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ORIGINAL PAPER

Depression literacy and health-seeking attitudes in the Western Pacific region: a mixed-methods study

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Abstract

Purpose Depression literacy refers to the ability to recognize depression and make informed decisions about its treatment. To date, relatively little research has been done to examine depression literacy in the Western Pacific region. Given the pervasiveness of depression and the need to enhance mental health care in this region, it is important to gain a better understanding of depression literacy and health-seeking behaviors in this part of the world.

Methods This mixed-methods study utilized a convergent parallel design to examine depression literacy and the associated health-seeking attitudes among urban adults from three countries—Cambodia, Philippines, and Fiji. A total of 455 adults completed a quantitative survey on depression knowledge, attitudes, and professional help seeking. Separately, 56 interviewees from 6 focus groups provided qualitative data on their impression and knowledge of depression and mental illness within the context of their local communities.

Results Overall, results showed that depression knowledge was comparatively lower in this region. Controlling for differences across countries, higher knowledge was significantly associated with more positive attitudes towards mental illness ($B = -0.28$, $p = 0.025$) and professional help seeking ($B = 0.20$, $p < 0.001$). Financial stability, such as employment, was also a salient factor for help seeking.

Conclusions This study was the first to provide a baseline understanding on depression literacy and highlights the need to increase public knowledge on depression in the Western Pacific. Culturally congruent recommendations on enhancing depression literacy in this region, such as anti-stigma campaigns, use of financial incentives, and family-based approach in health education, are discussed.

Introduction

Depression affects 350 million people worldwide, and is one of the most under-reported and under-treated mental disorders [1, 2]. Depression significantly contributes to the global disease burden as it impairs individual's ability to function or cope with daily life [3, 4]. Comparatively, little research has examined this mental health problem in the WHO Western Pacific region, but available statistics show that depression is a major public health issue in this part of the world. For example, a review of existing epidemiological studies showed that 26.3% of patients seen in primary care settings in South Asia exhibited signs of depression [3]. Another national household survey conducted in China estimated 4.08% of adults suffered from depression, and more than 1 in 3 adults frequently experience depressive symptoms [5]. In fact, depression was estimated to affect over 66 million people in the Western Pacific in 2015 [6].

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Further, approximately 200,000 people die by suicide each year in the region, accounting for 25% of the global burden on suicide [7].

Less than 1 in 4 people with mental disorders living in low- and middle-income countries receive the mental health services and treatment that they need [4]. It is possible that many people in these countries have a low propensity to seek professional help given little public awareness or knowledge about mental health. Indeed, it is widely recognized that the public often fail to identify mental disorders and have little knowledge about their signs and prevention [8]. Negative attitudes towards mental illness, especially social stigma, is also a major barrier to the timely diagnosis and treatment of mental health problems [9]. Additionally, negative expectations of recovery or fear of discrimination or social exclusion can strongly influence professional help seeking among people with mental health problems [10].

Mental health literacy is broadly defined as the knowledge and beliefs about mental disorders that may influence how these disorders are recognized, treated, and prevented in different communities [8]. Currently, most mental health literacy research was conducted in European countries [11–15], and those conducted in the Western Pacific primarily focused on higher income countries, such as Australia [16–18], China and Hong Kong SAR [19–21], Singapore [22], and Japan [23]. However, mental health knowledge, beliefs, and attitudes are culture and context specific, and are affected by the sociopolitical environment, such as difficulties accessing care, inadequate protection of human rights, inadequate financial and human resources, and worries about privacy and confidentiality [24, 25]. Thus, a large gap exists in understanding how best to target and improve mental health services and uptake for many countries within the Western Pacific region.

In 2015, WHO Member States in the Western Pacific have identified the management of depression as a key strategy to advance the public mental health agenda in this region; they also recognized that raising awareness and providing essential information (e.g. risk factors, early signs and symptoms, availability of interventions) was key to facilitating health-seeking behavior and early detection of depression [26]. As a response to this regional assessment, this study focused on depression literacy, a type of mental health literacy defined as the ability to recognize depression and make informed decisions about its treatment [27]. Specifically, the present study used a mixed-methods approach to examine depression literacy and the associated health-seeking attitudes among urban adults from three countries in the region that vastly differ in ethnic, religious, and socioeconomic composition—Cambodia, Philippines, and Fiji. The study objectives were: (1) to examine the levels of depression knowledge in the three countries; (2) to examine the attitudes towards mental disorders and seeking professional mental health care; (3) to identify predictors for positive attitudes towards mental illness and professional help seeking behaviors; and (4) to explore country-specific views on depression and its associated health-seeking beliefs and behaviors.

Methods

This cross-sectional, convergent parallel mixed-methods study examined depression literacy in Cambodia, Philippines, and Fiji. Depression knowledge, attitudes, and health-seeking behaviors towards mental disorders were quantitatively measured in a convenient sample of 455 respondents. Six focus group discussions were held to generate a more in-depth understanding of depression literacy and health-seeking behaviors within the context of participants' culture and their local communities. Quantitative and qualitative results were analyzed separately, then merged to identify convergence and divergence across data sources.

Subjects and settings

Data were collected in collaboration with local implementing partners between November 2016 and May 2017. These partners included local ministry of health and/or university research teams in each country. All implementing partners participated in a face-to-face research skills training program on research recruitment, consent, quantitative and qualitative data collection, and data management before study commencement.

Study participants were recruited from different regions in each country to obtain a more diverse sample of participants from different ages, genders, and social backgrounds. All urban adults over 18 years old and were able to provide consent to participate were eligible to participate. Target recruitment sites were determined based on discussion between project team members and local implementing partners to ensure greatest likelihood of successfully reaching sampling goals within recruitment timeframe. In Cambodia, participants were recruited from one major city (Phnom Penh) and one semi-urban area (Kandal Province). In the Philippines, participants were recruited from three most highly populated cities (Quezon, Manila, and Caloocan City). In Fiji, Suva was the target city for data collection.

Quantitative survey and qualitative focus groups were conducted concurrently. All participants were recruited from villages, marketplaces, restaurants, shopping centers, parks, local community clubs, and churches by convenience sampling. Study participants were only recruited from community-based settings; no participants were recruited from healthcare or medical settings. Recruitment for survey and focus group participants were conducted separately due to different nature of study involvement. A minimum sample

of 146 survey participants was proposed for each country to conduct multiple regression analyses with 12 predictors according to Green's rule of thumb [28]. Two focus group interviews were conducted in each country, with group size restricted between 6 and 12 interviewees to maximize discussion [29]. Focus group interviews were completed at times and locations agreeable to participants and implementing partners.

Implied consent by way of survey completion was obtained from all survey respondents; focus group participants provided written consent. This research study received ethical approval internally by the funding agency (WHO), the Ministry of Health in each participating country, and the first author's university ethical review board. No incentives were offered for study participation.

Quantitative measures

Each survey packet consisted of (1) demographic data, (2) depression knowledge, (3) attitudes towards mental disorders, and (4) attitudes towards seeking help for mental disorders. Participants' demographic data included sex, age, employment status (i.e., working/not working), highest academic qualification obtained (i.e., college or above/below college level), marital status (married/other), and prior contact with someone with a mental illness (i.e., yes/no). Depression knowledge, attitudes, and professional help-seeking behaviors were measured using the following psychometric instruments. Where appropriate, implementing partners translated and back-translated the instruments to their local language following the WHO guidelines [30].

Depression Literacy Scale (*D-Lit*) [31, 32] measures knowledge specific to depression, and includes 22 statements with three response options—true, false, and do not know. Respondents' depression knowledge is measured based on their number of correct responses, ranging from 0 to 22; higher score indicates greater depression knowledge. In this study, the internal consistency of this instrument was $\alpha = 0.53$ for the full sample, and ranged from 0.56 to 0.60 across the three countries.

Attitudes and Understanding Towards Mental Disorders (*AUM*) [33] consists of 15 statements related to stigma and discrimination associated with mental illnesses. Responses are captured on a 5-point Likert scale ranging from "Strongly Agree" to "Strongly Disagree." A total score can be calculated, where higher scores indicate more negative attitudes towards mental illnesses. The internal consistency ranged from $\alpha = 0.66$–0.75 across the three countries; α for the full sample was 0.74.

Attitudes Toward Seeking Professional Psychological Help-Short Form (*ATSPPH-SF*) [34] is a ten-item instrument that measures propensity for seeking help for mental disorders. Item responses are based on a 4-point Likert scale ranging from "disagree" to "agree," with total score ranging from 0 to 30; higher scores indicate higher propensity to seek help. In this study, the internal consistency of the instrument was $\alpha = 0.56$ for the full sample, and ranged between 0.49 and 0.64 across the three countries. For the two subscales—openness to seeking treatment and need in seeking treatment—alphas ranged from 0.62 to 0.75 and 0.40–0.55, respectively.

Qualitative interviews

Focus group discussions were used to promote participant interaction and sharing of ideas among local participants [29]. Two focus groups, consisting a total of 17–20 participants, were conducted in each country. Two facilitators selected by local implementing partners facilitated each focus group. Based on a semi-structured interview guide, participants were initially asked to describe and discuss their overall impression and understanding of mental health and mental disorders within the context of the local communities. Then, participants were presented with a case vignette that describes a person exhibiting signs and symptoms of depression. The case vignette was originally developed to help focus participants' discussions on a central topic, and to enhance interaction and sharing of individual views; local implementing partners modified on the vignette script to enhance its cultural and contextual relevance. After presenting the vignette, group facilitators used open-ended questions to engage discussion among group participants [35] to help elicit their knowledge, attitudes, and views on help seeking for depression. All focus groups lasted between 45 and 60 min; participants filled out a background form to provide their demographic data at the end of the discussion.

Data management and analysis

Quantitative survey data were entered and managed in Microsoft Excel. Focus group interviews were audio recorded and transcribed verbatim in Cambodia and the Philippines. Local implementing partners in Cambodia and the Philippines also translated the interviews from their local language to English for linguistic equivalence. Interviews conducted in Fiji were recorded and the local facilitators made detailed notes of the contents of each group.

Survey data from each country were first analyzed independently then compared using STATA SE14. Less than 5% of random missing data was observed and handled by mean/mode substitution. Frequency distributions and summary statistics described respondent demographics and primary variables on depression literacy (i.e. knowledge, attitudes, and help seeking behaviors). Bivariate associations between the three primary variables and their associations with respondents' demographic characteristics were

examined using *Pearson's* correlation, *t* tests, ANOVA, and Chi-square tests. Finally, multiple linear regression models adjusting for clustering by country were used to explore depression knowledge and demographic characteristics as predictors for attitudes and help-seeking behaviors towards mental disorders in the Western Pacific region. A stepwise backward-selection process was used with predictors retained at $p \leq 0.20$; the best model was chosen based on highest variance explained (i.e., adjusted R^2). Statistical significance was set at $p < 0.05$.

Focus group data were analyzed by country using a thematic analysis process [36]. Three research team members (GH, DB, and CL) independently coded the data in Nvivo. Coding was conducted using a deductive approach, with a focus on understanding participants' knowledge, attitudes, and help-seeking behaviors towards mental illnesses. Coding from different team members was combined and compared, with discrepancies resolved via consensus. Codes were then collapsed into themes, and these themes were reviewed within the context of other codes and the full data set. The themes were continually refined using a constant comparison process until a thematic map emerged with clear thematic labels and definitions. Themes uncovered across countries were compared and contrasted to identify converging and diverging patterns in views, attitudes, and health-seeking behaviors for mental disorders in the Western Pacific region.

Finally, results from quantitative and qualitative sources were merged to mutually inform and enrich overall findings, and to identify areas of agreement and disagreement in survey versus interview data [37]. Parallels and contradictions found between quantitative and qualitative results were interpreted and discussed to generate a fuller understanding of depression literacy and its associated health-seeking attitudes and behaviors in the Western Pacific region.

Results

A total of 455 adults participated in the quantitative survey (Cambodia: $n = 150$; Philippines: $n = 156$; Fiji: $n = 149$); another 56 urban adults participated in the focus group discussions (Cambodia: $n = 20$; Philippines: $n = 19$; Fiji: $n = 17$). Participant characteristics for the full sample and by country for survey and focus group participants are provided in Table 1.

Quantitative findings

The full sample of survey participants consists of 41.32% male, with a mean age of 33.64 years (SD = 14.25). Over half were working (56.92%) or received a college education or above (55.16%); less than half were married (38.02%) or had prior contact with someone with a mental illness (37.14%). Participants from Cambodia were more likely to be female, older, and married, and less likely to have a college or above education or had prior contact with someone with a mental illness compared with participants in the Philippines or Fiji.

Bivariate analyses showed that depression knowledge was negatively associated with AUM scores ($r = -0.13$, $p = 0.004$), indicating that a higher level of depression

Table 1 Characteristics of survey and focus group participants in full sample and by country

Variables	Survey participants				Focus group participants		
	Full sample ($n = 455$)	Cambodia ($n = 150$)	Philippines ($n = 156$)	Fiji ($n = 149$)	Cambodia ($n = 20$)	Philippines ($n = 19$)	Fiji ($n = 17$)
Male (*n*, %)	188 (41.32)**	36 (24.00)	85 (54.49)	67 (44.97)	5 (25.00)	10 (52.60)	9 (52.90)
Age (mean, sd)	33.64 (14.25)**	42.43 (16.94)	27.65 (9.87)	31.07 (10.46)	49.95 (15.39)	53.79 (8.26)	35.06 (10.65)
Currently working (*n*, %)	259 (56.92)**	81 (54.00)	71 (45.51)	107 (71.81)	11 (55.00)	11 (57.89)	14 (82.35)
Married (*n*, %)	173 (38.02)**	99 (66.00)	25 (16.03)	49 (32.89)	12 (60.00)	14 (73.68)	9 (52.90)
College or above (*n*, %)	251 (55.16)**	25 (16.67)	113 (72.44)	113 (75.84)	0 (0.00)	5 (26.31)	13 (76.40)
Contact with MI (*n*, %)	169 (37.14)**	32 (21.33)	67 (42.95)	70 (46.98)	1 (5.00)	2 (10.53)	12 (70.59)
Depression knowledge	8.60 (2.76)	8.25 (2.38)	8.83 (3.21)	8.73 (2.57)	–	–	–
Attitudes towards MI	41.08 (7.79)**	45.03 (7.09)	39.41 (7.29)	38.86 (7.49)	–	–	–
Help seeking towards MI	17.98 (4.23)**	18.69 (3.47)	16.83 (4.13)	18.47 (7.76)	–	–	–

**$p < 0.001$ comparisons across countries

knowledge is associated with more positive attitudes towards mental disorders. Depression knowledge was also weakly associated with attitudes towards professional help-seeking behaviors ($r = 0.12$, $p = 0.01$). The mean scores for depression knowledge (D-Lit), attitudes towards mental illness (AUM), and tendency to seek help for mental illnesses (ATSPPH-SF) across the three countries were 8.60 (SD = 2.76), 41.08 (SD = 7.79), and 17.98 (SD = 4.23), respectively (see Table 1). Participants from Cambodia expressed significantly more negative attitudes towards mental disorders, while participants from the Philippines scored lower in professional help seeking; no differences in depression knowledge were observed across the three countries ($p > 0.05$).

Results of multiple linear regression models are presented in Table 2; only the strongest prediction models from stepwise regression analyses are reported here. After controlling for country as a covariate, higher depression knowledge and female sex significantly predicted more positive attitudes towards mental disorders (adjusted $R^2 = 0.14$, $F(5, 449) = 6.37$, $p \leq 0.001$). For help-seeking behaviors, depression knowledge was the only significant predictor of participants' propensity to seek professional help for mental illnesses (adjusted $R^2 = 0.06$, $F(4, 450) = 7.68$, $p \leq 0.001$).

Qualitative findings

Fifty-six adults participated in six focus group interviews in the three countries. Characteristics of participants across countries are available in Table 1. Overall, Cambodia had less male participants (25 vs. 53% in Philippines and Fiji), had the lowest percentage of participants who has had prior contact with someone with a mental illness (5%), and had no participant with a college or above education. The Philippines had the highest percentage of participants who were married (74%). Fiji had the highest proportion of participants who were working (82%), had a college or above education (76%), and had previous contact with someone with a mental illness (71%).

The qualitative results were organized into four themes: (1) knowledge about depression, (2) attitudes towards people with depression, (3) helping people with depression, and (4) seeking help for depression. The following section presents findings by theme and comparisons of findings across countries. Table 3 consolidates main findings by country with the additional supporting quotes.

Knowledge about depression Across countries, participants ascribed mental illness, and specifically, depression, to stressors or problems arising from daily life, which resulted in the person "thinking too much," as the following participant noted:

> There are different factors [for depression], but 'problem' is the main reason (Philippines).

Further, most of the stressors or problems raised by the participants were financial, social, or relational in nature, including money, employment, family, and love. In Cambodia, a comparatively lower income country among the three participants mentioned low employment and unstable income as a reason for depression at a much higher frequency. In the Philippines, where the government is currently engaged in a highly publicized campaign against illegal drugs, participants also raised drug use as a common cause for depression.

Participants from the Philippines and Fiji also described possibilities of physiological illnesses that lead to signs and symptoms of depression. For example, one participant from the Philippines noted that a person may exhibit low mood, loss of appetite, and loss of interest due to "lung problem, like when he has TB." Another participant in Fiji also noted, "…maybe feeling sick of non-communicable disease and

Table 2 Multiple linear regression models assessing predictors for attitudes and professional help seeking towards mental disorders

Outcome	Predictors	*B* (SE)	95% CI	*t*	*p* value	Adjusted R^2
Attitude towards mental disorders	Constant	52.21 (2.00)	48.28, 56.14	26.10	< 0.001	0.14
	Depression knowledge	− 0.28 (0.12)	− 0.52, − 0.03	− 2.24	0.025	
	Sex (ref: male)	− 1.58 (0.71)	− 2.98, − 0.18	− 2.23	0.027	
	Age	− 0.05 (0.03)	− 0.10, 0.002	− 1.89	0.06	
	Country (ref: Cambodia)					
	Philippines	− 6.68 (0.94)	− 8.52, − 4.83	− 7.11	< 0.001	
	Fiji	− 6.93 (0.90)	− 8.70, − 5.17	− 7.71	< 0.001	
Professional help seeking for mental disorder	Constant	16.63 (0.70)	15.26, 18.00	23.80	< 0.001	0.06
	Depression knowledge	0.20 (0.70)	0.06, 0.34	2.89	0.004	
	Working (ref: no)	0.71 (0.40)	− 0.07, 1.49	1.78	0.08	
	Country (ref: Cambodia)					
	Philippines	− 1.92 (0.47)	− 2.85, − 0.99	− 4.07	< 0.001	
	Fiji	− 0.45 (0.48)	− 1.39, 0.50	− 0.93	0.35	

Table 3 Summary of thematic analysis results from focus group interviews by country with supporting quotes

Main themes	Cambodia	Philippines	Fiji
Knowledge about depression	Signs and symptoms of depression arise as a result of failures, ruminating on problems, or experiencing financial difficulties "Depression is we do something wrong, think too much, not success, so having a mind to be depressed"	Depression caused by a social problem, a challenging event, or drug use, but may also be a symptom of a physical health problem "First of all, what he's doing is not what a normal person is doing, right? So you would think that he's using drugs. That's the first thing that would come to mind"	Depression is triggered by stressors in daily life, but can also be caused by a physical health problem, such as infectious or chronic diseases "[Depression is] being focused on other things, thinks too much…"
Attitudes towards people with depression	View depression as a common problem and generally willing to provide support; however, also blame individuals for being depressed (i.e., failing or not able to control feelings) "Stop being sad, it wastes time and work"	Empathetic and warm towards people with depression, and recognizes that people with depression are marginalized and mistreated in society "Depression is something that is hard to overcome… because it prevails over you"	Accepting and benevolent towards people with depression, and showed concerns about stigma and mistreatment of people with mental illness "[People with mental illness are] left alone and ill-treated by families… abused"
Helping people with depression	Encourage people with depression to be happier, secure employment, and engage in activities to distract the mind "Waking his mind to do good thing and help to separate the right and wrong to make him understand"	Being with the person and allow person to share their thoughts and feeling; offer advice, food, money, and prayer "He/she would share it with me and then I would give her/him an advice that she/he would understand"	Being patient and supportive, keeping the person safe, and using substances to facilitate person to share their thoughts and feelings "Glass of beer would help to drink with him then to provide a platform to talk"
Seeking help for depression	Recognize importance of seeking help from family or people in the community; professional help sought only if other sources cannot help "How being alone can help? Should find neighbors to give advice"	Immediate family members are the preferred and key sources of help; help from doctors and government only sought if family cannot cope "The first people who could help is the family, because the love of the family could help in the healing process. Without family to help you, you could get worse"	Open to seeking professional help, especially from healthcare providers, but some concerns exist regarding perpetration of abuse "Need to be careful in referring cases to the pastor… some may tend to abuse the sick person. The police at times resort to violence to control the sick patients and they get abused in order to be controlled"

is in self-denial." Conversely, participants from Cambodia remained focused on psychosocial explanations for depression, and did not suggest biological plausibility for its signs and symptoms.

Attitudes towards people with depression Participants across countries were generally empathetic, sympathetic, and understanding towards people with depression. Overall, all participants were willing to engage with someone with depression to provide support, whether to "just be there with him" (Fiji), to "give him strength with good words" (Cambodia), or even to "chip in money… to let them know that they are important to us" (Philippines).

However, some differences in attitudes across countries were noted. Participants in the Philippines and Fiji discussed how people with depression are typically marginalized, stigmatized, and mistreated in their societies; those people were described as "lost in society," and "they will wander around". On the other hand, many participants in Cambodia viewed that depression is common in their communities, as one participant said, "[depression is] the mental problem everybody always has!" and another noted, "For mental problems, everybody never not have, whether less or much".

Additionally, participants from Cambodia more frequently ascribed depression to someone not being to "control his feelings" or that he or she must have done something wrong, thus regretting or feeling sad. Issues related to income and employment were also perceived to be an important contributor to depression, thus some Cambodian participants noted the importance of "getting over" the depression and get back to making a living.

Helping people with depression Offering companionship was the primary form of support that participants from all countries discussed as an important means of helping people with depression. In general, keeping the person company, talking with the person, allowing the person to share their thoughts and feelings, and providing guidance and counsel to help problem solve were key ways of helping people with depression. However, how this is practically executed appeared to differ by culture. For example, participants in the Philippines suggested hosting "happy activities" so that the depressed person may raise their mood. Providing prayer and nutritious foods (e.g., "meat three meals a day") were also mentioned.

In Cambodia, participants frequently suggested talking with depressed people to convince them to stop thinking about whatever issues that are causing their sadness, and "guiding" them out of their low mood. Further, giving depressed people opportunities for employment and generate an income were often discussed as viable solutions, as described by the following participants,

> "If he doesn't have a job like this, we should help him to find a job to work." (Cambodia).

> "Find who has a job and call to work with, just getting some money can go forward." (Cambodia).

> "Trying to earn money with his family… so the health is good." (Cambodia).

Finally, some participants from Fiji raised the idea of using alcohol, such as the local alcoholic beverage, Kava, as a means of helping people with depression. Participants suggested that this may help create a therapeutic environment to generate conversation, as the following participants noted,

> "Creating atmosphere, one jug or bowl of grog-kava." (Fiji).

Seeking help for depression Family, including parents and siblings, were viewed as the most trusted and reliable source of help, and most participants agreed that they would immediately seek help from family before approaching other sources. In particular, participants from the Philippines highlighted the importance of love and understanding from within the family environment that can help someone with depression. Additionally, participants from Cambodia also noted the importance of neighbors.

In general, participants viewed it is acceptable to seek help from healthcare providers. In fact, health professionals were considered to be the most trusted source of help among Fijian participants. However, participants from Cambodia and Philippines viewed going to government agencies or Ministry of Health as the last resort. Of note, participants from Fiji raised a unique concern with involving select authorities in helping people with depression, namely law enforcement and religious figures due to their concerns of potential abuse and mistreatment.

Across the three countries, the general consensus was that the participants would primarily resort to people within their close personal network or immediate communities to seek help for depression, and would only reach out to professional sources if their family, friends, or neighbors could not adequately manage the problem.

Merging quantitative and qualitative findings

Results from different data sources were merged and interpreted as a whole to generate a fuller understanding of depression literacy and associated health-seeking behaviors among urban adults residing in the Western Pacific region. In summary, financial factors strongly related with attitudes and professional help seeking for depression. Regression analyses demonstrated that employment was the only demographic characteristics that predicted higher propensity towards professional help seeking. Similarly, qualitative data from Cambodia showed that low employment and unstable

income were widely recognized as a source of depression, and that finding a job and making meaningful financial contribution were perceived to be effective in alleviating or reversing the symptoms of depression.

Higher depression knowledge was quantitatively associated with more positive attitudes towards mental disorders and the propensity to seek professional care; comparisons of focus group data across countries generated some evidence to support this finding. That is, participants from the Philippines and Fiji were able to describe biological causes for depression, thus indicating higher depression knowledge, and these participants also exhibited more empathy and likelihood to seek professional help towards depression. Conversely, participants from Cambodia, who attributed depression to psychosocial and spiritual factors (e.g., "problems" with money/relationships and Karma), were more likely to ascribe blame to people with depression, and would only seek professional help as a last resort.

Quantitative findings showed that individuals with more knowledge in depression were more likely to seek help from professional mental health care, while qualitative findings showed that family was the key source of support to depressed individuals. Converging these findings indicate that depression knowledge could be built up through family members. Education about depression should target families, rather than individuals. Using a family approach may be a viable option in promoting mental health and depression literacy in the region.

Discussion

This study sought to establish a better understanding of mental health literacy and health-seeking attitudes in the Western Pacific; it was the first to assess depression knowledge and professional help seeking in three low- and middle-income countries in the region. The mean depression literacy (D-Lit) scores obtained from Cambodia, Philippines, and Fiji suggest depression knowledge was lower compared with other high-income countries in the region. For example, prior studies with young adults in Australia reported average scores of 12–15 [38, 39]. However, our results are comparable with those found among Saudi Arabian adolescents (mean of 8.6) [40] and non-English speaking Greek and Italian immigrants in Australia (mean range of 8.17–10.61) [41]. The focus group data showed that participants across the three countries were able to identify most of the common signs and symptoms of depression, but they were largely unable to describe how best to help someone with depression beyond offering companionship, a listening ear, prayers, or support.

We also examined attitudes towards mental disorders and seeking professional mental health care, especially as they relate to depression. Our regression analysis showed that higher levels of depression knowledge predicted more positive attitudes towards mental disorders. This suggests that improved public knowledge will have an overall positive impact on reducing stigma associated with mental health problems. On the other hand, respondents' attitudes towards seeking professional psychological help was comparatively low in this region; previous studies on help-seeking attitudes across different populations within the USA have reported mean ATTSPH scores ranging between 20.45 and 26.27 [42–44]. In addition, unlike findings from a previous meta-analysis [45], we did not observe any association between gender and attitudes towards seeking professional help. However, we found that higher depression knowledge predicted more positive attitudes towards seeking help, which corroborates with results from studies conducted in Switzerland [46] and rural China [47]. In general, an enhanced understanding of depression can positively influence intentions to seek professional help. Indeed, a better understanding of depression can reduce the associated stigma, which has been shown to have a small-moderate effect on increasing professional help-seeking behaviors [48].

Enhancing public understanding of depression can help facilitate a community-based approach to the management of depression in the Western Pacific. Our qualitative findings indicate that communication interventions designed to improve depression literacy in the participating countries must be culture- and context-specific. For example, we uncovered some important differences in depression conceptualization and response across cultures, and the fears, misconceptions, and preferences for help that vary across these communities. Our results also underscore the salience in building trust and promoting a positive image towards helping professionals to enhance mental health help seeking in these countries. Further, we uncovered some unhealthy community practices, such as the use of alcohol to help people with depression that need to be addressed as well. Therefore, the specific contents of health communication programs need to be planned in consideration of the local issues that challenge mental health care, and the factors that will facilitate and impede the dissemination of relevant information in each country. As studies have shown that having exposure to people who have recovered from mental illness can help to improve attitudes and understanding, at least over the short-term [49], it would be useful to involve people living with mental illness (especially well-known public figures) in communication campaigns. Equipping people with specific knowledge and skills to promote mental health (i.e., mental health first aid and self-help resources) may also capitalize on the willingness of people in the region to help one another informally, especially within the family setting, as this may improve the early recognition and prevention of depression [50, 51].

Finally, financial concerns and the stigmatization/social exclusion of people with mental illness are recurring themes in the study findings. It is possible that these issues are more prominent in lower income countries as job and income instability can be both a common cause and consequence of social tension and mental health problems. Therefore, mental health promotion efforts at the systems or policy levels could target social inclusion through innovations in protected or supported local employment schemes for people recovering from mental health issues [52, 53]. This is especially imperative for people living in this region as we found an independent association between employment and propensity to seek help. Therefore, providing employment support may create opportunities to promote social cohesion, help generate regular sources of income, and promote recovery for people with depression [54, 55]. Importantly, these efforts will also demonstrate to local community members that people who experience mental illnesses are not dangerous and can continue to make meaningful contributions to society.

Study limitations and strengths

Several study limitations are acknowledged. First, the translation and back-translation of the survey tools followed the WHO guidelines, but we did not implement a formal content validity assessment. This may be a possible explanation for the low scale reliability, and suggest a need to further test and validate these translated measures. Second, the convenience sampling strategy precluded full generalizability of results within and across countries. Third, only self-report measures were used, which may not accurately reflect actual respondent behaviors (e.g., attitudes towards help-seeking versus actual help-seeking behaviors). Finally, the qualitative data may not fully capture all views on the topic because only two focus groups were held in each country. Interview transcripts were also translated back into English (as necessary) for linguistic equivalence, and it is possible that some meaning were lost in this process. Despite these limitations, the study findings provide novel and useful information on the current levels of depression literacy in three low- and middle-income countries within the Western Pacific region. We were also able to highlight some important areas of educational needs to inform future health communication interventions and mental health policies and programs for this region.

Conclusions

The misconceptions about mental illness and levels of stigma observed in this study likely present barriers towards seeking help. Our results suggest a need for more information on a population level about people's understanding of the signs, symptoms, and effective treatment of depression in all participating countries. Health communication interventions (e.g., anti-stigma campaigns) in the region should aim to enhance understanding of depression, correct common misconceptions that perpetuate stigma, promote available services, and generally improve the social acceptance of people with mental illnesses.

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Compliance with ethical standards

Conflict of interest On behalf of all authors, the corresponding author states that there is no conflict of interest.

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