students who did and did not visit the health service, as indicated above, is that those who did use the health service had a significantly lower mean scale score (mean = 1.27) than those who did not visit (mean=1.76).

This was also true of students from Latin American countries, but since there were only three students in this sample, less reliance can be placed on that result.

Russell, Rosenthal & Thomson, 2006
HEALTH AND WELL-BEING OF INTERNATIONAL STUDENTS

<table>
<thead>
<tr>
<th>Number of visits per student</th>
<th>1</th>
<th>2</th>
<th>3</th>
<th>4</th>
<th>5</th>
<th>6</th>
<th>7</th>
<th>8</th>
<th>9</th>
<th>10</th>
</tr>
</thead>
<tbody>
<tr>
<td>(Number of respondents=249)</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Percentage of respondents</td>
<td>47.8</td>
<td>26.5</td>
<td>15.7</td>
<td>4.4</td>
<td>3.2</td>
<td>0.8</td>
<td>0.4</td>
<td>0.4</td>
<td>0.4</td>
<td>0.4</td>
</tr>
</tbody>
</table>

Student evaluations of their experiences in visiting the health service are of particular interest. Asked how well a set of statements reflected their experience, students gave ratings of each item on a four-point scale. Table 76 presents a summary of their perceptions of the experience and the help they received.

Table 76  Student perceptions of their experiences of the university health service

<table>
<thead>
<tr>
<th>Items</th>
<th>Mean</th>
<th>SD</th>
<th>Percentage ratings</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td></td>
<td>0</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>Not at all</td>
</tr>
<tr>
<td>G4. I was satisfied with the service I received. (n=274)</td>
<td>1.9</td>
<td>0.8</td>
<td>4.7</td>
</tr>
<tr>
<td>G5. I felt uncomfortable about going to the health service. (n=272)</td>
<td>0.5</td>
<td>0.9</td>
<td>66.9</td>
</tr>
<tr>
<td>G6. I was able to get an appointment when I needed to. (n=273)</td>
<td>1.8</td>
<td>0.9</td>
<td>10.3</td>
</tr>
<tr>
<td>G7. The health professional was sensitive to my needs. (n=269)</td>
<td>1.9</td>
<td>0.9</td>
<td>7.8</td>
</tr>
<tr>
<td>G8. The health professional was professionally competent. (n=268)</td>
<td>2.0</td>
<td>0.8</td>
<td>4.5</td>
</tr>
</tbody>
</table>

As Table 76 indicates, students had very positive perceptions of the health service. The mean ratings given for satisfaction with the service received, obtaining an appointment when needed, sensitivity of the health professional and competence of the health professional were at or close to 2.0 on the four-point scale (0 – 3). In other words, the items reflect students’ experience ‘very well’. The mean rating of the one conceptually negative item (I felt uncomfortable about going to the health service.) was very low (0.5), indicating that this feeling was not characteristic of students’ experience.

A comparison of the scores of students from Asian and non-Asian countries on the Health Service Evaluation scale shows that students from Asian countries have a lower scale score than others (the mean scores were 1.8 and 2.1 respectively), though the difference is not quite large enough to reach statistical significance. Students from Asian countries have a significantly lower mean rating for being able to get an appointment when needed. The two groups show no difference in level of discomfort about going to the health service.

Also important are the reasons that students give for not going to the health service when they felt they needed to (Table 77). Some 150 students fell into this category, although not all of these responded to the questions concerning their reasons for

---

337 Number of students in this sample: Asian: n=221; non-Asian: n=40.
338 This scale comprises items G4, G6-G8.
339 t=1.98, 43.2 df, p=.054, two-tailed
340 t=3.56, 282 df, p<.001, two-tailed
deciding not to go. Students were given the opportunity to select more than one reason.

The most common reason students gave for not using the health service when they felt the need of it is their evaluation that the problem they had was of insufficient importance. Three other reasons receive a reasonably high percentage of endorsements. These items have in common a lack of information about the health service: not knowing how to obtain an appointment (G9a), not knowing the location of the service (G9f), and not knowing that the service was free (G9g).

Table 77 Reasons for students not using the health service: percentage of responses

<table>
<thead>
<tr>
<th>Reasons</th>
<th>Percentage of responses</th>
</tr>
</thead>
<tbody>
<tr>
<td>G9a I did not know how to get an appointment. (n=130)</td>
<td>43.8 56.2</td>
</tr>
<tr>
<td>G9b I felt uncomfortable asking for help. (n=125)</td>
<td>30.4 69.6</td>
</tr>
<tr>
<td>G9c I felt they would not understand me. (n=127)</td>
<td>30.7 69.3</td>
</tr>
<tr>
<td>G9d I thought my problem was not important enough. (n=134)</td>
<td>63.4 36.6</td>
</tr>
<tr>
<td>G9e I didn’t know there was such a service. (n=134)</td>
<td>32.1 67.9</td>
</tr>
<tr>
<td>G9f I didn’t know where to go. (n=134)</td>
<td>51.5 48.5</td>
</tr>
<tr>
<td>G9g I didn’t know the service was free. (n=136)</td>
<td>50.7 49.3</td>
</tr>
<tr>
<td>G9h I thought it might influence my academic results. (n=123)</td>
<td>9.8 90.2</td>
</tr>
<tr>
<td>G9i I thought they wouldn’t be able to help me. (n=128)</td>
<td>32.0 68.0</td>
</tr>
<tr>
<td>G9j I went to a service off-campus. (n=128)</td>
<td>26.6 73.4</td>
</tr>
<tr>
<td>G9k Other (n=106)</td>
<td></td>
</tr>
</tbody>
</table>

One item stands out as receiving little endorsement as a reason for not using the health service. Only 12 students who decided not to use the service when they felt they needed help indicated that they thought that going to the health service might affect their academic results.

Students were given the opportunity to provide other reasons for not using the health service when they felt they needed help. Some 82 students offered such reasons, with two students providing two reasons each. Of these, many answers are not responsive in the sense that they repeat reasons already offered explicitly within the questionnaire item (n=12) or simply state that the student had not fallen ill (n=46). Additional reasons included problems with obtaining appointments when needed, the length of the queue and the need to wait (n=9), the pressure on student time (n=6), hours of opening that did not meet students’ needs (n=4), the location of the service (n=2), poor previous experience (n=2), an anticipated language barrier (n=1), fear of the diagnosis (n=1) and laziness (n=1).

COUNSELLING SERVICE
Students' use of the university's counselling service was also explored. Students were asked whether they had felt the need of help from the university counselling service during the current year. Of the 970 respondents to this question, 268 or 27.6 per cent agreed that they felt they had needed help. The questionnaire provides students with the opportunity to specify the type(s) of help they needed: academic-educational and/or career-vocational and/or personal-social emotional counselling. Students could identify more than one area of need. Table 78 indicates the percentage of respondents selecting each of these areas.

Table 78 Perceived student need for three types of counselling help

<table>
<thead>
<tr>
<th>Type of counselling help needed</th>
<th>Academic-educational (n=244)</th>
<th>Career-vocational (n=124)</th>
<th>Personal-social-emotional (n=220)</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Yes</td>
<td>No</td>
<td>Yes</td>
</tr>
<tr>
<td>Frequency</td>
<td>204</td>
<td>40</td>
<td>161</td>
</tr>
<tr>
<td>Percentage of students in need of help (n=268)</td>
<td>76.1</td>
<td>60.1</td>
<td>56.0</td>
</tr>
</tbody>
</table>

It is clear that the strongest perceived need is for help in the academic-educational area. Although help is still seen to be needed in the remaining two areas by a substantial percentage of students, the need is less widespread. Because students had the opportunity to indicate the need for help in more than one area, it is possible to determine the number of students who perceive themselves to have multiple areas of need. Some 76 of the 268 students (28.4 per cent) who need counselling help feel they need help in all three counselling areas. This would seem to identify a group of students who are finding serious challenges in coping with their student life. This group is augmented by the additional 93 students (34.7 per cent) who indicate that they need help in two of the three areas of counselling. Some 26 students with problems in two or three areas did not seek help.

As in the medical health area, perceived need of counselling help did not necessarily translate into action. Of the 268 students who said they needed help, 53 or 19.8 per cent actually visited the counselling service, a much smaller percentage than was the case with the health service. In addition, three students who had indicated that they did not feel the need for help said that they had sought help from the counselling service. This means that 5.8 per cent of all respondents said they had accessed university counselling services between course enrolment for 2005 (February) and mid-May.

In order to see whether there is a systematic difference between students with an acknowledged need who choose to make use of university counselling services and those who choose not to do so, a range of demographic and other variables was explored. These are the same variables explored in connection with use of university health services.

Eight variables differentiate significantly between the two groups:
fewer undergraduate and postgraduate (coursework) students than expected visited the health service\textsuperscript{341};

students who feel they are doing less well academically than anticipated are under-represented among those that visited the counselling service and students who feel they are doing better than anticipated are over-represented\textsuperscript{342};

those who visited the counselling service have a significantly higher score on the Connectedness scale\textsuperscript{343};

they also have significantly lower scores on the Cultural Stress\textsuperscript{344}, Depression\textsuperscript{345}, Anxiety\textsuperscript{346}, and Stress scales\textsuperscript{347};

more students than expected with friends who visited the counselling service and fewer without such friends visited the service themselves\textsuperscript{348}.

These variables were entered into a logistic regression analysis, using the backward likelihood ratio method, in order to determine which variables predict whether students who felt the need to use the university counselling service did act on that perceived need.

The model that best predicts students’ decisions consists of three variables: friends’ use of the counselling service (positive predictor), the Stress scale score (negative predictor) and the Cultural Stress scale score (negative predictor). The model predicts successfully 38.5 per cent of the observed cases of students who did visit the counselling service and 92.9 per cent of those who did not, giving an overall success rate of 80.2 per cent. The model is statistically significant ($\chi^2 = 43.49$, 3 df, $p<.001$). Table 79 presents these results.

When students have friends who themselves have accessed the counselling service, they themselves are more likely to decide to visit the counselling service when they feel the need for help. This is a strong and significant, positive predictor of students’ decision-making.

Table 79 Significant predictors of students’ decision to visit the counseling service

<table>
<thead>
<tr>
<th></th>
<th>$\hat{b}$</th>
<th>S.E.</th>
<th>Wald</th>
<th>Odds (Exp($\hat{b}$))</th>
<th>95% C.I. for Exp($\hat{b}$)</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>Lower</td>
</tr>
<tr>
<td>Friends</td>
<td>-1.77</td>
<td>.36</td>
<td>23.92***</td>
<td>.17</td>
<td>.08</td>
</tr>
<tr>
<td>Stress scale score</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>.35</td>
</tr>
<tr>
<td>Cultural Stress scale score</td>
<td>.75</td>
<td>.33</td>
<td>5.27*</td>
<td>2.12</td>
<td>1.12</td>
</tr>
<tr>
<td></td>
<td>.73</td>
<td>.37</td>
<td>3.89*</td>
<td>2.08</td>
<td>1.00</td>
</tr>
</tbody>
</table>

*p<.05   ***p<.001

\textsuperscript{341} $\chi^2 = 6.52$, 2 df, $p<.05$
\textsuperscript{342} $\chi^2 = 8.42$, 2 df, $p<.05$
\textsuperscript{343} $t=2.59$, 227 df, $p<.05$, two-tailed
\textsuperscript{344} $t=3.51$, 224 df, $p<.01$, two-tailed
\textsuperscript{345} $t=2.87$, 220 df, $p<.01$, two-tailed
\textsuperscript{346} $t=2.17$, 222 df, $p<.05$, two-tailed
\textsuperscript{347} $t=3.50$, 223 df, $p<.01$, two-tailed
\textsuperscript{348} $\chi^2 = 30.44$, 1 df, $p<.001$
The *Stress* scale score and the *Cultural Stress* scale score are significant negative predictors of students’ decision to visit the counselling service when they feel the need for help. The role of *Stress* and *Cultural Stress* as negative predictors is perhaps counter-intuitive. Instead of higher stress levels increasing the likelihood of students going to the counselling service for help, higher levels of stress decrease the likelihood of students’ acting on their perceived need for help. Lower stress levels predict positive action in this regard. Lower cultural stress suggests greater acceptance of seeking professional help as a culturally acceptable way of coping with a problem.

In terms of frequency of visits to the counselling service, the predominant pattern is for one visit per person. Table 80 presents this information.

Table 80 Frequency of individual student use of university counselling service

<table>
<thead>
<tr>
<th>Number of visits per student (Number of respondents=47)</th>
<th>1</th>
<th>2</th>
<th>3</th>
<th>4</th>
<th>5</th>
<th>6</th>
<th>10</th>
</tr>
</thead>
<tbody>
<tr>
<td>Percentage of respondents</td>
<td>59.5</td>
<td>8.5</td>
<td>12.8</td>
<td>4.3</td>
<td>8.5</td>
<td>4.3</td>
<td>2.1</td>
</tr>
</tbody>
</table>

Students have positive perceptions of their experience with the counselling service (Table 81). Mean item ratings are at the positive end of the scale, at or close to 2.0 on the four-point scale (0 to 3). Students also indicate that they did not feel particularly uncomfortable, on average, about their visit(s) to counselling.

Table 81 Student perceptions of their experiences of the university counselling service

<table>
<thead>
<tr>
<th>Items</th>
<th>Mean</th>
<th>SD</th>
<th>Percentage ratings</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td></td>
<td>0 Not at all</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>1 Somewhat</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>2 Very</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>3 Extremely</td>
</tr>
<tr>
<td>G14. I was satisfied with the service I received. (n=55)</td>
<td>1.9</td>
<td>0.9</td>
<td>7.3</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>27.3</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>38.2</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>27.3</td>
</tr>
<tr>
<td>G15. I felt uncomfortable about going to the counselling service. (n=54)</td>
<td>0.7</td>
<td>0.9</td>
<td>55.6</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>25.9</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>13.0</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>5.6</td>
</tr>
<tr>
<td>G16. I was able to get an appointment when I needed to. (n=54)</td>
<td>2.0</td>
<td>1.0</td>
<td>14.8</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>9.3</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>40.7</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>35.2</td>
</tr>
<tr>
<td>G17. The counsellor was sensitive to my needs. (n=53)</td>
<td>1.8</td>
<td>0.9</td>
<td>9.4</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>20.8</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>47.2</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>22.6</td>
</tr>
<tr>
<td>G18. The counsellor was professionally competent. (n=54)</td>
<td>2.0</td>
<td>0.8</td>
<td>3.7</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>22.2</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>44.4</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>29.6</td>
</tr>
</tbody>
</table>

A comparison of the scores of students from Asian and non-Asian countries\(^{349}\) on the *Counselling Service Evaluation* scale\(^{350}\) shows that students from Asian countries have a higher scale score than other students (the mean scores are 2.0 and 1.5 respectively), though the difference is not statistically significant. Students from Asian countries give considerably more positive ratings on all four scale items. The two groups show no difference in level of discomfort about going to the counselling service.

\(^{349}\) Number of students in this sample: Asian: n=47; non-Asian: n=7.

\(^{350}\) This scale comprises items G14, G16-G18.

Russell, Rosenthal & Thomson, 2006
HEALTH AND WELL-BEING OF INTERNATIONAL STUDENTS

Since a much higher rate of students decided not to access the counselling service when they felt in need of help than was the case with the medical service, it is especially important to examine students’ explanations of their decisions not to attend. Some 176 students fell into this category, although not all of these responded to the questions concerning their reasons for deciding not to go. Students were given the opportunity to select more than one reason. Table 82 presents the relevant information.

Table 82  Reasons for students not using the health service: percentage of responses

<table>
<thead>
<tr>
<th>Reasons</th>
<th>Percentage of responses</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Yes</td>
</tr>
<tr>
<td>G9a  I did not know how to get an appointment. (n=150)</td>
<td>62.0</td>
</tr>
<tr>
<td>G9b  I felt uncomfortable asking for help. (n=150)</td>
<td>55.3</td>
</tr>
<tr>
<td>G9c  I felt they would not understand me. (n=145)</td>
<td>46.9</td>
</tr>
<tr>
<td>G9d  I thought my problem was not important enough. (n=148)</td>
<td>64.9</td>
</tr>
<tr>
<td>G9e  I didn’t know there was such a service. (n=143)</td>
<td>39.2</td>
</tr>
<tr>
<td>G9f  I didn’t know where to go. (n=151)</td>
<td>65.6</td>
</tr>
<tr>
<td>G9g  I didn’t know the service was free. (n=146)</td>
<td>39.7</td>
</tr>
<tr>
<td>G9h  I thought it might influence my academic results. (n=136)</td>
<td>8.8</td>
</tr>
<tr>
<td>G9i  I thought they wouldn’t be able to help me. (n=143)</td>
<td>47.6</td>
</tr>
<tr>
<td>G9j  I went to a service off-campus. (n=134)</td>
<td>3.7</td>
</tr>
<tr>
<td>G9k  Other (n=38)</td>
<td></td>
</tr>
</tbody>
</table>

The most common reasons students give for deciding not to access the counselling service when in need are similar to those given for the decision not to visit the health service. Close to 65 per cent of students who felt the need for counselling help thought their problem was not important enough (G19d). Students also indicate they lacked relevant information: a high percentage said they did not know where to go (G19f) or did not know how to get an appointment (G19a). However, being unaware of the cost-free nature of the service (G19g) was used less frequently as a reason in relation to the counselling service.

A much higher percentage of students indicate a feeling of discomfort (G19b) about asking for counselling help than for medical help (55.3 per cent compared with 30.4 per cent). There also seems to be a stronger perception that the counselling service would not understand them (G19c) and would be unable to help them (G19i). As with the health service, there is only a very small percentage of students who think their academic results might be influenced by the use of the counselling service (G19h).

There are 13 students who offer other reasons for not using the counselling service, in spite of their perceived need for help, with one student providing two reasons. A small number of these responses (n=3) repeat reasons already offered explicitly within the questionnaire item. The most common additional reason given is students’
perception that they did not have enough time to visit the counselling service (n=5). Other reasons concern perceived difficulty in making an appointment (n=1), an anticipated language barrier (n=1), poor prior experience (n=1), fear of the diagnosis or outcome (n=1), procrastination (n=1), and an undertaking to seek help next semester (n=2).

OTHER SERVICES

There are many other non-academic services offered to international students by the university in addition to health and counselling services. Of the 951 students who responded to the question about their use of other services, 154 or 16.2 per cent acknowledge accessing one or more of these other services. Of these, 150 specified the service that has been used, with 16 students indicating that they had used more than one service.

The most frequently used service is the housing service (n=55). The careers and employment (n=37) and the financial aid services (n=30) were also used by many students. Other services accessed by students include language assistance (n=11), scholarships (n=5), legal assistance (n=3) and a range of other less commonly mentioned services such as chaplaincy, child care, and parking.

SOURCES OF INFORMATION

Students gave as a common reason for not accessing health or counselling services their lack of knowledge or information about those services. The ease of obtaining information about student services is a basic factor in use of those services. Students rated the ease with which they were able to obtain information about university health, counselling and other services. The results are presented in Table 83.

Between 42 and 55 per cent of students agree that it is easy to find out information about university services, with the percentage varying according to the type of service. Information about health services is seen to be most easily accessed, while information about counselling services is least readily accessed. A repeated measures analysis of variance shows these differences in perception of information accessibility to be statistically significant.

Table 83 Perceived ease of obtaining information about university services

<table>
<thead>
<tr>
<th>Items</th>
<th>Mean</th>
<th>SD</th>
<th>0 Not at all</th>
<th>1 Somewhat</th>
<th>2 Very</th>
<th>3 Extremely</th>
</tr>
</thead>
<tbody>
<tr>
<td>G22. It is easy to find out about the health services provided by the university. (n=616)</td>
<td>1.6</td>
<td>1.0</td>
<td>13.6</td>
<td>31.5</td>
<td>34.4</td>
<td>20.5</td>
</tr>
<tr>
<td>G23. It is easy to find out about the counselling services provided by the university. (n=610)</td>
<td>1.4</td>
<td>0.9</td>
<td>18.5</td>
<td>39.3</td>
<td>31.1</td>
<td>11.0</td>
</tr>
<tr>
<td>G24. It is easy to find out about other services provided by the university. (n=615)</td>
<td>1.5</td>
<td>0.9</td>
<td>12.7</td>
<td>37.9</td>
<td>37.2</td>
<td>12.2</td>
</tr>
</tbody>
</table>

What are the sources of information that students rely on if they wish to obtain information about university services? Table 84 presents the relative usefulness of a

---

351 $F(1.9, 1155) = 38.64$, $p < .001$

Russell, Rosenthal & Thomson, 2006
variety of information sources, as perceived by students. Students were asked to indicate the most useful source of information only.

Table 84  Perceived usefulness of information sources concerning university services

<table>
<thead>
<tr>
<th>Sources of information</th>
<th>University website</th>
<th>Student diary</th>
<th>Academic staff</th>
<th>Non-academic staff</th>
<th>Students, friends</th>
<th>Other</th>
</tr>
</thead>
<tbody>
<tr>
<td>Percentage of responses</td>
<td>62.5</td>
<td>10.9</td>
<td>5.0</td>
<td>1.9</td>
<td>18.7</td>
<td>1.0</td>
</tr>
</tbody>
</table>

It is clear from student responses that the university website is regarded as by far the most useful source of information. Other sources of information are seen as the most useful source by much smaller percentages of students. In particular, students and friends act as a valuable source of information for an important percentage of students.

The part played by friends who have used university services in the prediction of whether or not students decide to access those services themselves has already been discussed. How many students know of friends who have used university health, counselling and other services? Table 85 presents this information.

Table 85  Use of university services by friends of respondents

<table>
<thead>
<tr>
<th>Type of university service</th>
<th>Health (n=973)</th>
<th>Counselling (n=968)</th>
<th>Other (n=969)</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Yes</td>
<td>No/DK</td>
<td>Yes</td>
</tr>
<tr>
<td>Percentage of respondents</td>
<td>47.6</td>
<td>52.4</td>
<td>17.4</td>
</tr>
</tbody>
</table>

Cross-tabulations of students who use a university service with their knowledge of friends who have used the same service show a significant relationship for each of the three types of service considered. Students with friends who have used the health service are themselves significantly more likely to use the service if they have need of help. Similarly, if they feel they need help, those with friends who have accessed the counselling service are themselves significantly more likely to use the counselling service. The same is also true of the use of other university services.

---

\(^{352}\) \(\chi^2 = 29.80, 1\) df, \(p<.001\)

\(^{353}\) \(\chi^2 = 30.44, 1\) df, \(p<.001\)

\(^{354}\) \(\chi^2 = 77.81, 1\) df, \(p<.001\)
THREE STYLES OF ADAPTATION

On the basis of the analyses of the responses students have given to the questionnaire, we have been able to discern three different styles or modes of adaptation of international students to life and study in Melbourne.

- **A positive and connected style of adaptation.** This style is characterised by a positive sense of connectedness, low levels of psychological and cultural stress, a sense of balance in lifestyle, and satisfaction with various aspects of life and study. This style is characteristic of the majority of students.

- **An unconnected and stressed style of adaptation.** Low levels of connectedness are evident in this style, together with a pervasive sense of stress and lack of well-being. Stress is evident in students’ sense of being overwhelmed by their studies and by cultural difference, but also in virtually every aspect of their life in Melbourne. Accompanying the stress are relatively high levels of anxiety, depression and avoidance of risk-taking behaviour. About one-third of students exhibit this style of adaptation.

- **A distressed and risk-taking style of adaptation.** This style of adaptation is characteristic of only a few students, approximately 7 per cent. Its main features are strong involvement in a wide range of risk-taking behaviours, together with high levels of depression and anxiety. There is also lack of well-being evident in the levels of connectedness, cultural stress and perceived lifestyle balance, though not as extreme as in the second style of adaptation.

An explanation of this typology and its development is provided below.

A wide range of information has been collected in this study, making many different variables concerning international student health and well-being variables available for examination. The development of scales has allowed some of these to be aggregated into more compact, second-order variables. Nevertheless, the number of separate variables, whether taking the form of scales or of single items, is large. Would it be possible to reduce this complexity further, by exploring natural groupings or clusters within the data? Such groupings would be based on variables drawn from the three domains of well-being – relating to others in Australian society, living and studying in Melbourne, health and health-related behaviour – and would represent different styles or modes of adaptation to university study and life in Melbourne.

Given the large sample size, the K-means form of cluster analysis was used to explore the groupings within the data. This permits pair-wise deletion of cases for missing data, which proved useful in allowing the inclusion of some variables with lower frequencies. Standardised forms of the following variables were entered into the analysis:

- scales: Connectedness, Cultural Stress, Abuse and Distress, Depression, Anxiety, Stress, Perceptions of Drug Use, Perceptions of Alcohol Use, Perceptions of Gambling and Smoking;

- items: B26 and B21 (financial situation), B12 and D14 (lifestyle balance), B20 (more university work than can be coped with), perceived academic progress, use of condoms, number of sexual partners in Australia, involvement in gambling in Australia, total self-harm, experience of exclusion, general physical health.

Solutions using different numbers of clusters were explored. A three-cluster solution provides a conceptually meaningful grouping, with the potential to be useful in further
analyses. The number of cases classified into each of the three groups appears to be aligned with what would be expected on the basis of the conceptual interpretation of the clusters: 576 in the first cluster, 337 in the second cluster and 66 in the third cluster.

Table 86  Mean standardised scores for each cluster on each defining variable

<table>
<thead>
<tr>
<th>Variable</th>
<th>1 (n=576)</th>
<th>2 (n=337)</th>
<th>3 (n=66)</th>
</tr>
</thead>
<tbody>
<tr>
<td>1. Connectedness scale</td>
<td>.32</td>
<td>-.51</td>
<td>-.21</td>
</tr>
<tr>
<td>2. Cultural Stress scale</td>
<td>-.45</td>
<td>.69</td>
<td>.38</td>
</tr>
<tr>
<td>3. Abuse and Distress scale</td>
<td>-.25</td>
<td>.26</td>
<td>.28</td>
</tr>
<tr>
<td>4. Depression scale</td>
<td>-.51</td>
<td>.70</td>
<td>.90</td>
</tr>
<tr>
<td>5. Anxiety scale</td>
<td>-.47</td>
<td>.62</td>
<td>.89</td>
</tr>
<tr>
<td>6. Stress scale</td>
<td>-.50</td>
<td>.70</td>
<td>.74</td>
</tr>
<tr>
<td>7. Perceptions of Drug Use scale</td>
<td>-.15</td>
<td>-.16</td>
<td>2.14</td>
</tr>
<tr>
<td>8. Perceptions of Alcohol Use scale</td>
<td>-.12</td>
<td>-.12</td>
<td>1.62</td>
</tr>
<tr>
<td>9. Perceptions of Smoking/Gambling scale</td>
<td>-.21</td>
<td>-.18</td>
<td>2.68</td>
</tr>
<tr>
<td>10. Finances satisfactory (B26)</td>
<td>.25</td>
<td>-.36</td>
<td>-.30</td>
</tr>
<tr>
<td>11. Worry about finances (B21)</td>
<td>-.33</td>
<td>.48</td>
<td>.46</td>
</tr>
<tr>
<td>12. Balance: time with others/alone (B12)</td>
<td>.31</td>
<td>-.48</td>
<td>-.28</td>
</tr>
<tr>
<td>13. Balance: study and other activities (D14)</td>
<td>.27</td>
<td>-.42</td>
<td>-.27</td>
</tr>
<tr>
<td>14. More university work than can cope with (B20)</td>
<td>-.30</td>
<td>.43</td>
<td>.38</td>
</tr>
<tr>
<td>15. Perceived academic progress</td>
<td>-.19</td>
<td>.31</td>
<td>.07</td>
</tr>
<tr>
<td>16. Condom use</td>
<td>-.02</td>
<td>.16</td>
<td>-.67</td>
</tr>
<tr>
<td>17. Number of sexual partners in Australia</td>
<td>-.05</td>
<td>-.21</td>
<td>1.43</td>
</tr>
<tr>
<td>18. Gambling in Australia</td>
<td>.08</td>
<td>.07</td>
<td>-1.03</td>
</tr>
<tr>
<td>19. Self-harm total</td>
<td>-.22</td>
<td>.21</td>
<td>.82</td>
</tr>
<tr>
<td>20. Experience of exclusion</td>
<td>.30</td>
<td>-.48</td>
<td>-.21</td>
</tr>
<tr>
<td>21. General physical health</td>
<td>.31</td>
<td>-.46</td>
<td>-.33</td>
</tr>
</tbody>
</table>

Interpretation of the clusters is based on the final cluster centres, as defined by each of the 21 variables used. Table 86 presents this information. The interpretation of negative and positive (low to high) mean scores of each variable depends on the way...
in which they were coded and scored\textsuperscript{355}. As with any such groupings, the profiles of individuals within each cluster will show considerable variation.

In comparison with those in other clusters, students in cluster 1 have a stronger sense of connectedness in Melbourne, they have not been upset by experiences of exclusion, and they display a lower level of cultural stress and other forms of psychological distress. They have little involvement in drugs, drinking, gambling and smoking, or self-harm. They feel their financial situation is satisfactory and do not worry very much about their finances. They see themselves leading a reasonably balanced lifestyle and feel they can cope with their university studies. They see their progress academically to be somewhat better than expected. The number of sexual partners during their time in Australia is about average, as is their approach to condom use. They experience good general physical health. Students in this cluster show a positive and connected style of adaptation to university life in Melbourne.

Cluster 2 students find life much more difficult than students whose style of adaptation is positive and connected. They feel much more isolated in Melbourne and have a high level of cultural stress. They have experienced abuse while here, including exclusion by others, and have been upset by this. They show evidence of psychological distress in their scores on the DASS scales. They have little involvement in drugs, drinking, gambling and smoking. However, they show considerable anxiety about their financial situation, feel their lifestyle is not well-balanced, and do engage in self-harm behaviours to some extent. Consistent with their levels of stress and anxiety, these students have had fewer sexual partners while in Australia and are more likely to use condoms than students in the other clusters. They feel overwhelmed by the amount of university work they are trying to cope with and believe their academic progress to be not as good as they had expected. They see their general physical health to be considerably below average. The style of adaptation that students in cluster 2 show to university life in Melbourne is summed up as being unconnected and stressed.

Cluster 3 students show some similarity to students whose style of adaptation is unconnected and stressed. They have low levels of connectedness and high levels of cultural stress, though not as extreme as those of cluster 2 students. Their scores on the DASS scales are higher than those of cluster 2 students, especially for the Depression and Anxiety scales. They have experienced abuse while in Australia, including some exclusion. Unlike cluster 2 students, however, they have very high involvement in drugs, alcohol, gambling and smoking, and they engage in a high level of self-harm activities. Their number of sexual partners in Australia has been well above average and they make infrequent use of condoms. They feel their general physical health is below average. They are anxious about their financial situation. They also feel they have more university work than they can cope with, but see their academic progress to be about average. Students in cluster 3 give evidence of a mode of adaptation to university life in Melbourne characterised by distress and risk-taking.

\textsuperscript{355} Scales (variables 1-9) follow the expected pattern of variation from low (negative) to high (positive). Rated items (variables 10-14) vary from low agreement with the item (negative) to strong agreement (positive). Variables 16, 17, 19 and 21 also vary from low (negative) to high (positive). However, items 15, 18 and 20 are the reverse: the lower the score on variable 15, the better the perceived academic progress, on variable 18, the more the gambling, and on variable 20, the more the experience of exclusion.
The relative numbers of students classified as belonging to each of the clusters is of interest. Cluster 1, the positive, connected mode of adaptation, contains the majority of students: 576 or 58.8 per cent of students are deemed to be adapting to university life in Melbourne in this way. There is, nevertheless, a strong presence of the unconnected, stressed style among the respondents. Some 337 students or 34.4 per cent of the respondents have been classified as belonging to cluster 2. Fortunately, few students have been placed in cluster 3; only 66 students (or 6.7 per cent of the sample) have been categorised as showing a distressed and risk-taking mode of adaptation to university life in Melbourne.

A representation of the three clusters, based on the 21 variables used in the analysis, can be seen in Figure 2.

It is of interest to see whether there is an association between students’ style of adaptation and a range of demographic variables such as age, gender, faculty and so on. Most demographic variables do not show a significant association with the style of adaptation; this includes age, marital status, faculty, number of years enrolled, completion of Foundation Studies, number of years of secondary schooling in Australia, presence of one’s child in Australia, and speaking some English when growing up.

Figure 2  Means of variables used to define mode of adaptation of three clusters: 1. Positive and connected; 2. Unconnected and stressed 3. Distressed and risk-taking.
Four demographic variables are significantly associated with this typology.

- Males and females are represented in cluster 1 in proportion to their presence in the sample. However, there is a higher representation than expected of females in cluster 2 and a higher representation of males than expected in cluster 3.

- More postgraduate students than expected are classified as adapting in a positive and connected way (cluster 1), while fewer than expected are classified into clusters 2 or 3. The reverse is true for undergraduate students; there are fewer undergraduate students than expected in cluster 1 and more than expected in clusters 2 and 3.

- Those who speak a LOTE off campus are over-represented in the group having an unconnected and stressed style of adaptation and under-represented in clusters 1 and 3. The reverse is true of students who do not speak a LOTE off campus.

- The fourth demographic variable that is significantly associated with the classification of modes of adaptation is country category. Four country categories show cluster membership numbers that are different from the expected: Hong Kong, Indonesia, UK/USA/Canada, and Europe. Dummy variables were constructed for each of these country groupings which were then tested.

<table>
<thead>
<tr>
<th>Country Category</th>
<th>Cluster 1</th>
<th>Cluster 2</th>
<th>Cluster 3</th>
</tr>
</thead>
<tbody>
<tr>
<td>Hong Kong</td>
<td>Under-represented</td>
<td>Over-represented</td>
<td>Over-represented</td>
</tr>
<tr>
<td>Indonesia</td>
<td>Over-represented</td>
<td>Under-represented</td>
<td>Over-represented</td>
</tr>
<tr>
<td>UK/USA/Canada</td>
<td>Under-represented</td>
<td>Over-represented</td>
<td>Over-represented</td>
</tr>
<tr>
<td>Europe</td>
<td>Over-represented</td>
<td>Under-represented</td>
<td>Over-represented</td>
</tr>
</tbody>
</table>

These four variables are not independent. Hong Kong students are almost all enrolled in undergraduate courses and speak a language other than English off the campus. Most Indonesian students also speak a language other than English off campus; a higher percentage than average are male students. A higher proportion than average of UK/US/Canadian and European students are female and are enrolled in postgraduate courses.

These demographic variables were entered into a multinomial logistic regression in order to find the model that best predicts the classification of students into the three clusters. The best model consists of three significant predictors: gender (p < .05), being a student from UK/US/Canada (p < .01) or from Europe (p < .05). However, the model was of little use. It predicts only 59.3 per cent of the classifications correctly, none of which fall into clusters 2 or 3. The goodness of fit is not significant and, at most, only 3.2 per cent of the variance is explained.

An attempt was also made to see whether a combination of these demographic variables could discriminate successfully among the three clusters. Discriminant
analysis resulted in two functions based on four variables: course type (undergraduate or not), LOTE use (yes or no), Hong Kong student (yes or no), and student from UK/USA/Canada (yes or no). However, using these two functions, only 50.9 per cent of students’ classifications could be made correctly. Because this is a clearly unsatisfactory result, it was concluded that these common demographic variables did not provide a useful basis for prediction of students’ mode of adaptation to university life in Melbourne. This suggests that the characteristic ways in which students adapt to university life might be more strongly associated with other factors, such as personal, behavioural and psychological factors, rather than with broad demographic factors. If this is the case, then the three styles of adaptation resulting from this cluster analysis could represent a typology applicable to domestic as well as to international students.

If the typology is both valid and useful, one would expect that students’ satisfaction, psychological states and behaviour in different domains could be hypothesised to differ, based on their style of adaptation. These would, of course, need to be different domains from the ones used to create the typology.

One relevant area of interest concerns students’ use of university services, particularly the health and counselling services. Do students with different styles of adaptation show different patterns of service usage? Two aspects were investigated: students’ perceptions of their need for help by these two services and their actual request for help, if they saw a need.

- Fewer students than expected with a positive, connected style of adaptation saw the need for health or counselling services. More students than expected with an unconnected and stressed or a distressed and risk-taking mode of adaptation felt the need for help from the health or the counselling services[^365]. These results are consistent with the relative levels of physical and mental health, and of other associated variables, that define the three styles of adaptation.
- Of those students who saw the need for help from the health or counselling service, more positive, connected adaptors than expected acted on their need, while fewer unconnected and stressed adaptors acted on their needs. Students with a distressed and risk-taking mode of adaptation, acted on their needs at about the expected level[^366]. For students exhibiting the first two styles of adaptation (but not the third), this is consistent with the findings that
  - depression is a negative predictor of acting on the need for help from the health service and that
  - stress and cultural stress are negative predictors of seeking help from the counselling service when there is a perceived need.

Students whose style of adaptation is positive and connected have the highest score on the Connectedness scale and those whose style is unconnected and stressed have the lowest. It might therefore be expected that style of adaptation would distinguish among students’ patterns of social mixing in Australia. This proved to be the case. Students whose mode is unconnected and stressed mix significantly less with Australians both within the University (D11) and off campus (D17) than students with either of the other two styles[^367]. At the university, students whose style of adaptation is unconnected and stressed have the highest level of mixing with co-culturals (D3),

[^365]: Health: $\chi^2 = 24.83$, 2 df, p<.001. Counselling: $\chi^2 = 44.19$, 2 df, p<.001
[^366]: Health: $\chi^2 = 6.90$, 2 df, p<.05. Counselling: $\chi^2 = 11.33$, 2 df, p<.01
[^367]: On campus: F(2,974)=24.28, p<.001. Off campus: F(2,975)=20.63, p<.001

Russell, Rosenthal & Thomson, 2006

Russell, Rosenthal & Thomson, 2006
HEALTH AND WELL-BEING OF INTERNATIONAL STUDENTS

significantly higher than students with a distressed and risk-taking mode\textsuperscript{368}. There is not a significant difference among the three modes in terms of mixing with co-culturals outside the university (B3).

Students whose style of adaptation is positive and connected have significantly more active involvement in national/cultural clubs or associations (D2) than students whose mode is unconnected and stressed\textsuperscript{369}. They also have stronger involvement in university clubs and activities (D24), but the difference is not great enough to reach significance (p=.06). No significant difference exists in social mixing based on religious practice (B8), although once again students showing a positive, connected style of adaptation have the highest score on this item.

Satisfaction with living arrangements might be expected to be an area in which cluster groups differ, since connectedness and cultural stress are significantly associated with satisfaction in this area. Students with an unconnected and stressed style of adaptation were found to be significantly less satisfied with their living arrangements than those with a positive, connected style and, to a lesser extent, than students in with a distressed and risk-taking style\textsuperscript{370}. This is consistent with relative scores of the three groups of students on the Connectedness and Cultural Stress scales, as well as with the expectation that the positive and connected adaptors would be more satisfied with and more stable in their living arrangements than the unconnected and stressed students. It might have been expected that students who are distressed and risk-taking in approach would also be less satisfied than those whose approach is positive and connected, but the difference between the two is not large enough to reach significance.

Given the description of the three styles, one might also expect that differences in the average level of self-esteem of the students would be found between styles, with students exhibiting a positive, connected mode having higher scores than other students. A univariate analysis of variance on item B5 (I have a positive view of myself as a person.) shows that students whose approach is positive and connected have a significantly higher level of self-esteem than other students\textsuperscript{371}. Students whose approach is unconnected and stressed have the lowest level of self-esteem on this item. On item D1 (As a person, I am as good as most others.), unconnected and stressed students have a significantly lower rating than other students\textsuperscript{372}. It is interesting that students with a distressed and risk-taking approach have a stronger level of self-esteem than those whose approach is unconnected and stressed.

A fifth example concerns students’ feelings of stress as a result of their need to do well for the sake of their families (item B27). The unconnected and stressed style of adaptation (and to a lesser extent the distressed and risk-taking mode), involving worries about finance and academic progress, and high levels of general stress, might be expected to produce high ratings on this item. The positive, connected style of adaptation could be expected to produce low ratings. A univariate analysis of variance on item B27 shows this to be the case\textsuperscript{373}. Students with a positive, connected approach have a significantly lower rating on this item than students exhibiting either

\begin{itemize}
\item \textsuperscript{368} F(2,974)=3.26, p<.05
\item \textsuperscript{369} F(2,975)=8.22, p<.001
\item \textsuperscript{370} F(2,973)=47.80, p<.001
\item \textsuperscript{371} F(2,971)=62.11, p<.001
\item \textsuperscript{372} F(2,972)=28.70, p<.001
\item \textsuperscript{373} F(2,971)=55.41, p<.001
\end{itemize}
of the other two approaches. Students whose approach is unconnected and stressed have the highest rating.

Typologies need to be approached with caution. However, this classification of general modes of student adaptation to university life offers potentially useful information for those concerned with assisting students and targeting their needs.
DISCUSSION

The self-perceptions of international students at the University of Melbourne constitute the data for this study. It is on the basis of the students’ own evaluations of themselves that conclusions are drawn about the quality of students’ sense of social, physical and psychological well-being. Objective and external measures are not used. To know about students’ housing and living arrangements, for example, we look to their degree of satisfaction with these, rather than to an assessment based on external criteria. The adequacy of their financial situation is viewed in terms of students’ judgments and concerns, rather than in terms of a financial audit. Perceived academic progress is studied, not university records of academic results. Students’ appraisals of their own physical health are explored, instead of the results of medical examinations.

Why make a deliberate choice to use subjective measures rather than objective measures as the basis of exploration? Researchers as a rule use objective measures so that they can be assured of the reliability and validity of their data. Not so in this case. Here valid data come from subjective measures, students’ self-perceptions, because well-being is in essence a subjective evaluation. What constitutes satisfaction in each domain of life will vary from person to person. Furthermore, it is on the basis of such self-perceptions that individuals make choices and decisions. We feel, we act, we respond on the basis of our perception and interpretation of situations.

The discussion of information gained in this study about the self-perceptions of international students will provide responses to the four research questions established at the outset:
1. What are international students’ self-perceptions of their health and well-being?
2. What group differences are there in students’ self-perceptions of their health and well-being?
3. Which factors predict positive student self-perceptions?
4. What use do students make of the university health and counselling services and how do they evaluate them?

INTERNATIONAL STUDENTS’ SELF-PERCEPTIONS OF HEALTH AND WELL-BEING

What would international students with a sound sense of social, physical and psychological well-being look like to the observer?

In terms of the domains of life satisfaction that were sampled in this study, we would expect such students to feel socially connected and supported while living in Melbourne, to experience a manageable level of cultural stress and stress from home, to be reasonably satisfied with living arrangements, finances, work commitments and academic progress, to have achieved a level of balance in lifestyle, to have sound self-esteem, not to show high levels of depression, anxiety or stress, and to avoid situations or behaviours that are potential threats to well-being or manage them where

---

374 External, objective measures provide valid data for other purposes; they also provide input to the formation and modification of students’ self-perceptions.
necessary in effective ways. Positive affect would thus dominate rather than negative affect, and the results of adaptation and effective coping strategies would be evident, in accordance with the description of the components of well-being given by Diener and his colleagues (Diener et al., 1999).

This portrait of the student with a sound sense of social, physical and psychological well-being is virtually identical to the description of students who belong to cluster 1 in the three-cluster typology of styles of adaptation to university life in Melbourne. The mode of adaptation shown by these students is positive and connected. We can extend that description to include the concept of well-being. The self-perceptions of students whose approach is positive and connected show them to have a sound sense of social, physical and psychological well-being: they experience positive affect and satisfaction in relation to the main domains of their life in Melbourne and their approaches to coping and adaptation are positive and effective. The self-perceptions of this group are consistent with the concept of psychological adaptation that Ward has proposed, a form of adaptation that she claims is influenced by such factors as personality and social support (Ward, 1997; Ward & Rana-Deuba, 1999).

The reassuring finding of the study is that the majority of international students display a positive, connected style of adaptation to life as international students in Australia; approximately 59 per cent of the students thus have, to varying degrees, a sense of well-being and a positive and effective approach to living and studying in Melbourne. There is much other, more detailed evidence that supports this generalisation.

Evidence of the general health and well-being of the majority of international students can be seen in most of the different domains of student life that were examined.

- Connectedness: About 70 per cent of students indicate that they have considerable to strong support, help and caring available to them in Melbourne.
- Cultural stress: Although about 50 per cent of students feel homesick and miss their own familiar way of life and their loved ones, about 84 per cent feel considerably or very comfortable in the Australian culture and 89 per cent feel considerably or very safe in Melbourne.
- Living arrangements: Just over 83 per cent of students are considerably or very well satisfied with their living arrangements in Melbourne.
- Finances: About 71 per cent of students are reasonably confident or very confident that their financial support is adequate for their needs during their time here.
- Lifestyle balance: About 72 per cent of students feel they have achieved a reasonable balance between social life and time alone, and about 76 students think they have established a sound nutritional balance in their diet. However, balance between study and other activities is a greater challenge; only 49.6 per cent of students consider they have achieved a reasonable balance in this aspect of their lives.
- Abuse and distress: The percentages of students who report not having experienced abuse are high (physical abuse: 97.1 per cent; verbal abuse: 71.2 per cent; sexual harassment: 91.6 per cent; exclusion: 67.5 per cent). However, this is an area where the aim is to have 100 per cent of students reporting no abuse.

Ratings of 2 or 3 on the four-point (0 – 3) scale are interpreted as agreement with items.

Rosenthal, Russell & Thomson, 2006
• Physical health: Almost 65 per cent of students report their general state of health to be good or excellent. Even more pertinently, just over 82 per cent judge their health here to be about the same as or better than at home.
• Anxiety presents a greater challenge to international students as a group than either depression or stress.
• About 85 per cent of students have a positive sense of self-esteem.
• In general, few students engage in behaviour that is potentially harmful to their health. Some 92 per cent of students indicate that they do not smoke, 92.5 per cent say that have not used soft drugs either at home or here, while 97.1 per cent say this of hard drug use, and 88.2 per cent say it of gambling. Self-harm behaviour is also relatively uncommon. However, drinking is a much more common activity; only 34.6 per cent of students acknowledge being non-drinkers. The lack of consistent use of condoms among sexually active students is a concern, with only about 50 per cent saying they always use them.

A minority of students in the sample do, however, have a lesser sense of well-being than those who have a positive, confident style of adaptation. These students seem to be coping less well with the psychological adaptation process. Their levels of satisfaction within the various domains of life in Melbourne are below average and their experience of negative affect is above average. The implication is that their approaches to coping are less than effective.

Emotional distress can be manifested as internalised distress or externalised distress (Roeser, Eccles and Strobel, 1998; Kazdin, 1993; Cameron & Jones, 1985). Negative affect such as anxiety, depression, stress, anger, fear and frustration can be directed inwards or expressed in behaviours that are potentially damaging to self and others. In this study these two different maladaptive approaches to coping are seen in the data.

The first of these involves a substantial minority of students, approximately one-third of those who have participated in the present study. Students exhibiting the second style of adaptation, the unconnected and stressed style, have high scores on the Cultural Stress, Depression, Anxiety, and Stress scales, but low engagement in drugs, alcohol, smoking, gambling, sexual activity and moderate engagement in self-harm. They show much less satisfaction and sense of well-being in the different domains of their life - social connectedness, adequacy of finances, lifestyle balance, experience of abuse, and physical health - than students whose approach is positive and connected. These are the students who feel most strongly that they have more university work than they can cope with and who are least satisfied with their academic progress. This is more strongly a female mode of adaptation than a male one.

The coping strategies being used by these students, presumably maladaptive forms of emotional, symptom-focused approaches, do not appear to be helping them to deal with their distress or to adapt positively to university life in Australia. The pattern of the unconnected and stressed student, whether international or domestic, is a familiar one to those within the university. It is a pattern which, in an extreme form, means that students experience their university life as unpleasant, even painful, and possibly achieve well below their capacity. With appropriate support, these students could have much more satisfying and productive experiences as university students.
The second form of maladaptive coping is seen in a small minority of students, about 7 per cent of the present sample. These students also show evidence of emotional distress. Students exhibiting the third style of adaptation, the distressed and risk-taking style, like their counterparts whose approach is unconnected and stressed, experience above-average levels of cultural stress, depression, anxiety and general stress, though the patterning of scale scores in these dimensions is different. Third mode students are much more depressed and anxious, while being less culturally stressed. The most obvious difference between the second and third modes of adaptation, however, is the distress expressed by third mode students through the pattern of their behaviours: high levels of potentially damaging involvement in drugs, alcohol, smoking, gambling, risky sexual activity and self-harm. This is more strongly a male mode of adaptation than a female one, a finding that is well supported in the literature (Barnes, Welte, Hoffmann, & Dintcheff, 2005; Hardoon, Gupta, & Derevensky, 2004; Stinchfield, 2000; Stinchfield & Winters, 1998).

There is considerable evidence in the research literature of the co-occurrence of these risky, health-related behaviours (Barnes et al., 2005; Desiderato & Crawford, 1995; Griffiths & Sutherland, 1998; Shaffer & Korn, 2002; Stewart & Kushner, 2005; Stinchfield, 2000; Vitaro, Bredgen, Ladouceur, & Tremblay, 2001; Wagner, 2001), with many studies also pointing to common risk factors, predictors and correlates. For example, there is evidence supporting the involvement of depression and anxiety (Holahan, Cronkite & Randall, 2001; Nathan, 2005; Shaffer & Korn, 2002; Wagner, 2001), as well as the use of avoidance and denial strategies for coping (Nower, Derevensky, & Gupta, 2004).

Four types of motivation for drinking have been validated by Cooper in her four-factor model (Cooper, 1994) - social, coping, enhancement and conformity. Drinking to cope has been shown to be associated with elevated levels of negative affect, particularly depression and anxiety, the placing of greater reliance on ineffectual forms of emotion-focused coping strategies (such as avoidance and denial) and the belief that alcohol can reduce tension and anxiety (Cooper, Frone, Russell, & Mudar, 1995; Holahan et al., 2001). These avoidant and denial-oriented coping strategies contrast with the active task-oriented coping of those not involved in these and related behaviours (Nower et al., 2004). In the present study, students with a distressed and risk-taking mode of adaptation appear to be using such maladaptive coping strategies. These strategies do not bring them a positive sense of well-being in the domains of life investigated.

Some validation of the interpretation of the typology is provided by the predicted differences that were found in students’ satisfaction, psychological states and behaviour in different domains, based on their style of adaptation: perceived need and actual use of university health and counselling services, social mixing, belonging to organisations, satisfaction with living arrangements, level of self-esteem, and level of stress associated with the need to do well academically for the sake of the family. While this typology is a convenient generalisation about sets of tendencies, encompassing considerable variation within each style, and does not allow prediction from the group to the individual level, the generalisation it offers is nevertheless useful for those seeking to maximise the quality of students’ satisfaction and achievement in adapting to university life in Australia.
While some demographic variables (gender, course type, using a LOTE off campus and country of origin) were found to be significantly associated with the typology, they did not prove to be useful predictors of or means of discrimination among the cluster groupings of students. The best model of prediction of the cluster groupings accounted for, at most, 3.2 per cent of the variance in the classification and was unable to classify any students correctly into clusters 2 or 3. Discriminant analysis resulted in the classification of students at no better than chance level. Demographic factors do not seem to be helpful in accounting for the modes of adaptation and related levels of well-being of international students.

This is consistent with findings from other research (Diener et al., 1999) that demographic factors account for only small amounts of variance in subjective well-being. In discussing this, Diener and his colleagues indicate that researchers have now turned to within-person variables as ones more likely to account for differences in perceptions of well-being, variables such as personality, goal structure (including cultural differences based on the individualism-collectivism dimension) and adaptive coping strategies. If this is the case, then the typology of student styles of adaptation might be seen as generic in nature, that is, it could well apply to all university students, whether domestic or international.

While the challenge of adapting to university life is generally much less for domestic students, they still confront cultural changes requiring adaptation. These could include the change from school to university life and from living at home in rural, interstate or New Zealand locations to living in Melbourne. Domestic students also include many first and second generation citizens from a range of other cultures. It would be interesting to see whether domestic students show evidence of the same three styles of adaptation to university life and life in Melbourne.

**GROUP DIFFERENCES IN PERCEPTIONS OF HEALTH AND WELL-BEING**

Demographic and related information was collected at the outset of the questionnaire. This information concerns aspects of life thought to be relevant to international student experience and adaptation:

- time in the country - years enrolled at the university, number of secondary school years in Australia, completion of a Foundation Studies program;
- age;
- gender;
- relationships - marital status, child present in Australia;
- course of study - faculty, course type;
- cultural background - country category, Asian/non-Asian, speaker of some English when growing up, LOTE speaker off campus;
- perceived academic progress.

These variables are not independent of one another. For example, age and course type are related, as are the four variables concerning cultural background. Each, however, measures something different.
These variables do differentiate among students’ perceptions of well-being in many different domains. Some variables are more powerful and pervasive in their capacity to differentiate than others.

**TIME IN AUSTRALIA**

It is generally thought that the longer international students spend in the host country, the greater their adaptation and the lower their level of cultural stress (Adler, 1975; Church, 1982), although Ward and her colleagues (Ward, Okura, Kennedy & Kojima, 1998; Ward & Kennedy, 1999; Ward & Rana-Dueba, 1999) argue that while sociocultural adjustment relates to length of stay, psychological adjustment does not.

| Three measures have some input to measuring length of stay: years of enrolment at the university, years of secondary schooling in Australia and completion of a Foundation Studies Program. |

The number of years of enrolment in the sample ranges from 1 to 9, with 82.6 per cent having been enrolled between 1 and 3 years and 99.2 per cent between 1 and 6 years. If time in Australia is associated with adaptation and level of cultural stress, it would be expected that the longer students had been enrolled, the lower their score on the Cultural Stress scale. In fact there is not a significant relationship between years of enrolment and cultural stress level. Some significant relationships between years of enrolment and well-being in domains of life were found: a stronger sense of general connectedness in Melbourne (though not for social mixing or membership of organisations), greater satisfaction with living arrangements and financial support, greater involvement in unpaid work, more sexual partners, a higher level of abuse and distress, and higher use of alcohol.

Some of these might be seen as evidence of sociocultural adaptation (for example, stronger sense of connectedness, greater satisfaction with accommodation and finance), but others seem more likely to be due to the effluxion of time (for example, number of sexual partners, more experiences of abuse). In any case, the percentage variance in all of these variables associated with years of enrolment is very small, ranging from 0.5 per cent (connectedness) to 3.2 per cent (abuse and distress). The years of enrolment variable does not provide a great deal of useful information about students’ adaptation and well-being across the domains that were investigated.

Two sub-groups of students spent time in Australia prior to enrolment in the university. Some 243 students spent from one to three or more years of their secondary schooling here, while 315 had undertaken a Foundation Studies program, aimed at preparing them academically and culturally for university study. Experience

---

376 The following are the domains that were explored:
- Relating to others in Australian society: connectedness, social mixing, organizations, cultural stress, stress from home;
- Living and studying in Melbourne: living arrangements, finances, paid work, unpaid work, lifestyle balance (study, social life and nutrition), abuse and distress;
- Health and health-related behaviour: physical health and its interference with study, depression, anxiety, stress, self-esteem, sexual partners, use of condoms, relationships, use of drugs, use of alcohol, gambling and smoking, self-harm;
- Use of university health and counseling services.

Rosenthal, Russell & Thomson, 2006 119
of secondary schooling in Australia throws no light on levels of well-being in different domains in this study.

The Foundation Studies variable does distinguish among students’ satisfaction and well-being in different domains. Because 99 per cent of the students who completed a Foundation Studies program are from Asian countries, comparisons are made between students from Asian countries who did or did not complete such a program.

Former Foundation Studies students from Asian countries show some positive characteristics compared with students from Asian countries who did not engage in a Foundation Studies program. They have a significantly stronger sense of connectedness in Melbourne and they have a significantly higher level of satisfaction with their living arrangements. Both of these characteristics might well have been developed through the experience with and help of the Foundation Studies program.

Former Foundation Studies students from Asian countries also have a clearly differentiated pattern of social mixing. Compared with students from Asian countries who have not undertaken Foundation Studies, they mix significantly more with co-culturals at the university as well as off campus and significantly less with Australians in both locations. They also mix significantly more with people they have met here through the practice of their religion. The Foundation Studies program might well provide the opportunity for meeting and forming continuing friendships with co-culturals of like mind.

There is some suggestion in the data that former Foundation Studies students from Asian countries are less confident in adapting to study and life in Australia. They have significantly lower levels of self-esteem than their counterparts, while their levels of depression and stress tend to be higher, though not significantly so. They also experience significantly more stress in trying to meet the expectations their families have of them. Perhaps these are students who had a marked need of preparation for living and studying in Australia; possibly a lesser facility with communication in English was a reason for being involved in the program in the first place.

Former Foundation Studies students from Asian countries are significantly less engaged in paid work than those who have not undertaken the program. Given that supporting students for an extra year in Melbourne is expensive, this result suggests that Foundation Studies students might have stronger financial support from home than other students. Over 95 per cent of these students are supported financially by their families, with relatively few relying on other sources of support. This presumably helps to account for the stronger level of perceived expectations and stress from home being experienced by these students.

The Foundation Studies variable is associated with differences in students’ sense of well-being in several domains. Most of the effect sizes are small, ranging from .2 to .4, with the largest effect size of .38 being associated with their significantly higher mixing with co-culturals at the university.

To sum up, the length of stay in Australia has not proven to be a very important dimension in accounting for differences in perceived well-being in the range of life domains measured in this study. The differences based on the years of enrolment are
few and small. The years of secondary schooling variable has produced nothing of interest. Some differences exist on the basis of the Foundation Studies variable. It is probable that students’ self-selection into the program, as well as their experiences during it, account for those differences. Ward and her colleagues (Ward et al., 1998; Ward & Kennedy, 1999; Ward & Rana-Dueba, 1999) have argued that length of stay does not affect psychological adjustment, only sociocultural adjustment. Since the focus of study here is well-being, an indicator of psychological adjustment, the finding of few differences on the basis of length of stay might be explicable in Ward’s terms.

AGE

Age has been studied as a demographic variable associated with adjustment of the international student. Church (1982) cites evidence of greater general and academic satisfaction of older students, but greater interaction with host nationals by younger students. The results of the present study point to a stronger sense of well-being among older students in most of the life domains explored.

Age does not correlate significantly with the Connectedness scale score. However, the older the student, the more likely they are to mix with Australians and the less likely they are to mix with co-culturals both within the university and off campus. This contrasts with the evidence cited by Church. On the other hand, younger students are significantly more likely to belong to university clubs and to mix with people they meet through the practice of their religion.

There is evidence that younger students experience more psychological distress than older students. There is a significant negative relationship between age and cultural stress, the experience of stress from family expectations, depression, anxiety, self-esteem and balance in nutrition. In terms of health-related behaviour, older students are significantly more likely to be married/have partners, to be sexually active and to have had more partners\(^{377}\), although making less use of condoms. Older students are also more likely to visit the health service if they feel they need medical help.

On the basis of these results it seems that age is positively associated with adjustment to Australian culture. However, although these correlations are statistically significant, the percentage of variance in the results associated with age is quite small, being mostly below 4 per cent.

GENDER

Church (1982) found that surprisingly few studies of gender differences in adjustment had been made; those that had studied gender differences tended to suggest that females might have more difficulties than males.

In the present study, no significant gender difference was found in the level of students’ connectedness in Melbourne. Supporting this finding is the fact that, although female students tend to mix more with co-culturals than males, the difference was significant on only one of the four measures taken. Males mix significantly more than females with Australians at the university. In addition, males

\(^{377}\) The higher number of sexual partners is to some extent the effect of the high proportion of students who are celibate singles.
belong to organisations at the university and off campus, including religious groups, significantly more than females.

Female students do show greater levels of psychological distress than male students. They have significantly higher scores on the Abuse and Distress scale and the Stress scale. They have lower levels of self-esteem, have experienced greater distress about relationships during their studies here and are involved in a significantly higher level of self-harm. In contrast, males are significantly more involved in gambling and smoking, possibly an alternative form of maladaptive response. Consistent with these differences, there are significantly more females than expected among students exhibiting an unconnected and stressed style of adaptation and significantly more male students than expected among those with a distressed and risk-taking approach.

While the gender differences mentioned are all statistically significant, the effect sizes are almost all small, about .2. The exception is the gender difference on the Abuse and Distress scale, where there is a medium effect size of .55, indicating an area that is important to consider. Female students feel generally less safe than male students. They experience a higher rate of physical abuse and sexual harassment, but a lower rate of verbal abuse than male students. They also report a higher level of distress than males in response to abuse. These findings are consistent with other recent Australian findings of a lesser feeling of safety and a greater experience of bad treatment among female compared with male international students in Australia (Deumart et al., 2004; Deumert, Marginson, Nyland, Ramia, & Sawir, in press).

RELATIONSHIPS

Two demographic variables concerning relationships were examined for their association with students’ sense of well-being in different domains of life in Australia: marital status and, for those with children, having a child present with them in Australia.

Although four categories of marital status were provided for response, only two students indicated that they were divorced or separated and only one was widowed. As a result, analyses focused on two categories only: being single or being married/partnered. Group differences on the basis of marital status are mainly concerned with social activity, experience of cultural stress, other forms of psychological distress and sexual behaviour.

Single students mix significantly more than married/partnered students with co-culturals on and off campus, and significantly less with Australians in both locations. They also belong to more organisations at the university and outside, including religious groups, than their married/partnered counterparts. It is interesting that the two groups do not differ significantly in terms of their connectedness in Melbourne. One might expect that being married or partnered would increase a sense of connectedness, although only if the partner were also living in Melbourne.

Single students experience higher levels of cultural stress and stress from family expectations than married/partnered students. Single students also experience greater depression and anxiety, as well as a lower level of self-esteem. This finding, at least in part, confounds marital status with age, because single students are much younger than married/partnered students (21.9 years compared with 28.2 years). Younger
students also experience higher levels of depression and anxiety, as well as lower levels of self-esteem. Other findings that could also confound marital status and age are the findings that single students have had fewer sexual partners since coming to Australia (since age is positively related to number of sexual partners) and single students’ greater use of condoms (since younger students use condoms more consistently).

The effect sizes for differences based on marital status are a little stronger than those for gender. However, they are still small, most being between .2 and .3. The strongest is the effect of marital status on the experience of stress from home concerning family expectations. This has a medium effect size of .50. This presumably reflects in part the much higher proportion of single students (96.3 per cent) than married/partnered students (74.4 per cent) who are dependent at least in part on financial support from their families.

Parents who bring a child or children to live with them while they are studying in Australia have the potential for different types or levels of connectedness and social mixing in Melbourne, through schools or child care contacts, in addition to the connectedness that family members provide. Those without their children might experience greater stress as a result of the separation from family. Few of the international students participating in the study have children, only 46, and of these 36 have a child living with them in Australia. The sample being compared is thus quite small.

There are only two areas in which this variable differentiates between levels of well-being of students. Those who have children with them in Australia have a significantly stronger sense of connectedness in Melbourne. They also have a significantly lower level of cultural stress. While this situational variable has not had a pervasive effect across the different domains explored in the study, the effect sizes on both connectedness and cultural stress are of medium size (.57 and .58 respectively) and worthy of note.

**COURSE OF STUDY**

Two variables were examined in relation to course of study. The first was the level at which the course is taken – undergraduate or postgraduate. Postgraduate students were classed as undertaking their degree by coursework or research. This variable bears some common ground with the variables of age and marital status. The second variable concerns the faculty in which students are enrolled.

Although there is no effect for course type on the level of connectedness, there are significant effects for social mixing. Undergraduate students mix significantly more than postgraduate students with co-culturals both on and off campus, while postgraduate students mix significantly more with Australians than undergraduate students in both locations. It seems likely that the high concentration of international students in many undergraduate courses encourages co-cultural mixing. Postgraduate students have more opportunity to meet and mix with Australians, because of the lower percentage of co-culturals in these courses. A similar difference exists between undergraduate and postgraduate social mixing patterns on the basis of age and marital status.
Undergraduate students are also significantly more likely to belong to organisations on campus than postgraduate research students and also to religious groups off campus. When it comes to involvement in national or cultural associations, it is postgraduate coursework students who are significantly more likely to be involved than postgraduate research students. This means the group least likely to participate in organisations is the postgraduate research group.

Undergraduate students experience a higher level of psychological distress than their postgraduate counterparts. Undergraduate students also have higher levels of cultural stress, as well as depression, anxiety, stress from home due to family expectations, and higher scores on the Perceptions of Alcohol Use scale. They have significantly lower levels of self-esteem. This is consistent with the evidence of Church (1982) that postgraduate students are bolstered by their greater maturity and record of successful achievement. At the same time, undergraduates in the present study have significantly less concern about the adequacy of their financial support and engage significantly less in paid work than postgraduate students.

Once again, the magnitude of the effect of the course type variable on students’ sense of well-being in the different domains is not large. The percentage variance accounted for by the type of course being undertaken ranges from 0.6 per cent for cultural stress to 8.6 per cent for social mixing with co-culturals at the university.

The differences in student well-being associated with faculty membership are more complex to describe, given that there are 13 faculties to take into account. The faculties differ in size, including class size, the number of international students enrolled, the relative representation from different country categories, the predominance of undergraduate or graduate courses, length of courses, the main approaches to teaching and learning, the different student activity requirements such as clinical, practical or performance work. All of these factors can influence student interaction, student and staff interaction and the faculty-related acculturation of students.

The Economics and Commerce Faculty, for example, has 251 international students of the current sample enrolled, 95.6 per cent of whom are from Asian countries. The approaches to teaching and learning and tasks required of students in this faculty contrast with those at the VCA, where only 12 students from the sample are enrolled, half of whom are from Asian countries and half from European or English-speaking countries. Eight students in the sample are enrolled in the MBS, four being from Asian countries and four from Latin American, European or English-speaking countries. The length of their courses and the types of tasks undertaken would contrast with the courses of students in Veterinary Science and in Land and Food Resources. Eighteen students from the sample are enrolled in Veterinary Science courses, ten of whom are from Asian countries, with most of the remaining eight being from English-speaking countries. Of the 13 students from the sample enrolled in the Land and Food Resources Faculty, 12 are from Asian countries.

Links can be seen between faculty profiles and the composition of the student sample within faculties. For example, students from the sample within the Economics and Commerce Faculty are predominantly from Asian countries, with about 42 per cent of these being from PR China. These country categories can be linked to the higher level of social interaction with co-culturals, lower level of interaction with
Australians, lower consumption of alcohol, and the lower use of the university health service, even when needed.

Significant faculty-based differences exist in students’ sense of connectedness in Melbourne. This is also reflected in significant differences concerning social interaction with co-culturals and Australians, as well as with participation in university clubs, national and cultural associations, and religious groups.

Although differences among faculties in cultural stress levels do not reach statistical significance (p=.055), there is a significant faculty-based effect for perceived stress relating to family expectations. Financial matters also differentiate among faculty groups. There are significant faculty effects on perceived adequacy of financial support and engagement in paid work.

Another area that differentiates among faculties is lifestyle balance. Faculty-based effects exist in two of the three areas of lifestyle balance investigated: study, and nutrition. Although there are no significant differences found in the experience of depression, anxiety or stress, faculty-based effects were found in the Abuse and Distress scale, the Perceptions of Drug Use, and the Use of Alcohol scale scores, as well as in seeking help from the university health service when students felt in need of medical help.

Once again, however, the percentage of variance in each domain associated with the faculty in which students are enrolled is small. The general range is from 1.3 per cent for balance in social life to 4.8 per cent for use of drugs. On only one variable is the percentage of variance higher: it is associated with 17.3 per cent of the variance on the Abuse and Distress scale. However, caution is needed with this variable because the numbers providing scores on this scale are much lower than for other measures.

An interesting question is whether any consistencies are revealed in the well-being and adaptation of students from particular faculties. When the rank order of faculty results in different domains are considered, patterns are seen most clearly for faculties that have small enrolments. Faculties with large enrolments from the study sample tend to achieve middle rankings, presumably as the effect of individual differences are reduced by the size of the group. In Table 87, profiles of the faculties are presented, showing higher and lower rankings on relevant variables. The terms ‘higher’ and ‘lower’ are relative terms, relating to the ranking of a faculty on a particular variable vis-à-vis other faculties. They do not necessarily indicate high or low scores in absolute terms. Empty cells indicate middle-level rankings.

Relative to students in other faculties, VCA students appear to have a positive sense of well-being in many areas. They have a stronger sense of connectedness, lower levels of cultural stress and stress from family expectations, and a higher level of perceived balance in study and nutrition. However, they also have higher scores concerning use of drugs and alcohol. The MBS students have contrasting self-perceptions. They have a lower sense of connectedness, reflected also in lower social interaction with either co-culturals or Australians. On the other hand they seem to be more actively involved in organisational life on and off campus. Their cultural stress levels are higher, as is the stress from fulfilling family expectations. They are concerned about their lifestyle balance in relation to study and also nutrition. While their use of drugs is lower, their use of alcohol is higher.
Table 87: Profiles of faculty-based student perceptions of well-being

<table>
<thead>
<tr>
<th></th>
<th>Architect Building Planning (n=56)</th>
<th>Arts (n=127)</th>
<th>Eco Commerce (n=251)</th>
<th>Education (n=41)</th>
<th>Engineering (n=156)</th>
<th>Land- Food Resource s (n=13)</th>
<th>Law (n=27)</th>
<th>Medicine Dentistry Health (n=122)</th>
<th>MBS (n=8)</th>
<th>Music (n=14)</th>
<th>Science (n=119)</th>
<th>Vet Science (n=18)</th>
<th>VCA (n=12)</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Connectedness scale</strong></td>
<td>Higher</td>
<td>Lower</td>
<td>Higher</td>
<td>Lower</td>
<td>Higher</td>
<td>Lower</td>
<td>Lower</td>
<td>Higher</td>
<td>Lower</td>
<td>Higher</td>
<td>Lower</td>
<td>Higher</td>
<td>Higher</td>
</tr>
<tr>
<td><strong>Social mixing-co-culturals</strong></td>
<td>Higher</td>
<td>Higher</td>
<td>Higher</td>
<td>Higher</td>
<td>Higher</td>
<td>Lower</td>
<td>Higher</td>
<td>Lower</td>
<td>Lower</td>
<td>Lower</td>
<td>Lower</td>
<td>Lower</td>
<td>Higher</td>
</tr>
<tr>
<td><strong>Social mixing-Australians</strong></td>
<td>Lower</td>
<td>Lower</td>
<td>Higher</td>
<td>Lower</td>
<td>Higher</td>
<td>Lower</td>
<td>Higher</td>
<td>Higher</td>
<td>Higher</td>
<td>Higher</td>
<td>Lower</td>
<td>Lower</td>
<td>Higher</td>
</tr>
<tr>
<td><strong>University clubs</strong></td>
<td>Lower</td>
<td>Lower</td>
<td>Lower</td>
<td>Lower</td>
<td>Higher</td>
<td>Lower</td>
<td>Higher</td>
<td>Higher</td>
<td>Higher</td>
<td>Higher</td>
<td>Higher</td>
<td>Higher</td>
<td>Higher</td>
</tr>
<tr>
<td><strong>National/cultural associations</strong></td>
<td>Higher</td>
<td>Higher</td>
<td>Lower</td>
<td>Higher</td>
<td>Higher</td>
<td>Lower</td>
<td>Higher</td>
<td>Lower</td>
<td>Lower</td>
<td>Lower</td>
<td>Lower</td>
<td>Lower</td>
<td>Lower</td>
</tr>
<tr>
<td><strong>Religious associations</strong></td>
<td>Higher</td>
<td>Higher</td>
<td>Higher</td>
<td>Lower</td>
<td>Higher</td>
<td>Lower</td>
<td>Higher</td>
<td>Lower</td>
<td>Lower</td>
<td>Lower</td>
<td>Lower</td>
<td>Lower</td>
<td>Lower</td>
</tr>
<tr>
<td><strong>Cultural Stress scale</strong></td>
<td>Higher</td>
<td>Lower</td>
<td>Higher</td>
<td>Higher</td>
<td>Higher</td>
<td>Lower</td>
<td>Lower</td>
<td>Lower</td>
<td>Lower</td>
<td>Lower</td>
<td>Lower</td>
<td>Lower</td>
<td>Lower</td>
</tr>
<tr>
<td><strong>Stress re family expectations</strong></td>
<td>Lower</td>
<td>Lower</td>
<td>Higher</td>
<td>Higher</td>
<td>Higher</td>
<td>Higher</td>
<td>Higher</td>
<td>Lower</td>
<td>Higher</td>
<td>Lower</td>
<td>Lower</td>
<td>Lower</td>
<td>Lower</td>
</tr>
<tr>
<td><strong>Financial support adequacy</strong></td>
<td>Higher</td>
<td>Higher</td>
<td>Lower</td>
<td>Higher</td>
<td>Higher</td>
<td>Lower</td>
<td>Higher</td>
<td>Higher</td>
<td>Higher</td>
<td>Higher</td>
<td>Higher</td>
<td>Higher</td>
<td>Higher</td>
</tr>
<tr>
<td><strong>Paid work</strong></td>
<td>Higher</td>
<td>Lower</td>
<td>Lower</td>
<td>Lower</td>
<td>Higher</td>
<td>Lower</td>
<td>Lower</td>
<td>Lower</td>
<td>Lower</td>
<td>Lower</td>
<td>Lower</td>
<td>Lower</td>
<td>Lower</td>
</tr>
<tr>
<td><strong>Balance – study</strong></td>
<td>Higher</td>
<td>Higher</td>
<td>Higher</td>
<td>Lower</td>
<td>Higher</td>
<td>Lower</td>
<td>Higher</td>
<td>Higher</td>
<td>Higher</td>
<td>Higher</td>
<td>Higher</td>
<td>Higher</td>
<td>Higher</td>
</tr>
<tr>
<td><strong>Balance - nutrition</strong></td>
<td>Lower</td>
<td>Higher</td>
<td>Lower</td>
<td>Higher</td>
<td>Higher</td>
<td>Lower</td>
<td>Higher</td>
<td>Higher</td>
<td>Higher</td>
<td>Higher</td>
<td>Higher</td>
<td>Higher</td>
<td>Higher</td>
</tr>
<tr>
<td><strong>Abuse and Distress scale</strong></td>
<td>Higher</td>
<td>Lower</td>
<td>Lower</td>
<td>Higher</td>
<td>Higher</td>
<td>Lower</td>
<td>Higher</td>
<td>Lower</td>
<td>Higher</td>
<td>Higher</td>
<td>Higher</td>
<td>Higher</td>
<td>Higher</td>
</tr>
<tr>
<td><strong>Use of Drugs scale</strong></td>
<td>Higher</td>
<td>Lower</td>
<td>Lower</td>
<td>Lower</td>
<td>Lower</td>
<td>Lower</td>
<td>Higher</td>
<td>Higher</td>
<td>Higher</td>
<td>Higher</td>
<td>Higher</td>
<td>Higher</td>
<td>Higher</td>
</tr>
<tr>
<td><strong>Use of Alcohol scale</strong></td>
<td>Lower</td>
<td>Lower</td>
<td>Lower</td>
<td>Lower</td>
<td>Lower</td>
<td>Lower</td>
<td>Higher</td>
<td>Higher</td>
<td>Higher</td>
<td>Higher</td>
<td>Higher</td>
<td>Higher</td>
<td>Higher</td>
</tr>
<tr>
<td><strong>Visit health service</strong></td>
<td>Higher</td>
<td>Lower</td>
<td>Lower</td>
<td>Lower</td>
<td>Higher</td>
<td>Higher</td>
<td>Higher</td>
<td>Higher</td>
<td>Higher</td>
<td>Higher</td>
<td>Higher</td>
<td>Higher</td>
<td>Higher</td>
</tr>
</tbody>
</table>

*Numbers involved in this domain are very low.
The profile of Law students shares many features with the VCA student profile, although Law students have a much lower sense of balance between study and other activities. Neither do they engage in higher level use of drugs and alcohol. The main challenges for Veterinary Science students seem to be their lower level of connectedness, higher stress from family expectations, and higher involvement in drugs and alcohol. For Music students, cultural stress and stress from family expectations provide challenges to adaptation, as does their lower sense of balance regarding study and their higher involvement in drug use. Connectedness seems to be the main challenge for Land and Food Resources students; they, together with Economics and Commerce and also Engineering students do not seem to interact with Australians to any great degree. Students in these three faculties, all with a high percentage of Asian students in the sample (92 to 97 per cent), also have low involvement in health-related risk behaviours.

Of all the faculties, students in the Medicine/Dentistry/Health Sciences Faculty have the profile that seems to give the most consistent evidence of well-being. Many of the domains have middle-ranking scores, but in addition there is a high level of social interaction with both co-culturals and Australians, little concern about financial support, a strong sense of lifestyle balance in study and nutrition, low drug use and a preparedness to use the university health service when necessary.

**CULTURAL BACKGROUND**

Four demographic and situational variables relate to cultural background: the category of country of origin, Asian or non-Asian country of origin, experience of speaking some English when growing up or not, and speaking a LOTE off campus or not. There is clear overlap among these variables, though each is also measuring something different as well.

There are country-based effects on students’ perceptions of well-being in a wide range of areas. There is not a significant effect on the Connectedness scale score. However, there are significant effects on perceived social interaction with co-culturals and Australians, both within the university and off campus, as well as in students’ involvement in organisations and associations. Country-based effects are also found on satisfaction with living arrangements, perceived adequacy of finances and engagement in paid work.

There are significant country-based effects on measures of psychological distress: cultural stress, stress from perceived family expectations, depression, anxiety, stress and self-esteem, as well as perceived health interference with studies and balance in lifestyle. Health-related behaviours also show country-based effects: number of sexual partners, use of condoms, and use of drugs and alcohol. There are differences among countries of origin in students’ preparedness to use the university health service when in need.

For the most part, the percentage of variance associated with country category is small, usually about 3 to 4 per cent. However, in two areas, a higher percentage of variance is accounted for by country category. Country category accounts for between 10 and 17 per cent of the variance in the social mixing patterns of students and between 7 and 13 per cent of the variance in health-related behaviours.
Patterns can be seen in the well-being and adaptation of students from different country categories, when the rank order of results in different domains is considered. Profiles of each country category are presented in Table 88. Once again, the terms ‘higher’ and ‘lower’ relate to the ranking of a country category on a particular variable vis-à-vis other country categories. They do not necessarily indicate absolute scores. Empty cells indicate middle-level rankings.

There are two main patterns in evidence, represented by pale and dark highlighting in Table 88. The first is a pattern that seems to be associated with Asian countries, in some cases also being influenced by Islamic culture. Although there are differences among the Asian countries, the main elements of the pattern appear to be higher social interaction with co-culturals and lower interaction with Australians, high involvement in religious groups by students from Muslim countries, higher cultural stress and stress from family expectations, lower involvement in paid work for students from wealthier areas, higher levels of depression and anxiety, and lower levels of self-esteem, and lower use of drugs and alcohol.

In contrast, the pattern associated with English-speaking, European and westernised countries is characterised by lower social interaction with co-culturals and higher interaction with Australians, greater involvement in university clubs but lower participation in national, cultural and religious groups, lower cultural stress resulting from trying to meet family expectations, higher satisfaction with living arrangements but lower satisfaction with the level of financial support, a stronger sense of lifestyle balance, fewer worries about poor health interfering with work, higher levels of self-esteem, a greater number of sexual partners while in Australia, and higher use of drugs and alcohol.

Both patterns show areas of strength as well as areas of concern. Students from countries that display the first pattern seem to experience greater difficulty in adaptation, while those displaying the second pattern appear to engage in more risk-taking behaviour.

If the interpretation of the patterns in Table 88 is accurate, the second variable relating to cultural background (comparison of students from Asian and non-Asian countries) should produce results that are similar to the two main patterns seen in Table 88, though modified to some extent by the inclusion of countries that do not show a clear-cut pattern.

This is the case. Many of the most consistent elements of the two patterns seen in Table 88 are to be found in the comparison of the perceptions of students from Asian/non-Asian countries. There is strong differentiation in the pattern of social mixing. Students from Asian countries mix significantly more with co-culturals and significantly less with Australians both on and off campus than do students from non-Asian countries. There are moderate to high effect sizes on these measures, ranging from .58 to .82. Students from Asian countries have significantly higher involvement than those from non-Asian countries in national and cultural associations, as well as in religious organisations.
Table 88  Profiles of country-based student perceptions of well-being

<table>
<thead>
<tr>
<th></th>
<th>PR China (n=224)</th>
<th>Hong Kong (n=80)</th>
<th>India (n=16)</th>
<th>Indonesia (n=96)</th>
<th>Malaysia (n=225)</th>
<th>Singapore (n=113)</th>
<th>UK/US/Canada (n=38)</th>
<th>Other East Asia (=43)</th>
<th>Other S.E.Asia/Pacific (n=50)</th>
<th>Middle East/N.Africa (n=11)</th>
<th>Other Africa (n=14)</th>
<th>Europe (n=26)</th>
<th>Latin America (n=7)</th>
<th>Other South Asia (n=13)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Social mixing-co-culturals</td>
<td>Higher</td>
<td>Higher</td>
<td>Lower</td>
<td>Higher</td>
<td>Higher</td>
<td>Higher</td>
<td>Lower</td>
<td>Lower</td>
<td>Lower</td>
<td>Lower</td>
<td>Lower</td>
<td>Lower</td>
<td>Lower</td>
<td>Lower</td>
</tr>
<tr>
<td>Social mixing-Australians</td>
<td>Lower</td>
<td>Lower</td>
<td>Higher</td>
<td>Lower</td>
<td>Higher</td>
<td>Higher</td>
<td>Lower</td>
<td>Lower</td>
<td>Higher</td>
<td>Higher</td>
<td>Lower</td>
<td>Higher</td>
<td>Lower</td>
<td>Higher</td>
</tr>
<tr>
<td>University clubs</td>
<td>Lower</td>
<td>Lower</td>
<td>Higher</td>
<td>Lower</td>
<td>Higher</td>
<td>Higher</td>
<td>Lower</td>
<td>Lower</td>
<td>Lower</td>
<td>Higher</td>
<td>Lower</td>
<td>Lower</td>
<td>Lower</td>
<td>Lower</td>
</tr>
<tr>
<td>National/cultural associations</td>
<td>Higher</td>
<td>Lower</td>
<td>Lower</td>
<td>Higher</td>
<td>Lower Higher</td>
<td>Higher</td>
<td>Lower</td>
<td>Lower</td>
<td>Higher</td>
<td>Higher</td>
<td>Lower</td>
<td>Higher</td>
<td>Higher</td>
<td>Lower</td>
</tr>
<tr>
<td>Cultural stress scale</td>
<td>Higher</td>
<td>Higher</td>
<td>Higher</td>
<td>Lower</td>
<td>Higher</td>
<td>Higher</td>
<td>Lower</td>
<td>Higher</td>
<td>Higher</td>
<td>Higher</td>
<td>Lower</td>
<td>Higher</td>
<td>Higher</td>
<td>Lower</td>
</tr>
<tr>
<td>Stress re family expectations</td>
<td>Higher</td>
<td>Higher</td>
<td>Higher</td>
<td>Lower</td>
<td>Higher</td>
<td>Lower</td>
<td>Higher</td>
<td>Lower</td>
<td>Lower</td>
<td>Higher</td>
<td>Lower</td>
<td>Higher</td>
<td>Higher</td>
<td>Lower</td>
</tr>
<tr>
<td>Financial support adequacy</td>
<td>Higher</td>
<td>Lower</td>
<td>Higher</td>
<td>Lower</td>
<td>Higher</td>
<td>Lower</td>
<td>Higher</td>
<td>Higher</td>
<td>Higher</td>
<td>Higher</td>
<td>Lower</td>
<td>Higher</td>
<td>Higher</td>
<td>Lower</td>
</tr>
<tr>
<td>Paid work</td>
<td>Higher</td>
<td>Lower</td>
<td>Lower</td>
<td>Lower</td>
<td>Higher</td>
<td>Higher</td>
<td>Lower</td>
<td>Higher</td>
<td>Lower</td>
<td>Higher</td>
<td>Lower</td>
<td>Higher</td>
<td>Higher</td>
<td>Lower</td>
</tr>
<tr>
<td>Physical health interferes</td>
<td>Higher</td>
<td>Lower</td>
<td>Lower</td>
<td>Higher</td>
<td>Higher</td>
<td>Higher</td>
<td>Higher</td>
<td>Higher</td>
<td>Higher</td>
<td>Higher</td>
<td>Lower</td>
<td>Higher</td>
<td>Higher</td>
<td>Lower</td>
</tr>
<tr>
<td>Depression scale</td>
<td>Higher</td>
<td>Higher</td>
<td>Higher</td>
<td>Lower</td>
<td>Higher</td>
<td>Lower</td>
<td>Higher</td>
<td>Lower</td>
<td>Higher</td>
<td>Higher</td>
<td>Lower</td>
<td>Higher</td>
<td>Higher</td>
<td>Lower</td>
</tr>
<tr>
<td>Anxiety scale</td>
<td>Higher</td>
<td>Higher</td>
<td>Higher</td>
<td>Lower</td>
<td>Higher</td>
<td>Lower</td>
<td>Higher</td>
<td>Lower</td>
<td>Higher</td>
<td>Higher</td>
<td>Lower</td>
<td>Higher</td>
<td>Higher</td>
<td>Lower</td>
</tr>
<tr>
<td>Stress scale</td>
<td>Lower</td>
<td>Higher</td>
<td>Higher</td>
<td>Lower</td>
<td>Lower</td>
<td>Higher</td>
<td>Lower</td>
<td>Higher</td>
<td>Lower</td>
<td>Higher</td>
<td>Lower</td>
<td>Higher</td>
<td>Higher</td>
<td>Lower</td>
</tr>
<tr>
<td>Self-esteem</td>
<td>Lower</td>
<td>Lower</td>
<td>Lower</td>
<td>Lower</td>
<td>Lower</td>
<td>Higher</td>
<td>Higher</td>
<td>Higher</td>
<td>Higher</td>
<td>Higher</td>
<td>Lower</td>
<td>Higher</td>
<td>Higher</td>
<td>Lower</td>
</tr>
<tr>
<td>Number of partners</td>
<td>Lower</td>
<td>Higher</td>
<td>Lower</td>
<td>Lower</td>
<td>Higher</td>
<td>Lower</td>
<td>Higher</td>
<td>Higher</td>
<td>Higher</td>
<td>Higher</td>
<td>Lower</td>
<td>Higher</td>
<td>Higher</td>
<td>Lower</td>
</tr>
<tr>
<td>Use of condoms</td>
<td>Higher</td>
<td>Lower</td>
<td>Lower</td>
<td>Higher</td>
<td>Lower</td>
<td>Higher</td>
<td>Lower</td>
<td>Lower</td>
<td>Lower</td>
<td>Higher</td>
<td>Lower</td>
<td>Higher</td>
<td>Higher</td>
<td>Lower</td>
</tr>
<tr>
<td>Use of Drugs scale</td>
<td>Higher</td>
<td>Lower</td>
<td>Higher</td>
<td>Lower</td>
<td>Lower</td>
<td>Lower</td>
<td>Lower</td>
<td>Lower</td>
<td>Lower</td>
<td>Lower</td>
<td>Lower</td>
<td>Higher</td>
<td>Higher</td>
<td>Lower</td>
</tr>
<tr>
<td>Use of Alcohol scale</td>
<td>Lower</td>
<td>Lower</td>
<td>Higher</td>
<td>Lower</td>
<td>Lower</td>
<td>Lower</td>
<td>Lower</td>
<td>Lower</td>
<td>Lower</td>
<td>Lower</td>
<td>Lower</td>
<td>Higher</td>
<td>Higher</td>
<td>Lower</td>
</tr>
<tr>
<td>Visit health service</td>
<td>Lower</td>
<td>Higher</td>
<td>Higher</td>
<td>Lower</td>
<td>Higher</td>
<td>Higher</td>
<td>Lower</td>
<td>Lower</td>
<td>Higher</td>
<td>Higher</td>
<td>Lower</td>
<td>Higher</td>
<td>Higher</td>
<td>Lower</td>
</tr>
</tbody>
</table>

Rosenthal, Russell & Thomson, 2006 129
Students from Asian countries experience greater psychological distress - a higher level of cultural stress, greater stress from home in relation to family expectations, and higher anxiety. Although they are significantly more satisfied with their financial support than other students, students from Asian countries feel their diet is less balanced and that poor health interferes more with their studies. Nevertheless, they are less likely to visit the university health service, even though they feel they need help. Students from Asian countries, however, are significantly less involved in drug and alcohol use than other students.

This variable results in some of the strongest effect sizes to date in this report, indicating the importance of the Asian/non-Asian dimension. In addition to those concerned with patterns of social mixing, there are moderate effect sizes for perceived stress from home (.50) and for use of drugs and alcohol (.64 and .61 respectively). The remaining aspects of well-being mentioned in this summary have small effect sizes of about .3.

The third variable concerned with cultural background focuses on whether students spoke some English when growing up. Some facility with language and communication increases the likelihood of ease of adaptation. This is clear in the profiles presented by those who did and did not speak some English in childhood.

Compared with those who did not, students who spoke some English when growing up have significantly stronger levels of connectedness, lower levels of cultural stress, greater satisfaction with their living arrangements, higher involvement in paid work, a stronger sense of balance in study, social life and diet, less interference in their studies arising from poor health, greater preparedness to use the university health service when in need, but also greater use of drugs and alcohol.

This comparison bears a resemblance to the Asian/non-Asian comparison (and there is a clear overlap in category membership), but it has a stronger emphasis on connectedness and a lower emphasis on social mixing patterns and psychological distress. This variable, however does not produce effects of the magnitude of those resulting from the Asian/non-Asian variable. The effect sizes are small, mostly just below or above .2.

The final variable measuring cultural background concerns the language spoken when students are away from the university, in particular whether they speak a LOTE or not. Again, the overlap with other measures of cultural background is apparent. In this case, however, the focus is on the language the student habitually uses when away from the academic setting of the university. This will, of course, depend in part on the groups with whom students interact socially.

The two language-related variables, using a LOTE off campus and speaking some English when growing up, are both better able to differentiate among students’ levels of connectedness in Melbourne than the two country-related variables, the country category and Asian/non-Asian variables. Although the country-related variables distinguish among patterns of social mixing and involvement in organisations, they do not produce differences in levels of connectedness. In contrast, the two language-related variables do so, suggesting that the capacity to communicate in English is more closely linked to a sense of well-being in this area than country category.
Students who speak a LOTE off campus not only feel a significantly lower sense of connectedness in Melbourne, but also show the pattern of social mixing that one might expect on this basis. They interact significantly more with co-culturals both on and off-campus and significantly less with Australians in both locations than those who speak English off campus. LOTE speakers are also significantly less involved in university clubs and organisations, while being significantly more involved in religious groups than English speakers.

Consistent with the three other variables concerning cultural background, off-campus LOTE speakers experience a significantly higher level of stress than those who speak English. They also feel significantly more stress from trying to meet family expectations. Additional evidence of psychological distress can be seen in the significantly higher levels of Anxiety and Stress scale scores of LOTE speakers. It is reflected as well in their significantly stronger perceptions that poor health interferes with their study, that living arrangements are less satisfactory and that diet is less balanced.

The one domain in which LOTE speakers have a stronger sense of well-being than English speakers is their significantly lower involvement in drug and alcohol use. This has been a consistent finding in relation to all four cultural background variables. In fact the overall patterns of well-being characteristic of off-campus LOTE and English speakers summarised here are in alignment with the patterns seen on the other three cultural background variables.

The effect sizes on most measures are small, about .2 to .3. The highest are of moderate magnitude; they concern social interaction with Australians (.48 and .52) and use of alcohol (.47). As will be seen in subsequent discussion, the LOTE/English variable acts as a predictor of well-being in some of these domains.

PERCEIVED ACADEMIC PROGRESS

Many studies of international students have focused on their academic progress, outcomes and satisfaction, together with the factors affecting these. Since the present study aimed to investigate students’ perceived health and well-being, it was decided not to measure students’ perceptions of their studies in any detail.

Instead, a single, simple measure of their perceived academic progress was used as a situational variable that might produce differences in students’ perceptions of well-being in other domains of life. The results show that students’ evaluation of their progress as being better than, the same as, or worse than expected is associated with their sense of well-being in a wide range of domains.

In general the contrast is between students who feel they are progressing less well academically than expected and those who see their progress to be better than or about the same as expected. Thus students who evaluate their progress positively, compared with their counterparts, have a stronger sense of connectedness in Melbourne, mix less with co-culturals, more with Australians, and are not as actively involved in national, cultural and religious groups off campus.

Their stronger sense of connectedness is reinforced by lower levels of cultural stress and stress from family expectations. Lower levels of psychological distress are also

Rosenthal, Russell & Thomson, 2006
shown in the lower scores on the Depression and Stress scales, the Abuse and Distress scale, as well as in higher levels of self-esteem.

Psychological well-being is also evident in students’ feelings about their daily lives. They feel their lifestyle is less out of kilter in the areas of study, social interaction and diet than students who are progressing less positively. They feel more able to cope with the amount of work to be done for their courses. Compared with other students, they see their health to be interfering less in their studies and they are more satisfied with their living arrangements. There is evidence that they are less involved in gambling than their counterparts.

All of the comparisons outlined here are statistically significant. The percentage variance in each of these comparisons associated with perceived academic progress is not large, ranging generally from about 1 to 5 per cent. However, the range of domains of well-being that are associated with perceptions of academic progress is wide, indicating the importance of the interaction between self-evaluations of progress and well-being. Another indicator of the importance of this variable is the number of domains of life in which it acts as a predictor of students’ perceived well-being. This will be discussed in the next section of the report.

WELL-BEING IN LIFE DOMAINS: PERCEPTIONS, PREDICTORS, INFLUENCE

International students’ sense of health and well-being were examined in three major domains of their lives in Melbourne: their perceptions of their relationships to others in society, their perceptions of daily life and study in Melbourne, and their perceptions of their health and health-related behaviours. Three perspectives on well-being in these domains will be discussed: first, what has been learned about student perceptions in these domains; secondly, what predicts positive adaptation in each domain; and thirdly, the links between each domain and other aspects of students’ lives.

It is useful to keep in mind that the data for this study were collected in first semester. Some of the response patterns might have been different, especially those of first-year students, had the data been collected in second semester.

RELATING TO OTHERS WHILE LIVING IN AUSTRALIAN SOCIETY

Two psychological dimensions were the focus of investigation in this domain. Both connectedness and cultural stress are accorded considerable importance in the research literature concerned with understanding the adaptation of sojourners, such as international students, in their host countries. At an intuitive level it is also very easy to understand what it must be like when studying in another country to have caring, supportive people who know you, listen to you and give you help when needed, especially if the foreign country is culturally, linguistically, geographically and climatically different from your own.

The importance of both of these dimensions has been supported by the results of the present study. Students’ connectedness and level of cultural stress are fundamental to
their experience of well-being, not only in terms of their relationships with others, but also across all domains of life and study in Melbourne.

While connectedness has a positive association with well-being in aspects of life and study, cultural stress has a negative relationship. Evidence supporting the opposing valence of these two dimensions is found in the strong and significant negative relationship between the Connectedness and the Cultural Stress scales. Each accounts for 15.3 per cent of the variance in the other. Further evidence is seen in the associations of each measure with students’ well-being in each domain.

**Connectedness**

The majority of students have a sense of well-being in their relationships with others in Australian society as measured by their perceptions of connectedness to others in Melbourne. About 70 per cent of students have a considerable to strong sense of connectedness, while only a small percentage of students (3.5 to 6 per cent) indicate that they feel quite isolated.

While the strength of the majority response is reassuring, there is room for further action to improve the sense of belonging of international students in Melbourne, especially of those who feel alone and without support. There is a hint in the relative ratings on each of the three scale items about the kind of support that students most need. People to whom one can go for help are seen to be more readily available than those who care and with whom one can discuss problems.

The university itself provides many types of help for students, including academic help, information and advice about housing, finance, employment and a range of other matters, services such as health and counselling, as well as clubs, associations and activities. These are well-publicised on the university web-site and in other ways, although students do not necessarily take advantage of these opportunities. For example, in the present study, 49.9 per cent of international students indicated no involvement at all in university associations, a similar figure to the 41.6 per cent of final year international students surveyed by the university in 2004 (Daroesman et al., 2005).

However, over and above this, students indicate the need of more personal forms of support from people who know them and care about them as individuals. It is a greater challenge to an organisation such as a university and to individual international students to help develop approaches that establish this kind of support.

Three potential sources of social connectedness were investigated in the study: social mixing and interaction with co-culturals and Australians, involvement in organisations, associations and groups, and connections to home and family while living in Melbourne. All of these potential sources proved to be actual sources or manifestations of social connectedness. Positive and significant correlations were found between the Connectedness scale and each of the 12 items measuring perceptions in these three areas for the sample as a whole.

The literature has pointed to the positive role played by social interaction with host nationals in sojourner adjustment, although often indicating that such interaction has usually been at a low level and difficult to achieve (Church, 1982; Li & Gasser, 2005; Sam, 2001). This has been found to be true in the present study and a continuing
challenge and problem in other local research (Daroesman et al., 2005; James & Devlin, 2001). The literature also endorses the value of networking with co-culturals (Al-Sharideh, 1998: Carr et al., 2003; Church, 1982).

When students in this study are separated into those coming from Asian countries and those not, different patterns emerged. The more students from Asian countries mix socially with co-culturals and especially with Australians, whether on or off campus, the stronger is their sense of connectedness. However, for students from Asian countries, social mixing with Australians is much less in evidence than mixing with co-culturals. Nevertheless, students who mix with co-culturals only or almost entirely are still able to feel a sense of well-being and connectedness.

The situation is different for students from non-Asian countries. For them, consistent with the findings of a study of Norwegian students studying abroad (Wiers-Jenssen, 2003), the important social interaction is mixing with host nationals. Students from non-Asian countries have a significantly higher rate of interaction with Australians than students from Asian countries. Furthermore, for them, social interaction with Australians is positively related to connectedness, while social mixing with co-culturals is unrelated.

Another contrast between students from Asian countries and others can be seen in the role played by involvement in organisations. Involvement in university clubs, in national or cultural organisations off campus, and in religious groups, is positively related to a sense of connectedness for students’ from Asian countries. For these students, the strongest association is between social interaction with people met through the practice of religion and a sense of connectedness. For other students, there is no correlation between the involvement in organisations and a sense of connectedness. Awareness of these and other specific differences among international students from varying cultural backgrounds can help target assistance in achieving a sense of well-being.

Both groups of students indicate a positive relationship between their sense of connectedness in Melbourne and their connection to and support from home. The most important aspects of home support are the knowledge of having a family who cares about them and the capacity to contact their family whenever they need to. For students from Asian countries it is also important to know they can return home whenever they need to. This latter point is not related to the sense of connectedness of students from non-Asian countries. Finance and distance might be factors involved here. For these students, having a caring and contactable family are the most important correlates of a sense of connectedness.

Berry (1997) has argued that sojourners who value and interact with people from their own culture as well as those from the host culture will adapt more positively, but those who confine their relationships to people from their own culture will experience greater difficulty. In the present study, evidence from the cluster analysis of responses suggests support for this. Students whose mode of adaptation is unconnected and stressed have the least positive sense of connectedness and the strongest tendency to mix with co-culturals rather than Australians both on and off campus.

Social interaction is more culturally constrained outside the university than it is on campus. Students have significantly more interaction with co-culturals and
significantly less interaction with Australians off campus than they do at the university. This makes sense in terms of the factors that influence interaction in each location. For an institution that sees the value of augmenting and supporting greater levels and diversity of cultural interaction for international students, however, the obvious location on which to focus is the university campus. Students enrolled in faculties and courses with a high percentage of international students, particularly students from Asian countries, are ones in which conscious approaches are most needed to encourage and support cultural interaction.

Another dimension of understanding of students’ sense of well-being in this area is gained by considering the factors that predict students’ sense of connectedness. Three factors combine to create the model that best predicts connectedness. Two relate to students’ cultural background and communication skills in the new culture (speaking some English when growing up and speaking a LOTE when off campus) and the third concerns students’ evaluation of achievement of their purpose for being here, their perceived academic progress. It is easy to understand the way in which communication skills are associated with connectedness, particularly in the development of personal, caring relationships in Melbourne. Not only linguistic skills but appropriate sociolinguistic and non-verbal skills are needed for good interpersonal communication and for the self-esteem and confidence required in order to try to develop new relationships.

Possible reasons for the predictive power of perceived academic progress are less immediately obvious. One speculation is that the factors which underlie connectedness also form the foundation for positive perceptions of academic progress. Some evidence for this might be seen in the co-variation of variables that define the three modes of adaptation. Here connectedness and perceived academic progress are positively related to each other and to other positive variables such as balance and health. At the same time they are both negatively related to dimensions such as depression, anxiety, stress, risk-taking behaviours, and feeling overwhelmed by the amount of university work.

However, students’ linguistic skills and perceived academic progress account for only a very small percentage of the variance (3.9 per cent) in students’ responses on the Connectedness scale. This leaves almost all of the variance unexplained and inevitably raises a question about which factors might account for a higher proportion of the variance in students’ perceptions of connectedness. The most likely are personal and individual factors. These are the within-person variables such as personality, goal structure and adaptive coping strategies that Diener and colleagues (1999) suggest are better able to account for well-being than demographic variables. Differences in coping strategies relating to social interaction and involvement in organisations and associations, for example, might well explain a greater proportion of the variance in sense of connectedness.

The final question to be considered in relation to connectedness is the extent to which this dimension relates to or has impact on well-being in other domains of life for the international student. The short answer is that its associations with well-being are pervasive. Students’ level of connectedness is positively associated with students’ well-being in

- relating to others: their level of cultural stress and stress from home;
HEALTH AND WELL-BEING OF INTERNATIONAL STUDENTS

- daily life and study in Melbourne: their satisfaction with living arrangements, perceived adequacy of financial support, lifestyle balance in terms of study, social life and diet, experience of abuse and distress;
- health and health-related behaviours: general and relative health, sexual activity here, depression, anxiety, stress, self-esteem, use of drugs and alcohol, involvement in gambling and smoking, and self-harm;
- use of university services: seeking help from the university health and counselling services when necessary.

In addition, Connectedness is a significant predictor of several aspects of students’ health and well-being. It acts as a significant predictor of three of the four aspects of well-being examined in the domain of living and studying in Melbourne. It is the strongest predictor of students’ satisfaction with living arrangements and also of their perceived adequacy of financial support. In both of these cases it acts as a positive predictor. It also acts as a significant positive predictor of perceived balance between study and other activities. Within the domain of health and health-related behaviour, Connectedness is a positive predictor of self-esteem and a negative predictor of the Depression scale.

Connectedness is a fundamental dimension of students’ experience of well-being, not only in the domain of relating to others in society, but in all domains investigated. Designing new and better ways to increase students’ sense of connectedness would be of great value.

Cultural Stress

Cultural stress is an obvious and ubiquitous challenge to the well-being of international students, particularly where the home and host countries are culturally distant. It is a challenge that is discussed at length in the research literature. International students in the present study provide evidence of cultural stress through their responses to items in the Cultural Stress scale, as well as through responses that are associated with their perceptions of cultural stress.

The average score on the Cultural Stress scale, while indicating the presence of feelings of discomfort, dislocation and distress among students, also indicates that these responses are for the most part not at an extreme level. Students’ responses also discriminate among the sources of cultural stress, with some causing little concern and others greater concern.

It is also important to distinguish between aspects that are inherent in living away from home in a foreign country and those aspects where cultural stress might reasonably be ameliorated by local action. The distress and homesickness that is experienced through missing loved ones and the familiar things of home when in another country is to be expected. About half the sample in the present study indicate that they experience this form of distress to a considerable degree or very much. It is these aspects of cultural stress that are given the highest ratings by students. As a study of final year international students has shown, this distress tends to be felt strongly in the initial period of study abroad, but diminishes over time (Daroesman et al., 2005).
In most other areas, students’ perceptions are much more positive. This is particularly so in areas usually associated with discrimination and prejudice. About 77 per cent of students report little or no discriminatory treatment, about 84 per cent say they feel little or no discomfort in the Australian culture, and about 89 per cent indicate that they feel little or no threat to their safety here (a slightly higher percentage than in the general Australian population of late adolescents: 85 per cent (Australian Institute of Health and Welfare, 2003)). Although the vast majority of students seem quite positive in their responses concerning these experiences, there are nevertheless substantial numbers of students who do experience distress in these areas. This is most strongly seen in the 23 per cent who do perceive discrimination in the way they are treated in Australia.

A higher proportion of students in the sample are concerned about their loneliness and feelings of relative unimportance here. Although some 60 to 70 per cent are not particularly concerned, about 32 and 41 per cent respectively report these feelings to a considerable or great degree. Both of these perceptions are strongly and significantly related to students’ feelings of lack of connectedness in Melbourne, further reinforcing the value of helping to develop stronger coping strategies that result in networking, friendship and support for international students.

Recent research (Deumert et al., 2004) involving interviews of a sample of 200 international students at universities in metropolitan and regional Victoria, New South Wales and Queensland provides some basis for comparison. In Melbourne, 4 per cent of students said they felt unsafe, while in Sydney the percentage was higher (23 per cent). Fifty per cent of students said they had experienced acts of discrimination. About 65 per cent reported experiencing periods of loneliness and isolation. The actual percentages are difficult to compare because forced-choice (yes/no) answers were used in the Deumert et al. study and a four-point rating scale was used in the present study. Questions were also worded differently.

However, both studies indicate that safety is not a particular concern for international students in Melbourne. Both studies also indicate a higher level of student concern about perceived discrimination and loneliness. In both studies, female students feel less safe than male students. Deumert and colleagues found that female students also experienced higher rates of discrimination. In the present study, although there is no gender difference in students’ perceptions of differential treatment on the basis of cultural background, female students do experience higher levels of perceived abuse, significantly so in terms of physical abuse and sexual harassment.

Apart from homesickness, the aspect of cultural stress that provokes the strongest reaction from students in the present study concerns the feeling of belonging at the university. About 53 per cent of students in the sample report feeling a lack of belonging to a considerable or great degree, with students from Asian countries feeling this significantly more than other students. This is, again, a form of connectedness that needs to be worked on, but one that is quite specific to the university.

The psychological distress resulting from cultural stress is compounded by students’ experience of stress from home, while living and studying here. A comparatively small number of students are stressed by events in their own countries, perhaps ones that might cause difficulty for them on return. Small numbers of students are concerned about difficulties with or within their families. A significantly stronger
source of stress from home, however, is that caused by students trying to do well for the sake of their families. About 46 per cent of students report this as a source of stress to a considerable or great degree. Only one-fifth of the students report not experiencing this form of stress at all. Stress resulting from trying to meet family expectations has stronger effects on young, single, undergraduate students from Asian countries who perceive their academic progress to be not as good as than expected. It is not surprising to find that students who are very stressed by trying to do well for the sake of their families also experience higher levels of cultural stress. The antecedents of both forms of stress are similar.

Two factors together were found to constitute the best model for predicting cultural stress. Using a LOTE off campus is associated with higher levels of cultural stress. As a variable, this probably acts as an indicator of cultural difference, something that would be expected to be linked with cultural stress. The second factor is perceived academic progress. Better perceived academic progress is associated with lower levels of cultural stress. This is the second dimension of well-being for which perceived academic progress is a predictor. However, as in the case of connectedness, only a very small percentage of the variance in cultural stress is explained by the model, in this case 6.1 per cent. The likelihood is that within-person, psychological variables would be better able to account for variation in students’ experience of cultural stress than demographic variables.

Cultural stress, like connectedness, is a dimension of well-being that is fundamental to the experience of relating to others in society. Connectedness has been found to be associated with students’ well-being in all domains of life investigated in this study. It would be expected that the same would be true of cultural stress. This is, in fact, the case. The difference is that cultural stress is inversely related to students’ sense of well-being. It is associated with a lower sense of wellbeing in the domains of:

- relating to others: their level of connectedness and social interaction;
- daily life and study in Melbourne: stability of housing, satisfaction with living arrangements, perceived adequacy of financial support, lifestyle balance in terms of study, social life and diet;
- health and health-related behaviours: general health, effect of health on studies, sexual activity here, number of partners, relationship distress, depression, anxiety, stress, self-esteem, involvement in gambling and smoking, and self-harm;
- use of university services: seeking help from the university health and counselling services when necessary.

In addition to this widespread association with decreased well-being, cultural stress has also been found to be a significant predictor of several psychological and behavioural dimensions. Its most powerful role as a predictor lies in the domain of physical and mental health. Cultural stress predicts perceived health interference in study; it is also a very strong, positive predictor of depression, anxiety and stress. In addition, it acts as a predictor in other domains. It is a reasonably strong negative predictor of students’ satisfaction with living arrangements. It is a weaker, though still significant, positive predictor of involvement in gambling and smoking. Finally, it is a significant negative predictor of students taking action to seek help from the university counselling service when they feel in need of help. The role of cultural stress as predictor in these seven dimensions of well-being is an additional indicator of the power of its association with well-being.
Students’ responses show that connectedness and cultural stress are dimensions that are associated with students’ well-being in all domains of their life and study in Melbourne – cultural stress to an even greater degree than connectedness. They are fundamental to students’ experience as international students. To bring about improvement in these dimensions of experience would be to enable students to experience a greater sense of well-being in a multitude of ways.

LIVING AND STUDYING IN MELBOURNE

Having positive human contact and relationships with people in Melbourne is seen as basic to the well-being of international students. The analysis of students’ responses indicates that this dimension relates to all domains of student life, but particularly to their daily life and study in Melbourne.

Student Perceptions of Living and Studying in Melbourne

Living Arrangements

Living arrangements have the capacity to enhance or destroy one’s sense of well-being – interactions with co-residents, comfort, noise, cost, distance are all factors that have great impact. An indication of the importance of accommodation to students is seen in the fact that housing is the university service that students say they have approached most frequently, apart from the university health and counselling services.

Asked about their satisfaction with their living arrangements, the great majority of respondents (83.3 per cent) indicate that they are considerably or very well satisfied. Nevertheless, this leaves a substantial number who feel a reduced sense of well-being because of perceived inadequacies of their accommodation. Time, of course, is a relevant variable in relation to satisfaction. As has been found here and elsewhere (Daroesman et al., 2005), students’ satisfaction with their living arrangements increases with the number of years of enrolment.

The type of living arrangement has an impact on the level of satisfaction. Students’ preference for living with family and/or partners was clear. This type of living arrangement produces the highest level of satisfaction. Either living alone or with friends or other students is also conducive to strong levels of satisfaction, though slightly less so than living with family/partner. Significantly lower satisfaction is associated with living with ‘others’, perhaps boarding arrangements of some sort.

Finances

Financial well-being is regarded as a feeling of satisfaction that sufficient resources are available to meet the requirements for studying and living in Melbourne and an absence of the need to worry about whether there is enough funding, how to increase funding, or how to meet obligations that are associated with the source of the funding.

The majority of students (71.3 per cent) feel reasonably to very confident that their financial resources are adequate to support their needs during their study here. Not quite as many (64.7 per cent) are free of worries about the adequacy of their financial support. Although these figures indicate a majority of students have a sense of well-being about their financial resources, there is a substantial minority of students who do have concerns. There is a lower level of well-being in regard to finances than in
relation to some other aspects of living in Melbourne. This finding is supported by other research (Daroesman et al., 2005). Students on the whole are significantly less satisfied with the adequacy of their finances than they are, for example, with their living arrangements.

Students do worry about whether their finances are or will be sufficient for their needs throughout their courses. In fact, more students worry than need to, if their judgment about their financial situation is accurate. Although there is a negative relationship between perceiving resources to be adequate and level of worry, it is not a perfect negative correlation. There are still students who say they are sure their financial support is satisfactory but who record a high level of worry about their financial situation. This seems to have more to do with their general levels of depression, anxiety and stress than with their finances, as the strong and significant positive correlations between these psychological dimensions and worry indicate.

Another possible indication that worry about finances is not based altogether on reality is the link between students’ financial concerns and their involvement in paid work. If more funding is needed, one would expect that students would like to spend more time in paid work. Students who worry most are significantly more likely than others to want to increase their hours of paid work, but once again there is not a one-to-one relationship between worry and wanting increased work. It is possible this is affected by other factors such as course requirements and permitted work limits. It is also possible, however, that this is another indication that worry is not quite aligned with reality.

In fact only 27.4 per cent of students in the sample are engaged in paid work; those who are average 10.7 hours of work per week. First year students have a lower rate of involvement in paid work than the average: 24.1 per cent work for an average of 10.6 hours per week. This is consistent with the findings of Krause and colleagues (2005) concerning first year international students across Australia in 2004: 23.3 per cent were involved in paid work for an average of 11.6 hours per week. These rates contrast markedly with those of first year domestic HECS students, 58.7 of whom were in paid work in 2004, working an average of 12.45 hours per week (Krause et al., 2005). Students in the sample who are already undertaking paid work are much more likely than others to want to increase their number of hours of work.

Students draw their funding from a variety of sources: family, own and/or partner’s savings, paid work, scholarships from their home countries, from Australia or from organisations of a different kind, and from other sources such as loans. Most students rely on multiple sources rather than one alone. The source that is most frequently used by students is the family. Some 84.6 per cent of students are supported wholly or in part by their families. This is a two-edged sword for students. They have the assurance of financial support from a well-disposed, personally-involved source. At the same time, students feel a great obligation to meet family expectations, an obligation that creates considerable stress for them. These students give a significantly higher rating than those not dependent on family financing to the notion of being stressed by the need to do well for the sake of their family.

Of the 828 students who are supported by their families, there is one small group of 86 who are quite different. These are the students who are wholly financed by their families; this is their sole source of funding. Their level of well-being seems considerably greater than the well-being of others. They are significantly more
confident than others that their financial support is adequate, significantly less worried about their financial situation, and at the same time they are not more stressed by the need to do well for the sake of their family. One would speculate that these students are from wealthier backgrounds than other students.

Concern about financial support does vary with the source of that support. Students who feel most at risk or who worry significantly more than others are those who rely wholly or in part on their own savings, on paid work or on ‘other’ sources, most of which take the form of loans of one sort or another. These sources of funding carry obligations and risks for the individual that are perhaps less immediately apparent in the case of other sources. Students who draw financial support from an Australian scholarship are significantly less worried about their financial situation than other students. This suggests that Australian scholarships are a positive force for students’ sense of well-being.

Lifestyle Balance

The perception that one’s life is well-balanced can be a useful indicator of one’s well-being. Achieving that balance can be a challenge for tertiary students, both domestic and international, particularly where there are strong internal and external pressures to achieve well academically. Three main aspects of lifestyle balance are targeted in this study: balance between social life and solitary time, nutritional balance and balance between study and other activities.

The majority of students consider they have achieved a reasonable balance between social life and time alone. Some 72.4 per cent of students believe their social life is well-balanced to a considerable or great degree. The remaining 270 students would like to see change. A small number think they need to restrict their social life more, but most of those wanting change would like to increase their social activity.

Most students evaluate their nutritional balance positively. Some 76.9 per cent of students feel they maintain a considerably to very well-balanced diet. Factors associated with a perceived lack of balance in diet are eating fewer than three meals a day, eating fast food, and being concerned about one’s financial situation. Students who eat three or more meals a day, who include home-cooked meals in their diet, and who feel they have adequate financial support have more positive perceptions of their well-being in this area. There are also indications that cultural background might impinge on perceptions of nutritional balance.

Students’ perceptions of lifestyle balance tend to generalise across areas. The more positive students’ perceptions are of balance in social life, the more positive they are likely to be in relation to diet, as well as in relation to study. There are significant, positive correlations among perceptions in all three areas, suggesting perhaps a more global dimension of lifestyle balance and perceived well-being.

In spite of this, there is a difference in the percentage of students who have a sense of well-being in relation to study. Only about half of the students in the sample believe they have considerable to very good balance in relation to study, leaving 50.4 per cent of students who feel they have not achieved any balance at all or only to some small degree. This is an area where the majority of students do not have a strong sense of well-being.
Some of the students who feel they have not achieved the right balance with study do so because they feel they need to spend more time studying, others feel they do not need to do so. Those who see the need to spend more time studying outnumber the others about three to one. These are the ones of greater concern because they have a stronger-than-average feeling of being overwhelmed by the amount of their university work and their inability to cope. This is a strong indicator of lack of well-being in what has to be a central aspect of life for international students.

They are not the only students, however, who find their coping skills are being challenged by their university work. Almost one-third of the respondents (308 students) indicate they are overwhelmed by university work to a considerable or great degree. Lack of well-being in this regard has other unpleasant associations for students. The more students feel they are unable to cope with the amount of university work, the less balanced they feel their lives to be in terms of study, the more time they want to devote to study, and the more they feel that study dominates all their waking hours. This has the appearance of a cyclic pattern that increases stress and anxiety and is unlikely to improve academic performance, let alone a sense of well-being. While assistance in study skills is given to students, perhaps some further, different types of assistance are needed, combining more general life-coping strategies with specific study skills and approaches.

Abuse and Distress

For international students, an unfortunate aspect of living and studying in Melbourne can be the experience of perceived abuse – physical abuse, verbal abuse, sexual harassment or exclusion from involvement in activity or interaction with others. People respond to abuse with different levels of distress. One cause of distress can be the perception that the abuse is culturally motivated and discriminatory.

This is an area in which it is desirable to have no student experiencing abuse, so that to report the incidence of some forms of abuse as relatively low is not regarded as a particular achievement. In addition, non-reporting of abuse by respondents is a possibility. Of the four forms of abuse investigated, the lowest incidence is for physical abuse; 2.9 per cent (29 respondents) reported physical abuse. Although there is a higher reported level of sexual harassment, the rate is still relatively low: 8.4 per cent or 78 students. Rates in regard to the remaining two forms of abuse are much higher. Verbal abuse is common; it is reported by 28.8 per cent or 266 students. The most frequent form of abuse is exclusion, with 32.5 per cent or 314 students saying they have experienced this. Altogether, almost half the sample (46.7 per cent) report having experienced at least one form of abuse. Students do report having experienced multiple forms of abuse, with four students indicating that they have experienced all four forms.

The experience of abuse causes distress for the students concerned. The level and continuation of this distress is an important factor in students’ well-being, as are the coping strategies used to deal with the distress. It is not surprising to find that stress, anxiety and depression measures are positively related to the Abuse and Distress scale. While there are individual differences in students’ responses to incidents of

---

378 It is noted that between 53 and 56 students did not respond to items concerning physical abuse, verbal abuse or sexual harassment, though almost all responded to the item concerning exclusion. This means the incidence of abuse could be higher, but unreported by students.
abuse, and presumably different degrees of seriousness of abuse, the average reaction to each of the four forms of abuse does differ. The highest level of distress is shown by those who are physically abused, a finding that is not surprising. The next strongest reaction is to exclusion. The responses to verbal abuse and sexual harassment are similar and almost at the level of those to exclusion. It might be thought surprising that distress in response to exclusion is as strong as it is, relative to responses to verbal abuse and sexual harassment. Perhaps the kinds of emotions engendered by each of these forms of distress (anger as opposed to hurt and damaged self-esteem) have something to do with this. Perhaps exclusion is seen as a more personally directed form of abuse.

Abuse can also lead to feelings of insecurity and lack of safety. There is evidence of this in the data. Those who have experienced abuse feel significantly less safe in Melbourne than those who have not. This undoubtedly increases the lack of well-being of these students, as well as reverberating among the friends and acquaintances of those who have been abused.

Abuse can come from many different sources and be the result of a variety of motivations. Of concern here is the question of whether the abuse experienced by international students is culturally motivated. The items in the questionnaire do not target culturally motivated discrimination. This means that students might be reporting abuse from strangers, acquaintances, employers, or even family members. The abuse is not confined to on-campus incidents. The results show that students who have reported abuse have significantly stronger perceptions of being treated differently in Australia because of their cultural background than those who have not. The heightened awareness of discriminatory treatment of the abused students could be the result of the abuse. On the other hand, it might be that those who are more sensitive to discriminatory treatment are more likely to interpret events as abusive.

The actual rates of reported abuse show little difference on the basis of country category or cultural background. Physical abuse and sexual harassment do not seem to be significantly associated with cultural background. Students from Asian countries, especially Malaysian and Singaporean students, report higher rates of exclusion than expected on the basis of a null hypothesis. Students from Malaysia and Singapore also report higher rates of verbal abuse than expected. On the other hand, students from PR China experience less verbal abuse and exclusion than expected. Students from non-Asian countries, especially European and English-speaking countries, also report lower rates of exclusion than expected. Although there is some tendency for the rates of abuse to relate to cultural background, it is by no means strong, clear and consistent. This is reinforced by the finding that there are no significant differences in the Abuse and Distress scale score based on country category or the Asian/non-Asian country dichotomy.

There is a strong and significant gender difference in the experience of abuse by students. This can be seen in both the rates of abuse of different types as well as in the response to abuse. Although there is little difference in rates of reported exclusion, women report significantly higher rates of physical and sexual abuse than men, while men report significantly higher rates of verbal abuse. The difference is greatest for sexual harassment, where 72 of the 76 who have been sexually harassed are women; 12.1 per cent of female respondents compared with 1.9 per cent of male respondents have been sexually harassed. There is also a strong and significant gender difference in the level of distress experienced or reported in response to abuse,
with women being more distressed than men, significantly so in response to physical abuse and exclusion. Female students who have been abused also report feeling significantly less safe in Melbourne than do their male counterparts.

Predictors of Well-being in this Domain

The word ‘predictor’ is being used here in a statistical and not a causal sense. Any interpretation of the role played by predictors in the different aspects of well-being is speculative. A predictor indicates that it is associated with a certain amount of variation in the aspect of well-being that is being predicted. This might, for example, be the result of a uni-directional influence, a causal relationship, an interactive relationship, or the influence of a third variable on both. Some interpretations can be suggested, particularly where findings from relevant research are available but, in terms of the present study and its data, they remain speculative.

Four aspects of living and studying in Melbourne have been investigated in the present study: living arrangements, satisfaction with financial support, lifestyle balance and experience of abuse and associated distress. Several variables have been shown to act as significant predictors in these areas. For the first three of these areas, the most consistent predictors are connectedness, depression, and length of stay. Cultural background and perceived academic progress also contribute to an understanding of these three areas.

The Connectedness scale is the predictor that characterises this domain most clearly, strongly and consistently. It is a predictor of satisfaction with living arrangements, financial support and lifestyle balance in relation to study. It contributes strongly to each of these areas. It is a positive predictor: the stronger the students’ sense of connectedness, the greater their sense of well-being in these areas. Having people in Melbourne who care, support, listen and help at a personal level has implications for well-being in a range of aspects of the day-to-day life and study of international students.

In contrast to this, the Connectedness scale does not act as a characteristic and consistent predictor in the domain of health and health-related behaviour. In that domain it is associated significantly with the variance in only two of the five areas investigated: self-esteem and depression. It seems likely that connectedness not only acts as a protective factor through provision of emotional support and a sense of belonging to international students in Melbourne (Benard, 1996; Marcus & Swisher, 1992), but also assists students’ acquisition of social skills and understandings, thus enabling them to undertake the ordinary tasks of daily life, such as arranging satisfactory housing and negotiating finances, with greater ease and confidence – the sociocultural aspects of adaptation (Ward & Rana-Dueba, 1999; Ward & Kennedy, 1999). For some students, such as those from western countries, understanding the system and the bureaucracy constitutes the greatest challenge (Wiers-Jenssen, 2003).

A second consistent predictor is the Depression scale. It is negatively associated with students’ satisfaction with living arrangements, finance and lifestyle balance. High levels of depression predict a weak sense of well-being in each of these three aspects of living and studying in Melbourne. Although not as strong a predictor as connectedness in this domain, depression is just as consistent a predictor. Symptoms and correlates of depression, such as low self-esteem, fatigue and inertia, sense of hopelessness, interpersonal difficulties and withdrawal from social interaction can be
HEALTH AND WELL-BEING OF INTERNATIONAL STUDENTS

readily aligned with dissatisfaction and difficulties experienced in achieving suitable housing and financial arrangements, as well as balance between study and other aspects of life. Unlike connectedness, depression plays a key role in the domain of health and health-related behaviour, as well as in the domain of living and studying in Melbourne. It is seen to be an indicator of the process of psychological adaptation.

Length of stay has been proposed as an important dimension in sociocultural adaptation, giving the sojourner time for social learning and adaptation, allowing the sojourner to develop from social difficulty to social competence (Ward, 1997). Length of stay, measured by number of years of enrolment, has been shown in this study to act as a positive predictor of satisfaction with living arrangements and financial support. Although significant, number of years of enrolment is not a strong predictor as connectedness or depression. Nevertheless, it does reinforce the concept that these aspects of daily life in Melbourne are at least in part sensitive to social skill learning and to the process of sociocultural adaptation. This variable does not act as a predictor of balance between study and other aspects of life, suggesting that lifestyle balance might be less strongly influenced by social learning.

It might be expected that cultural background would play a significant role in students’ well-being and adaptation in the domain of daily life and study in Melbourne. There are cultural background variables that do act as significant predictors in this domain, but not always as strong predictors. The Cultural Stress scale is a strong negative predictor of satisfaction with living arrangements. This is the only area within this domain that is predicted by cultural stress. This contrasts with the situation in the health domain, where cultural stress is a consistent and strong predictor of well-being or rather the lack of well-being.

A second cultural background variable, country category, is a very small, although significant, predictor of satisfaction with living arrangements. To interpret the meaning of this predictor, one needs to look further into the data. Students from PR China, for example, are much less satisfied with their accommodation than students from Singapore. Being a student from an Asian country is a positive predictor of satisfaction with financial support. Cultural background variables have not contributed in a consistent manner to the prediction of well-being in this domain. No cultural background variable has acted as a predictor of perceived lifestyle balance in relation to study.

It is important to mention one other predictor – perceived academic progress. This variable has already been discussed as one that plays a role in a range of aspects and domains of well-being. In the present domain, perceived academic progress is a significant predictor of students’ perceptions of balance between study and other activities. Students who feel their progress is better than or as good as expected have a stronger perception of balance in study than those who feel their progress is not meeting their expectations. The capacity of this variable to account for variation in students’ perceptions of balance in study, but not in their perceived satisfaction with living arrangements or finance, strengthens the view that perceptions of lifestyle balance are more an aspect of psychological adaptation than sociocultural adaptation. This is reinforced by the fact that perceived academic progress also acts as a predictor in the domains of mental health and health-related behaviour.

A fourth aspect of living and studying in Melbourne that has been investigated in this study is the experience of abuse and associated distress. The predictors of this
HEALTH AND WELL-BEING OF INTERNATIONAL STUDENTS

dimension mark it out as being quite different from the first three aspects of daily life of the international student that have been discussed. Gender is a strong predictor of abuse and its accompanying distress; female students have much higher scores on this dimension. Gender is also a significant predictor on three other aspects of well-being in other domains: self-esteem, involvement in gambling and smoking, and in self-harm. There seems to be a consistency across these areas in the role that gender plays. Female students have lower self-esteem, experience greater abuse and distress, higher involvement in self-harm and lower engagement in gambling and smoking. They seem to turn their emotional distress inwards. Male students, on the other hand, have higher self-esteem, higher involvement in gambling and smoking, and lower involvement in abuse, distress and self-harm.

Perceptions of differential treatment based on cultural background also predict higher scores on this scale. In fact, this is the strongest predictor of perceived abuse and distress. It is the only culturally-related predictor. Cultural stress, country category or being from an Asian/non-Asian country do not predict abuse and distress. Perceived discriminatory or differential treatment could be a result of abuse or the basis on which events are interpreted. The number of years a student has been enrolled is a positive predictor of Abuse and Distress scale score. This makes sense, since the longer the student has been here, the greater the opportunity for incidents to occur. The Stress scale is also a positive predictor of abuse and distress. The association of general stress with abuse seems likely to be based on individuals’ reactions to abusive events.

Perceived academic progress is another significant predictor of abuse and distress. Students whose academic progress is worse than expected have higher scores on this dimension. Any attempted explanation of this is speculative. Perhaps students’ studies have been adversely affected by the distress and fearful reactions to abuse. Perhaps students who feel they are progressing less well than expected react more strongly and are more distressed by abuse. Perhaps such students’ level of anxiety and arousal makes them more sensitive to situations and more likely to interpret them as abusive.

The amount of variance in each aspect of well-being in this domain accounted for by its combined predictors varies. The lowest percentage variance accounted for concerns satisfaction with financial support; only 8.3 per cent of the variance in this area is accounted for. The percentage variance associated with the four predictors of abuse and associated distress, 25.8 per cent, is the highest. The psychological dimensions, particularly connectedness, prove to be much stronger predictors than demographic/situational variables. This is consistent with the findings of others (Diener et al., 1999) that demographic factors account for only small amounts of variance in subjective well-being.

**Links with Other Domains of Well-being**

Another question to be considered is the way in which perceptions of well-being in this domain are related to or have impact on well-being in other domains. Does well-being concerning living and studying in Melbourne have links with well-being in the domain of relating to others or in the domain of health and health-related behaviour? Because three of the four aspects of daily life in Melbourne were measured by single items rather than aggregated variables (scales), they were not used as potential predictors of well-being in other domains. However, some notion of their links to
other domains can be seen through the typology of adaptation modes that has been developed.

Measures of well-being in relation to living arrangements, financial support, balance between study and other activities, and the experience of abuse and associated distress co-vary with other indices of well-being in predictable ways in forming the profiles of each of the three modes of adaptation. The positive, connected mode of adaptation, for example, combines above-average perceptions of financial support, balance in study, and below average perceptions of abuse and distress, with positive perceptions in other domains, such as good general physical health and perceived academic progress, and low cultural stress, depression, anxiety, stress, self-harm, involvement in drugs, drinking, gambling and smoking. In the unconnected, stressed mode of adaptation and the distressed and risk-taking mode, these indices of well-being from the daily life domain also co-vary with other variables in predictable ways, although the profiles that result point to a lack of well-being rather than the presence of well-being.

The measure used for the fourth aspect of the daily life domain, the experience of abuse and distress, takes the form of a scale. As such it was used as a potential predictor of dimensions of well-being in other domains. It proved to be a significant predictor of three dimensions: the Depression scale, the Stress scale, and self-harm. In each case, the Abuse and Distress scale is a positive predictor; a high score on this scale is associated with high levels of depression, stress and self-harm. These seem likely to be the outcomes of experiences of abuse. However, it is also possible that a person who is already stressed and depressed would experience greater distress if abused, thus leading to a downward cycle of psychological distress and maladaptive coping behaviour. Abused students are most likely to demonstrate an unconnected, stressed mode of adaptation to life and study in Melbourne or a distressed and risk-taking mode.

Abuse constitutes a significant threat to students’ well-being. It would be beneficial to know much more about this situation – its link with discrimination, with cultural background and gender, the sources of abuse, the on-campus/off-campus locations of abuse events, and the effects of abuse on students’ lives.

HEALTH AND HEALTH-RELATED BEHAVIOUR

Three aspects of students’ well-being in relation to the domain of health have been investigated: perceived physical health, self-reported dimensions of mental health (depression, anxiety, stress and self-esteem) and a range of health-related behaviours that do not necessarily put students at risk but which have the potential to do so.

Student Perceptions of Health and Health-related Behaviour

Physical Health

The majority of students have positive perceptions of their general physical health. Some 64.7 per cent of the students consider their health to be good or excellent, with only 25 students (2.6 per cent) who consider that their health is poor. This does leave a substantial proportion of students, 32.7 per cent, who evaluate their health as being only fair. Some comparison can be drawn with the health self-evaluations of 18-24 year olds in the general Australian population (Australian Institute of Health and
Welfare, 2003). On a five-point scale, 59 per cent considered their health to be excellent or very good, 30 per cent believed it to be good, while 11 per cent judged it to be fair or poor. While it is difficult to map the results of a four-point scale onto those of a five-point scale, both sets of results suggest a majority perception of positive health, a small minority of perceived poor health, with a substantial group judging themselves to be between the two extremes.

It is reassuring to find that the vast majority of students, 82.3 per cent, report that they are as healthy here as they were at home, or even healthier. It is the students who judge their general health to be poor or fair who are more likely to feel that they are less healthy in Australia. A lack of well-being is associated with perceptions of below-average health; these students have a lower sense of connectedness and a higher level of cultural stress than other students.

One finding is less expected. Students with poor general health generally and relatively worse health in Australia than at home are less likely to seek help from the university health service when in need than those in better health. This appears to be counter-intuitive, but it could be associated with the higher levels of depression and the accompanying inertia that these students experience. Alternatively, these students might have their own general practitioners and specialists, thus not needing to use university services.

A major consideration for students’ well-being is the effect that health has on their studies. Poor health can make it difficult to maintain the energy and focus on study, even at times the opportunity to participate in classes and complete work. Once again, the majority of students (81.9 per cent) see little or no interference with their studies arising from their state of health. It is the 52 students (5.3 per cent) who feel there has been a strong adverse effect of their health on study who are of concern, as well as the 125 students (12.8 per cent) who see a considerable effect. Students who do not view their health positively and/or believe it to be worse in Australia are more likely to judge their health to have a negative effect on their studies.

Mental Health

The items used in the DASS scales (Lovibond & Lovibond, 1995), exemplify the authors’ conceptual understanding of the dimensions of depression, anxiety and stress. Depression is not seen to be characterised by sadness or distress, as is often thought, but by loss of self-esteem and perceived capacity to achieve the person’s life goals. Anxiety is conceived of as a prolonged state of anticipation of negative events, exemplified by having to cope with demands for high achievement that are extremely important for the person to meet if self-esteem is to be maintained. Anxiety is thus thought to be different from a fear response. Stress is seen as an enduring state of high arousal, resulting from the difficulties experienced in trying to meet the demands being placed upon the individual. Highly stressed individuals have low tolerance for frustration.

The authors argue that the moderate correlations between the scales are due, not to overlapping concepts, but to a common underlying cause, such as an environment that stimulates these responses. Given these conceptual understandings, it is not surprising to find that depression, anxiety and stress play an important role in international student perceptions of well-being.
HEALTH AND WELL-BEING OF INTERNATIONAL STUDENTS

Relative to the norms for the DASS scales students in the present study have slightly elevated levels of depression, anxiety and stress: a mean of 8.7 for the Depression scale compared with the norm of 6.3, a mean of 7.6 for the Anxiety scale compared with the norm of 4.7, and a mean of 11.7 for the Stress scale compared with the norm of 10.1. Based on the norms provided for the DASS scales, it is possible to group student scores along a continuum from normal to extremely severe. The result of the comparison shows the student distribution in the present study to be biased towards the higher end of the continuum.

The difficulty in making this comparison is the difference between the sample used to norm the DASS scales and the sample used in this study. The normative sample consisted of Australian people of a wide age-range, drawn from white and blue collar occupations, as well as from among university students. Even though this normative sample would probably have included first and second generation people from overseas countries, it is significantly different from a group of younger international students living in Australia temporarily, almost all of whom have cultural backgrounds markedly different from the Australian culture and who are under pressure to achieve academically in a language that is not their own. Given the difference in the two samples, it would be expected that the students in the present study would have higher than average scores on the DASS scales.

A useful approach to examining the DASS scale scores is to consider the relative distributions on each scale. Anxiety is the dimension that seems to present most concern. On this scale, students are most under-represented in the ‘normal’ classification and most over-represented in the ‘moderate’ and ‘extremely severe’ classifications. The gap between the student mean and the norm on this scale (using the DASS scoring system) is also larger than for the Depression and Stress scales. Given the conceptual basis of the Anxiety scale – a prolonged period of coping with demands for high achievement that are extremely important for the person to meet if self-esteem is to be maintained – it makes sense that international students would have higher than average levels of anxiety. On the Depression scale, students are over-represented in the ‘mild’ and ‘moderate’ classifications, while they seem to cluster more in the lower classifications on the Stress scale.

A fourth measure of psychological well-being, self-esteem, was used in the study. Although global self-esteem did not have the status of a major variable, two single items measuring it were included in the questionnaire to give some idea of how self-esteem relates to other measures of well-being. Global self-esteem is essentially a measure of positive affect, and as such has a well-established negative relationship with depression and anxiety, for example, as well as a positive relationship with life satisfaction (Rosenberg et al., 1995). These relationships are found in the current study.

The majority of students (about 85 to 86 per cent), through their ratings on these two items, indicate that they have considerably positive to very positive views of themselves as individuals. Consistent with the literature, male students have significantly stronger levels of self-esteem than female students (Kling, Hyde, Showers & Buswell, 1999). Of the remaining 15 per cent of students, less than one per cent of students have extremely poor perceptions of themselves as people.
Some change in patterns of sexual activity might be expected among students who have relocated from home to another country for an extended but temporary period. The expectation rests in part on the age group into which most international students fall. Late adolescence will be the time for many when sexual activity begins or increases. Moving into a society where there are fewer cultural constraints on social and sexual interaction than in the home country context, especially for young females, might make this more likely. On the other hand, students who move to Australia without their spouse or partner, might be less likely to engage in sexual activity here. Others might find cultural differences to be stressful and inhibiting.

There is evidence in the data of some changes in patterns of sexual activity when students move from home to Australia. The first is evidence of change in students’ involvement in sexual activity. Some 12.1 per cent of students (115 individuals) who were not sexually active at home have become sexually active here. A higher percentage of the female sample than the male sample changed in this direction. Others (9.8 per cent) changed in the opposite direction, from being sexually active at home to being celibate here. A higher percentage of the male sample than the female sample changed in this direction; these students are older and about 20 per cent are married/partnered, so have possibly left their partners at home. Students with sexual partners in Australia have a significantly stronger sense of connectedness and feel significantly less cultural stress.

The second type of change is the change in gender of partner, with students moving from heterosexual to same-sex relationships or the reverse, or from uni-sexual to bi-sexual relationships. Only a very small number of students reported such changes, two males and eight females.

Students were also asked about the number of sexual partners they have had while in Australia. There is some variation in number, positively related to age for both males and females, but also related to time spent in Australia for female students. However, for the vast majority (88.2 per cent of male students and 90.7 per cent of female students), the number of sexual partners stands at zero or one.

Having a sexual partner in Australia is associated with a stronger sense of connectedness and less cultural stress. On this basis, well-being is seen to be stronger. However, the experiences of STIs, unwanted pregnancy, abortion and relationship distress can have damaging effects on students’ sense of well-being. Of particular importance to students’ health and well-being, then, is the pattern of condom use by sexually active students.

Approximately 38 per cent of the students indicate that they are sexually active. Of these, only half say they always use condoms; this group is evenly divided between males and females, relative to their representation in the group of sexually active students. The remaining 50 per cent are divided between those who never use condoms (21.8 per cent) and those who sometimes use them (28.3 per cent). Males are more strongly represented in the group of students who never use condoms and females in the group of students who sometimes use them.

The percentage of students who always use condoms is slightly higher than the rate reported in another study by Australian undergraduate students for vaginal sex with a
regular partner (males: 47.6 per cent, females: 42.2 per cent) but lower than the rate for use with a casual partner (males: 70.3 per cent, females: 58.7 per cent) (Smith, de Visser, Akande, Rosenthal & Moore, 1998). In the same study it was reported that rates of condom use by South African students were much lower and rates for use in anal sex were more variable. Rates of condom use reported by unmarried heterosexual undergraduates at a university in south-eastern USA (Desiderato & Crawford, 1995) were much lower than those in this study: 29.8 per cent (regular partner) and 18.8 per cent (multiple partners) always used condoms. It is not surprising that a higher percentage of these students reported having had an STI (19 per cent).

There are clear indications in these results that a high percentage of students are placing themselves and their partners at risk. There are few demographic or situational variables that help us to understand this situation. The significant negative association between age and marital status with condom usage might suggest that married students and students in stable relationships make less use of condoms. In a twenty-year study of Canadian university students, Netting and Burnett (2004:19) found that ‘monogamists rely on love and fidelity for protection … without objective HIV/AIDS knowledge’. There is some evidence of differential condom usage rates based on country category, particularly with a high usage rate by students from PR China. Those who never use condoms have a significantly higher score on the Perceptions of Gambling/Smoking scale. Perhaps there is some element in common in the notion of gambling with money, gambling with general health (smoking) and gambling with sexual health (condoms), such as impulsivity (Vitaro et al., 2001) or intensity/sensation-seeking (Wagner, 2001) or both (Nower et al., 2004).

In order to see some possible consequences of the pattern of condom usage among students, information was gathered via the questionnaire about pregnancy, miscarriages, terminations, still births and live births. Some 32 students did not respond to this question at all, leaving open the possibility that not all occurrences were reported. Most of the students who did respond (96.4 per cent) indicated that they or their partners had not experienced these events during their stay in Australia. Of the 34 who did report at least one such event (students were given the opportunity to tick more than one), 70 per cent were married/partnered.

The reported rates of pregnancy and related events do not seem high. Some comparable figures are available for the general Australian population of young people aged 18-24 years. The rate of hospitalisation for childbirth in this age group in 2000-2001 was about 1 per cent, and for termination about 1.4 per cent (Australian Institute of Health and Welfare, 2003). Within the study sample, the childbirth rate for the 18-24 year age group is 0.1 per cent. Given the purpose for which students have come to Australia, it is not surprising that the birth rate for this group would be much lower than that of the general Australian population of the same age. The majority of pregnancies and all live births have been to students (or their partners) aged at least 25 years and married/partnered. The termination rate for students aged 18-24 years in the study sample, however, is 1.4 per cent, the same as that of the general Australian population.

Few students involved in terminations, however, seem to have altered their patterns of condom use. There is an exception. One student wrote somewhat ruefully on the questionnaire that, following the experience of a termination, he now always uses a condom. Not all appear to have followed this practice. A similar situation exists with
those few students or their partners, almost all of whom are single, who have been diagnosed with an STI in Australia. Over 50 per cent indicate that they do not always use condoms.

Although the rate of STI diagnoses in the present study appears low, there are some possible concerns. The rate of notifications for chlamydia (the STI with the highest incidence) in the general adolescent population in Australia (age 12-24 years) in 2001 was 0.3 per cent (Australian Institute of Health and Welfare, 2003). The rates for gonorrhoea and syphilis were much lower, 0.07 and 0.01 per cent respectively. If we compare these rates with the rate of undifferentiated STI diagnoses in the under-25 year age group in present sample, 0.8 per cent, the basis for concern becomes apparent.

Relationships can also be a source of psychological distress for students. Most students (84 per cent) feel their relationships with girlfriends, boyfriends or partners have not unduly upset them during the time they have been in Australia. Of the remaining students, 6.6 per cent report being very much distressed by these relationships. Of these 64 students, over 80 per cent are women. Accompanying this distress are many other indicators of a lack of well-being: lower connectedness, higher cultural stress, higher involvement in drug, alcohol and gambling/smoking, and a greater experience of abuse and distress. Female students in this group have higher levels of cultural stress than males, while males have stronger involvement in drugs, alcohol and gambling/smoking – perhaps alternative reactions to distress. However, the majority of these students (59.4 per cent) are classified as having an unconnected and stressed mode of adaptation to living and studying in Melbourne, suggesting that this is the dominant and generally maladaptive coping strategy of these students.

The results show that drug-taking, drinking, gambling and smoking are not independent but are significantly inter-correlated activities. The three scales used to measure these health-related behaviours are strongly, significantly and positively related, with correlations ranging from +0.39 to +0.44, a pattern also found in two longitudinal studies of youth (adolescent to young adult), especially males, in the USA (Barnes et al., 2005). Regression analyses also show that each scale acts as a significant positive predictor of the other two scales. These health-related behaviours play an important role in helping to define one of the three modes of adaptation used by international students in adjusting to life and study in Australia. The typology developed through cluster analysis includes a mode of adaptation characterised as distressed and risk-taking. Strong involvement in drugs, alcohol, gambling and smoking helps to define this maladaptive mode of coping and adaptation.

In spite of the strong level of association among these health-related behaviours, there are differences. One of these concerns the rates of student involvement. Drinking is the most common of these activities and drug use is the least common. Only 34.6 per cent of the students say they are non-drinkers. This compares with 88.2 per cent who do not gamble, 92 per cent who do not smoke, 92.5 per cent who do not use soft drugs and 97.1 per cent who do not use hard drugs.

There is some evidence that the rates of drug, alcohol and cigarette use in the present sample are considerably lower than the rates in the general Australian population in 2001. A comparison of the two 18-24 year age groups shows that fewer international students smoke (7.6 compared with 32 per cent), drink (65 compared with about 89
per cent), use soft drugs (5.9 compared with 32 per cent), or use hard drugs (2.8 compared with about 13 per cent) (Australian Institute of Health and Welfare, 2003).

National US rates of adolescent involvement in drugs, gambling and alcohol also show alcohol use to predominate (Winter & Anderson, 2000). There is concern about high alcohol consumption rates of college students in the USA (Brower, 2002; Wechsler, Lee, Kuo, Seibring, Nelson & Lee, 2003). In the present study, very few students acknowledge being heavy users of drugs, alcohol or tobacco, although a pattern can be seen in some students’ drinking that might constitute binge drinking, with large amounts being drunk but on an irregular basis. Heavy episodic drinking of this type has been found elsewhere in research into the drinking patterns of university students (Keeling, 2002; O’Connor & Colder, 2005; Wechsler et al., 2002).

Patterns of change in involvement in these activities between home and Australia are also of concern. Given that the dominant age group of international students encompasses late adolescence and early adulthood, some exploration of these activities might be anticipated. Few students used drugs at home: 51 used soft drugs and 15 used hard drugs before coming to Australia. However, there has been some change since arrival in Australia. Some 28 students (2.8 per cent) have increased their use of soft drugs here, including five who have become frequent users; at the same time another 28 have decreased their use of soft drugs here. Fifteen students (1.5 per cent) have increased their use of hard drugs here, including 13 who began their use of hard drugs in Australia; only five students are making less use of hard drugs in Australia relative to their use at home. There has been no change in the very small number of students who inject drugs or share needles and/or fits.

Change has also occurred in student involvement in both gambling and smoking since arrival in Australia. Seventy-one students (7.3 per cent) who did not gamble at home have begun gambling here, while 12 (1.2 per cent) students who did gamble at home do not do so here. In relation to smoking, 82 students (8.4 per cent) indicate that they have started or increased their smoking in Australia, including 43 students who have increased their smoking to a considerable or great degree. Change is more evident in relation to alcohol. Although 74.3 per cent of students report that they have not increased their alcohol consumption since arriving in Australia, 150 students (25.7 per cent) indicate that they have. Of these, 111 students or 11.4 per cent have increased their drinking to a considerable or great degree.

In order to provide some insight into students’ perceptions of these activities, students were asked in the questionnaire whether they saw their involvement in drug use, drinking, gambling and smoking to be creating a problem for them. Few students feel their involvement in drug use and drinking is a cause for concern. Only seven of 59 students (11.9 per cent) who have continued or increased their use of drugs here feel considerably or very much concerned. This can be illustrated by the extreme example of one student who sometimes used hard drugs at home but is a frequent user here, who injects drugs, but who considers that his drug use is ‘not at all’ a problem for him. Of the 257 students who have continued or increased their alcohol consumption here, only 20 students (7.8 per cent) feel considerably or very much concerned. None of those who drink most (nine or more drinks per occasion) feel they have a particular problem with alcohol and only four of the 44 in the next category (5-8 drinks per occasion) do so, not necessarily those who drink this amount most frequently.
A slightly higher percentage of students perceive difficulties in relation to gambling. Of the 60 students who have continued to gamble or increased their gambling in Australia, 14 students (23.3 per cent) are considerably or very much concerned. Thirteen of the 25 (52 per cent) who have increased their gambling to a considerable or great extent show strong concern. An even higher level of concern is shown in regard to smoking. Of the 107 students who have continued to smoke or increased their smoking, 37 students (34.6 per cent) are considerably or very much concerned about their smoking. Twenty of the 43 (46.5 per cent) who have increased their smoking here to a considerable or great extent indicate strong levels of concern. Half of the 24 heaviest smokers acknowledge their smoking to be a problem.

Why are there different rates of acknowledgement of difficulties in these four areas of health-related behaviours? It is difficult to escape the feeling, when examining the data relating to drug use and alcohol consumption, that there is an element of denial operating. Few students, even those heavily involved, acknowledge any difficulties. This is, perhaps, a pattern of maladaptive coping common to substance addiction (Cooper et al., 1995; Holahan et al., 2001; Nower et al., 2004). In the current study, the pattern of perceptions seems to be different in the areas of gambling and particularly smoking, with a higher proportion of students recognising their involvement in these activities to be causing them problems. There are some hints in the literature that gambling involves different and unique processes, sharing fewer common predictors than alcohol and drug use do (Barnes et al., 2004).

A lack of well-being is clearly demonstrated in self-harm behaviour, whether it takes the form of people deliberately hurting themselves, doing something because it might harm or kill them, or having suicidal thoughts. Few international students report engaging in either the first or the second forms of self-harm – 35 students (3.6 per cent) and 23 students (2.4 per cent) respectively. A much higher number of students (95 or 9.8 per cent) indicate that they have entertained suicidal thoughts. While all forms of self-harm are a matter of great concern, the high rate of suicidal thought is of particular concern. The age group of the majority of international students is one in which there is a high suicide rate in Australia. Nearly 30 per cent of all injury deaths in the 12-24 year age-group in Australia result from intentional self-harm or suicide, with only traffic accidents contributing a higher percentage (Australian Institute for Health and Welfare, 2003).

It is not at all surprising to find that students with high self-harm scores also have high scores on other indices of lack of well-being. In the literature, for example, self-harm has been found to be associated with depression, substance use problems and maladaptive coping (Hawton, Hall, Simkin, Bale, Bond, Codd & Stewart, 2003; Laye-Gindhu & Schonert-Reichl, 2005; Muehlenkamp & Gutierrez, 2004). In this study those with high self-harm scores also have high scores on cultural stress, depression, anxiety, general stress, abuse and distress, use of drugs, alcohol, and involvement in gambling and smoking. It is also not surprising to find that students who engage in self-harm have lower scores on positive measures of well-being such as connectedness and perceived academic progress.

The finding that female students have a significantly higher involvement in self-harm than male students is consistent with other research, though there is some variation, depending on the definitions and types of self-harm being investigated (Australian Institute for Health and Welfare, 2003; Hawton et al., 2003; Hawton, Harris, Simkin, Bale, & Bond, 2004; Laye-Gindhu & Schonert-Reichl, 2005; Muehlenkamp & Rosenthal, Russell & Thomson, 2006)
The higher rate of female involvement in self-harm is also consistent with other findings in the study concerning abuse and distress, relationship distress, self-esteem and general stress levels. The gender difference on such measures of emotional distress and the female pattern of internalising that distress are consistent with higher female involvement in self-harming. The fact that gender acts as a significant predictor of self-harm is another indicator of its importance in this context.

Undergraduate students are also more vulnerable to self-harm, as are students who feel their academic progress is worse than anticipated.

Predictors of Health and Health-related Behaviours

Several aspects of students’ well-being have been investigated in this domain: perceptions of general physical health, mental health, and health-related behaviour. Several variables have been shown to act as significant predictors in these areas, some more consistently than others. The most consistent are cultural stress, involvement in risky behaviour, depression and perceived academic progress.

The most consistent predictor in relation to physical and mental health is Cultural Stress scale. It is a significant predictor of each aspect of physical and mental health investigated through regression analysis, except for self-esteem. Cultural stress is a strong predictor of depression, anxiety and stress, in fact the strongest of the predictors of each of these dimensions. It is also a positive though weaker predictor of perceived health interference in study, that is, high cultural stress predicts strong perceived interference.

The fact that cultural stress is associated with a significant amount of the variance in students’ depression, anxiety, stress and perceived health interference in study does not necessarily mean it is causally related. Cultural stress might exacerbate depression, anxiety and stress or these dimensions might increase cultural stress, the influence might be bi-directional, or it might be that all are affected by a third underlying factor – the demands and complexities of the environment in which students find themselves as international students. Whatever the case, it seems important that students’ experiences of cultural stress should be alleviated.

Cultural stress plays a lesser role in the aspects of health-related behaviour that have been investigated. It is a significant positive predictor of only one area - involvement in gambling and smoking – where it plays a relatively minor role. It also acts as a negative predictor in another domain: students’ preparedness to seek help from the university counselling service, when they feel the need for help.

Involvement in risk-taking behaviours, in particular drug and alcohol use, is a common predictor of aspects of psychological well-being. The Perceptions of Drug Use and Perceptions of Alcohol Use scales are significant positive predictors of depression, anxiety and stress, though not of self-esteem. High scores on these scales are predictive of high levels of psychological distress. In each case perceived drug use is a stronger predictor than perceived alcohol use. Involvement in addictive behaviours is commonly associated with a lack of psychological well-being, especially with depression (Holahan et al., 2001; Rodgers, Korten, Jorm, Jacomb, Christensen, & Henderson, 2000).
Perceived drug and alcohol use, together with involvement in gambling/smoking, are consistent predictors of health-related behaviours. Each pair of these behaviours predicts the third, thus the three form a tightly-knit, interdependent cluster of risky behaviours. Perceived drug use is the strongest predictor, involvement in gambling/smoking the next strongest, while perceived alcohol use is the weakest of the three. Needless to say, they are all positive predictors of one another. Alcohol use also acts as a significant positive predictor of self-harm. Excessive alcohol use can itself constitute a form of self-harm, a maladaptive strategy for coping with distress. The Perceptions of Gambling/Smoking scale is also a strong negative predictor of condom use; high involvement in gambling/smoking is associated with less frequent use of condoms.

The Depression scale is another common and consistent predictor of well-being in the domain of health and health-related behaviour. We saw earlier that depression is a significant negative predictor in the domain of daily life and study in Melbourne. Here depression is a negative predictor of self-esteem and a positive predictor of drug use, alcohol use and self-harm. Its strength as a predictor is highest for self-esteem and self-harm.

Perceived academic progress plays a role in students’ well-being in the domain of health and health-related behaviours. It is a significant negative predictor of depression, general stress and self-harm, and a positive predictor of self-esteem. Students who feel they are progressing as well as or better than expected have low levels of depression, general stress and self-harm, but high levels of self-esteem. It is the students who feel they are doing worse than expected academically who are in difficulties. The strongest contribution of perceived academic progress is to the dimension of depression, with its contribution to other aspects of well-being being weaker. However, it is a variable that does act as a significant predictor in a considerable range of areas of well-being in different domains.

Several other predictors play a less consistent role in this domain - connectedness, abuse and distress, gender, anxiety and age – each helping to account for variance in one or two aspects of well-being. Different variables concerning cultural background also act as predictors, but for only half of the aspects of well-being in this domain. Being from an Asian country is a positive predictor of anxiety, participation in a Foundation Studies program is a negative predictor of self-esteem, speaking a LOTE off campus is positive predictor of perceiving health interference in study, being from a non-Asian country is a positive predictor of drug use, and being an English speaker off campus is a positive predictor of alcohol use. Although these variables seem to play a less consistent part in students’ well-being in this domain, when they are combined with or mediated by the cultural stress variable, it can be seen that cultural background does play an important role in accounting for variation in students’ perceptions of well-being in the domain of health and health-related behaviour.

The amount of variation in students’ well-being accounted for in the different aspects of health and health-related behaviour ranges from a low of 7.9 per cent for condom use to 30.4 per cent for Depression. The data provide a very limited understanding of patterns of condom use. The highest percentages of variance are accounted for in the three DASS scales and the three main risk-taking behaviours, drug use, alcohol use and gambling/smoking. Once again, the strongest predictors are psychological dimensions rather than demographic variables.
Links with Other Domains of Well-being

Does well-being in aspects of health and health-related behaviours contribute to students’ well-being in other domains? Psychological well-being in particular has a pervasive relationship with students’ well-being in virtually every aspect of life and study that has been investigated. There is some evidence that international students, given the unusual and demanding cultural and academic context in which they live, experience higher than usual challenges to their psychological well-being. Their experience as international students would be much improved if strategies could be found to increase students’ well-being in this area.

Each of the Depression, Anxiety and Stress scales, for example, correlates significantly with measures in almost every aspect of the domains investigated. More importantly, the three scales act as predictors in certain areas. Depression is a negative predictor of satisfaction with living arrangements, perceived adequacy of financial support, balance between study and other activities, and seeking help from the university health service when in need. Stress is a positive predictor of abuse and distress and of seeking help from the university counselling service when in need.

The profiles of the three different styles of adaptation to university life and study in Australia show that depression, anxiety and stress play a key role. There is a clear difference in profile on these dimensions between the positive, connected style of adaptation and the other two styles. Those who are positive and connected in their approach to coping with adaptation have comparatively little depression, anxiety or stress. In contrast, the unconnected, stressed and the distressed and risk-taking styles of adaptation are characterised by scores on these scales that are well above average, although the patterning of scale scores is different in each case.

Another major difference in the three styles of adaptation is the level of well-being in health-related behaviour. Integral to the distressed and risk-taking mode of adaptation is the above-average involvement in drug and alcohol use, gambling and smoking, non-use of condoms, high number of sexual partners and high levels of self-harm. This contrasts sharply with the characteristic health-related behaviours of both the positive, connected adaptors and the unconnected, stressed adaptors.

It is also interesting that the three styles of adaptation distinguish significantly among students’ levels of self-esteem in a way that might not be altogether expected. Those students whose mode of adaptation is positive and connected have the highest level of global self-esteem, while those whose mode of adaptation is unconnected and stressed have the lowest. This is not unexpected. However, students displaying a distressed and risk-taking style of adaptation have a stronger sense of self-esteem than those whose approach is unconnected and stressed. Given that this style of adaptation is also defined by a high level of depression, it might be expected that it would also signify a low level of self-esteem. These results suggest that the distressed and risk-taking mode of adaptation is associated with a particular type of coping mechanism, such as denial or avoidance. The research of Cooper and her colleagues (1995) has linked use of alcohol, for example, to depression and to these maladaptive forms of coping.
USE OF UNIVERSITY HEALTH AND COUNSELLING SERVICES

RELATIVE USE OF HEALTH AND COUNSELLING SERVICES

A reasonably high percentage of international students who responded to the survey, 41.2 per cent, indicated that they felt they needed to obtain help from the university health service. Students were responding in terms of their experiences to date during the current year. Since the survey was completed in April or May, the period of time referred to was relatively brief, at most three months. It was also a period of time encompassing summer and autumn months, when seasonal illnesses might be expected to be less frequent than during the winter months. The rate of perceived need for help from the university counselling service was much lower, 27.6 per cent.

The differential rates of perceived need for medical and counselling help were reinforced by the relative percentages of students who acted on their perceived need and went to the respective services for help: 62.2 per cent of those with a perceived need for medical help and 19.8 per cent of those with a perceived need for counselling help actually sought help. This means that 27.5 per cent of the total sample of international students said they had accessed health services, while only 5.8 per cent of all respondents said they had accessed the counselling service. In all, about five times as many international students used the health service compared with the number who used the counselling service.

The higher use by international students of university medical services as opposed to counselling services is consistent with the expectation that medical services are used more frequently than counselling services by university students in general. Evidence of this is to be found elsewhere (Daroesman et al., 2004). Responding to a survey on the perceived quality of university administrative and support services, 2,020 University of Melbourne students rated their experiences of the university health service, while only 535 rated experiences of the counselling service. If, as seems likely, these responses represent the relative number of students in the sample who used each service, then the health service is used by more students than the counselling service. When responses of international and domestic students in this data set are separated, it can be seen that about eight times as many international students used the health service compared with the number who used the counselling service, while only about three times as many domestic students used the health service compared with the number who used the counselling service.

There are assertions in the literature that international students, in particular those from Asian countries, use university medical services more than domestic students for what are essentially psychological problems, either because their stress levels have led to physiological problems or because the reluctance to acknowledge a psychological difficulty has resulted in the symptoms being interpreted physiologically. At the same time such students are said to make less use of counselling services than domestic students for a range of culturally-based reasons (Braun & Browne, 1998; Carr et al., 2003; Mori, 2000; Zhang & Dixon, 2003). The relative rate of use of health and counselling services by international students in the present study supports the assertion of higher use of health services, though this is not sufficient in itself to give endorsement of the explanation offered in the literature.
PREDICTING SERVICE USE FROM PERCEIVED NEED

There is a marked gap between the number of students who said they needed help from either medical or counselling services between February and mid-May and the number who actually went to the services for help. The gap was much greater in the case of the counselling service. If students’ perceived need of help was a genuine and realistic appraisal of their situation, then it is of concern that a substantial percentage of students did not take action to obtain the help they needed. There is particular concern about the 26 students who thought they needed help with problems in more than one area of counselling but did not seek help; these students needed help in two or all three of the areas of academic-educational, career-vocational and personal-social-emotional counselling.

Two approaches were employed to try to gain some insight into this issue: exploration of the factors that predict which students took positive action and examination of the reasons students gave for not taking action.

In the case of both the medical service and the counselling service, a significant, positive predictor of students’ decision to act on their perceived need for help was having friends who were known to have used that service themselves. This might seem to be an obvious and expected association, likely to be the same for any group of students. However, it is possible that it is particularly important for international students. Carr and her colleagues (2003) point out that communication from members of students’ own national or ethnic group can provide valuable information for international students who have less experience of the host culture. Kilinc & Granello (2003) found that 50 per cent of their sample of Turkish students in the USA would seek informal help, largely from friends, when in need of help. Fallon (2005), in a study of international students participating in a Foundation Studies program in Melbourne, found that students placed considerable reliance on family and friends for medical advice.

The information friends can provide concerns not only factual matters about location of services, hours of opening, and absence of fees, but also the more subjective aspects that are likely to intimidate the inexperienced, such as what to expect, how clients are treated and how helpful the service is. If we are looking for a means of increasing the proportion of international students who actually seek help when in need, then the power of the friendship network would seem to be something to be harnessed.

While having friends who have used the health or counselling services is a positive predictor of international students’ decision to seek help themselves when in need, being very depressed (in the case of the health service) or highly stressed (in the case of the counselling service) are negative predictors. At first sight, it seems counter-intuitive that depression and stress should reduce the likelihood of seeking help. Depressed or stressed students would seem to be the ones most in need of help.

A possible interpretation is that the more depressed a person becomes, the stronger the sense of inertia and the less likely that decisions or actions will be taken. In fact the Depression scale includes the concept of inertia, illustrated by the item “I found it difficult to work up the initiative to do things.”. Similarly, the more stressed a person becomes, the more anxious they become if their work is interrupted and the less
tolerant they are of having to leave the tasks that are causing them such stress. The Stress scale incorporates this notion; one of the items illustrating it is “I was intolerant of anything that kept me from getting on with what I was doing.” Several students who offered reasons for not seeking counselling help when they felt they needed it said that they did not have enough time.

The final variables predicting use of the university health and counselling services appear to relate to cultural issues. Being a student from PR China was found to be a negative predictor of seeking the help of the health service when in need. At first sight, this might seem to suggest a cultural reluctance to seek help. However, the literature discusses the reluctance of Asian international students to seek help from psychological not medical services. Furthermore the concept of somaticisation of problems suggests the view that there is not a reluctance on the part of Asian students to use health services. It is possible to look at the reasons given by the 50 Chinese students who did not act on their perceived need for medical help. While the general pattern of the reasons students from PR China gave for not going to the health service was similar to that of other students, Chinese students tended to indicate that they had relatively less information about the health service – the existence of the service, its location, and the absence of fees - than other students. Fallon (2005) found that pre-tertiary students from PR China placed greatest emphasis in their explanations for not accessing medical help on having, and presumably using, their own medication.

The final variable predicting use of the counselling service by international students, cultural stress, does concern acculturation. The Cultural Stress scale measures the perceived discomfort of international students in an unfamiliar cultural setting, their feelings of being lonely, less important than at home, being treated differently and not belonging. These feelings are discussed in the literature as typical responses to the new personal, social and cultural environment early in the acculturation process (Sandhu & Asrabadi, 1994; Ward, Okura, Kennedy & Kojima, 1998; Ward & Ranadueba, 1999). The stronger these feelings are, the higher the score on the Cultural Stress scale, with a high score indicating a low level of adjustment to the new culture.

Students who acted on their need for counselling help had, on average, a significantly lower score on the Cultural Stress scale than those who felt they needed help but did not visit the service. This indicates that those who sought help were more acculturated, that they had achieved some adaptation to the Australian culture. Lack of acculturation could affect knowledge about service availability, discomfort at the thought of seeking help, belief that the counsellor would not understand or help the student, and perhaps concern about possible stigmatisation.

**STUDENTS’ REASONS FOR NOT SEEKING HELP**

The exploration of the factors that predict students’ use of health and counselling services helps us to understand why some students chose not to seek help even when they felt in need of it. An examination of the reasons given by students themselves for not seeking help provides another approach to understanding their decision. One of the most common reasons given by international students for not taking action was that they thought their problem was not important enough. Over 60 per cent of these students endorsed this as one of their reasons for not seeking medical or counselling help when needed. This was also found to be one of the most common reasons given by Foundation Studies international students for not seeking medical help when needed (Fallon, 2005).
It would be interesting to know the criteria students use in order to decide whether a health condition is sufficiently serious to require health service attention and also the degree of variability among students in the judgments they make. On the other hand, it is a rather curious reason in some respects. The evaluation of the seriousness of a need for help might be expected to take place when the initial question is being answered: During this year, did you feel you needed help from the university health (or counselling) service? Perhaps designating the problem as relatively unimportant after the fact is another way of saying that the difficulty resolved itself over time and nothing untoward happened as a result of not seeking help. This still does not explain why students failed to take action in the first place.

Lack of information about the health and counselling services is given as a reason for not seeking help by a high proportion of students. There was a cluster of items concerning this issue: not knowing how to get an appointment, not knowing the location of the service or that the service was free, and not even knowing of the existence of these services. Most students indicated that they knew of the existence of university health and counselling services, but a high percentage of students did not know the location of the services or how to go about making an appointment. Location of and appointment-making with the counselling service seem to be much more of a challenge for students. Since, as we have already seen, the experience of the friends of international students is of much importance to their help-seeking decisions, the greater lack of information about the counselling service might be due to the smaller number of international students who have accessed that service compared with the health service.

If international students are to use the support services offered by the university, it is important that information about those services is easy to obtain. A reasonably high percentage of students indicated that it is not easy to find out information about university support services. About 45 per cent indicated it is not easy to find information about the health service, about 58 per cent indicated this about the counselling service and about 51 per cent about other services such as housing, finance and careers. While no doubt friends play a role in the provision of factual information about university services, the majority of international students (62.5 per cent) cited the university website as their most useful source of information about university services.

Much has been written in the literature about the under-utilisation of university counselling services by Asian international students. Reasons given for this generally emphasise cultural differences in conceptions of mental health and what are seen to be appropriate responses to problems. These include the concept that psychological problems are stigmatised; being a sign of weakness, they bring shame and disgrace upon the family. Since the family is much more important than the individual, it is very important not to make problems known. Disclosure of personal problems to a counsellor breaches much-valued privacy (Carr et al., 2003; Mori, 2000; Shonfeld-Ringel, 2000; Zhang & Dixon, 2003). These writers also point to other reasons for the under-utilisation of university counselling services by Asian international students: unfamiliarity with the basic concepts of counselling because of lack of prior exposure to such services at home, language difficulties, shortage of culturally knowledgeable and sensitive counselling staff, lack of confidence in counsellors’ competence, and lack of information about the university services and their availability to ‘outsiders’.

Rosenthal, Russell & Thomson, 2006
There are some indications in students’ survey responses that suggest some of these explanations might be influencing students’ decision-making about help-seeking. Three items are relevant: students’ feeling of discomfort about asking for help, their concern that the service professional would not understand them, and their feeling that the service would not be able to help them. About 30 per cent of students responding to reasons for not accessing the health service endorsed these as reasons for not seeking help, but a much higher percentage (55 per cent, 47 per cent and 48 per cent respectively) endorsed these as reasons for not accessing the counselling service. These comparisons suggest a higher level of discomfort at the thought of approaching the counselling as opposed to the health service.

It was pleasing to see that few students felt that there might be an effect on their academic results if they sought help from either the health or the counselling service. Only 10 per cent endorsed this as a reason for not seeking medical help and only 9 per cent for not seeking counselling help. If students feel that their medical or psychological difficulties would not be kept confidential, they might fear revealing problems to members of a university support service. Mori (2000) notes that, in some cases, students might fear they would be sent home as failures if formal counselling became necessary. Another interpretation, suggested by some of the other comments made by students, is that taking time off from study to go to the health or counselling service would be detrimental to completing work on time, thus affecting their academic results. This is a comment typical of a highly stressed student.

**EVALUATION OF HEALTH AND COUNSELLING EXPERIENCES**

Students who did seek help from the university’s health or counselling services were asked to evaluate their experiences. There have been reports in the literature that Asian students tend to be less satisfied than Caucasian students with university health services, particularly with counselling services. For example, Lee & Mixon (1995) found that, although both Asian and Caucasian college students attending a west coast university in the USA had generally positive perceptions of their counsellors and the counselling experience, Asian students were significantly less positive than Caucasian students in their perceptions of the usefulness of counselling for personal/social problems and in their perceptions of the counsellor’s competence. Asian students were also significantly less favourably disposed toward returning to their counsellor and they engaged in fewer counselling sessions.

International students at the University of Melbourne have positive perceptions of the health and counselling services, according to the ratings of those in the present study who have sought help from these services. The mean ratings for items concerning satisfaction with service, obtaining an appointment when needed, and sensitivity and competence of the health professional/counsellor, were all at or close to 2.0 on the four-point scale (0 – 3), indicating that these statements reflected students’ experiences ‘very well’. Students also indicated that they did not experience great discomfort in seeking help from either of these services, although the level of discomfort was slightly higher for those students evaluating their experience of the counselling service. This higher level of discomfort with counselling is consistent with the higher level of discomfort reported in students’ reasons for not seeking counselling help.
These positive perceptions of international students are consistent with the results found in a study of University of Melbourne student evaluations of administrative and support services in 2003 (Daroesman et al., 2004). Students gave very positive responses to items concerning professional competence, understanding, effectiveness and quality of health and counselling services, though, in accord with the literature, the mean ratings given by international students tended to be a little lower than those of domestic students. Lowest mean ratings of both student groups were given for the availability of appointments and the hours of opening.

Within the present study, it was possible to compare the evaluations of Asian and non-Asian international students; some interesting and unexpected results were found. Asian students tended to be more positive in their evaluation of their counselling experiences than non-Asian students. This finding is inconsistent with expectations arising from previous research. At the same time, Asian students tended to be less positive than non-Asian students in their evaluation of their experiences of the health service. They were particularly critical of the availability of appointments, in contrast to non-Asian students who rated appointment availability significantly more positively. It must be remembered, however, that there was a very small sample of non-Asian students in this comparison and that the non-Asian students probably included people from cultures that are also wary of the process of counselling (Kilinc & Granello, 2003).

To sum up, the results indicate that international students make greater use of university health services than counselling services; their relative rate of use of the two services is probably different from that of domestic students. This finding is consistent with the research literature. A positive predictor of use of health and counselling services by students with a perceived need for help is friendship with others who have used these services. Depression is a negative predictor of health service use, as is being a student from PR China. Stress is a negative predictor of accessing the counselling service. So too is the interaction of cultural stress and course type - postgraduate (coursework) students needed to be well acculturated to access this service.

The main reason students gave for not using the university services in spite of an acknowledged need was that their problem was not sufficiently important. There were also strong indications that students lacked necessary information about the services. Some acknowledged discomfort about using the services, especially the counselling service, but few were concerned that use of the services would affect their academic results. Students who did use the services gave very positive evaluations of their experiences, though again the level of discomfort was slightly higher in relation to the counselling service.

**DRAWING THE THREADS TOGETHER**

The focus of the study is on the health and well-being of international students. Well-being is seen to be the broader concept of the two in this study. It is measured subjectively, using students’ self-perceptions of emotional, cognitive and behavioural states. Well-being here concerns students’ satisfactions, judgments and emotional responses to the challenging situation of being an international student in Melbourne. Two processes are central to well-being in such a challenging situation: adaptation.
The vast majority of international students in the present study have indicated by their responses that they have a sound sense of social, physical and psychological well-being. They experience positive affect and satisfaction in relation to the main domains of their life in Melbourne and their approaches to coping and adaptation are positive and effective. There are, nevertheless, some students whose sense of well-being is weaker and whose approaches to coping and adaptation are less effective.

Evidence on which this conclusion is based can be found in the detailed results of the three domains of students’ lives that have been investigated: students’ ways of relating to others while living in Australian society, their experiences of living and studying in Melbourne, and their health and health-related behaviour here compared with at home. In addition, results in a related area - students’ use and perceptions of the university health and counselling services – provide further relevant information.

One way of increasing our understanding of students’ perceptions of well-being is to determine the factors that act as significant predictors of those perceptions. The most fundamental and pervasive are a sense of connectedness and a sense of cultural stress. Depression, perceived academic progress and involvement in risk-taking health behaviours are also consistent predictors. Various measures concerning cultural background act as predictors of well-being in different domains. Other variables, such as friendship, gender, age, course type, years of enrolment, and participation in a Foundation Studies program, make occasional contributions.

Differences in students’ perceptions of wellbeing based on a range of demographic variables have been found. These variables measure length of stay, age, gender, relationships, course of study, cultural background, and perceived academic progress. Of particular interest are the two general patterns of adaptation that can be discerned on the basis of cultural background, each exhibiting different areas of strength and concern. Faculty-based patterns can also be seen, possibly linked at least in part to the composition and cultural background of the student bodies.

A three-category typology of styles of adaptation has been developed on the basis of student responses across the domains investigated. The majority of students, 59 per cent, exhibit a positive, connected style of adaptation; these students have a sound sense of well-being. A substantial minority of students, 34 per cent, are unconnected and stressed in their approach, while a very small group, 7 per cent, have a distressed and risk-taking style of adaptation. The latter two groups of students are the ones whose well-being is in need of strengthening. With appropriate support, these students could have much more satisfying and productive experiences as university students in Australia.
REFERENCES


HEALTH AND WELL-BEING OF INTERNATIONAL STUDENTS


HEALTH AND WELL-BEING OF INTERNATIONAL STUDENTS


Women’s Health Australia (2002). *Data book for the 2000 Phase 2 survey of the young cohort (22-27 years): Australian Longitudinal Study on Women's Health.* Newcastle: The Research Centre for Gender and Health, University of Newcastle.


## ATTACHMENT 1

### CLASSIFICATION OF COUNTRIES OF ORIGIN

Countries specified as belonging to the categories below are the countries of origin of international students in the achieved sample for the present study. Countries contributing large numbers of international students at the University of Melbourne are assigned to single country categories.

<table>
<thead>
<tr>
<th>Category</th>
<th>Countries</th>
</tr>
</thead>
<tbody>
<tr>
<td>1. PR China</td>
<td></td>
</tr>
<tr>
<td>2. Hong Kong</td>
<td></td>
</tr>
<tr>
<td>3. India</td>
<td></td>
</tr>
<tr>
<td>4. Indonesia</td>
<td></td>
</tr>
<tr>
<td>5. Malaysia</td>
<td></td>
</tr>
<tr>
<td>6. Singapore</td>
<td></td>
</tr>
<tr>
<td>7. UK/US/Canada</td>
<td>UK, Canada, USA</td>
</tr>
<tr>
<td>8. Other East Asia</td>
<td>Japan, Macau, South Korea, Taiwan</td>
</tr>
<tr>
<td>9. Other South East Asia and Pacific</td>
<td>Brunei, East Timor, Fiji, Myanmar, New Caledonia, Philippines, PNG, Samoa, Solomon Islands, Thailand, Vanuatu, Vietnam</td>
</tr>
<tr>
<td>10. Middle East and North Africa</td>
<td>United Arab Emirates, Iran, Oman, Saudi Arabia, Bahrain, Lebanon, Turkey</td>
</tr>
<tr>
<td>11. Other Africa</td>
<td>Botswana, Ethiopia, Ghana, Mauritius, Mozambique, South Africa, Zambia</td>
</tr>
<tr>
<td>12. Europe</td>
<td>Czech Republic, Denmark, Finland, France, Germany, Greece, Iceland, Italy, Netherlands, Norway, Poland, Russia, Serbia-Montenegro, Sweden, Switzerland</td>
</tr>
<tr>
<td>13. Latin America</td>
<td>Brazil, Columbia, Mexico, Venezuela</td>
</tr>
<tr>
<td>14. Other South Asia</td>
<td>Bangladesh, Bhutan, Pakistan, Nepal, Sri Lanka</td>
</tr>
</tbody>
</table>
HEALTH AND WELL BEING SURVEY

INTERNATIONAL STUDENTS
at
THE UNIVERSITY OF MELBOURNE

Thank you very much for taking the time to complete this survey. We hope you find it both interesting and worthwhile. Your responses will assist us in developing improved University services for international students during their stay in Australia.

While it is helpful to have all questions answered, please remember that you can choose not to answer any question you would rather not answer.

This questionnaire is ANONYMOUS and CONFIDENTIAL.

Return of Survey

Please return the completed survey in the reply-paid envelope provided, by no later than:

WEDNESDAY 27 April, 2005

Please note: No stamp is needed for the reply-paid envelope.
HEALTH AND WELL-BEING OF INTERNATIONAL STUDENTS

SECTION A DEMOGRAPHIC INFORMATION

Please answer the following questions by ticking the appropriate box or giving requested information.

1. What was your age on 31 March, 2005? □ □Years

2. What is your gender? Male □ Female □

3. Are you: Single □ Married or □ divorced or separated □ Partner □ single with partner □ deceased

4. Which type of course are you enrolled in? Undergraduate □ Postgraduate by □ coursework Postgraduate by □ research Other □

If Other, please specify ____________________________________________

5. In which Faculty are you enrolled? _______________________________ □ □

If a Combined Degree, which Faculties? _______________________________ □ □

6. Which year of the course are you in? □ Year

7. Are you enrolled: Full-time □ Part-time □

8. How are you progressing with your studies in comparison with what you anticipated? Better □ About the same □ Not as well □

9. How long have you been enrolled in university studies in Australia? □ Years

10. Did you undertake a Foundation Studies program? Yes □ No □

11. How many years of secondary schooling did you complete in Australia? None □ One year □ Two years □ Three years or more □

12. How many children do you have? □ Child/children

13. If you have a child/children, are any living with you in Australia? Yes □ No □ No children □

14. If you have a young child/children living with you in Australia, has it been difficult to obtain satisfactory child care? Not applicable □ Extremely □ quite □ fairly □ quite □

difficult □ difficult □ easy □ easy □

15. Which country do you come from? _______________________________ □ □

16. Did you speak English some of the time at home when growing up? Yes □ No □

17. Do you speak a language other than English most of the time off-campus? Yes □ No □
SECTION B

Below are some statements that describe how you might feel about being an international student in Melbourne DURING THIS YEAR. Please circle the number 0, 1, 2 or 3 that indicates how much the statement applies to you and your experience. There are no right or wrong answers. Do not spend too much time on any statement.

The rating scale is as follows:
0 Does not apply to me at all
1 Applies to me to some degree, or some of the time
2 Applies to me to a considerable degree, or a good part of time
3 Applies to me very much, or most of the time

<table>
<thead>
<tr>
<th>Statement</th>
<th>Rating</th>
</tr>
</thead>
<tbody>
<tr>
<td>1. At the university, I mix socially with other international students.</td>
<td>0 1 2 3</td>
</tr>
<tr>
<td>2. I am satisfied with my living arrangements here.</td>
<td>0 1 2 3</td>
</tr>
<tr>
<td>3. I can contact my family at home as much as I need to.</td>
<td>0 1 2 3</td>
</tr>
<tr>
<td>4. During this year, my physical health has interfered with my studies.</td>
<td>0 1 2 3</td>
</tr>
<tr>
<td>5. I have a positive view of myself as a person.</td>
<td>0 1 2 3</td>
</tr>
<tr>
<td>6. There are people here in Melbourne I can ask for help if I needed it.</td>
<td>0 1 2 3</td>
</tr>
<tr>
<td>7. Outside the university, the people I mix with socially have a cultural background similar to my own.</td>
<td>0 1 2 3</td>
</tr>
<tr>
<td>8. I mix socially with people I met here through the practice of my religion.</td>
<td>0 1 2 3</td>
</tr>
<tr>
<td>9. I would like to spend more time in physical activities and exercise.</td>
<td>0 1 2 3</td>
</tr>
<tr>
<td>10. I would like to stay in Australia when I finish my studies, if I could.</td>
<td>0 1 2 3</td>
</tr>
<tr>
<td>11. My family is interested to know how I’m getting on with my studies.</td>
<td>0 1 2 3</td>
</tr>
<tr>
<td>12. I think the balance between the time I spend with others and the time I spend alone is about right.</td>
<td>0 1 2 3</td>
</tr>
<tr>
<td>13. I miss the familiar way of life in my own country.</td>
<td>0 1 2 3</td>
</tr>
<tr>
<td>14. I would like to spend more time in paid work.</td>
<td>0 1 2 3</td>
</tr>
<tr>
<td>15. I feel less important here than at home.</td>
<td>0 1 2 3</td>
</tr>
<tr>
<td>16. Most of my waking hours are spent in studying.</td>
<td>0 1 2 3</td>
</tr>
<tr>
<td>17. My relationship with a girlfriend/boyfriend/partner has upset me during my studies here.</td>
<td>0 1 2 3</td>
</tr>
<tr>
<td>18. I feel uncomfortable in the Australian culture.</td>
<td>0 1 2 3</td>
</tr>
<tr>
<td>19. My smoking of cigarettes is a problem for me.</td>
<td>0 1 2 3</td>
</tr>
<tr>
<td>20. I have more work to do for my university studies than I can cope with.</td>
<td>0 1 2 3</td>
</tr>
<tr>
<td>21. I worry about whether I have enough money to live on during my studies here.</td>
<td>0 1 2 3</td>
</tr>
<tr>
<td>22. There are people here in Melbourne who care about me.</td>
<td>0 1 2 3</td>
</tr>
<tr>
<td>23. I feel I really belong here at the university.</td>
<td>0 1 2 3</td>
</tr>
<tr>
<td>24. Things that are happening in my home country make it hard for me to keep my mind on my studies.</td>
<td>0 1 2 3</td>
</tr>
<tr>
<td>25. I drink more alcohol since I began my university studies here.</td>
<td>0 1 2 3</td>
</tr>
<tr>
<td>26. I have enough financial support for my needs during my studies here.</td>
<td>0 1 2 3</td>
</tr>
<tr>
<td>27. I am stressed by the need to do well for the sake of my family.</td>
<td>0 1 2 3</td>
</tr>
</tbody>
</table>
LIVING IN MELBOURNE

Please answer the following questions by ticking the appropriate box or giving requested information.

1. What are your current living arrangements? *(Please tick one only)*
   - Live alone □
   - Live with friend(s) or other student(s) □
   - Live with family member(s) or partner □
   - Live with other(s) (not family, or friends or students) □

2. How many times have you changed your accommodation during your studies at the university?
   - Not at all □
   - 1-3 times □
   - 4-6 times □
   - More than 6 times □

3. Which of the following sources provide you with financial support during your studies here? *(Please select more than one if necessary.)*
   - Family □
   - Own and/or partner’s savings □
   - Paid work □
   - Scholarship from own country □
   - Scholarship from Australia □
   - Scholarship from organisation outside own country and Australia (eg. WHO, Ford Foundation) □
   - Other □
   - Please specify ____________________________

4. Are you currently doing paid work? Yes □ No □

5. If yes, how many hours a week do you work on average? □ □ Hours

6. Do you currently do any unpaid work? Yes □ No □

7. If yes, how many hours a week do you work on average? □ □ Hours

8. Thinking about what you did last week, how many hours did you spend in the following activities?
   - Formal university classes (eg. lectures, tutorials, supervision) □ □ Hours
   - Private study □ □ Hours
   - Physical activity □ □ Hours
   - Social and/or leisure activities □ □ Hours
   - Work other than studying (paid or unpaid) □ □ Hours
   - Sleep □ □ Hours

9. On average, how many times a day do you eat meals? Less than 3 □ 3 times □ More than 3 times □

10. During a typical week, roughly what percentage of your meals would be:
    - Home-prepared (your own or another’s) □
    - Prepared in a café or restaurant □
    - Fast or junk food □
SECTION D

Below are some more statements that describe how you might feel about being an international student in Melbourne DURING THIS YEAR. Please circle the number 0, 1, 2 or 3 that indicates how much the statement applies to you and your experience. There are no right or wrong answers. Do not spend too much time on any statement.

The rating scale is as follows:

<table>
<thead>
<tr>
<th>Rating</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>0</td>
<td>Does not apply to me at all</td>
</tr>
<tr>
<td>1</td>
<td>Applies to me to some degree, or some of the time</td>
</tr>
<tr>
<td>2</td>
<td>Applies to me to a considerable degree, or a good part of time</td>
</tr>
<tr>
<td>3</td>
<td>Applies to me very much, or most of the time</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Number</th>
<th>Statement</th>
<th>0</th>
<th>1</th>
<th>2</th>
<th>3</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>As a person, I am as good as most others.</td>
<td>0</td>
<td>1</td>
<td>2</td>
<td>3</td>
</tr>
<tr>
<td>2</td>
<td>I am an active member of a national/cultural club or association.</td>
<td>0</td>
<td>1</td>
<td>2</td>
<td>3</td>
</tr>
<tr>
<td>3</td>
<td>At the university, the people I mix with socially have a cultural background similar to my own.</td>
<td>0</td>
<td>1</td>
<td>2</td>
<td>3</td>
</tr>
<tr>
<td>4</td>
<td>My family care about whether I am happy and well here.</td>
<td>0</td>
<td>1</td>
<td>2</td>
<td>3</td>
</tr>
<tr>
<td>5</td>
<td>My diet provides a balance of carbohydrates (eg. rice, noodles, bread), proteins (eg. eggs, meat, fish, chicken), vegetables, fruits and dairy products (eg. milk, yoghurt, butter).</td>
<td>0</td>
<td>1</td>
<td>2</td>
<td>3</td>
</tr>
<tr>
<td>6</td>
<td>I would like to spend more time in social and/or leisure activities.</td>
<td>0</td>
<td>1</td>
<td>2</td>
<td>3</td>
</tr>
<tr>
<td>7</td>
<td>I return home to visit as often as I need to.</td>
<td>0</td>
<td>1</td>
<td>2</td>
<td>3</td>
</tr>
<tr>
<td>8</td>
<td>The situation in my home country means it will be difficult for me when I return home.</td>
<td>0</td>
<td>1</td>
<td>2</td>
<td>3</td>
</tr>
<tr>
<td>9</td>
<td>There are people here in Melbourne I can talk to about my problems.</td>
<td>0</td>
<td>1</td>
<td>2</td>
<td>3</td>
</tr>
<tr>
<td>10</td>
<td>My consumption of alcohol is a problem for me.</td>
<td>0</td>
<td>1</td>
<td>2</td>
<td>3</td>
</tr>
<tr>
<td>11</td>
<td>At the university, the people I mix with socially are Australian.</td>
<td>0</td>
<td>1</td>
<td>2</td>
<td>3</td>
</tr>
<tr>
<td>12</td>
<td>I would like to spend more time studying.</td>
<td>0</td>
<td>1</td>
<td>2</td>
<td>3</td>
</tr>
<tr>
<td>13</td>
<td>I have increased my use of drugs since I began my university studies here.</td>
<td>0</td>
<td>1</td>
<td>2</td>
<td>3</td>
</tr>
<tr>
<td>14</td>
<td>I think the balance between studying and other activities in my life is about right.</td>
<td>0</td>
<td>1</td>
<td>2</td>
<td>3</td>
</tr>
<tr>
<td>15</td>
<td>It is lonely for me here in Melbourne.</td>
<td>0</td>
<td>1</td>
<td>2</td>
<td>3</td>
</tr>
<tr>
<td>16</td>
<td>It’s hard being away from the people I love.</td>
<td>0</td>
<td>1</td>
<td>2</td>
<td>3</td>
</tr>
<tr>
<td>17</td>
<td>Outside the university, the people I mix with socially are Australian.</td>
<td>0</td>
<td>1</td>
<td>2</td>
<td>3</td>
</tr>
<tr>
<td>18</td>
<td>My friends often use drugs.</td>
<td>0</td>
<td>1</td>
<td>2</td>
<td>3</td>
</tr>
<tr>
<td>19</td>
<td>I worry about problems my family at home is experiencing.</td>
<td>0</td>
<td>1</td>
<td>2</td>
<td>3</td>
</tr>
<tr>
<td>20</td>
<td>People treat me differently because of my cultural background.</td>
<td>0</td>
<td>1</td>
<td>2</td>
<td>3</td>
</tr>
<tr>
<td>21</td>
<td>I smoke more heavily since I began my university studies here.</td>
<td>0</td>
<td>1</td>
<td>2</td>
<td>3</td>
</tr>
<tr>
<td>22</td>
<td>I don’t feel safe here in Melbourne.</td>
<td>0</td>
<td>1</td>
<td>2</td>
<td>3</td>
</tr>
<tr>
<td>23</td>
<td>My involvement in drug use is a problem for me.</td>
<td>0</td>
<td>1</td>
<td>2</td>
<td>3</td>
</tr>
<tr>
<td>24</td>
<td>I am involved in organised university activities (eg. clubs, sport) other than my studies.</td>
<td>0</td>
<td>1</td>
<td>2</td>
<td>3</td>
</tr>
<tr>
<td>25</td>
<td>I am not getting on well with my family at home.</td>
<td>0</td>
<td>1</td>
<td>2</td>
<td>3</td>
</tr>
<tr>
<td>26</td>
<td>My involvement in gambling is a problem for me.</td>
<td>0</td>
<td>1</td>
<td>2</td>
<td>3</td>
</tr>
<tr>
<td>27</td>
<td>I would like to get more sleep than I do.</td>
<td>0</td>
<td>1</td>
<td>2</td>
<td>3</td>
</tr>
<tr>
<td>28</td>
<td>I have increased my gambling since I came here.</td>
<td>0</td>
<td>1</td>
<td>2</td>
<td>3</td>
</tr>
</tbody>
</table>
Please answer the following questions by ticking the appropriate box or giving requested information.

1. In general, how would you describe your physical health?
   - Poor □, Fair □, Good □, Excellent □

2. Compared with when you were living at home, has your health here this year been:
   - Worse □, About the same □, Better □

3. During your time in Australia, have you been told by a medical person that you have a sexually transmissible infection (eg. chlamydia, gonorrhoea)?
   - Yes □, No □

4. During your time in Australia, have you or a partner:  *(Tick more than one if necessary.)*
   - Become pregnant □, Had a miscarriage □, Had a termination (abortion) □, Had a stillbirth □, Given birth to a live child □, Not applicable □

5. If you have had sex, how often have you/your partner used a condom?
   - Not applicable (not had sex) □, Never □, Sometimes □, Always □

6. Before coming to Australia, were your sexual partner(s):
   - Male only □, Female only □, Both male and female □, No sexual partner □

7. Since coming to Australia, have your sexual partner(s) been:
   - Male only □, Female only □, Both male and female □, No sexual partner □

8. How many sexual partners have you had since coming to Australia?
   - □ □ Partners

9. On average, how many cigarettes do you smoke a day at present?
   - None □, 1-5 □, About ½ pack (6-15) □, About a pack (16-25) □, About 1 ½ packs (26-35) □, About 2 or packs (over 35) □

10. Generally, how often do you drink alcohol at present?
    - Never □, Rarely □, Less than once a week □, 1-2 days a week □, 3-4 days a week □, Most days □, Every day □

11. On a day when you drink alcohol, how many drinks do you usually have?
    - Non-drinker □, 1 or 2 □, 3 or 4 □, 5 – 8 □, 9 or more □

12. Before coming to Australia, did you use 'soft' drugs (eg. marijuana, hash, mushrooms)?
    - Not at all □, Seldom □, Sometimes □, Frequently □

13. Since coming to Australia, have you used 'soft' drugs (eg. marijuana, hash, mushrooms)?
    - Not at all □, Seldom □, Sometimes □, Frequently □

14. Before coming to Australia, did you use 'hard' drugs (eg. amphetamines, cocaine, heroin, ecstasy)?
    - Not at all □, Seldom □, Sometimes □, Frequently □

Rosenthal, Russell & Thomson, 2006
HEALTH AND WELL-BEING OF INTERNATIONAL STUDENTS

15. Since coming to Australia, have you used 'hard' drugs (eg. amphetamines, cocaine, heroin, ecstasy)?
   Not at all □, Seldom □, Sometimes □, Frequently □.

16. Before coming to Australia, had you ever injected yourself with a drug (not for medical purposes)?
   Yes □, No □.

17. Since coming to Australia, have you ever injected yourself with a drug (not for medical purposes)?
   Yes □, No □.

18. Before coming to Australia, had you ever shared needles and/or fits for injecting a drug?
   Yes □, No □.

19. Since coming to Australia, have you ever shared needles and/or fits for injecting a drug?
   Yes □, No □.

20. Before coming to Australia, were you involved in any gambling?
    Yes □, No □.

21. Since coming to Australia, have you been involved in any gambling?
    Yes □, No □.

22. Since you began your university studies here, have you ever
   • deliberately hurt yourself?
     Yes □, No □.
   • done something because you knew it might harm you seriously or even kill you?
     Yes □, No □.
   • thought about taking your own life?
     Yes □, No □.

23. During your time in Australia, have you been physically abused?
    Yes □, No □.

24. If yes, how upsetting was this for you? Not at all □, Somewhat □, Very □, Extremely □.

25. During your time in Australia, have you been verbally abused?
    Yes □, No □.

26. If yes, how upsetting was this for you? Not at all □, Somewhat □, Very □, Extremely □.

27. During your time in Australia, have you been sexually harassed?
    Yes □, No □.

28. If yes, how upsetting was this for you? Not at all □, Somewhat □, Very □, Extremely □.

29. During your time in Australia, have you been upset by people who deliberately left you out of things?
    Yes □, No □.

30. If yes, how upsetting was this for you? Not at all □, Somewhat □, Very □, Extremely □.
SECTION F

Please read each statement and circle a number 0, 1, 2 or 3 which indicates how much the statement applied to you OVER THE PAST WEEK. There are no right or wrong answers. Do not spend too much time on any statement.

The rating scale is as follows:
0   Does not apply to me at all
1                Applies to me to some degree, or some of the time
2                Applies to me to a considerable degree, or a good part of time
3                Applies to me very much, or most of the time

<p>| | | | |</p>
<table>
<thead>
<tr>
<th></th>
<th></th>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>1. I found it hard to wind down (relax).</td>
<td>0</td>
<td>1</td>
<td>2</td>
</tr>
<tr>
<td>2. I was aware of dryness in my mouth.</td>
<td>0</td>
<td>1</td>
<td>2</td>
</tr>
<tr>
<td>3. I couldn’t seem to experience any positive feeling at all.</td>
<td>0</td>
<td>1</td>
<td>2</td>
</tr>
<tr>
<td>4. I experienced breathing difficulty (eg. excessively rapid breathing, breathlessness in the absence of physical exertion).</td>
<td>0</td>
<td>1</td>
<td>2</td>
</tr>
<tr>
<td>5. I found it difficult to work up the initiative to do things.</td>
<td>0</td>
<td>1</td>
<td>2</td>
</tr>
<tr>
<td>6. I tended to over-react to situations.</td>
<td>0</td>
<td>1</td>
<td>2</td>
</tr>
<tr>
<td>7. I experienced trembling (eg. in the hands).</td>
<td>0</td>
<td>1</td>
<td>2</td>
</tr>
<tr>
<td>8. I felt that I was using a lot of nervous energy.</td>
<td>0</td>
<td>1</td>
<td>2</td>
</tr>
<tr>
<td>9. I was worried about situations in which I might panic and make a fool of myself.</td>
<td>0</td>
<td>1</td>
<td>2</td>
</tr>
<tr>
<td>10. I felt that I had nothing to look forward to.</td>
<td>0</td>
<td>1</td>
<td>2</td>
</tr>
<tr>
<td>11. I found myself getting agitated.</td>
<td>0</td>
<td>1</td>
<td>2</td>
</tr>
<tr>
<td>12. I found it difficult to relax.</td>
<td>0</td>
<td>1</td>
<td>2</td>
</tr>
<tr>
<td>13. I felt down-hearted and blue.</td>
<td>0</td>
<td>1</td>
<td>2</td>
</tr>
<tr>
<td>14. I was intolerant of anything that kept me from getting on with what I was doing.</td>
<td>0</td>
<td>1</td>
<td>2</td>
</tr>
<tr>
<td>15. I felt I was close to panic.</td>
<td>0</td>
<td>1</td>
<td>2</td>
</tr>
<tr>
<td>16. I was unable to become enthusiastic about anything.</td>
<td>0</td>
<td>1</td>
<td>2</td>
</tr>
<tr>
<td>17. I felt I wasn’t worth much as a person.</td>
<td>0</td>
<td>1</td>
<td>2</td>
</tr>
<tr>
<td>18. I felt that I was rather touchy (over-sensitive).</td>
<td>0</td>
<td>1</td>
<td>2</td>
</tr>
<tr>
<td>19. I was aware of the action of my heart in the absence of physical exertion (eg. sense of heart rate increase, heart missing a beat).</td>
<td>0</td>
<td>1</td>
<td>2</td>
</tr>
<tr>
<td>20. I felt scared without any good reason.</td>
<td>0</td>
<td>1</td>
<td>2</td>
</tr>
<tr>
<td>21. I felt that life was meaningless.</td>
<td>0</td>
<td>1</td>
<td>2</td>
</tr>
</tbody>
</table>
SECTION G

UNIVERSITY SERVICES

Please answer the following questions by ticking the appropriate box or giving requested information.

1. During this year, did you feel you needed help from the university health service?
   Yes ☐, No ☐

2. Did you go there for help?
   Yes ☐, No ☐

3. If yes, on how many occasions did you go during this year?
   ☐ ☐ Occasions

   If yes, please rate how well the following items reflect your experience, by circling the appropriate number: 0=not at all; 1=somewhat; 2=very; 3=extremely.

<table>
<thead>
<tr>
<th>Item</th>
<th>0</th>
<th>1</th>
<th>2</th>
<th>3</th>
</tr>
</thead>
<tbody>
<tr>
<td>4. I was satisfied with the service I received.</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>5. I felt uncomfortable about going to the health service.</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>6. I was able to get an appointment when I needed to.</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>7. The health professional was sensitive to my needs.</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>8. The health professional was professionally competent.</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

9. If no, why did you not go? (Indicate for each one whether it was or was not a reason. You can have more than one reason.)
   Yes, this WAS a reason. No, NOT a reason.
   ☐ I did not know how to get an appointment.
   ☐ I felt uncomfortable asking for help.
   ☐ I felt that they would not understand me.
   ☐ I thought my problem was not important enough.
   ☐ I didn't know there was such a service.
   ☐ I didn't know where to go.
   ☐ I didn't know the service was free.
   ☐ I thought it might influence my academic results.
   ☐ I thought they wouldn't be able to help me.
   ☐ I went to a service off-campus
   ☐ Other ________________________________________________

10. During this year, did you feel you needed help from the university counselling service?
    Yes ☐, No ☐

11. If yes, did you feel you needed help concerning:
    ☐ academic-educational needs?
    ☐ career-vocational needs?
    ☐ personal-social-emotional needs?
12. Did you go there for help?

13. If yes, on how many occasions did you go during this year?

If yes, please rate how well the following items reflect your experience, by circling the appropriate number: 0=not at all; 1=somewhat; 2=very; 3=extremely.

<table>
<thead>
<tr>
<th>Question</th>
<th>0</th>
<th>1</th>
<th>2</th>
<th>3</th>
</tr>
</thead>
<tbody>
<tr>
<td>14. I was satisfied with the service I received.</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>15. I felt uncomfortable about going to the counselling service.</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>16. I was able to get an appointment when I needed to.</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>17. The counsellor was sensitive to my needs.</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>18. The counsellor was professionally competent.</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

19. If no, why did you not go? (Indicate for each one whether it was or was not a reason. You can have more than one reason.)

- I did not know how to get an appointment.
- I felt uncomfortable asking for help.
- I felt that they would not understand me.
- I thought my problem was not important enough.
- I didn't know there was such a service.
- I didn't know where to go.
- I didn't know the service was free.
- I thought it might influence my academic results.
- I thought they wouldn't be able to help me.
- I went to a service off-campus
- Other ____________________________

20. During this year, did you access other university services (eg. financial aid, housing)?

21. What kind of service(s) did you use?

Please rate how easy it is to find out about university services, by circling the appropriate number: 0=not at all; 1=somewhat; 2=very; 3=extremely.

<table>
<thead>
<tr>
<th>Question</th>
<th>0</th>
<th>1</th>
<th>2</th>
<th>3</th>
</tr>
</thead>
<tbody>
<tr>
<td>22. It is easy to find out about the health services provided by the university.</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>23. It is easy to find out about the counselling services provided by the university.</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>24. It is easy to find out about other services provided by the university.</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

25. In your experience, what is the most useful source of information about services at the university? (Please tick one box only.)

- The university website
- Student diary
- Academic staff

Rosenthal, Russell & Thomson, 2006
HEALTH AND WELL-BEING OF INTERNATIONAL STUDENTS

- Non-academic staff
- Students/friends
- Other ________________________________

26. Have any of your friends gone for help to

- the university health services? Yes □ 1, No □ 2, Don't know □ 3
- the university counselling services? Yes □ 1, No □ 2, Don't know □ 3
- the other university services? Yes □ 1, No □ 2, Don't know □ 3

Thank you very much for completing this survey. Your participation is greatly appreciated.

Please return the survey in the reply-paid envelope provided by no later than

WEDNESDAY, 27 APRIL, 2005
ATTACHMENT 3

SCALES

1. *Connectedness scale*

B6. There are people here in Melbourne I can ask for help if I needed it.
B22. There are people here in Melbourne who care about me.
D9. There are people here in Melbourne I can talk to about my problems.

Percentage variance = 69.2%
Alpha: = .78

2. *Cultural Stress scale*

B13. I miss the familiar way of life in my own country.
D16. It’s hard being away from the people I love.
D15. It is lonely for me here in Melbourne.
B15. I feel less important here than at home.
D20. People treat me differently because of my cultural background.
B18. I feel uncomfortable in the Australian culture.
D22. I don’t feel safe here in Melbourne.
B23 I feel I really belong here at the university. (Reversed)

Percentage variance = 36.3%
Alpha: = .75

3. *Abuse and Distress scale*

Abuse total (0-3)
Sum of physical, verbal and sexual abuse
Physical abuse
   E24. If yes, how upsetting was this for you?
Verbal abuse
   26. If yes, how upsetting was this for you?
Sexual harassment
   28. If yes, how upsetting was this for you?

Percentage variance = 72.2%
Alpha: = .87

4. *Depression scale* (Lovibond & Lovibond, 1995)

F3. I couldn’t seem to experience any positive feeling at all.
F5. I found it difficult to work up the initiative to do things.
F10. I felt that I had nothing to look forward to.
F13. I felt down-hearted and blue.
F16. I was unable to become enthusiastic about anything.
F17. I felt I wasn’t worth much as a person.
F21. I felt that life was meaningless.

Normative sample: alpha=0.81
This sample: 58.9% variance; alpha=0.88

Rosenthal, Russell & Thomson, 2006
5. **Anxiety scale** (Lovibond & Lovibond, 1995)

F2. I was aware of dryness in my mouth.
F4. I experienced breathing difficulty (eg. excessively rapid breathing, breathlessness in the absence of physical exertion).
F7. I experienced trembling (eg. in the hands).
F9. I was worried about situations in which I might panic and make a fool of myself.
F15. I felt I was close to panic.
F19. I was aware of the action of my heart in the absence of physical exertion (eg. sense of heart rate increase, heart missing a beat).
F20. I felt scared without any good reason.

Normative sample: 0.73
This sample: 46.8 % variance; alpha=0.81

6. **Stress scale** (Lovibond & Lovibond, 1995)

F1. I found it hard to wind down (relax).
F6. I tended to over-react to situations.
F8. I felt that I was using a lot of nervous energy.
F11. I found myself getting agitated.
F12. I found it difficult to relax.
F14. I was intolerant of anything that kept me from getting on with what I was doing.
F18. I felt that I was rather touchy (over-sensitive).

Normative sample: alpha=0.81
This sample: 54.7 % variance; alpha=0.86

7. **Perceptions of Drug Use scale**

D13. I have increased my use of drugs since I began my university studies here.
D18. My friends often use drugs.
D23. My involvement in drug use is a problem for me.
E12. Before coming to Australia, did you use 'soft' drugs (eg. marijuana, hash, mushrooms)?
E13. Since coming to Australia, have you used 'soft' drugs (eg. marijuana, hash, mushrooms)?
E14. Before coming to Australia, did you use 'hard' drugs (eg. amphetamines, cocaine, heroin, ecstasy)?
E15. Since coming to Australia, have you used 'hard' drugs (eg. amphetamines, cocaine, heroin, ecstasy)?

Percentage variance = 52.0%
Alpha: = .84
8. **Perceptions of Alcohol Use scale**

B25. I drink more alcohol since I began my university studies here.
D10. My consumption of alcohol is a problem for me.
E10. Generally, how often do you drink alcohol at present?
E11. On a day when you drink alcohol, how many drinks do you usually have?

Percentage variance = 57.1%
Alpha: = .74

9. **Perceptions of Gambling/Smoking scale**

B19. My smoking of cigarettes is a problem for me.
D21. I smoke more heavily since I began my university studies here.
D26. My involvement in gambling is a problem for me.
D28. I have increased my gambling since I came here.
E9. On average, how many cigarettes do you smoke a day at present?

Percentage variance = 52.2%
Alpha: = .77

10. **Health Service Evaluation scale**

G4. I was satisfied with the service I received.
G6. I was able to get an appointment when I needed to.
G7. The health professional was sensitive to my needs
G8. The health professional was professionally competent.

Percentage variance = 66.5%
Alpha: = .83

11. **Counselling Service Evaluation scale**

G14. I was satisfied with the service I received.
G16. I was able to get an appointment when I needed to.
G17. The counsellor was sensitive to my needs
G18. The counsellor was professionally competent.

Percentage variance = 73.4%
Alpha: = .88