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ORIGINAL ARTICLE

Clinical features of depression in Asia: Results of a large prospective, cross-sectional study

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The authors wish it to be known that, in their opinion, the first three authors should be regarded as joint First Authors.

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Abstract

Introduction: The objective of this study was to investigate the clinical features of depression in Asian patients.

Methods: It was a cross-sectional, observational study of depression in China, Korea, Malaysia, Singapore, Taiwan, and Thailand. Participants were drug-free outpatients with depressed mood and/or anhedonia. Symptoms and clinical features were assessed using the Montgomery–Asberg Depression Rating Scale, Symptoms Checklist 90-Revised (SCL-90-R), and the Fatigue Severity Scale. Other measures included the Medical Outcome Survey 36-Item Short-Form Health Survey (SF-36), the Sheehan Disability Scale, and the Multidimensional Scale of Perceived Social Support (MSPSS).

Results: A total of 547 outpatients with major depressive disorder were included in the analyses. Among the Montgomery–Asberg Depression Rating Scale symptoms, "reported sadness" and "reduced sleep" had the highest severity, with means (SDs) of 3.4 (1.2) and 3.4 (1.6), respectively. Apart from the SCL-90-R depression and anxiety domains, the SCL-90-R obsession–compulsion syndrome had the highest domain score, with a mean (SD) of 1.9 (0.9). Among eight domains, the mean (SD) SF-36 pain subscale score of 58.4 (27.7) was only second to that for the SF-36 physical function. In comparison to other disability domains, the Sheehan Disability Scale work/school had the highest subscale score, with a mean (SD) of 6.5 (2.9). The mean (SD) MSPSS "family" subscale score of 4.7 (1.7) was higher than the MSPSS "friends" and "significant others" subscale scores.

Discussion: This study suggests that pain has a minimal impact on the quality of life in Asian patients with depression. Noteworthy issues in this population may include insomnia, obsessive–compulsive symptoms, working/school disability, and family support.

Introduction

Depressive disorders are a major public health problem in most countries. In 2004, the World Health Organization (WHO) estimated that approximately 151 million people across the world suffer from unipolar depressive disorder, of whom 80 million live in South-East Asia and the Western Pacific region (WHO, 2008). Unipolar depressive disorder is a leading cause of disability. It is the fourth leading cause of disability-adjusted life years (DALYs) in South-East Asia, and the second leading cause of DALYs in the Western Pacific region.

Classification systems like the *Diagnostic and Statistical Manual of Mental Disorders* (DSM) framework can mask considerable cultural variation in the way that depression is understood and expressed. Indeed, there is a growing body of evidence that suggests differences in depression between Asia and the West. First, a lower prevalence of depression has long been observed in the Asian population. Chiu (2004) compared studies (albeit of varying methodology) in Asia and the US, and noted that the lifetime prevalence rates of DSM-III or DSM-IV depressive disorders reported in Hong Kong (3.7%), South Korea (4.0%), and Taiwan (1.1%) were considerably lower than that reported in the US (17.1%) (Chiu, 2004). Two of the 17 countries that participated in the WHO's World Mental Health Survey Initiatives were from Asia (namely, Japan and India), and by using a standardized methodology across all participating countries, the investigators showed that Japan has the lowest 1-year prevalence of depression (2.2%) among 10 developed countries (mean = 5.5%), and that India has the second lowest prevalence (4.5%) among seven developing countries across the globe (mean = 5.9%) (Kessler *et al*., 2010).

Besides differences in prevalence, there also appear to be differences in depressive symptomatology between Asian and Western populations. For instance, when comparing the results of the US National Comorbidity Survey and the Korean Epidemiologic Catchment Area Study, it was observed that Koreans with major depressive disorder (MDD) were more likely to express symptoms like "low energy" and "concentration difficulty," and less likely to express symptoms like "depressed mood" and "thought of death," than their American counterparts (Lee *et al*., 2007). In addition, according to the results of some field research and anthropological studies, there appears to be a greater tendency for Chinese people with depression (as compared with their Western counterparts) to complain of somatic symptoms (Kleinman, 1977). Chinese people with depression were also more likely to have some sociocultural protective factors against depression (Xu, 1987) and were more likely to deny that they had depression (Parker *et al*., 2001).

Over the past few years, a group of psychiatrists in Australia and Asia have collaborated in a network called the "Mood Disorder Research: Asian & Australian Network" or "MD RAN." The ultimate goal of this group is to gain greater knowledge regarding Asian depression, in particular the similarities and differences of depression among Asian populations, and between Asians and Caucasians. The Study on Aspects of Asian Depression (SAAD) is the first study undertaken by this network.

Aims of the study

The SAAD aimed to examine the clinical features of depression in Asians and their beliefs/attitudes toward depression. In this first paper of the SAAD, we present data obtained from Asian sites. Those included sociodemographic and clinical features, symptom presentation, health status, disability, and social support profile.

Methods

Study design and settings

The SAAD was a multicountry, multicenter, cross-sectional, observational study of depression in clinical settings carried out between 2008 and 2010. Thirteen SAAD study sites were established across six Asian countries: China, Korea, Malaysia, Singapore, Taiwan, and Thailand. One study site was established in Australia to recruit a Caucasian comparison group. Outside of Australia, the study sites within Asia were as follows: Beijing Anding Hospital (Beijing, China), Institute of Mental Health (Beijing, China), Shanghai Mental Health Center (Shanghai, China), Kyungpook National University Hospital (Daegu, Korea), Inha University Hospital (Incheon, Korea), Asan Medical Center (Seoul, Korea), Samsung Medical Center University School of Medicine (Seoul, Korea), University of Malaya Medical Center (Kuala Lumpur, Malaysia), Institute of Mental Health Woodbridge Hospital (Singapore), Chung Gang Memorial Hospital (Taoyuan County, Taiwan), McKay Memorial Hospital (Taipei City, Taiwan), Maharaj Nakorn Chiang Mai Hospital

(Chiang Mai, Thailand), and Prince of Songkla University (Songkhla, Thailand). All 14 study sites provide psychiatric care for the public or private sector. The study did not involve any clinical management of the enrolled participants, and it was approved by the institutional review board or ethics committee of each site.

Participants

Participants were prospectively enrolled from outpatients seeking psychiatric treatment at the respective study sites. Individuals who presented for an intake appointment were approached by a study coordinator to participate in the study. After the study details had been fully explained, written informed consent was obtained from each participant. The inclusion criteria were as follows:

- male or female aged 18–65 years
- a positive response ("yes") to the Mini-International Neuropsychiatric Interview (M.I.N.I.) question A1 (depressed mood) and/or A2 (loss of interest) (Sheehan *et al*., 1998)

The exclusion criteria included the following:

- unstable medical condition
- mood disorder due to medical conditions and/or substance abuse
- psychotic or bipolar disorder
- clinically significant cognitive impairment
- treatment with psychotropic medication within the previous month
- treatment with a benzodiazepine within the previous week
- treatment with long-acting antipsychotic medication within the previous 3 months

All other psychiatric and comorbid conditions were permitted.

Variables

Sociodemographic characteristics were recorded at baseline, including age, gender, ethnicity, education, marital status, work status, living situation, and religion. Clinical indicators were also recorded at baseline, including age at first onset, duration of index episode, length of illness, number of past psychiatric hospitalizations, type of psychiatric disorder (as defined by the M.I.N.I.), and depressive severity.

Assessment

Participants completed several self-report measures in the presence of the study coordinator. A face-to-face interview was then conducted with the site investigator before participants met with their treating clinician. The order of data collection was intended to keep the participant's perceptions of depression (or whatever was their perceived illness) free from being influenced by the interview or the response to rating scales applied in this study. Data collection was accomplished in a single visit.

Symptom measures included the Montgomery–Asberg Depression Rating Scale (MADRS) (Montgomery and Asberg, 1979), the Symptoms Checklist 90-Revised (SCL-90-R) (Derogatis, 1977), and the Fatigue Severity Scale (FSS) (Krupp *et al*., 1989). Health status was assessed using the Medical Outcome Survey 36-Item Short-Form Health Survey (SF-36) (Ware and Sherbourne, 1992). Functional impairment was evaluated using the Sheehan Disability Scale (SDS) (Sheehan *et al*., 1996). Social support was assessed using the Multidimensional Scale of Perceived Social Support (MSPSS) (Zimet *et al*., 1990). Two additional scales were used but will be reported in a subsequent paper. These are the List of Threatening Experiences Questionnaire (LTE-Q) (Brugha *et al*., 1985) and a modified version of the Explanatory Model Interview Catalogue (m-EMIC) (Weiss *et al*., 1992).

Except for the M.I.N.I. and MADRS, all questionnaires were self-administered. Lundbeck Export A/S supervised the acquisition of versions in Chinese (both traditional and simplified), Korean, Malay, and Thai. The licenses to use the English or validated translations of the SCL-90-R, SDS, SF-36, M.I.N.I., and MADRS were secured from the respective scale proprietors. A protocol for forward and backward translation was implemented to produce the equivalent translations of the FSS, MSPSS, LTE-Q, and m-EMIC. The latter set of scales was not pilot-tested.

All scales presented within this paper are briefly described below.

MADRS

The MADRS is a depression rating scale that comprises 10 items that assess the core symptoms of depression: apparent sadness, reported sadness, inner tension, reduced sleep, reduced appetite, concentration difficulties, lassitude, inability to feel, pessimistic thoughts, and suicidal thoughts. Each item is scored from 0 to 6, with 0 denoting the absence of the symptom and 6 denoting the most severe form of the symptom. The participants were classified as having mild (0–18 points), moderate (19–29 points), or severe depression (30–60 points) (Snaith *et al*., 1986; Bech *et al*., 2006).

SCL-90-R

The SCL-90-R is a 90-item inventory to assess psychological symptom status on nine dimensions (or subscales): somatization, obsession–compulsion, interpersonal sensitivity, depression, anxiety, hostility, phobic anxiety, paranoid ideation, and psychoticism. Each subscale is rated from 0 (indicating no distress) to 4 (indicating extreme distress).

FSS

The FSS is a nine-item questionnaire to assess the severity of fatigue related to physical functioning, exercise, work, family, and social life. Each item is scored from 1 (indicating no fatigue) to 7 (indicating extreme fatigue) and is averaged to give the mean score.

SDS

The SDS is a three-item scale designed to assess perceived disability in three areas of the patient's life: work/school, social life/leisure, and family/home life. Each item is rated from 1 (indicating no disability) to 10 (indicating extreme disability), and all items are summed to provide a total score ranging from 3 to 30.

SF-36

The SF-36 is a 36-item questionnaire that measures self-perceived general health across eight health status domains (or subscales): physical functioning, role limitations due to physical health, bodily pain, general health perceptions, vitality, social functioning, role limitations due to emotional problems, and mental health. Each subscale is scored from 0 to 100, with higher scores indicating a better health state.

MSPSS

The MSPSS is a 12-item scale that measures perceived social support from three sources (or subscales): family, friends, and significant other. Each subscale is scored from 1 to 7. The subscale scores are averaged to give the mean total score, with higher scores indicating greater perceived social support.

Statistical analysis

Data were summarized as mean (SD) and percentage of the entire cohort. An examination showed that the great majority of the participants completed the scales with no missing data. For any given outcome, the percentage missing did not exceed 4%. Missing data were, therefore, excluded.

Results

Participant enrollment

A total of 1,917 outpatients were screened for eligibility, of whom 637 (33.2%) were eligible. The reasons for screen failure were as follows: use of psychotropic medication (370 patients, 28.9%); failure to meet the M.I.N.I. criteria (308 patients, 24.1%); presence of psychotic or bipolar disorder (226 patients, 17.7%); age above 65 years (127 patients, 9.9%); presence of mood disorders due to medical conditions or substance abuse (97 patients, 7.6%); age below 18 years (69 patients, 5.4%); refusal to provide informed consent (56 patients, 4.4%); or presence of an unstable or comorbid medical condition (27 patients, 2.1%).

Of 637 patients confirmed eligible, 556 were enrolled. The remaining patients were not enrolled for one of the following reasons: refusal/unwillingness to cooperate (58 patients), lack of patience to be interviewed (14 patients), or lack of the time to participate in the study (9 patients). All participants were compensated for their time. The mean (SD) time taken for completion of self-administered scales was 35.8 (14.1) minutes, and for face-to-face interview it was 38.1 (13.8) minutes. Nine enrolled patients were further excluded because they had no current major depressive episode (MDE), as confirmed by the M.I.N.I. After the exclusion, all 547 participants included in the analysis met the DSM-IV diagnosis of MDD.

Sociodemographic features

The countries of origin were as follows: 114 participants were from China (20.8%), 101 from Korea (18.5%), 130 from Malaysia/Singapore (24.0%) (90 from Malaysia and 40 from Singapore), 103 from Thailand (18.6%), and 99 from Taiwan (18.1%). In terms of gender, 352 (64.4%) participants were female (Table 1). The mean (SD) age was 39.6 (13.2) years. With respect to depression severity, 10.2% of participants had mild depression (n = 56), 40.2% had moderate depression (n = 220), and 49.5% had severe depression (n = 271). Most participants were married/cohabiting, employed, or living with families. Most had no religion or were Buddhists.

Table 1. Sociodemographic features of Asian patients with major depressive disorders

Sociodemographic features	Total (n = 547) Mean (SD)
Age (years)	39.6 (13.2)
	n (%)
Gender (female)	352 (64.4%)
Ethnicity	
Chinese CN	114 (20.8%)
Chinese TW	99 (18.1%)
Chinese MY/SG†	77 (14.1%)
Korean	101 (18.5%)
Thai	102 (18.6%)
Other Asians (e.g. Malay, Indian)	54 (9.9%)
Education (% completed secondary education)	413 (75.5%)
Marital status	
Never married	160 (29.3%)
Married/cohabiting	318 (58.2%)
Divorced/separated	45 (8.2%)
Widowed	23 (4.2%)
Work status	
Employed	260 (47.5%)
Homemaker	114 (20.9%)
Student	71 (12.9%)
Retired	45 (8.3%)
Unemployed/disabled	57 (10.4%)
Living situation	
With family	437 (79.9%)
Alone	68 (12.4%)
Institutionalized	25 (4.6%)
Others	17 (3.1%)
Religion	
No religion	217 (39.7%)
Buddhism	191 (34.9%)
Christian	72 (13.2%)
Hindu	21 (3.8%)
Muslim	38 (6.9%)
Others	8 (1.5%)

†MY/SG (n's) = 43/34.
CN, China; MY/SG, Malaysia/Singapore; TW, Taiwan.

Clinical features

The mean (SD) age at first onset was 36.4 (13.3) years (Table 2). The mean (SD) duration of index episode was 79.3 (162.9) weeks, and the mean (SD) length of illness was 3.2 (5.4) years. Approximately 28.7% of the participants (n = 157) reported no previous psychiatric hospitalization. The highest percentage of participants (62.9%) had MDE only (n = 344), and only 4.8% of participants (n = 26) had MDE with atypical features (with or without melancholic features).

Table 2. Clinical features, disability, and support features of Asian patients with major depressive disorders

Features	Total (n = 547) Mean (SD)
MADRS score	29.1 (8.1)
Age at first onset	36.4 (13.3)
Index episode duration (weeks)	79.3 (162.9)
Length of illness (years)	3.2 (5.4)
	n (%)
Number of past psychiatric hospitalizations	
0	157 (28.7%)
1	197 (36.0%)
≥2	193 (35.3%)
M.I.N.I. MDE subtype	
MDE only	344 (62.9%)
MDE with melancholia	174 (31.8%)
MDE with atypical features	26 (4.8%)
MDE with both	3 (0.5%)
	Mean (SD)
SDS	
Total	17.1 (8.0)
Work/school	6.5 (2.9)
Social life/leisure	5.8 (3.0)
Family/home life	5.5 (3.2)
MSPSS	
Total	4.4 (1.4)
Family	4.7 (1.7)
Friends	4.2 (1.6)
Significant others	4.6 (1.8)

MADRS, Montgomery–Asberg Depression Rating Scale; MDE, major depressive episode; M.I.N.I., Mini-International Neuropsychiatric Interview; MSPSS, Multidimensional Scale of Perceived Social Support; SDS, Sheehan Disability Scale.

Symptom presentation

Among the MADRS symptom scores, "reported sadness" and "reduced sleep" had the highest mean (SD) scores of 3.4 (1.2) and 3.4 (1.6), and "suicidal thoughts" had the lowest mean (SD) score of 2.0 (1.6) (Table 3). The mean (SD) obsession–compulsion subscale score of 1.9 (0.9) was almost as high as the depression subscale (SD) score of 2.0 (0.9). The mean (SD) FSS score was 5.0 (1.4).

Health status, disability, and social support

Of the eight SF-36 domains, the "vitality" had the lowest mean (SD) score of 25.7 (19.1), and "physical functioning" had the highest mean (SD) score of 77.6 (23.5), followed by the pain mean (SD) score of 58.4 (27.8) (Table 4). Among the three areas of the patient's life, "work/school" had the highest mean (SD) score of 6.5 (2.9). The mean (SD) MSPSS

Table 3. MADRS symptom and SCL-90-R syndrome profiles in Asian patients with major depressive disorders

	Mean (SD)
MADRS symptom	
1. Apparent sadness	3.2 (1.1)
2. Reported sadness	3.4 (1.2)
3. Inner tension	3.2 (1.2)
4. Reduced sleep	3.4 (1.6)
5. Reduced appetite	2.3 (1.7)
6. Concentration difficulties	3.2 (1.3)
7. Lassitude	2.7 (1.5)
8. Inability to feel	3.2 (1.3)
9. Pessimistic thoughts	2.7 (1.4)
10. Suicidal thoughts	2.0 (1.6)
SCL-90-R syndrome	
1. Somatization	1.3 (0.8)
2. Obsession–compulsion	1.9 (0.9)
3. Interpersonal sensitivity	1.4 (0.9)
4. Depression	2.0 (0.9)
5. Anxiety	2.0 (0.9)
6. Hostility	1.2 (0.9)
7. Phobic anxiety	1.0 (0.9)
8. Paranoid ideation	1.2 (0.9)
9. Psychoticism	1.1 (0.8)

MADRS, Montgomery–Asberg Depression Rating Scale; SCL-90-R, Symptoms Checklist 90-Revised.

Table 4. Health status (SF-36), disability (SDS), and social support (MSPSS) profiles in Asian patients with major depressive disorders

	Mean (SD)
SF-36	
1. Physical functioning	77.6 (23.5)
2. Role limitations due to physical health	48.9 (28.8)
3. Bodily pain	58.4 (27.8)
4. General health perceptions	36.1 (21.1)
5. Vitality	25.7 (19.1)
6. Social functioning	45.2 (25.2)
7. Role limitations due to emotional problems	38.9 (26.8)
8. Mental health	31.4 (18.7)
SDS	
1. Work/school	6.5 (2.9)
2. Social life/leisure	5.8 (3.0)
3. Family/home life	5.5 (3.2)
4. Total	17.1 (8.0)
MSPSS	
1. Social support from family	4.7 (1.7)
2. Social support from friends	4.2 (1.6)
3. Social support from significant others	4.6 (1.8)
4. Total social support	4.4 (1.4)

MSPSS, Multidimensional Scale of Perceived Social Support; SDS, Sheehan Disability Scale; SF-36, Medical Outcome Survey 36-Item Short-Form Health Survey.

"family" subscale score of 4.7 (1.7) was higher than the MSPSS "friends" and "significant others" subscale scores.

Discussion

The participants of this study were a mix of Asian ethnic groups. Of the 547 participants, approximately half were Chinese (53%). As measured by the MADRS, reduced sleep was as severe as was reported sadness. The SCL-90-R scores suggest that obsessive–compulsive syndrome is prominent among Asian patients with depression. As the higher SF-36 scores indicates a better health state, given that "pain" ranked the second highest among SF-36 subscale scores, this may indicate that pain has minimal impact on the quality of life in these patients. The SDS scores reflected that Asian patients with depression find their symptoms to be most disruptive to their work/school rather than to their family lives or their social lives. However, family was their leading source of social support.

This study's finding that reduced sleep or insomnia is as severe as reported sadness is in line with previous studies. Several studies in the West and a study in Taiwan have found that more than 90% of depressed patients have poor sleep (Thase, 1999; Hsu *et al*., 2009).

Obsessive–compulsive symptoms have long been observed in Western patients with depression. Indeed, it is noteworthy that in one of the most widely used rating scales for assessing depression (the Hamilton Rating Scale for Depression), these symptoms have been singled out as a separate entity (Hamilton, 1960). In examining the medical records of 398 inpatients with depression in the UK, Gittleson (1966) found obsessive symptoms among 124 patients (31.2%) (Gittleson, 1966). In a US study, obsessive–compulsive symptoms were found in 36% of MDD patients (Wisner *et al*., 1999). Although the present study did not examine the prevalence of obsessive–compulsive symptoms *per se*, the finding of high SCL-90-R scores on the obsessive–compulsion subscale appears to mirror the findings in the West. On a separate note, the findings of this study do not support previous findings of prominent somatization in Asians with depression (Kleinman, 1977). The present somatization subscale scores were around average as compared with the other eight subscale scores of the SCL-90-R.

Studies in the West suggest that depression and painful symptoms commonly occur together (Bair

et al., 2003). Recent studies in Asia also support this observation. For example, Lee and Tsang (2009) showed that in Hong Kong, painful physical symptoms were strongly associated with depression (Lee and Tsang, 2009), while Lee *et al*. (2009) showed that painful physical symptoms were experienced by approximately half of Taiwanese patients with MDD (Lee *et al*., 2009). In a survey of a multiethnic US sample of 480 cancer patients, the Asian Americans reported the lowest pain scores on multiple types of scales as compared with Hispanic, non-Hispanic White, and African American (Im *et al*., 2007). Such low pain scores appeared to be in concordance with the present finding that pain had less impact on Asian depressed patients' health. Taken together, it may be speculated that pain is a common symptom among Asian patients with depression, but has minimal impact on their quality of life. More studies of pain in multiethnic samples with depression may help clarify this complex symptom.

While it is widely accepted that depression can cause severe functional impairment, there is a dearth of research that assesses multiple dimensions of psychosocial functioning in a population with depression. Nonetheless, there was a small US study (which just as in this present study used the SDS for measuring disability) that suggests that social life is the most impacted domain, followed by family, and then work/school lives (Kennedy *et al*., 2002). The present study, on the other hand, found work/school life to be the most impacted, followed by social, and then family lives. The discrepancy between the present study and the US study may reflect cultural differences between Asia and the West regarding functional priorities.

There are several limitations of the present study. First, imbalances in ethnic representation across groups may have had significant influence on the study results. A study involving three countries in Asia showed differences in symptom presentation between countries (Nakane *et al*., 1991), which in turn serves as a caution to the assumption that depression is uniform across Asia.

Second, caution should be applied in generalizing the study findings. The exclusion of patients treated with psychotropic medications allowed us to have a clear picture of the psychiatric symptoms in our participants, but may inadvertently have led to the exclusion of many patients commonly seen in typical clinic settings. This study also did not employ random sampling procedures. Moreover, this study primarily enrolled patients from tertiary care settings. Third, this study could not recruit as wide a range of patients with depression as originally planned. Because the Western concept of depression may not cover the full spectrum of depressive symptoms observed among Asian populations (Lee *et al*., 2007), we intended to enroll a wide range of depressed patients through the use of loose inclusion criteria. This was to enable the participation of patients with core symptoms of depression (depressed mood and loss of interest) who might not have met the DSM-IV diagnostic criteria for current MDE. In primary care settings, the specificity of this two-question screening test for depression is approximately 67% (Arroll *et al*., 2003), implying that about a third of patients having a positive response to this test do not meet the DSM-IV criteria for MDD. However, when we applied this same strategy in our tertiary care settings, only 9 of 556 participants did not meet the criteria for a current MDE diagnosis. Due to the small numbers involved, we had less reservation about excluding them from the present analyses. Fourth, despite the rigorous methodology set in place for scales translation, nuances may have been lost in translation, especially the MPSSS, which was only translated and back-translated. In addition, this study had no rating scale training as a group and no inter-rater reliability study. Finally, although comorbidity is very common in patients with depression, the present study did not assess comorbidity. Therefore, it remains unknown whether comorbidity (e.g. substance use disorders) had any impact on the study results.

Despite the above-mentioned limitations, this study's findings provide insight for understanding the clinical features of Asian depression. In addition to depressive symptoms, insomnia, obsession, compulsion, and pain may be clinically significant in this population. Still, pain does not seem to have a significant impact on a patient's quality of life. Depression-related symptoms appear to be most disruptive to work/school life for the Asian patient with depression, as compared with family life or social life. Given that patients perceived family to be a leading source of social support, family members may have an important role in helping this population. Further studies in these areas are warranted.

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Declaration of interest

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