

## The Relationship between Mental Health Literacy and General Health in Female Adolescents

### ABSTRACT

**Background and Objectives:** It has identified health literacy as one of the most important determinants of health status. Considering the importance of mental health literacy (MHL), the aim of this study was to determine the level of mental health literacy and its correlation with general health in female middle school students.

**Materials and Methods:** This cross-sectional study was conducted during the academic year of 2018. First of all, three education districts were randomly selected in Mashhad. Then three female middle schools were randomly selected from those districts. Students in all three schools were included in the study through convenient sampling. A total of 638 female students contributed to the study. Goldberg and Hillier's version of the General Health Questionnaire (GHQ-28) and the Mental Health Literacy Scale (MHLS) were used. The data were analyzed using SPSS version 22.

**Results:** The mean (SD) MHL and GHQ-28 were 127.69(9.58) and 23.71(12.82), respectively. Students in upper grade with graduate and employee's fathers had significantly higher MHL ( $p < 0.05$ ). Students whose mothers were employees had a significantly better scores in GHQ-28 ( $p < 0.001$ ). More than 70% of students had no somatic symptoms, anxiety, or depression. Around 53.2% of students had low disorder in the social function subscale. Based on the results, there was a significant negative correlation between MHL and depression ( $p < 0.05$ ).

**Conclusion:** Based on our results, better mental health literacy led to lower depression in female middle school students.

**Paper Type:** Research Article

**Keywords:** Mental health literacy, General health, Adolescents

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## Introduction

Nowadays, mental health disorders have been considered as one of the most common health problems; moreover, they lead to more than 30 percent disabilities and premature deaths in a lifetime (1, 2). About 75% of all mental health disorders begin at age 14, and affect 10% to 20% of children and adolescents, respectively (3, 4). Research on the mental health of Iranian adolescents has shown that female adolescents experience more mental disorders than male adolescents (2, 5).

Untreated mental health disorders can lead to educational, interpersonal, family, and social problems, and reduce life expectancy due to related disabilities (2, 6). In general, mental health problems can significantly reduce the quality of life and impose significant economic and social burdens on communities. Therefore, designing and implementing appropriate control strategies to manage mental health problems should be one of the significant priorities in all countries (2, 7, 8).

Like other countries, Iran has a high prevalence of mental disorders. The rate of mental disorders in the first national mental survey in Iran was reported as 21%; furthermore, one study in 2007 reported the prevalence rate of mental disorders in Iran as 34.2% (9). Several individual studies have also reported a high and increasing prevalence of mental disorders in the country. Therefore, in line with global trends, Iran faces the challenge of a high prevalence of mental disorders. It was evidenced that mental disorders is the second burden of disease in Iran (10). Also, due to the young population of the country, the prevalence of mental disorders among Iranian children and adolescents has attracted great attention. A population-based survey

on children and adolescents aged between 6 and 18 years across all provinces of Iran reported

that more than 22% of the participants had at least one mental disorder (11). Another National Mental Health Survey reported that 21% of the participants aged 15–19 years suffer from at least one mental disorder (12). Several studies have also reported a high prevalence of mental disorders among students (13–15). Therefore, in recent years the attention of Iranian policy makers has turned to appropriate interventions and services to improve students' mental health. Although mental health problems are frequently reported in adolescents, there is a large gap between the proportion of people who need mental health care and those who receive it, which one of the main and important gaps in MHL concept (2).

Results of a systematic review demonstrated that a higher level of health literacy in adolescents leads to better health outcomes (16). Mental health literacy is a subset of health literacy that refers to knowledge and beliefs related to mental disorders that can lead to identify, manage, and prevent mental disorders (17). The rate of diagnosis and treatment of mental problems is lower in people with an insufficient level of MHL (18). Mental health literacy consists of items relating to knowledge of where to seek information relating to mental health, risk factors, and causes of mental health problems, self-treatment, professional help available, recognition of disorders, and attitudes that promote recognition or appropriate help-seeking behavior (19, 20). Studies have shown that people with adequate MHL have better disease care behaviors, are more aware of how to seek health-related information, and have a better quality of life (21). Furthermore, people with limited MHL do not seek mental health services, which in turn leads to worsening mental health conditions (6). Despite of the importance of MHL, its potential effects on physical or social

health have been less studied (8, 20).

Although population growth has declined in the last decade, Iran is still the second youngest country in the Middle East (22). Adolescents whose health plays an important role in the efficiency and dynamism of communities, and they are considered as one of the most important vulnerable age groups in any society (16). Adolescents' health is significantly affected by changes due to physical and mental development during this period (16, 23). Findings of a study demonstrated that more than 22% of Iranian children and adolescents between 6 and 18 years old had at least one mental problem (24). Moreover, other findings from a study showed that more than 20% of Iranian adolescents aged 15-19 years suffer from at least one mental disorder (25). Other studies have also reported a high prevalence of mental disorders among Iranian adolescents (7, 26, 27). Therefore, paying more attention to the health of female adolescents is particular importance because of the high prevalence of diseases in women and the vulnerability of women for reasons such as pregnancy and childbirth (28). Health literacy is identified as one of the most important determinants of health status (16). Considering the importance of MHL as one of the main components of health literacy, the aim of this study was to investigate the status of MHL and its relationship with general health in female middle school students in Mashhad, Iran.

## Materials and Method

### Study Design and Setting

This is a cross-sectional study that was conducted in the governmental schools of Mashhad city. Mashhad city is the second largest city in Iran. This city is the spiritual capital of Iran. After Tehran city (the capital of Iran), Mashhad city has the largest population in Iran with more than 3 million

people. This cross-sectional study was conducted in November 2018 at three middle schools that were randomly selected from three different (District 1, District 3, and District 5) of Mashhad.

### Study Population

The study samples were middle school students who registered for the academic year 2018 and 2019. We excluded any participants who did not complete the questionnaires or did not agree to be part of the study. By considering 50% as the maximum expected prevalence of optimal MHL (no previous study available), 95% confidence interval, 0.5% error level, and 0.04 accuracy, the sample size was calculated as 600 persons. With 10% dropout, the final sample size estimated 660 persons. Due to incomplete questionnaires, twenty-two questionnaires were removed. Finally, a total of 638 female middle school students participated in this study. In this study, the status of MHL and its relationship with general health in female middle school students (seventh, eighth and ninth) were examined.

$$n = \frac{(z_{1-\frac{\alpha}{2}})^2 p(1-p)}{(d)^2}$$

### Sampling

First of all, three education districts were randomly selected from all education districts in Mashhad then three female middle schools were randomly selected from those districts. Finally, based on convenient simple

### Data Collection and study tools

In this study, the Goldberg and Hillier's version of the General Health Questionnaire (GHQ-28) and the Mental Health Literacy Scale (MHLS) (29) were used to measure general health and mental health among study population(30).

The GHQ-28 questionnaire was designed and introduced as a screening tool to identify those who are at risk for mental disorders or at risk for

the development of mental disorders. This tool contains 28 questions to assess the prevalence of mental health disorders. Each question has four options which scored between 0-3. In this questionnaire, disorders are divided into four categories. For each subgroup, a score of 0 to 6 considered as the without disorder, 7 to 11 as low disorder, 12 to 16 as moderate disorder, and 17 to 21 as severe disorder. For the whole questionnaire, the score 0 to 22 was considered as without disorder, 23 to 40 as low disorder, 41 to 60 as moderate disorder, and 61 to 84 as severe disorder. Participants with a higher score are more likely to have a disorder. In this questionnaire, a cut point of 6 is considered for each part and a cut point of 23 is considered for the whole questionnaire. The validity and reliability of the Persian version of this questionnaire have been evaluated in other study and Cronbach's alpha was calculated 0.923 for the whole questionnaire. Cronbach's alpha for somatic symptoms, anxiety, social function and depression, were 0.865, 0.833, 0.746, and 0.897, respectively (31). In the present study, Cronbach's alpha was 0.89.

The MHLS has 35 questions which are graded with a 5-point Likert scale from 1 to 5. The measure is scored from 35 to 160 which higher scores indicating a higher level of MHL. This measure evaluate the knowledge to seek information relating to mental health, risk factors and causes of mental health problems, self-treatment, professional help available, recognition of disorders, and attitudes that promote recognition or appropriate help-seeking behaviors(30). In this study, the Persian version of MHLS with a Cronbach's alpha coefficient 0.89 was used (32). Cronbach's alpha coefficient was calculated as 0.92 in this study.

### Statistical Analysis

Data were analyzed using descriptive statistics (mean and standard deviation) and analytical

methods (independent t-test, ANOVA and Pearson correlation test) by SPSS software version 20. A significance level of 0.05 was considered in all analyzes.

### Ethical Considerations

This study is based on a research project approved by Ethics Committee of Mashhad University of Medical Sciences with the code of ethics IR.MUMS.REC.1399.437. All procedures performed in this study were in accordance with the ethical standards of the institutional and/or national research committee and with the 1964 Helsinki declaration and its later amendments or comparable.

Consent was requested from all participants in the study. Privacy, as well as confidentiality, was respected for all study participants. Data was kept and only used for scientific purposes. Students were told that they have the right to withdraw at any time.

### Results

The mean (standard deviation) age of students was 14.01 (0.815). The mean (standard deviation) MHL of students was 102 (9.58). Most of the students (34.2%) were in the ninth grade. Most of the fathers (57.5%) and mothers (49.8%) had university degree. Most of the fathers (62.5%) were employees and most of the mothers (72.9%) were housewife (Table 1).

**Table1: Socio demographic characteristics of the respondents**

Variable		N	%
Grade	7th	206	32.3
	8th	214	33.5
	9th	218	34.2
Father education	< Diploma	77	12.1
	Diploma	194	30.4
	University	367	57.5
Mother education	< Diploma	100	15.7
	Diploma	220	34.5
	University	318	49.8

Father job	Employee	399	62.5
	Self employed	239	37.5
Mother job	Employee	173	27.1
	Housewife	465	72.9

The significant correlation was observed among mental health literacy ( $p < 0.001$ ), father's education ( $p < 0.05$ ), and father's job ( $p < 0.05$ ). General Health was significantly correlated with mother job ( $p < 0.001$ ) (Table 2).

**Table2: Correlation between MHL and GHQ-28 with demographic characteristics of study samples.**

Variable	MHL	GHQ-28	Test
	P-value	P-value	
Grade	<0.001	0.381	ANOVA
Father education	0.027	0.087	ANOVA
Mother education	0.068	0.057	ANOVA
Father job	0.001	0.395	T-test
Mother job	0.284	<0.001	T-test

The results of this study showed that more than 50% of students had low disorder in social function and total scale of GHQ-28 (Table 3).

**Table3: Descriptive statistics of studied sample's GHQ-28**

Item	N	%	Mean $\pm$ SD	Status
somatic symptoms	449	70.5	5.54 $\pm$ 4.18	Very low disorder
anxiety	482	75.5	4.47 $\pm$ 3.87	Very low disorder
social dysfunctions	340	53.2	10.60 $\pm$ 3.59	Low disorder
severe depression	523	82	3.11 $\pm$ 4.32	Very low disorder
GHQ-28 total scale	358	56.2	23.71 $\pm$ 12.82	Low disorder

Based on the results of Pearson correlation, there was a significant negative correlation between MHL and severe depression ( $p < 0.05$ ). There was no significant correlation between

MHL and total general health (Table 4).

**Table4: Bivariate correlation between MHL and GHQ-28 subscales and total scale**

GHQ-28 subscales	MHL	
	R	P value
somatic symptoms	0.026	0.511
Anxiety	0.045	0.253
social dysfunctions	0.032	0.423
severe depression	-0.107	0.007
GHQ-28 total scale	-0.006	0.889

## Discussion

The aim of this study was to investigate the status of MHL and its relationship with general health in female middle school students in Mashhad, Iran. The results of this study indicated that most of the participants had a moderate level of MHL. The results of a study in line with the results of other study in Iran showed that MHL of adolescent girls was moderate (33). In another study, the mean score of MHL was 102.75 (160), which was similar to the results of the present study (8). The results of a study in which the MHL of medical students were examined, students had low MHL (34). Some studies on MHL have been conducted in other countries. The mean score of MHL of medical students in the UK was 127.69 (160).. On the other hand, students in higher years had better MHL scores than those in lower years (35). Consistent with the results of this study, the results of a study in Nigeria showed that among the high school students, just about 4.8% had adequate MHL (36). One of the main reasons for low level of MHL can be the new mental health issue and less focus on maintaining and promoting mental health and well-being.

According to the results of this study, ninth-grade students and students whose fathers had a university degrees showed the higher MHL scores. Students whose fathers and mothers

were employees had significantly higher MHL and general health scores. The results of various studies show that more literacy is associated with better health literacy (35, 37, 38). Financial, physical, and informational environments could have a supportive or deterrent role on adolescent's health behaviors or health outcomes. Socio-economic conditions reflect the nature and social class and social status of adolescents, which has a significant impact on adolescent social function. Parents with the permanent jobs have a reliable economic status which has a significant influence on adolescent's health. The experience of economic deprivation has extensive physical and mental consequences for adolescents. Livelihood problems were frequently expressed by adolescents and it is considered as a wide range of basic living problems such as lack of food to eat to inability to afford expensive price of entrance exam classes. Moreover, Iranian adolescents considered poverty as one of the barriers to family health (39). On the other hand, the role of leisure time activities in providing the health of adolescents is highly emphasized. Due to unaffordable expenses of the sport facilities and other hobbies for parents, about 20% of Iranian adolescents have difficulty to spending their leisure time. It could be leads to increase stress and conflict in the family, poor social functioning mental disorders (such as anxiety and depression), as well as cause more adolescents to turn to friends and risky behaviors (40).

The results of a study also showed that adolescents considered parental unemployment as a barrier to their health (39). The results of a study showed that adolescents with lower socioeconomic status smoke more than adolescents with higher socioeconomic status, and they are less likely to quit smoking, which can lead to less confidence in their quitting abilities due to lack of social support. likewise, it was

evidenced that more dependence on nicotine in people with less education and poorer and lead to more limited health (41), which is consistent with the results of this study which parents with higher education and permanent job with fixed monthly income had healthier and more informed children related to mental disorders. Increasing family supports can lead to better mental health in adolescents and lead to high quality of life in adulthood (39). Therefore, adolescents whose parents have higher education and stable and reliable jobs have better health status than other adolescents.

The results of this study showed that there was no statistically significant relationship between the total score of MHL and general health, but there was a significant negative relationship between MHL and depression. One of the most prevalent mental problems which could lead to decrease the quality of life is depression (42). The results of another study showed that MHL is a strong predictor of all health-promoting behaviors (8). The results of another study showed that diabetic patients with higher MHL had better adaptability to diabetes (43). The results of a study on the relationship between MHL and eating disorders showed that girls had insufficient MHL and less MHL was associated with more nutritional disorders (44). On the other hand, the results of a study showed that there was no statistically significant relationship between MHL and any of the components of general health (33) which is not in line with the results of this study.

Although, the rate of depression during adolescence has the highest level compared to other periods of life, they do not seek formal help to treat their depression (45). Unfortunately, population-based health promotion interventions to promote MHL are very limited and there has been very little studies focus on this area (44). With

the change in the appearance of diseases and the increase in the incidence of non-communicable diseases such as mental disorders, the health sector has the main responsibility for providing conditions for maintaining and promoting health, which is a basic right of individuals (28).

Promoting mental health in female adolescents can benefit the whole community and could ensure a healthy and productive adult community in the future. Although, schools are ideal places to teach MHL(45), there are few interventions have been conducted in this setting(2).

To our knowledge this study was unique in this field and this was strong point of our study. The limitation of this study was the negative attitude towards mental disorders in society, which lead to the limitation of cooperation of other schools in conducting this research.

**Conclusion:** According to the results of this study, MHL among Iranian female adolescents was poor and increasing MHL among them is an urgent need. Increasing the awareness of adolescents in the field of diagnosis of mental disorders significantly contributes to the early diagnosis of disorders such as depression. Thus, health professionals should design and implement educational interventions in the field of early detection of mental disorders with the aim of early diagnosis and guidance of people with disabilities. Take action to reduce the labeling of mental disorders also should be considered. Attention in the field of adolescent's mental health is growing in Iran and providing adolescent mental health will ensure the mental health of the next generation. Furthermore, considering the onset of some disorders in this period and the consequences of not diagnosing and treating these disorders such as substance abuse and delinquency reveal the significant need to pay attention to the mental health of adolescents in the community, especially the activation of

student counseling centers, training of adaptation and cognitive skills, and comprehensive planning to provide services related to psychological therapy and counseling.

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