

Research Article

Factors Associated with Depression-Related Mental Health Literacy in Patients who Attend Emergency Services in Taiwan

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Submitted: 02 August 2016

Accepted: 16 September 2016

Published: 19 September 2016

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OPEN ACCESS**Keywords**

- Depression
- Help-Seeking
- Mental health literacy
- Suicide prevention
- Taiwan

Abstract

Objectives: Patients attending emergency services are in need of better mental health literacy (MHL) for self-care and proper help-seeking for mental health problems. The study aimed to examine emergency patients' depression-related mental health literacy and factors associated with the knowledge, attitudes and help-seeking toward depressive symptoms.

Methods: This is an observational cross-sectional study of a convenience sampling of adult patients presenting to an urban university-affiliated emergency department in northern Taiwan during October 2014 and March 2015. Patient interviews were performed by a research assistant using standardized procedures to collect information including depression-related mental health literacy, help-seeking, and attitudes toward depressive symptoms described in a case vignette. The primary outcome variable was the level of depression-related MHL in rating the cause of depressive symptoms in a case vignette. Descriptive and correlational statistics were performed between higher/lower levels of MHL, defining by relative correctness of the awareness and recognition of depressive symptoms as mental or physical-and-mental health problems.

Results: Among the 384 patients recruited, better MHL were characterized as being more likely to give psychologically distressed friends proper advices, having fewer perceived stigmatized attitudes of psychiatric illnesses and services, and having more optimistic views about mental health treatments. However, prior help-seeking behaviors for depressive symptoms did not differ by levels of MHL.

Conclusions: A higher level of MHL may help to shape an individual's gatekeeping role and stigmatized attitudes for mental illness. Developing an effective mental health literacy program to enhance the recognition of depression among emergency patients may be needed to promote help-seeking and prevent early-stage mental health problems.

ABBREVIATIONS

ED: Emergency Department; MHL: Mental Health Literacy

INTRODUCTION

According to World Health Organization, depression affects about 350 million people worldwide [1] and can greatly impact on the sufferer's physical [2] and psychological functioning [3]. Global variations of the prevalence of depression exist due to cultural difference and methodological issues among studies, but countries with low prevalence may have noticeably higher level of overall functional disability that worth attention, such as in Taiwan (1.2%, lifetime) [4]. Patients with depressive disorders are twice more likely to use emergency department (ED) services than those with long term conditions and without depression [5]. In particular, two-thirds of elderly people admitted to ED have co-

existing mental health problems including depression, and their adverse outcomes following discharge call for more attention in wider range of mental and social care [6].

Despite the detrimental impacts of depression in different clinical settings including the ED, there is widespread stigma and misconceptions related to depression. Consequently, less than 25% of the people sought help even though treatments for depression are widely available [1]. Although many people believe that counseling may be helpful for mental health problems, psychiatric medications tended to be considered as ineffective or even harmful [7]. Also, patients often experience self-stigma (e.g. feeling embarrassed), social stigma (e.g., fear others' negative reactions), misconceptions of psychiatric services (e.g., fear doctors will respond negatively to their problems), and lack the proper knowledge of help-seeking, resulting in

treatment delay [8]. As a result, the concept of health literacy that emphasizes clinical health education required for appropriate treatment among ED patients [9] or the mental health literacy that potentially brings better knowledge, self-awareness, and help-seeking intentions of mental illness have emerged to be important strategies in emergency mental health care.

"Mental health literacy" (MHL) was first introduced by Jorm et al., [7], and defined as the "knowledge and beliefs about mental disorders which aid their recognition, management or prevention." Considering depression as a worldwide phenomenon, it would be expected that the public should have a good level of MHL regarding this issue. However, it was found that only 39% of the people in Australia had correctly identified depression when presented with a depression vignette [7]. Although MHL for depression has been improving over the years [10, 11] only about half of the study subjects correctly identified depression [12]. And less than 25% of the Asian subjects had correctly identified depression [13-15]. Deprived health literacy has been associated with poor health conditions and mortality rates [16]. These patients have higher medical services usage and lower compliance to treatments. Conversely, having a good level of MHL is crucial for individuals' mental well-being on many different levels. People with a higher level of MHL have less social stigma against depression [17] which in turn affecting their willingness to seek help. Non-psychiatric physicians would be more likely to detect patients' mental distress if the patients are able to identify their own symptoms as psychological problems [18, 19]. A lower MHL level has been suggested as a risk factor for postpartum depression, [20] and increasing MHL is beneficial for clinically depressed patients [21-23]. Moreover, people are more willing to seek help and receive the help they need if they can correctly attribute their own psychological distress as a mental health problem [24].

Currently the concepts of MHL on depression and related factors are under-researched and deserve more attention among service users in East Asia. Therefore, the aim of the study was to examine mental health literacy and related factors including physical, psychological and suicide risks of people with heterogeneous health conditions under emergency services. We hypothesized that MHL would be associated with mental health status and help seeking attitude.

MATERIALS AND METHODS

Participants and procedures

All the participants were recruited from the emergency department of a 2000-bedded university hospital in northern Taiwan. There were fifty-seven ED beds for screening per day during the study period, and the turnover rate was about twenty new patients a day. The ethical approval was acquired from the study hospital (reference number: 201303092RIND). During October 2014 and March 2015, there search assistant approached consecutive patients to inquire their willingness of participation. The inclusion criteria included age of 20 and over and being communicable by Mandarin; we excluded patients with severe medical conditions, identifiable cognitive dysfunctions or remarkable psychotic symptoms that interfere with interviews. The purpose and contents of the study were fully instructed to

the patients. If a patient was unable to understand the study or showing signs of disorientation, he/she would be excluded. After signing the informed consent, the participants were interviewed by the research assistant. In order to establish interview credibility and data reliability, the research assistant was trained to perform standardized procedures of data collection and data management. The participants were asked to fulfill the questions themselves under assistance or through interview. The questionnaires took about 30-40 minutes to complete. All the participants received a mental health resource card by the end of the interview and were offered psychiatric referral services if needed (i.e. BSRS-5 \geq 15 and/or moderate or severe suicide ideation in the past 7 days). The study targeted at ED patients for its diversity of disease entity since ED attenders were the psychosocially vulnerable group with co morbid physical, mental, behavioral disorders or psychiatric illness and self-harm or suicidal ideation; with more than half (56%) of those with the need for social work services having mental health related problems [25-27].

Measures

A series of psychosocial assessment questionnaires, containing the Revised Five-item Brief Symptom Rating Scale (BSRS-5R), the Chinese SAD PERSONS Scale (CSPS), two vignettes nested in the scale of MHL for depression, and questions regarding mental health help-seeking experiences and intentions, mental health knowledge and attitudes and perceive need for help, were given to all participants. Sociodemographic information including questions on education level, marital status, living situation, religion, employment status, physical health problems, medical utilization experiences, the presence of major life events in the past year, past suicide ideations, hopelessness, loneliness, self-rated health conditions, physical illness, and self-efficacy toward the control of personal illness or health maintenance were also collected. Patients' co morbidity data were based on electronic medical record information at discharge.

The Revised Five-Item Brief Symptom Rating Scale (BSRS-5R): The BSRS-5R checklist is a quick screening and self-report scale designed to evaluate a person's level of psychological distress during the week prior to the interview. Deriving from BSRS-5, it is a 5-item self-checking scale to assess if a person has recently been experiencing sleep-related problems (insomnia), feeling tense or keyed up (anxiety), feeling depressed (depression), feeling easily annoyed or irritated (hostility), or feeling inferior to others (inferiority) [28]. One point is given for every "yes" answer, and zero for "no", resulting in a total score of 5. It had an additional question asking whether the patient had suicidal thoughts, but this question did not count towards the final score. A score of 4 points or higher indicated high-risk group for suicide ideation or psychiatric morbidity such as depression [28]. The scale of BSRS-5R was validated as a simple and effective tool for mental health screening in both community and psychiatric settings.

The Chinese SAD PERSONS Scale (CSPS): The SAD PERSONS was originally designed to screen for suicide risk to assist decision-making of hospitalization for ED attendees based on a 10-item mnemonic risk assessment scale. The modified 9 items in the validated CSPS [29] were sex, age, depressive disorders or past experience of attending psychiatric services, previous suicide

attempts, excessive ethanol or drug use, separated/ widowed/ divorced, organized self-harm act for the index presentation to the hospital, no social support, and stated future suicide intent. Each item is scored one point, with two points weighing for three items including depression or past experience of attending psychiatric services, suicidal act by means of methods requiring medical treatment, and stated future suicide intent. The score of five points or higher could predict 6-month repetition of self-harm, indicating a higher risk for suicide [29].

Depression-related Mental Health Literacy: The concept of MHL in this study was defined as the capability to recognize depressive symptoms as described in two case vignettes (Mr. Chen & Mrs. Lee) and to attribute the cause of symptoms [24]. The scenarios of a middle-aged male and an elderly female version of depression were developed by the principle investigator and her research team based on our prior study [24]. Mr. Chen's symptom descriptions were as follows: "Mr. Chen is 46years old and unmarried. For the past month, he has been feeling depressed, tired, tense and irritable during the day, and having difficulty concentrating at work. He has been thinking a lot at night and experiencing sleep problems. After recently being fired at work, he had a poor appetite and felt painful to be alive. Is he ill?" The patients were asked to choose an answer from the following five options representing their attributions of the case symptoms: (1) no illness, simply a bad mood; (2) having physical illness; (3) having mental illness; (4) having both physical and mental illness; (5) having been possessed by evil spirits or being. Patients who chose item (3) or (4) were considered as having relatively correct answer and higher level of MHL for depression. The rationale of designing the case vignettes and defining higher MHL level were based on previous study in the Taiwan Social Change Surveys [24]. In this study we used the same approach to investigate the participants' knowledge and interpretations of depression for both vignettes as an indicator of the level of MHL. Higher MHL means the participant recognized both scenarios as depression, with correct attributions of both cases as having mental and physical problems.

Mental health help-seeking experience and intentions: The participants were asked whether they had experienced any of the depressive symptoms presented in the case vignette. Those responding 'yes' to the above questions were subsequently asked whether they had sought help and the source of the help sought. 'Formal help-seeking' referred to contacts with physicians or psychiatrists at different service sites including emergency, outpatient and inpatient services. 'Informal help-seeking' referred to help sought or disclosure of mental distress to friends, family, colleagues, or any other non-professional help. One patient could seek help from more than one source. Moreover, the patients were further asked about the reasons they wish to (or not wish to) discuss their mental distress with their doctors, regardless of her/his professional background.

The Mental Health Knowledge Schedule: The scale was designed to assess help-seeking behavior and personal attitude and knowledge toward mental health [30]. It is composed of a six-item evaluation of personal knowledge about stigma-related mental health, including help seeking, illness recognition, support, employment, treatment, and recovery issues. In addition, there

were six items evaluating the respondents' knowledge of mental illness conditions. For example, the respondents were asked, "Please say to what extent you agree or disagree that each of the following conditions is a type of mental illness: A. depression, B. stress, C. schizophrenia, D. bipolar disorders, E. drug addiction, F. grief." The ratings are from 1 (strongly disagree) to 5 (strongly agree), with a higher score indicating more agreeableness to the item. The test-retest reliability in sub-sample analysis (n=23) showed a significant correlation coefficient ($r=0.79$).

Perceived need for help: The "barriers to treatment" related questions used in the WHO Mental Health Survey [31] and in another study [32] were combined and tested for reliability and validity in this study. This is a variable composing of three main factors, i.e., low perceived need for mental health service, structural barriers and attitudinal barriers [31]. The ratings are from 1 (strongly disagree) to 5 (strongly agree). The internal consistency was good with Cronbach's alpha value of 0.81. The initial validity findings indicated that the measurement could be classified as four main factors of appraisal of mental distress and coping, cognitive and personal barriers, attitude towards medical services, and accessibility to medical services, with a good factor loading of 0.7945. It was shown to be a valid and reliable scale assessing the respondents' help-seeking attitudes and perceived need for help.

Statistical Analysis

The statistical analysis was performed using SPSS 16.0. The significant level was set at 0.05. The dichotomous outcome variable was defined as the level of depression-related mental health literacy (higher/lower), which refers to recognition of symptoms as mental or mental-and-physical problems based on the scenario presented in two case vignettes. In the question we evaluated the MHL level, the responses of mental (item 3) or physical-and-mental (item 4) illnesses toward the cases were viewed as relatively higher level of MHL, while other items including not ill, simply physical illness or supernatural explanations were classified as relatively lower level of MHL [24]. We categorized the patients' responses in the scale of "perceived need for help" as agree or disagree because the data were somewhat skewed to the lower level of agreeableness as a whole; however, responses in the scale of "mental health knowledge and attitude" were analyzed by its original 5-point score due to its relatively even distribution of results. Independent t-test was performed for between-group differences (i.e., high and low MHL) in continuous variables; Chi-square test was used for categorical variables.

RESULTS

Demographics and psychosocial characteristics

A total of 384 patients were recruited. The response rate was 30.7% after excluding those with severe medical conditions and unable to be interviewed at the ED. There is no gender difference between patients who completed the full questionnaires and those who did not. The participants had the mean age of 52.1years (SD=14.1, range 20-92) (Table 1). They were predominately male (63%), living with others (89.1%), married (61.7%), religious (68.2%), employed (51.3%), and had more than one medical

Table 1: The sociodemographics, physical and mental conditions of the participants (n=384).

Variables	n (%)
Age, Mean \pm SD [†]	52.12 \pm 14.06
20-44	117 (30.5)
45-64	194 (50.5)
\geq 65	73 (19.0)
Gender	
Male	242 (63.0)
Female	142 (37.0)
Education	13.11 \pm 4.04
\leq 9 years	86 (22.3)
10-12 years	113 (29.4)
\geq 13 years	185 (48.2)
Marital Status	
Single	90 (23.4)
Married/ Cohabitation	237 (61.7)
Divorced/Separated	38 (9.9)
Widowed	19 (4.9)
Living Situation	
Living alone	42 (10.9)
Living with others	342 (89.1)
Religion	
Buddhism	132 (34.4)
Taoism	100 (26.0)
Christianity	30 (7.8)
No Religion	122 (31.8)
Employment	
Employed	197 (51.3)
Unemployed	91 (23.8)
Retired	96 (25.0)
Medical comorbidity [‡] , Mean \pm SD	2.66 \pm 1.50
One diagnosis	92 (24.0)
Two diagnoses	121 (31.5)
More or equal to three diagnoses	171 (44.5)
Medical utilization in the past three months	
Outpatient service use	344 (89.6)
Emergency service use	141 (36.7)
Hospitalization	110 (28.6)
Mental distress assessed by BSRS-5R [†] , Mean \pm SD	1.73 \pm 1.48
Total score, \geq 4	56 (14.6)
Having sleep-related problems	221 (57.6)
Feeling tense or keyed up	144 (37.5)
Feeling easily annoyed or irritated	87 (22.7)
Feeling inferior to others	74 (19.3)
Feeling depressed	139 (36.2)
Suicide risks assessed by CSPS [†] , Mean \pm SD	2.33 \pm 1.59
Total score, \geq 5	35 (9.1)
High-risk group for mental illness [§]	77 (20.1)
Had suicide thoughts during the past week	24 (6.3)
Seriously considered suicide at some point during the lifetime	68 (17.7)
Had suicide attempt/self-harm behavior in the past	24 (6.3)

[†]SD: Standard Deviation; BSRS-5R: The Revised Five-item Brief Symptom Rating Scale; CSPS: The Chinese SAD PERSONS Scale
[‡]Comorbidity data was based on electronic medical record information at discharge.
[§]The high-risk group refers to individuals who received a score of either BSRS-5R \geq 4 or CSPS \geq 5.

diagnosis (76%). The average of BSRS-5R and CSPS scores were 1.73(SD= 1.48) and 2.33(SD=1.59) respectively. The prevalence of patients with higher risk for mental health problems were about 20.1% (defined as BSRS-5R \geq 4 or CSPS \geq 5). In terms of specific suicide risks among this emergency population, 17.7% of the patients had lifetime suicide ideations; 6.2% had recent suicidal thoughts in the past 7 days or had ever self-harmed/attempted suicide (n=24, respectively).

Depression-related mental health literacy

Table (2) revealed that 245 (63.8%) patients correctly identified both Mr. Chen and Mrs. Lee's described symptoms in the scenarios as having mental or physical-and-mental health problems, which was defined as higher level of MHL in this study (i.e. the outcome variable). That is, about one in three (36.1%) failed to provide correct answers of the potential illness of the two cases. Among those who could recognize mental health issues of the two case vignettes (n=245), 36.7% of them (n=90) could further attributed the conditions as depression. There were no socio-demographic, medical risks and self-perception differences between patients with higher and lower MHL.

Mental health literacy toward common mental illnesses

Figure (1) presented the percentages of selected psychiatric diagnoses that were perceived as mental illnesses by the participants. The results showed that the participants agreed most of the listed terminology as mental illnesses. Over 80% of the patients agreed that depression and bipolar disorder are mental illnesses. However, higher degree of disagreement was found in acknowledging "grief" as a mental illness; some patients argued that it is merely a "normal reaction" to a sad event rather than a diagnosable mental health problem.

Table 2: Mental health literacy in depressive symptom recognition and attribution toward the two case vignettes.

	Mr. Chen n (%)	Mrs. Lee n (%)
Response items toward symptom cause:		
1. Not ill, just bad mood	62 (16.1)	79 (20.6)
2. Physical health problems	7 (1.8)	26 (6.8)
3. Mental health problems [†]	169 (44.0)	140 (36.5)
4. Both physical and mental [†]	146 (38.0)	138 (35.9)
5. Possessed by evil spirits or being	0 (0)	1 (0.3)
Recognition of mental health problems:		
Higher MHL [†] (Correct answers for both cases)	245 (63.8)	
Lower MHL (Either one or both were wrong)	139 (36.2)	
Attribution of case scenario as depression*:(n=245)	90 (36.7)	

[†]Higher mental health literacy level refers to participants' awareness of both cases' mental health problems and recognized the conditions as mental (Item 3) or mental-and-physical (Item 4) causes of the symptoms (both belong to correct answers).
*Correct attribution of the cases' mental health problems as depression reflected that the participant had better ability in the interpretation of depressive symptoms.

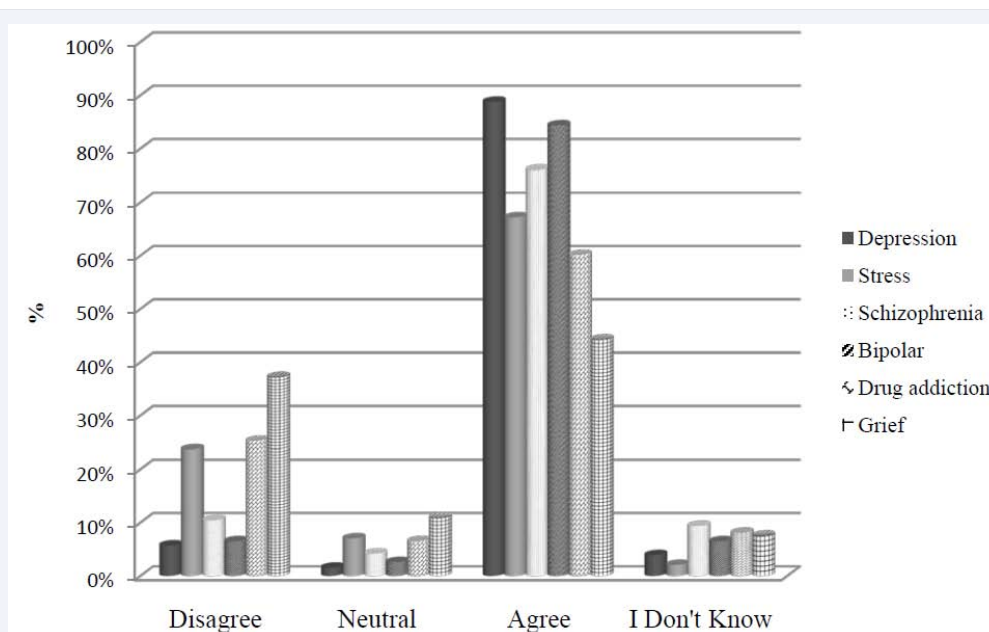


Figure 1 The participants' agreeableness of selected mental health problems as being mental illnesses (n=384).

Mental health literacy and associated factors

With better MHL were characterized as having a slightly higher level of mental distress assessed by BSRS-5R or CSPS (thought insignificantly) and better perceived need or positive attitudes and knowledge for mental health (Table 3). In addition, we found that higher level of MHL was correlated with more positive attitude or better recognition toward mental health problems, i.e., patients with higher MHL level had greater knowledge and more optimistic attitude towards such problems and their treatment (Table 4). For example, patients with higher MHL had more agreeable attitudes to the following statements: "people with mental health problems would want to have a job" (Item1), "I know how to give advice to friends/family if they have mental health problems" (Item 2), "I believe that medications (Item3) and counselling (Item 4) can effectively treat such problems, these people can fully recover (Item5) and they tend to seek professional help (Item 6)". Significant differences between the attitudes of people with high/lower MHL were found in Item 2 & 6. That is, ED patients who had higher MHL level were prone to have faith in giving advice for friends with mental health problems and getting connection with professional help. In addition, patients with better MHL were significantly more likely to agree that "Grief" is a kind of mental illness.

These results indicated that higher literacy was associated with self-efficacy in helping people and better acceptance of formal help-seeking or recognition of grief, which in turn may facilitate early detection and treatment referral of mental illnesses (such as depression).

DISCUSSION

General findings

To our knowledge, this is the first study that investigated the issue of mental health literacy among ED attendees in an Asian

country. In our sample, about one in three participants (36.2%) failed to recognize potential mental health problems described in the case vignettes, i.e. a relatively high percentage of participants (63.8%) had correct concept toward the cause of depressive symptoms. Among those who could correctly recognize mental health problems, about 36.7% could further attribute the scenario as depression. Higher MHL level was associated with patients being more likely to give psychologically distressed friends proper advices, having fewer perceived stigmatized attitudes of psychiatric services, and more optimistic views about mental health treatments. These results suggested that emergency patients with better MHL were characterized as having potential gate keeping roles and favorable attitudes of acceptance toward professional treatment rather than holding stigmatized attitudes toward mental illnesses.

Mental health attitudes and literacy

Stigma has been a common barrier to seeking help from psychiatric service [8]. Our findings supported the concept that less stigmatized attitude toward mental illnesses. Specifically, we found that perceived ability to give advice and faith in professional help for people with mental health problems were associated with better depression recognition. The finding was consistent with others that support the idea that increasing MHL can produce positive changes in attitude and reduce stigma associated with mental health problems [34]. Patients with higher MHL may have more accurate understanding of depression, thus leaning towards a healthier attitude to formal treatment in psychiatric services. The fact that higher MHL were associated with more positive attitude towards the treatment of mental illnesses has important implications. Patients are less likely to seek help if they think professionals cannot alleviate their symptoms or their problems are not curable [33-36]. For example, during the study period when the researcher attempted to refer depression or suicide high risk patients to psychiatric services, some patients

Table 3: The associations between depression-related mental health literacy level and related factors.

	Level of MHL		t	p-value
	Lower (n=139)	Higher (n=245)		
BSRS-5R	1.71 ± 1.48	1.75 ± 1.48	-0.27	0.79
CSPS	2.25 ± 1.55	2.38 ± 1.62	-0.76	0.45
Perceived MH need	33.88 ± 7.52	34.02 ± 8.20	-0.16	0.88
MHKS_Attitudes	19.76 ± 3.02	20.91 ± 2.85	-3.2	0.001**
MHKS_Knowledge	22.10 ± 3.79	22.69 ± 3.97	-1.25	0.21

Table 4: The relationship between the level of mental health literacy.

Depression-related MHL					
Item in the MHKS	Lower		Higher		t
	M	SD	M	SD	
Attitude to mental illness:					
1. People with mental health problems would want to have a job	3.68	1.09	3.71	0.99	-0.31
2. If my friend has a mental health problem, I know how to give him/her advice to seek professional help	3.41	1.02	3.76	0.95	-3.32**
3. Medications can effectively treat mental health problems	3.11	1.16	3.26	1.13	-1.14
4. Counselling can effectively treat mental health problems	3.94	0.65	4.01	0.67	-1.00
5. People with severe mental health problems can fully recover	3.03	1.02	3.24	1.06	-1.76
6. Most people with mental health problems would seek professional help	2.57	1.03	2.94	1.07	-3.13**
Knowledge of mental health problems					
A. Depression	4.12	0.84	4.21	0.79	-1.05
B. Stress	3.44	1.16	3.63	1.04	-1.51
C. Schizophrenia	4.06	0.95	4.00	.96	-0.51
D. Bipolar	4.11	0.79	4.09	0.85	-0.21
E. Drug addiction	3.47	1.10	3.51	1.20	-0.32
F. Grief	2.83	1.24	3.24	1.18	-3.04**

†The assessment of mental health attitudes and knowledge in the "Mental Health Knowledge Schedule" (MHKS) were based on a 5-point rating scale, in which higher score indicates a higher level of agreement with the statements listed above.

**p<.01

refused and replied "the doctor cannot help with my problem". Therefore, by providing proper education regarding the nature of depression and its prognosis, the patients' motivation to seek professional help could preferably be increased. The perceived need for help did not significantly differ between patients with different levels of MHL. It is logical because despite the amount of knowledge, patients were equally likely to experience mental health need and psychological distresses.

Mental health literacy and the role of gatekeepers

Patients with higher MHL were more confident in giving advice to psychologically distressed friends. These patients may have better background knowledge and experiences associated with depression, thus would be more capable of providing support when facing the above situation. Moreover, patients who were able to recognize depression may be more willing to offer help because the increased understanding and empathy on what depressed individuals may have been experiencing;

[37] conversely, people may be less likely to assist someone if they think the individual is to be blamed for the symptoms. In other words, patients with higher MHL were more likely to play the role of gatekeepers for the identification of mental health problems or may be more likely to successfully refer patients with such problems to proper management. The gatekeeper concept is important because patients' first line of contact is usually informal sources (i.e., friends, family members), and obtaining timely support from the above sources or healthcare providers is beneficial for the depressed individuals. Only when the informal sources start to link people in need to mental health professionals, the patients can receive maximal benefits. As a result, an educational program designed to educate the public about depression is essential.

Clinical implications

Previous study revealed that about one in three residents in Taiwan had low health literacy [38]. Our findings had similar

results and filled the knowledge gap about the previously unknown prevalence of poor mental health literacy level among the ED patients, a population that has long been neglected with mental health care needs. Given that more positive attitudes toward gate keeping mental health problems and their treatment would affect mental health literacy among ED patients, the healthcare professionals should enhance their ability to provide better mental health care for those with lower level of mental health literacy or those with stigmatizing attitudes by identifying patients in need for help. Once the ED patients were reinforced about mental health literacy or destigmatized attitudes, there might be more gatekeepers disseminating positive forces in the medical settings. Particularly in the Chinese culture, it is common for people to visit certain doctors upon friends or family's recommendations, making the public gatekeeper concept a well-accepted strategy for professional help-seeking facilitation.

A mental health educational program targeting at the public would also be a gradual move towards mental health promotion and early prevention due to the establishment of a positive environment in the ED about better mental health care quality. As mentioned above, people with better recognition of depression were more likely to act as a mental health gatekeeper, linking potential depressed patients to psychiatric services. Therefore, a successful educational program may aid the early identification of depression. Besides covering the signs of depression, the program can also clarify the nature of psychiatric services, emphasizing the importance of professional help and positive attitudes toward help-seeking for mental health problems.

Lastly, we found that using case vignettes to discuss mental health literacy appeared to be a considerable strategy to measure literacy level and to facilitate responses of perceived depressive symptoms among Chinese emergency attendees. That is, patients were more likely to identify their own depressive symptoms when given a case vignette. Therefore, when screening for mental health status in clinical settings, it may be useful to provide a case example to the patients for reference. For example, physicians may ask "some other patients with this condition also present symptom X, do you experience this symptom?" By normalizing mental illnesses' symptoms, patients may be less defensive, more willing to discuss their feelings and truly revealed their present mental health problems.

Strengths and Limitations

The present study was among the few that discussed factors associated with mental health literacy in ED patients. One of the strengths is that we adopted heterogeneity of patients with physical and/or mental conditions and different age groups in the ED, which findings may be more generalizable to the public who access to such service in Taiwan and elsewhere with similar medical service system.

One of the limitations of the present study is small sample size. The numbers of people with relatively higher level of MHL were not enough for secondary analysis. With a greater number of participants, stronger relationships may emerge. Moreover, some high-risk patients presented with acute adjustment disorders due to physical illness may have a different level of MHL compared to the true chronic depressed patients, which may

affect the results. The MHL of those who refused to participate may be different from those who were willing to participate, i.e., selection bias may be present in this study. Likewise, those who refused to discuss about their mental health status may have different level of MHL with various influencing factors. However, the researchers had retrieved all possible participants' responses to every question in the questionnaire, and people with refusal were not much different from the study participants in terms of their gender. Lastly, unlike previous studies on health literacy [38] only one question regarding depression recognition was used to determine patients' level of MHL in the current study, which may present a risk for weaker accuracy. In our defense, this method has been used in the past study, [7, 24] and it has yielded good results. Nonetheless, more evidence is needed in the validity of this method to provide well-rounded understanding of ED patients' level of MHL.

CONCLUSION

Emergency patients with higher level of mental health literacy were more likely to be able to help others in need, having less stigmatized attitudes and more confidence toward mental health treatment. The result supported the importance of mental health literacy in different levels, including willingness to receive treatment and the implementation of the gatekeeper concept. Mental health literacy may help to shape an individual's gate keeping role and stigmatized attitudes for mental illness. Promoting mental health literacy to enhance the recognition of depression among emergency patients may be needed to promote help-seeking and prevent early-stage mental health problems.

ACKNOWLEDGEMENTS

The study is funded by the Ministry of Science and Technology (Study ID: MOST 103-2314-B-002-014). The authors were extremely grateful for the devoted work done by the research assistance, Ms. Chin-Ching Chang. We were also thankful to administrative assistance offered by the vice director of the Emergency Department, also the supervisor of the Nursing Department in the study hospital, Mrs. Bey-Jing Yang. The nursing staffs that helped to arrange the patients for study interview were also acknowledged.

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Cite this article

Wu CY, Lee MB, Fang CC, Liu SI (2016) Factors Associated with Depression-Related Mental Health Literacy in Patients who Attend Emergency Services in Taiwan. *Arch Emerg Med Crit Care* 1(2): 1009.