

Chapter 29

Stress, Positive Psychological Resources, and Mental Health of Migrant Chinese Postgraduate Students in Macau

Ya Ting Dong, Allan B.I. Bernardo, and Charles M. Zaroff

Abstract The number of postgraduate students from Mainland China who study in foreign universities has increased significantly in the past decade. Some of these Chinese postgraduate students opt to study in other Chinese countries and cities, like Macau, partly with the belief that doing so would require less cultural adjustment. Our chapter inquires into factors related to self-reported mental health in a sample of Mainland Chinese postgraduate students in Macau, and the results indicate that higher levels of acculturative stress (but not academic stress) are associated with poorer mental health – results that call attention to the need to conceptualize cultural experience and adjustment beyond notions of ethnicity and race. The results also show how psychological resilience is associated with better mental health. The results are discussed with references to the importance of culture in understanding Asian learners well-being.

In the past decade, Mainland Chinese students had comprised the largest group of international students overseas (Li & Bray, 2007). More than ever before, increasing numbers of Chinese Mainland students attend foreign universities for undergraduate and postgraduate studies, and the target universities include those in other Chinese cities like Hong Kong and Macau. In the University of Macau, for example, the number of postgraduate students increased from 1,914 in 2010 to 2,588 in 2012 (a 35 % increase in just 2 years), and 80 % of these are from Mainland China. Research indicates that postgraduates studying overseas were at high risk of suffering from mental health concerns such as depression (Constantine, Okazaki, & Utsey, 2004), and thus, postgraduates studying overseas have urgent needs to seek for counseling service such as marriage and family therapies, career counseling, and

Y.T. Dong • C.M. Zaroff
Department of Psychology,
University of Macau, Macau SAR, P.R. China

A.B.I. Bernardo (✉)
Faculty of Social Sciences, Department of Psychology,
University of Macau, Macau, Macau SAR, P.R. China
e-mail: AllanBIBernardo@umac.mo

stress management. Numerous studies have noted the adjustment problems of Mainland Chinese students in United States or United Kingdom (e.g., Wang & Byram, 2011; Zhou & Todman, 2009). In this regard, one of the reasons Chinese students give for choosing to study in Macau is that it is still part of China, and as such the “overseas” adjustment required would be minimal. However, very few researchers have paid attention to Mainland Chinese students in Macau, and there been hardly any focus on the mental health concerns that these students might have. In this chapter, we survey a sample of Mainland Chinese postgraduate students in Macau and explore how their self-reported mental health is associated with various forms of stress and of psychological resources for coping with stress.

Similar to Hong Kong, Macau is viewed as both domestic and external by the Mainland Chinese, and as Chinese institutions with international standards and global linkages (Li & Bray, 2007). However, Mainland Chinese postgraduates have to face different stressors from the students in other areas of greater China and foreign countries because Macau is not a typical city for study overseas like Hong Kong, United Kingdom, and United States. For one, the graduate schools in Macau are not presently highly ranked in international listing, and Mainland Chinese postgraduates typically focus on gaining admission in highly ranked universities because degrees from these universities will make the graduates more attractive to employers in Mainland China. Thus, Mainland Chinese students with postgraduate degrees from Macau would be less competitive for jobs when they return to Mainland China compared to those with degrees from highly ranked universities in Hong Kong, United Kingdom, and United States. This knowledge is a possible source of stress for postgraduate students who choose to study in Macau.

In this study, we focus on six important psychological variables that may play an important role on the mental health of Migrant Chinese postgraduates in Macau. We realize that the range of potential predictors of mental health of any group is quite wide, but for this study, we limited our investigation to a subset of stress-related factors that relate to cultural adjustment and academic requirements, and also consider a set of positive psychological resources that are known to buffer the effects of stress on well-being.

Correlates of Mental Health

Graduate Stress

Academic life and academic requirements are typically the major sources of stress for university students, as most of the activities revolve around their university experience. Students' postgraduate studies and experiences, however, create sources of stress different from those experiences by students in primary, secondary, and even undergraduate university education. This is because the structure of activities and requirements of postgraduate education are qualitatively different from the earlier experiences in the more basic educational systems. For students doing postgraduate studies overseas, their academic life are likely to involve various sources

of stress that relate to their own self-expectation regarding their academic requirements, in addition to the lack of their normal social supports, having to learn a new language, and a host of other divergent cultural experiences that they would need to adjust or adapt to (Constantine, Anderson, Berkel, Caldwell, & Utsey, 2005). Moreover, many Chinese students studying overseas have to deal with financial issues, and if they get their financial support from doing research or teaching assistantships, they have to deal with the need to balance this work with their academic requirements like coursework and their own research (Lu, 1998). In an attempt to capture the unique aspects of stress experienced by postgraduate students, Rocha-Singh (1994) proposed three broad dimensions of stress: academic stress, environment stress, and family/monetary stress. Interestingly some research suggests that postgraduate students at the doctoral level report less academic stress than masters students (Hull, 1978), and that may be because PhD students have had more experience in dealing with the stressors in postgraduate programs. There may also be sex-related differences in academic stress; a study of Chinese students in Taiwan revealed that female students reported more academic stress than their male counterparts (Yang, 2010).

Acculturative Stress

International students commonly experience variable challenges when they strive to adapt themselves to other cultures; as such, overseas students as a group is viewed as one at a high risk of poor mental health (Joiner & Walker, 2002). Acculturative stress is defined as the difficulties and conflicts derived from the acculturation experience of migrant population (Joiner & Walker), and this also applies to migrant students. Kim et al. (1997) found that Chinese migrant college students studying in the U.S. had more stressors and experienced higher levels of stress compared to those from Japan and Korea. It was suggested that for the international students from China, their acculturative stressors could be classified into two categories: language difficulties and psychosocial adjustment.

Regarding language difficulties, for Chinese students studying in the English speaking countries, self-perceived English proficiency was a strong predictor of students' stress related to social and cultural adaption (Wan, Chapman, & Biggs, 1992; Yeh & Inose, 2003). English proficiency was even identified as the greatest concern by international students in the USA (Swagler & Ellis, 2003). Most of Chinese migrant college students have difficulties in oral or listening English or have no confidence to communicate through English (Swagler & Ellis, 2003; Xu, 2002). Although English is not the dominant nor even one of the official languages in Macau, English is the medium of instruction in the leading university in Macau, thus, it is possible that self-perceived English proficiency would also be considered a source of stress among Chinese students in Macau.

We should note that outside the classes in the university, the commonly used language in Macau is Cantonese, which is one of major Chinese languages but is quite distinct from Mandarin and the other major Chinese languages (i.e., the differ-

ent Chinese languages are not always mutually intelligible). Anecdotally, many Mainland Chinese students do not have high levels of proficiency in Cantonese either (except those who come from Guangdong Province), and thus oral and written communication within the Cantonese-speaking Macau is sometimes challenging for them. In this study, we consider proficiency in both English and Cantonese as possible sources of acculturative stress that would be associated with poorer mental health of Chinese postgraduate students in Macau.

Regarding psychosocial adjustment, there are varied and important cultural issues such as social contact, discrimination, homesickness and loneliness, cultural difference, and lack of independence. These issues are particularly significant for Chinese people who are from a collectivist culture that emphasizes interpersonal relationships (Constantine et al., 2004). Shen and Takeuchi (2001) noted that challenging acculturation process may lead to depression or suicide ideation within the subgroup of international students. Barrett, et al. (2003) also indicated that anxiety in migrant students is likely to be have been caused by difficult acculturation processes.

It may seem odd that Mainland Chinese students would experience acculturative stress in a city that is also Chinese. Yet there is much anecdotal information about Mainland Chinese students having very limited social contacts with the Macau Chinese community, or even their Macau Chinese classmates in university. There are also anecdotal reports of feeling homesick and lonely, and of experiences of discrimination from Macau Chinese. Thus, it is important to verify whether acculturative stress is experiences by Mainland Chinese postgraduate students in Macau, and whether this form of stress is related to their mental health.

Sense of Belonging

We now consider some personal psychological resources that could help Mainland Chinese postgraduate students deal with the various stressors their experience while studying in Macau. Sense of belonging is defined as “personal experience of engagement in a system or environment so that people feel themselves as an integral part” (Hagerty, Lynch-Sauer, Patusky, Bouwsema, & Collier, 1992, p. 173; see also Hagerty, Williams, Coyne, & Early, 1996). Among students (not migrant students), a sense of belonging positively affected academic engagement and performance (Osterman, 2000). And among migrants (not students) sense of belonging was associated with lower levels of psychological distress (Nesdale, Rooney, & Smith, 1997). In the case of Mainland Chinese students in Macau, sense of belonging means that they feel themselves as an integral part of Macau society or of their university community in Macau. Even though Mainland China and Macau share many educational and cultural values, there are significant distinctions between the two cultures such as different languages, life style, social norms, political systems, all of which may have an effect on Mainland Chinese students’ sense of belonging in

Macau. Thus, it is important to inquire into whether this variable can contribute to better mental health of Mainland Chinese postgraduate students in Macau.

Resilience

High-risk populations, including migrant populations, often face challenges in maintaining physical and mental health and also often show signs of psychological disturbances. In this regard, resilience, which is defined by Grotberg (2003) as individual traits that help individuals to successfully adapt to a varied range of stressors and adverse conditions in life, is often discussed as an important variable that contributes to positive mental health of migrant students. Resilience has a positive effect on a person's mental health because it focuses on individuals' strength, resources, and competences rather than the things like stressors (Michaud, 2006). Because of different levels of resilience, international students with high levels of resilience may not experience poorer mental health compared to local students, even if they face acculturative stressors. Indeed, Wong et al. (2003) found that Mainland China teenagers studying in Hong Kong are mentally healthier than local youth, and they attributed this to resilience and other social competencies that Mainland Chinese youth possess. As such, resilience would also be good to consider as a contributor to Mainland Chinese postgraduate students' mental health.

Meaning of Life

Aside from resilience, meaning of life is another positive concept which facilitates the migrant students' adaption (Grotberg, 2003; Masten & Reed, 2002). Meaning of life is defined as "the cognizance of order, coherence, purpose in one's existence, the pursuit and attainment of worthwhile goals, and an accompanying sense of fulfillment" (Recker & Wong, 1988, p. 221). Wong (1998) proposed seven kinds of meaningful life resources: achievement, religion, relationship, self-transcendence, self-acceptance, intimacy, and fair treatment. A few studies suggested that the meaning of life not only attaining of life meaning brings more positive affections and life satisfaction, but also supports the populations who are suffering from challenging stressors, such as cancer survivors (Fleer, Hoekstra, Sleijer, Tuinman, & Hoekstra-Webers, 2006) and caregivers (Konstam, Holmes, Wilczenski, Baliga, Lester, & Priest, 2003). Meaning of life of Mainland Chinese students could be one of those protective factors to help them maintain good mental health, even as they experience various forms of stress.

To summarize, in this study we explored mental health of Mainland Chinese postgraduate students in Macau by using a self-report measure on their general mental health. We inquired into how self-reported mental health is related to two sets of factors: sources of stress and personal positive resources. We predicted that

the two types of stress (i.e., graduate level academic stress and acculturative stress to be associated with poorer self-reported mental health, but the personal positive psychological resources of sense of belonging, resilience, and meaning in life would serve as protective factors that would be associated with better mental health.

Method

Participants

The original sample consisted of 170 migrant postgraduate (masters and doctoral) students at a state university in Macau who were recruited following a purposive sampling procedures. But data from six participants were excluded because they did not complete all the questionnaires; so the final sample consisted of 164 students who are all holders of Mainland Chinese IDs from variable provinces such as Guangdong, Guangxi, Hubei, Hunan, Beijing, Shanghai, Xinjiang, Fujian, Jiangsu, and Shanxi provinces, Fujian, Henan, and Tianjin. Most of the participants were female (102 or 62.2 %), and most were seeking masters degrees (146 or 89.0 %). Their ages ranged from 21 to 38 years, with mean age of 24.6 years..

Questionnaire

Data were gathered using a questionnaire with instructions and scales in Mandarin. All the measures in the study were translated to Mandarin using simplified Chinese orthography from the original English version of the scales below. All the scale and subscales were found to have satisfactory internal consistency (see Table 29.1 for Cronbach α scores).

Demographic Information The questionnaire inquired about the participants' sex, education level, major, residential status in Macau, monthly individual income in Macau, marriage status, religion (if any), and length of stay in Macau. No personal identifying information was obtained from the participants. As part of the background information on the participants, we also asked them to indicate their self-rated proficiency in Cantonese and in English, but these data were not included in the present analysis.

Mental Health The measure of the students' mental health was the General Health Questionnaire-12 (GHQ-12; Banks et al., 1980), which is a 12-item short form of the original 60-item General Health Questionnaire. Sample items include, "Have you recently lost much sleep over worry?" and participants were asked to respond on a scale from 0 (*never*) to 3 (*much more than usual*); lower scores in the GHQ-12 suggest better mental health.

Table 29.1 Descriptive statistics and group comparisons for variables

Variables	Complete sample		Comparison by sex				Comparison by education level			
	Cronbach α	<i>M</i> (<i>SD</i>)	Male		Female		<i>F</i> (1,162)	Masters		Doctoral
			<i>M</i> (<i>SD</i>)	<i>M</i> (<i>SD</i>)	<i>M</i> (<i>SD</i>)	<i>M</i> (<i>SD</i>)		<i>M</i> (<i>SD</i>)	<i>M</i> (<i>SD</i>)	
<i>Graduate stress</i>	.89	3.22 (0.82)	3.21 (0.81)	3.23 (0.83)			<1.0	3.21 (0.83)	3.35 (0.68)	<i>F</i> (1,162) <1.0
Academic stress	.83	4.01 (1.02)	3.78 (1.05)	4.14 (0.98)			4.99*	4.00 (1.04)	4.03 (0.86)	<1.0
Environmental stress	.82	2.80 (0.90)	2.89 (0.89)	2.75 (0.90)			<1.0	2.81 (0.90)	2.82 (0.89)	<1.0
Family/monetary stress	.76	2.64 (1.04)	2.78 (0.91)	2.55 (1.10)			2.03	2.57 (0.99)	3.12 (1.31)	4.54*
<i>Acculturative stress</i>	.91	1.27 (0.58)	1.18 (0.54)	1.32 (0.60)			2.07	1.24 (0.59)	1.48 (0.47)	2.83
Language deficiency	.82	1.45 (0.84)	1.37 (0.77)	1.50 (0.87)			<1.0	1.42 (0.85)	1.64 (0.71)	1.10
Academic work	.71	1.45 (0.63)	1.31 (0.57)	1.54 (0.66)			5.21*	1.44 (0.65)	1.60 (0.42)	1.07
Cultural difference	.83	0.91 (0.66)	0.89 (0.60)	0.93 (0.70)			<1.0	0.87 (0.66)	1.22 (0.63)	4.53*
Social interaction	.75	1.25 (0.65)	1.18 (0.62)	1.29 (0.66)			1.26	1.22 (0.65)	1.47 (0.63)	2.37
<i>Sense of belonging</i>	.87	2.92 (0.77)	2.97 (0.79)	2.89 (0.75)			<1.0	2.90 (0.77)	3.04 (0.72)	<1.0
<i>Resilience</i>	.92	4.76 (0.90)	4.73 (0.85)	4.78 (0.93)			<1.0	4.78 (0.91)	4.67 (0.73)	<1.0
<i>Personal meaning</i>	.93	4.40 (0.83)	4.53 (0.85)	4.32 (0.81)			2.52	4.41 (0.85)	4.33 (0.70)	<1.0
Achievement	.82	4.53 (1.06)	4.78 (0.98)	4.37 (1.08)			5.93*	4.53 (1.08)	4.56 (0.91)	<1.0
Relationship	.79	5.07 (1.07)	4.98 (0.93)	5.13 (1.15)			<1.0	5.10 (1.05)	4.81 (1.15)	1.17
Religion	.84	3.36 (1.50)	3.72 (1.58)	3.14 (1.41)			5.95*	3.38 (1.51)	3.17 (1.38)	.34
Self-transcendence	.79	4.35 (1.14)	4.61 (1.12)	4.19 (1.14)			5.53*	4.35 (1.16)	4.31 (1.02)	<1.0
Self-acceptance	.66	4.73 (0.97)	4.74 (0.95)	4.72 (0.99)			<1.0	4.75 (1.00)	4.53 (0.70)	<1.0
Intimacy	.72	4.22 (1.45)	4.28 (1.33)	4.19 (1.52)			<1.0	4.17 (1.44)	4.69 (1.48)	2.06
Fair treatment	.83	4.57 (1.01)	4.62 (0.97)	4.54 (1.04)			<1.0	4.62 (0.99)	4.20 (1.10)	2.72
General mental health	.81	1.03 (0.43)	1.10 (0.42)	0.99 (0.43)			2.59	1.00 (0.42)	1.26 (0.42)	6.23*

**p* < .05

Cantonese and English Proficiency Each participant was asked to rate respectively their self-rated proficiency in Cantonese and in English using a scale from 1 (*very poor*) to 5 (*proficient*).

Postgraduate Stress The 21-item Graduate Stress Inventory-Revised (GSI-R; Rocha-Singh, 1994) was administered to assess postgraduates' level of perceived stressors including academic stress (8 items, e.g., "Taking exams"), environment stress (8 items; "Living in the local community"), and family/monetary stress (5 items, "Paying monthly expenses"). Participants were asked to rate how stressful each item was from 1 (*not at all stressful*) to 7 (*extremely stressful*).

Acculturation Stress The 17-item Acculturation Hassles Scale for Chinese Students (Pan, Yue, & Chen, 2010) was administered to measure one's acculturative stress and includes a set of factors containing language deficiency (3 items; e.g. "I cannot express myself very well when using English"), academic work (5 items; "I find it hard to meet the expectation of my supervisor"), cultural difference (4 items; "It is hard for me to integrate to Macau culture"), and social interaction (5 items; "I do not have new social network in Macau"). Participants were asked respond on a scale from 0 (*not at all stressful or not applicable*) to 3 (*extremely stressful*).

Sense of Belonging The 7-item Belonging Scale (Gambone & Arbretton, 1997) was modified to measure the degree of one's sense of belonging to the postgraduate program at Macau. For each of the items (e.g., "People really listen to me at my graduate program"), participants will be asked to respond using the scale from 1 (*never*) to 5 (*all the time*).

Resilience The 14-Item Resilience Scale (Wagnild & Young, 1993) was used to assess psychological resilience. Participants were asked to respond using a scale from 1 (*strongly disagree*) to 7 (*strongly agree*) for each of the items (e.g., "I feel that I can handle many things at a time").

Meaning of Life Finally, the brief version of the Personal Meaning Profile (PMP-B; Wong, 1998) was used to measure the sources of meaning in life. The brief scale comprises 21 items, divided into seven subscales/factors with three items each. The subscales are achievement (e.g., "I like challenge"), relationship ("I am trusted by others"), religion ("I seek to glorify God"), self-transcendence ("I make a significant contribution to society"), self-acceptance ("I accept what cannot be changed"), intimacy ("I have a mutually satisfying loving relationship"), and fair treatment ("Life has treated me fairly"). Participants were asked to indicate to what extent each item characterizes their own life, using a scale from 1 (*not at all*) to 7 (*a great deal*).

Procedure

Target participants who were willing to answer the survey where approached in dormitories, postgraduate student offices, laboratories, and the library. The questionnaire was given only to students who gave their informed consent. Most participants took 20–25 min to finish the questionnaire.

Results

The descriptive statistics for all the scales and subscales are summarized in Table 29.1, which also shows the statistics comparing male and female students, and that comparing masters and doctoral students. There are very few cases of significant group differences. Regarding sex, female students reported experiencing higher levels of academic stress and acculturative stress related to academic work compared to male students; but male students also reported deriving higher levels of personal meaning related to achievement, religion, and transcendence. Regarding level of postgraduate education, doctoral students reported higher levels of stress due to family/financial concerns, and acculturative stress related to cultural differences compared to masters students. Most interestingly, masters students reported better mental health than doctoral students.

Which stress-related experiences are related to the postgraduate students' mental health? And which psychological resources are likely to contribute to better mental health? We conducted a multiple regression analysis, where GHQ-12 scores were regressed into all the major scales (but not the subscales) of the various stress-related factors and psychological resources. Prior to the regression analysis, we inspected the correlations among these variables and found no indication of multicollinearity. Most significant correlations were low to moderate, with the only relatively high correlations between resilience and personal meaning ($r=.73$). The correlations showed that GHQ-12 was significantly negatively correlated with proficiency in English ($r=-.16$), belonging ($r=-.23$), resilience ($r=-.52$), and personal meaning ($r=-.47$). Because lower GHQ-12 scores indicate better mental health, these four factors are related to better mental health. And as expected, both academic stress ($r=.38$) and acculturative stress ($r=.43$) were significantly related to poorer mental health.

When these relationships were examined together, the regression analysis revealed only two significant predictors of GHQ-12. Among the sources of stress, only acculturative stress [$\beta=.21$, *stderr of Beta* = .06, $p=.009$] was associated with poorer mental health; academic stress was not [$\beta=.12$, *stderr of Beta* = .04, *n.s.*]. On the other hand, psychological resilience was a significant negative predictor of GHQ-12 [$\beta=-.31$, *stderr of Beta* = .05, $p=.001$], whereas both sense of belonging [$\beta=.04$, *stderr of Beta* = .04, *n.s.*] and personal meaning [$\beta=-.15$, *stderr of Beta* = .05, *n.s.*] were not. The regression model accounted for a significant proportion of the variance in GHQ-12 [$R^2=.36$, $F(5, 158)=17.50$, $p=.0001$]. We believe that the results indicate how cultural experiences make up an important element of students' academic life and well-being, but personal psychological resources are also important factors in this regard. We discuss some implications of our findings in the next section.

Discussion

The current study aimed to explore how stress and positive psychological resources relate to self-reported mental health of migrant Chinese postgraduates in Macau. Generally speaking, the participants reported relatively good mental health and did not suffer from severe distress, based on their mean scores in the GHQ-12. We should note, however, that small number (12 or 7.3 %) of the postgraduate student respondents reported a mean score of 1.67 or higher, which suggests that there may be experiencing severe psychological distress (Goldberg et al., 1997). The figure of 7.3 % is actually relatively high that corresponding counseling service are probably much needed (c.f., Stecker, 2004). Unlike in previous studies indicated that male migrant postgraduates showed better mental health than female counterpart (Yang, 2010), there was no significant sex difference in our sample. We did find that doctoral students reported a relatively poorer mental health than master students. We should be careful about extrapolating from these trends as our sample is not very large, and possibly not representative. But the trends are worth looking into, particularly as are more important results relate to the factors that are associated with poorer or better mental health.

For example, we hypothesized that the two sources of stress would predict poorer mental health. However, the regression analysis indicated that for this sample of migrant postgraduate students from China, acculturative stress was the only significant predictor of mental health, but graduate stress was not. Presumably, the two forms of stress would share some variance (note: graduate stress and acculturative stress were significantly correlated; $r = .53, p = .0001$). But when their influences on mental health are examined together, it seems that the students' problems associated with adjusting to the Macau culture are more significant in determining their mental health. It may be that because of selective admission policies, the postgraduate students from China are capable of dealing with the stresses due to the academic work, and as such, these sources of stress do not influence their mental health as much. But what is interesting is that the acculturative stress experienced by Mainland Chinese students in what is actually another Chinese city seems to be an important determinant of the students' mental health, a finding that is consistent with previous researches (Barrett et al., 2003; Shen & Takeuchi, 2001) but is only now documented with Mainland Chinese students in Macau.

Note that the mean scores for acculturative stress are not high (c.f., $M = 1.27$ in range of 0–3). But those who do experience more acculturative stress report poorer mental health. It may be the case that those students from Mainland China who may not be as prepared to deal with the requirements of acculturating in Macau because they expect that it would be similar to their home communities. But an examination of the subscales for acculturative stress actually indicates that cultural difference is the least stressful for the Chinese postgraduate students compared to the stress they experience from the language and academic requirements and from their social interactions. These findings highlight the role of interpersonal variables in general mental health, which could have even greater relevance in a collectivistic culture

such as that in Macau (Zaroff, Wong, Ku, & Van Schalkwyk, 2014). Nevertheless, our results indicate that we cannot underestimate the adjustment that Mainland Chinese postgraduate students need to go through in Macau. The framework we used for assessing acculturative stress points to four dimensions that could be the target of psychological or counseling interventions.

These interventions might do well to focus on building the psychological resilience, which was a significant predictor of better mental health among the migrant Chinese postgraduate students. Although sense of belonging and personal meaning were also correlated with better mental health, consistent with previous research (Michaud, 2006; Nesdale et al., 1997), only resiliency was significantly related to mental health when the effects of these three positive psychological resources are examined together. This finding adds to the large body of research findings that show resilience as an important predictor of positive mental health (Grotberg, 2003; Masten & Reed, 2002; Michaud, 2006), and in some cases contributing to migrant students having even better mental health than local students (Wan et al., 1992).

We acknowledge that we examined a very limited range of positive resources and protective factors that contribute to positive mental health and a more comprehensive approach to addressing the mental health needs of Mainland Chinese postgraduate students in Macau would need to consider a more diverse range of factors. Research suggests that there are culture-specific factors that serve as protective factors in some Chinese communities. For instance, the considerably low rates of violent crime in some Chinese societies may be related to an adherence to traditional Chinese values, values in which family solidarity assumes extreme importance, even in the face of strict parental control and discipline (Tong, Ku, & Zaroff, 2014). These traditional values may serve as protective factors in those at risk for psychopathology. Thus, consideration of such values in samples of individuals of Chinese ethnicity may be helpful, especially when the sample in question is a group of students of Chinese ethnicity, who might be in a context leaving them particularly susceptible to stress, as noted in the current chapter. So there could be more research undertaken about specific factors that contribute to better mental health in the specific population of Mainland Chinese postgraduate students.

In this regard, we also acknowledge that we used a very popular and often used self-report measure of mental health that can be criticized as being too simple to actually provide a good index of the postgraduate students' real mental health profiles. There are also cultural nuances in how symptoms of distress and other mental health problems are manifested in specific cultures. In particular, somatic presentations of distress may predominate in Asian cultures (Zaroff, Davis, Chio, & Madhavan, 2012), due in no small measure to stigma. Thus, we may not have been able to capture all aspects of the postgraduate students' mental health in this study on the basis of a brief, albeit widely used and validated, self-report measure.

The limitations in our study notwithstanding, we believe that our results point to attend to the factors that shape the mental health experiences of Chinese postgraduate students in Macau who experience problems adjusting to their new academic and social environments. Our results point to some viable entry points for psycho-

logical interventions that could help maintain positive mental health in these students, but a discussion of psychological interventions fall beyond the scope of this chapter.

Instead, we wish to conclude by emphasizing the need to have a more nuanced understanding of the psychological experiences of this special type of learner that we find in more and more universities across Asia. Consistent with the work of Prof David Watkins, whom we honor with this chapter, our results underscore that need to pay attention to the cultural dimensions of learners' total range of experiences (King & Watkins, 2013). The finding of the study regarding how acculturative stress experiences by Chinese postgraduate students in another Chinese city also tells us that culture is construct that should not be equated with related constructs such as race, ethnicity, or nationality (Hwang & Matsumoto, 2013) and that differences in cultural knowledge and experiences can arise at many different levels of the learners social and learning experiences (Bernardo & Liem, 2013). In this regard, we believe that the mental health and well-being of the migrant Asian learners will be an important and potentially complicated area of inquiry within what is already a rich area of the study of culture and the psychology of learning. Fortunately, Prof David Watkins has already blazed a trail for all psychologists interested in these dynamic interphases between culture, psychology, and learning.

References

- Banks, M. H., Clegg, C. W., Jackson, P. R., Kemp, N. J., Stafford, E. M., & Wall, T. D. (1980). The use of the general health questionnaire as an indicator of mental health in occupational studies. *Journal of Occupational Psychology*, 53, 187–194.
- Barrett, P. M., Sonderegger, R., & Xenos, S. (2003). Using friends to combat anxiety and adjustment problems among young migrants to Australia: A national trial. *Clinical Child Psychology and Psychiatry*, 8(2), 241–260.
- Bernardo, A. B. I., & Liem, G. A. D. (2013). Mapping the spaces of cross-cultural educational psychology. In G. A. D. Liem & A. B. I. Bernardo (Eds.), *Advancing cross-cultural perspectives on educational psychology: A Festschrift for Dennis M. McInerney* (pp. 345–357). Charlotte, NC: Information Age Publications.
- Constantine, M. G., Anderson, G. M., Berkel, L. A., Caldwell, L. D., & Utsey, S. O. (2005). Examining the cultural adjustment experiences of African international college students: A qualitative analysis. *Journal of Counseling Psychology*, 52, 57–66.
- Constantine, M. G., Okazaki, S., & Utsey, S. O. (2004). Self-concealment, social self-efficacy, acculturative stress, and depression in African, Asian, and Latin American international college students. *American Journal of Orthopsychiatry*, 74(3), 230–241.
- Fleer, J., Hoekstra, H. J., Sleijer, D. T., Tuinman, M. A., & Hoekstra-Weebers, J. E. H. M. (2006). The role of meaning in the prediction of psychological well-being of testicular cancer survivor. *Quality of Life Research*, 15, 705–717.
- Gambone, M. A., & Arbretton, A. J. A. (1997). *Safe havens: The contributions of youth organizations to healthy adolescent development*. Philadelphia, PA: Public/Private Ventures.
- Goldberg, D. P., Gater, R., Sartorius, N., Üstün, T. B., Piccinelli, M., Gureje, O., et al. (1997). The validity of two versions of the GHQ in the WHO study of mental illness in general health care. *Psychological Medicine*, 27, 191–197.

- Grotberg, H. E. (2003). *Resilience for today: Gaining strength from adversity*. Westport, CT: Praeger Publishers.
- Hagerty, B. M., Williams, R. A., Coyne, J. C., & Early, M. R. (1996). Sense of belonging and indicators of social and psychological functioning. *Archives of Psychiatric Nursing*, 10, 235–244.
- Hagerty, B. M. K., Lynch-Sauer, J., Patusky, K., Bouwsema, M., & Collier, P. (1992). Sense of belonging: A vital mental health concept. *Archives of Psychiatric Nursing*, 6, 172–177.
- Hull, W. F. (1978). *Foreign students in the United States of America: Coping behavior within the educational environment*. New York: Praeger.
- Hwang, H. C., & Matsumoto, D. (2013). Culture and educational psychology. In G. A. D. Liem & A. B. I. Bernardo (Eds.), *Advancing cross-cultural perspectives on educational psychology: A Festschrift for Dennis M. McInerney* (pp. 21–37). Charlotte, NC: Information Age Publications.
- Joiner, T. E., Jr., & Walker, R. L. (2002). Construct validity of a measure of acculturative stress in African Americans. *Psychological Assessment*, 14(4), 462–466.
- Kim, K. I., Won, H., Liu, X., Liu, P., & Kitanashi, K. (1997). Students' stress in China, Japan, and Korea: A trans-cultural study. *The International Journal of Social Psychiatry*, 43, 87–94.
- King, R. B., & Watkins, D. A. (2013). Cultivating a “cultural imagination” in school motivation research: Recommendations for moving forward. In G. A. D. Liem & A. B. I. Bernardo (Eds.), *Advancing cross-cultural perspectives on educational psychology: A Festschrift for Dennis M. McInerney* (pp. 59–86). Charlotte, NC: Information Age Publications.
- Konstam, V., Holmes, W., Wilczenski, F., Baliga, S., Lester, J., & Priest, R. (2003). Meaning in the lives of caregivers of individuals with Parkinson's disease. *Journal of Clinical Psychology in Medical Settings*, 10(1), 17–25.
- Li, M., & Bray, M. (2007). Cross-border flows of students for higher education: Push–pull factors and motivations of mainland Chinese students in Hong Kong and Macau. *Higher Education*, 53, 791–818.
- Lu, D. (1998). *Facing dilemmas: Chinese students in the United States: 1979–1989*. Unpublished PhD thesis, University of Oregon.
- Masten, A. S., & Reed, M. G. J. (2002). Resilience in development. In C. R. Snyder & S. J. Lopez (Eds.), *Handbook of positive psychology*. New York: Oxford University Press.
- Michaud, P. A. (2006). Adolescents and risks: Why not change our paradigm? *Journal of Adolescent Health*, 38, 481–483.
- Nesdale, D., Rooney, R., & Smith, L. (1997). Migrant ethnic identity and psychological distress. *Journal of Cross-Cultural Psychology*, 28, 569–588.
- Osterman, K. F. (2000). Students' need for belonging in the school community. *Review of Educational Research*, 70(3), 323–367.
- Pan, J. Y., Yue, X., & Chan, C. L. W. (2010). Development and validation of the Acculturative Hassles Scale for Chinese Students (AHSCS): An example of mainland Chinese university students in Hong Kong. *Psychologia*, 53(3), 163–178.
- Recker, G. T., & Wong, P. T. P. (1988). Aging as an individual process: Toward a theory of personal meaning. In J. E. Birrer & V. L. Bengtson (Eds.), *Emergent theories of aging* (pp. 214–246). New York: Springer.
- Rocha-Singh, I. A. (1994). Perceived stress among graduate students: Development and validation of the Graduate Stress Inventory. *Educational and Psychological Measurement*, 54(3), 714–727.
- Shen, B. J., & Takeuchi, D. T. (2001). A structural model of acculturation and mental health status among Chinese Americans. *American Journal of Community Psychology*, 29(3), 387–418.
- Stecker, T. (2004). Well-being in an academic environment. *Medical Education*, 38, 465–478.
- Swagler, M. A., & Ellis, M. V. (2003). Crossing the distance: Adjustment of Taiwanese graduate students in the United States. *Journal of Counseling Psychology*, 50, 420–437.
- Tong, T. S., Ku, L., & Zaroff, C. M. (2014). The influence of culture-specific variables as protective factors in adolescents at risk for juvenile delinquency. *International Journal of Offender Therapy and Comparative Criminology*. Published online November 2014, doi: 10.1177/0306624X14556609.
- Wagnild, G. M., & Young, H. M. (1993). Development and psychometric evaluation of the resilience scale. *Journal of Nursing Measurement*, 1, 165–178.

- Wan, T. Y., Chapman, D. W., & Biggs, D. A. (1992). Academic stress of international students attending U. S. universities. *Research in Higher Education*, 33, 607–623.
- Wang, L. H., & Byram, M. (2011). 'But when you are doing your exams it is the same as in China' – Chinese students adjusting to western approaches to teaching and learning. *Cambridge Journal of Education*, 41, 407–424.
- Wong, P. T. P. (1998). Implicit theories of meaningful life and the development of the personal meaning profile. In P. T. P. Wong & P. S. Fry (Eds.), *The human quest for meaning: A handbook of psychological research and clinical application* (pp. 111–140). Mahwah, NJ: Erlbaum.
- Wong, D. F. K., Yan, P., Lo, E., & Hung, M. (2003). Mental health and social competence of mainland Chinese immigrant and local youth in Hong Kong: A comparison. *Journal of Ethnic and Cultural Diversity in Social Work*, 12(1), 85–110.
- Xu, J. (2002). *Chinese students' adaptation to learning in an American university: A multiple case study*. Unpublished PhD thesis, University of Nebraska.
- Yang, T. Y. (2010). *Stress, coping, and psychological well-being: Comparison among American and Asian international graduate students from Taiwan, China, and South Korea*. Unpublished PhD thesis, University of Kansas.
- Yeh, C. J., & Inose, M. (2003). International students' reported English fluency, social support satisfaction, and social connectedness as predictors of acculturative stress. *Counseling and Psychology Quarterly*, 16, 15–28.
- Zaroff, C. M., Wong, H. L., Ku, L., & Van Schalkwyk, G. (2014). Interpersonal stress, not depression or hopelessness, predicts suicidality in university students in Macao. *Australasian Psychiatry*, 22, 127–131.
- Zaroff, C., Davis, J., Chio, P., & Madhavan, D. (2012). Somatic presentations of distress in China. *Australian and New Zealand Journal of Psychiatry*, 46, 1053–1057.
- Zhou, Y. F., & Todman, J. (2009). Patterns of adaptation of Chinese postgraduate students in the United Kingdom. *University of Dundee Journal of Studies in International Education*, 13, 467–486.