

Original Research

Psychometric properties of a mental health literacy questionnaire for university students in Indonesia

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Received (first version): 13-Dec-2022

Accepted: 10-Jan-2023

Published online: 06-Jun-2023

Abstract

Background: Mental health literacy is necessary for early recognition and intervention of mental disorders. Its multifaceted structure provides useful perspectives for developing a tool to assess mental health literacy. **Objective:** This study aimed to adapt the Mental Health Literacy Questionnaire (MHLq) designed to observe mental health literacy among university students and to test its construct validity and internal consistency. The impact of a sociodemographic variable on mental health literacy score was also explored. **Methods:** A number of 650 university students participated in this study. The questionnaire items were adapted using a backward forward translation. An exploratory factor analysis was conducted to examine the construct validity. Internal consistency of the questionnaire was tested using Cronbach's Alpha. **Results:** The results showed that the MHLq modified version possessed good validity and reliability (total scale $\alpha=0.821$) that may be used as a screening tool by mental health professionals and researchers to identify intervention needs among university students. **Conclusions:** This study also found that individuals who identified knowing someone with a mental health problem performed better on the MHLq global score and three-dimensional factors than those who did not. Future studies are needed to further develop and adapt the questionnaire to reach different target-populations.

Keywords: mental health literacy; MHLq; validation; Indonesia

INTRODUCTION

Mental disorder is the most common challenge that both current and future generations will face as it is among the most prevalent health issues affecting the adult population.^{1,2}ISSN:"1353-8292",abstract:"People differ in their potential for psychological restoration but there is little evidence on the role of varying mental health state or settings in the process. This paper reports two quasi-experiments which compare the restorative benefits of walking in urban and rural settings in two groups of adults with good and poor mental health. Two aspects of restoration are examined, firstly mood, the other using personal project techniques (Little, 1983 Common mental disorders are highly prevalent among young adults in the twenties, and those who suffer from one mental disorder in their twenties have a significantly increased risk of developing another disorder ten years later.³ According to the Canadian Public Health Survey, the age group that is most likely to experience mental health disorders is young adults, accounting for 18.4 percent of the total population.⁴in comparison to older adults (25–64 years of age This is highly

concerning since mental disorders may lead to interference with young people's ability to complete age-relevant tasks in important developmental periods.³ Furthermore, mental disorders in the young adult period are linked to the possibility of future health problems.⁵but whether this is true of mental disorders in the community, and how generalized (across a range of physical health outcomes

It has been argued that mental health literacy is considered necessary for early recognition and intervention in mental disorders. Mental health literacy is an evolving construct that is increasingly informed by a developing and more comprehensive approach to health literacy.⁶ Jorm *et al.* in 1997 introduced mental health literacy as "knowledge and beliefs about mental disorders which aid their recognition, management or prevention".⁷ The concept was later refined to include knowledge that benefits the mental health of a person or others, including: knowledge of how to prevent a mental disorder; recognition of disorders when developing; knowledge of effective self-help strategies for mild-to-moderate problems; and first aid skills to help others.⁸

Mental health literacy has recently received a lot of attention as a way to improve mental health knowledge, reduce stigma, and enhance help-seeking behavior. The multifaceted structure of the construct provides a useful tool for assessing the factors that may affect an individual's mental health. Numerous studies have developed a number of measures to assess mental health literacy in various populations and settings. One of the studies by Jorm *et al.* developed the Vignette Interview, which describes a person with a mental health problem and asks a series of questions about the participants' understanding of what is "wrong" with the person in the vignette.^{7,9} Despite its limitations, such as the lack of a total or subscale score, it has

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been the most widely used. Currently, there are a variety of alternative measures available, particularly those that generate a total mental health literacy or subscale score: the Mental Health Literacy Scale;¹⁰ Mental Health Knowledge Questionnaire,¹¹ the vignette and self-constructed questionnaire based on Jorm *et al.*,^{7,12} Mental Health Literacy Questionnaire for young people¹³ and young adults.¹⁴ and for this reason, it has become a focus of research over the past few decades. Assessing this construct is relevant for identifying knowledge gaps and erroneous beliefs concerning mental health issues, to inform the development of interventions aimed at promoting mental health literacy as well as the evaluation of these interventions. Recently, we developed a new self-reporting measure (MHLq

The Mental Health Literacy Questionnaire (MHLq) is a valid and reliable self-report instrument for assessing mental health literacy in young people from a more contemporary and comprehensive view of the construct, avoiding the focus on specific mental disorders.¹³ It overcomes several limitations of other mental health literacy instruments by providing a brief, valid and reliable self-report assessment, based on a comprehensive approach to this construct.¹⁴ and for this reason, it has become a focus of research over the past few decades. Assessing this construct is relevant for identifying knowledge gaps and erroneous beliefs concerning mental health issues, to inform the development of interventions aimed at promoting mental health literacy as well as the evaluation of these interventions. Recently, we developed a new self-reporting measure (MHLq The questionnaire contains 33 items, classified into three subscales: first aid skills and help seeking, knowledge/stereotypes, and self-help strategies. The MHLq form is able to be adapted into other languages by ensuring its reliability and validity within local cultures.¹⁴ and for this reason, it has become a focus of research over the past few decades. Assessing this construct is relevant for identifying knowledge gaps and erroneous beliefs concerning mental health issues, to inform the development of interventions aimed at promoting mental health literacy as well as the evaluation of these interventions. Recently, we developed a new self-reporting measure (MHLq This study aimed to adapt the MHLq designed to assess mental health literacy among university students and to test its construct validity and internal consistency, as well as to explore the differences in mental health literacy score based on proximity to people with mental health problems.

METHODS

The present study began by adapting the Mental Health Literacy Questionnaire (MHLq)¹⁴ and for this reason, it has become a focus of research over the past few decades. Assessing this construct is relevant for identifying knowledge gaps and erroneous beliefs concerning mental health issues, to inform the development of interventions aimed at promoting mental health literacy as well as the evaluation of these interventions. Recently, we developed a new self-reporting measure (MHLq into the Indonesian language using a backward forward translation. The first section of the questionnaire asked about participants' sociodemographic information, such as age, gender, college,

marital status, paternal education level, family income, and relation to a person with mental disorders. The other section of the questionnaire included 33 items that assessed students' mental health literacy. The questionnaire was administered to a group of university students in Yogyakarta, Indonesia. A sample of 600 participants was estimated, targeting students from five universities from various faculties, including: Medicine, Pharmacy, Science, Economics and Business, Law, and Art and Language faculties. Exploratory factor analysis and Cronbach's Alpha were used to examine the questionnaire's psychometric properties, including construct validity and internal consistency. Both analyses were used to determine the final structure of the adapted instrument as complementing approaches.¹⁵ For the factor analysis, the following criteria were used: a) item loadings greater than or equal to 0.20; and b) the content of items loading in factors should be consistent with the underlying theoretical content. The data was analyzed using SPSS ver. 20 (SPSS, Chicago, IL, USA).

RESULTS

The modified version of the Mental Health Literacy Questionnaire (MHLq) was administered to 650 students from five universities in Yogyakarta, Indonesia, including students in their second year (33.85%), third year (22.00%), and fourth year (44.15%) of study. Half of the students were from state universities (49.85%), while the other half came from private universities (50.15%). Majority of the students (52.00%) were from non-health field majors, while the rest were from health field majors (48.00%). The number of female and male students were 67.69% and 32.31%, respectively. The students' parents mainly worked as employee (53.38%), and the others were self-employed (28.15%) or were civil servant (18.46%). Of the students' parents education, most of them had less than university degree (54.46%), while the rest had university degree (45.54%).

The questionnaire was adapted from the Mental Health Literacy Questionnaire (MHLq) by Dias *et al.*¹⁴ and for this reason, it has become a focus of research over the past few decades. Assessing this construct is relevant for identifying knowledge gaps and erroneous beliefs concerning mental health issues, to inform the development of interventions aimed at promoting mental health literacy as well as the evaluation of these interventions. Recently, we developed a new self-reporting measure (MHLq A backward forward translation approach was used to adapt the original questionnaire into the Indonesian version. The validated version of the questionnaire featured 33 items in total, categorized into three factors: knowledge/stereotypes (17 items), first aid skills and help seeking (7 items), and self-help strategies (9 items). Table 1 shows the comparison of the original version of MHLq and the modified version after backward forward translation. Except for item number 2, 12, and 21, the majority of the items from the original MHLq remained unchanged.

An exploratory factor analysis using a fixed number of three-dimensional factors was conducted. The factor structure



No.	MHLq original version	MHLq after backward forward translation
1	If a friend of mine developed a mental disorder. I would offer her/him support	unchanged
2	Physical exercise helps to improve mental health.	Physical exercise contributes to good mental health
3	A person with depression feels very miserable.	unchanged
4	People with schizophrenia usually have delusions (e.g.. they may believe they are constantly being followed and observed	unchanged
5	If I had a mental disorder I would seek my family's help.	unchanged
6	If a friend of mine developed a mental disorder. I would encourage her/him to look for a psychologist	unchanged
7	Mental disorders don't affect people's behaviors.	unchanged
8	If a friend of mine developed a mental disorder. I would talk to her/his parents	unchanged
9	Good sleep helps to improve mental health	unchanged
10	If I had a mental disorder I would seek professional help psychologist and/or psychiatrist	unchanged
11	A person with anxiety disorder may panic in situations that she/he fears	unchanged
12	People with mental disorders come from families with little money	People with mental disorders belong to low-income families
13	If a friend of mine developed a mental disorder. I would listen to her/him without judging or criticizing	unchanged
14	Alcohol use may cause mental disorder	unchanged
15	Mental disorders don't affect people's feelings	unchanged
16	The sooner mental disorders are identified and treated. the better	unchanged
17	Only adults have mental disorders.	unchanged
18	Brain malfunctioning may cause the development of mental disorders	unchanged
19	If a friend of mine developed a mental disorder. I would encourage her/him to get medical support	unchanged
20	If I had a mental disorder I would seek my friends' help	unchanged
21	Having a balanced diet helps to improve mental health	A balanced diet contributes to good mental health
22	One of the symptoms of depression is the loss of interest or pleasure in most things	unchanged
23	A person with anxiety disorder avoids situations that may cause her/him distress	unchanged
24	If a friend of mine developed a mental disorder. I wouldn't be able to help her/him	unchanged
25	The symptom's length is one of the important aspects to determine whether a person has or does not have a mental disorder	unchanged
26	Depression is not a true mental disorder	unchanged
27	Drug addiction may cause mental disorders	unchanged
28	Mental disorders affect people's thoughts	unchanged
29	If a friend of mine developed a mental disorder. I would talk to the form teacher or other teacher	unchanged
30	Doing something enjoyable helps to improve mental health	unchanged
31	A person with schizophrenia may see and hear things that nobody else sees and hears	unchanged
32	Talking over problems with someone helps to improve mental health	unchanged
33	Highly stressful situations may cause mental disorders	unchanged

included: items related to knowledge and stereotypes (Factor 1); items related to first aid skills and help seeking (Factor 2); and self-help strategies (Factor 3). Table 2 presents the factorial structure of the MHLq modified version. Most of the items' factor loadings were greater than the criteria (0.2). Considering the factor loadings, five of the items should be eliminated from the questionnaire. Those five items, however, are compatible with the underlying theoretical content, thus implying that

they should be maintained.

Table 3 presents the internal consistency of the global score and the three-dimensional factors of the MHLq modified version. Cronbach's Alpha values were satisfactory for the global score ($\alpha=0.821$) as well as the other three factors: knowledge/stereotypes ($\alpha=0.768$), first aid skills and help seeking ($\alpha=0.793$), and self-help strategies ($\alpha=0.823$).



Table 2. Exploratory factor analysis of MHLq modified version and factor loadings

No	MHLq modified version	Factor 1	Factor 2	Factor 3
3	A person with depression feels very miserable.	0.732		
4	People with schizophrenia usually have delusions (e.g.. they may believe they are constantly being followed and observed)	0.643		
7	Mental disorders don't affect people's behaviors.	-0.576		
11	A person with anxiety disorder may panic in situations that she/he fears	0.573		
12	People with mental disorders belong to low-income families	0.549		
14	Alcohol use may cause mental disorder	0.529		
15	Mental disorders don't affect people's feelings	-0.522		
17	Only adults have mental disorders	-0.519		
18	Brain malfunctioning may cause the development of mental disorders	0.514		
22	One of the symptoms of depression is the loss of interest or pleasure in most things	0.511		
23	A person with anxiety disorder avoids situations that may cause her/him distress	0.498		
25	The symptom's length is one of the important aspects to determine whether a person has or does not have a mental disorder	0.488		
26	Depression is not a true mental disorder	-0.472		
27	Drug addiction may cause mental disorders	0.471		
28	Mental disorders affect people's thoughts	0.465		
31	A person with schizophrenia may see and hear things that nobody else sees and hears	0.459		
32	Talking over problems with someone helps to improve mental health	0.435		
33	Highly stressful situations may cause mental disorders	0.433		
1	If a friend of mine developed a mental disorder. I would offer her/him support		0.721	
6	If a friend of mine developed a mental disorder. I would encourage her/him to look for a psychologist		0.643	
	If a friend of mine developed a mental disorder. I would listen to her/him without judging or criticizing		0.621	
19	If a friend of mine developed a mental disorder. I would encourage her/him to get medical support		0.596	
24	If a friend of mine developed a mental disorder. I wouldn't be able to help her/him		-0.563	
29	If a friend of mine developed a mental disorder. I would talk to the form teacher or other teacher		0.532	
2	Physical exercise contributes to good mental health			0.543
5	If I had a mental disorder I would seek my family's help			0.523
9	Good sleep helps to improve mental health			0.511
10	If I had a mental disorder I would seek professional help psychologist and/or psychiatrist			0.498
16	The sooner mental disorders are identified and treated. the better			0.456
20	If I had a mental disorder I would seek my friends' help			0.433
21	A balanced diet contributes to good mental health			0.421
30	Doing something enjoyable helps to improve mental health			0.396
32	Talking over problems with someone helps to improve mental health			0.211

Table 3. Internal consistency of MHLq domain and global score

Domain	Alpha-cronbach
Knowledge/stereotypes (17 items)	0.768
First aid skills and help seeking (7 items)	0.793
Self-help strategies (9 items)	0.823
Global score (33 items)	0.821

The questionnaire consists of 33 multiple-choice items on a four-point Likert scale (from 1 = strongly disagree to 4 = strongly agree), arranged in three factors. Higher scores in all factors, as well as the total MHLq score (global score), indicate higher levels of mental health literacy. The global score for the 33 items of the MHLq modified version ranged between 1 and 132. The knowledge/stereotypes factor (Factor 1) score ranged between 1 and 68. The first aid skills and help seeking



factor (Factor 2) score ranged between 1 and 28. The self-help strategies factor (Factor 3) score ranged between 1 and 36.

Table 4 shows the differences in mental health literacy based on proximity to people with mental health problems. The differences are significant in the MHLq global score (p-value=<0.001) and all MHLq dimensions: knowledge/stereotypes (p-value=0.048), first aid skills and help seeking (p-value=<0.001), self-help strategies (p-value=<0.001). Participants who implied knowing someone with a mental health problem performed better on MHLq global score and the other three factors than participants who did not imply knowing someone with a mental health problem.

	Proximity to people with mental health problem		p-value
	Yes (mean, SD)	No (mean, SD)	
Global score ^a	123.25 (5.65)	109 (5.78)	<0.001
Knowledge/stereotypes ^b	61.23 (5.43)	59.28 (4.89)	0.048
First aid skills and help seeking ^c	25.34 (3.24)	20.91 (3.56)	<0.001
Self-help strategies ^d	32.35 (4.56)	29.27 (4.86)	<0.001

^arange score 1-132. ^brange score 1-68. ^crange score 1-28. ^drange score 1-36
*significant at p<0.05

DISCUSSION

The present study aimed to adapt the Mental Health Literacy Questionnaire (MHLq) designed to assess mental health literacy among university students, based on a previous study developed by Dias *et al.*¹⁴ and for this reason, it has become a focus of research over the past few decades. Assessing this construct is relevant for identifying knowledge gaps and erroneous beliefs concerning mental health issues, to inform the development of interventions aimed at promoting mental health literacy as well as the evaluation of these interventions. Recently, we developed a new self-reporting measure (MHLq for young adults). The construct validity and internal consistency of the MHLq modified version were also examined. Unlike other instruments, MHLq avoids the focus on specific mental disorders in its questionnaire items. Hence, it is a valid and reliable self-report instrument for assessing mental health literacy from a more up-to-date and comprehensive perspective of the construct.¹³ The MHLq is specially designed for its target populations and provides a practical approach to evaluating interventions aimed at promoting mental health literacy.^{13,14} "type": "article-journal", "volume": "15"}, "uris": [{"http://www.mendeley.com/documents/?uuid=19320569-034b-4ced-86f8-1042fa39609e"}], {"id": "ITEM-2", "itemData": {"DOI": "10.3390/ijerph15071318", "ISBN": "1660-4601", "abstract": "Mental health literacy (MHL) Several studies have developed and adapted MHLq for different target populations, such as for young people,¹³ adolescents,¹⁶ young adults,¹⁴ and for this reason, it has become a focus of research over the past few decades. Assessing this construct is relevant for identifying

knowledge gaps and erroneous beliefs concerning mental health issues, to inform the development of interventions aimed at promoting mental health literacy as well as the evaluation of these interventions. Recently, we developed a new self-reporting measure (MHLq university students,¹⁷ and refugee teachers.¹⁸ The MHLq modified version in the present study was administered to a sample of 650 participants. Exploratory factor analysis was performed to assess the construct validity. The results revealed that the questionnaire items were compatible with a three-dimensional factorial structure of the MHLq modified version. The three-dimensional factorial structure is also consistent with the multidimensional perspective of the construct of mental health literacy by Jorm.⁸ Internal consistency, measured by Cronbach's Alpha, revealed good reliability values for the global score and the three dimensional factors.

The MHLq modified version was used to observe the impact of sociodemographic variables on mental health literacy among university students. Significant differences in the global score and three-dimensional factors scores were found based on participants' proximity to people with mental health problems. According to this study, participants who identified knowing someone with a mental health problem performed better on the MHLq global score and three-dimensional factors than those who did not. The findings are in line with previous studies, providing support for the questionnaire validity. A study in Iran showed that having a personal or family history of mental disorders was associated with a higher mental health literacy score.¹⁹ A study in Australia also revealed similar results, in which individuals who have a close friend or family member with a mental disorder have significantly higher mean scores on all mental health literacy scales used in the study.²⁰ Individual awareness and behavior toward mental health problems may improve as a result of personal experiences with mental disorders. This may also lead to better mental health literacy in those individuals. The findings of a study by Kim *et al.*,²¹ confirm this argument, stating that psychological symptoms in individuals can have an impact on certain components of mental health literacy.

The present study has several limitations due to its cross-sectional design, such as selection bias. Participants in this study consisted of university students with a higher education level and a better understanding of the language. Increase diversity should be conducted in future studies, as the present study only provided participants from five universities in the same province. The inclusion of a more diverse sample would allow researchers to test the questionnaire items' translation appropriateness with individuals with different education levels and sociodemographic backgrounds. Another limitation is that the questionnaire items only covered three dimensional factors of mental health literacy. Future studies may explore other perspectives on multidimensional factors of mental health literacy.

CONCLUSION

The modified version of the Mental Health Literacy



Questionnaire (MHLq) is a valid and reliable instrument that may be used as a screening tool by mental health professionals and researchers to identify intervention needs in certain populations in various settings. This study also showed the differences in mental health literacy based on proximity to people with mental health problems. Future studies are needed to further develop and adapt the questionnaire to reach various target-populations.

ACKNOWLEDGEMENTS

I would like to extend my gratitude to all the participants of the study. This work would not have been possible without the financial support of the Universitas Gadjah Mada. This paper and the research behind it would not have been possible without the exceptional support of my supervisor, Susi Ari Kristina and Muhammad Junaid Farrukh.

DECLARATIONS

Ethical approval and consent to participate: The study was approved by the Medical and Health Research Ethics

Committee (MHREC) Faculty of Medicine, Public Health and Nursing, Universitas Gadjah Mada (Reference KE/FK/1265/EC/2022). We confirm that the study was carried out according to internationally approved guidelines for human research in the declaration of Helsinki. Written consent was taken from all the participants of the study prior to their participation in the study.

Consent for publication: Not applicable.

Conflicts of interest: The authors declare that they have no competing interests.

Author contribution: The authors confirm contribution to the paper as follows: study conception and design: PP, SAK; data collection: PP, SAK; analysis and interpretation of results: MJF, SAK; draft manuscript preparation: PP, SAK, MJF. All authors reviewed the results and approved the final version of the manuscript.

Funding: The study is funded by the Post-doctoral research grant, Universitas Gadjah Mada.

Availability of data and materials: Not applicable.

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