The State of Mental Health Literacy among High School Students: A Cross-Sectional Study

ABSTRACT

Background and Objectives: Mental disorders affect around 20% of children and teenagers worldwide, resulting in a decrease in academic success and progress, ultimately resulting in a decrease in their academic performance. This research aimed to determine the level of mental health literacy for high school students in eastern Iran in 2023.

Materials and Methods: This descriptive-analytical cross-sectional study was conducted on 348 high school students in Zirkuh City, Iran, using a cluster sampling method. The data was gathered by a 29-item questionnaire known as the Mental Health Literacy Scale (MHLS). Mann-Whitney U-test and Kruskal-Wallis test were utilized for data analysis at a significant level of 0.05.

Results: The study included 348 students with a μ (SD) age of 16.27 (0.89) years. Of these, 176 (50.6%) were female. Most students (53.2%) scored low in MHL with a μ (SD) score of 79.3 (9.2). The most common source of mental health knowledge was "Internet and friends" (65.5%). The mean score of "help-seeking attitudes" was significantly higher in students of natural sciences (P<0.03) and technical sciences (P<0.02) than those in humanities. There was a significant difference in the mean score of MHL, the ability to recognize disorders, and help-seeking attitudes based on the father's occupation. The mean scores for MHL and help-seeking attitudes were higher among self-employed fathers than those involved in farming and animal husbandry occupations (P<0.001). The study found that students whose fathers were teachers had a higher ability to recognize disorders compared to the other groups (P<0.001).

Conclusion: Based on the results of the study, the level of MHL of the students participating in the study was not favourable. Therefore, it is necessary to develop educational interventions for students and their parents with their teachers' aim.

Paper Type: Research Article

Keywords: High Schools, Mental Health, Literacy, Students.

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Introduction

Mental health is one of the most significant problems in contemporary society and one of the top priorities for the healthcare system (1, 2). Based on the World Health Organization (WHO) definition (3), public health refers to the overall well-being of individuals, including both physical and mental health (4). Mental illnesses are the leading cause of complications and disabilities resulting from poor health worldwide (5, 6). It is estimated that approximately 25% of individuals will experience a mental health condition at some point in their lifetime (7). Mental disorders account for 7% of all years of life lost (YLLs) due to premature death and 19% of years lived with disability (YLDs) caused by all diseases (5). It is predicted that in 2030, the overall burden of depression will occupy the second place in developing countries and the first place in developed countries (8). In the world, approximately one-fifth of children and adolescents, up to 17 years old, experience mental disorders ranging from mild to severe (9). This evidence is particularly strengthened by the fact that most mental health disorders develop during adolescence, and an estimated 50% of all cases of mental disorders diagnosed in adulthood originate from the age of 14 onwards (10). Studies conducted in various countries show low public awareness regarding the prevention, treatment and seeking help for mental disorders. Therefore, improving people's mental health literacy (MHL) is crucial for improving the mental health of society (11-13).

MHL refers to knowledge of how to prevent and recognize mental disorders, effective self-help strategies for mild to moderate problems, and first aid skills to help others (14). People who possess adequate MHL are more likely to engage in better healthcare behaviors, know how to search for reliable health-related information, and have a better quality of life. On the other hand, individuals with limited MHL are less likely to access mental health services, which may lead to poorer outcomes (15). The results of various studies in Vietnam (16), China (17), Nigeria (18), and Iran (19) have shown that most people have low levels of MHL and only a small percentage have an adequate level of such literacy. In Iran, 39% of students face behavioral and emotional problems and 34.1% of girls and 23.7% of teenage boys are suspected of mental disorders (20), which can reduce their academic success and progress, ultimately leading to decreased academic efficiency (21). On the other hand, the prevalence of mental disorders in Iran shows an upward trend as follows: 21.5% in 1999, 34.2% in 2008, and 39.6% in 2011 (22, 23). In recent years, there has been growing concern regarding the prevalence of mental health disorders among children and young (10). Therefore, enhancing the MHL has a critical role in the help-seeking process (24).

According to the above, studying the level of MHL among students can serve as a starting point for identifying and improving MHL in this group and can help to reduce stigma and improve help-seeking, access to care, and ultimately, improve the mental health of students in schools.in addition, this can provide the basis for implementing appropriate educational interventions that help improve MHL. Therefore, this study

aimed to investigate MHL in middle school students of eastern Iran in 2023.

Materials and Methods

Study design and sample size

This descriptive-analytical study was conducted among secondary middle students of Zirkuh City in South Khorasan province in 2022. The sample size was calculated at 348 people, considering d= (0.32.S) s=34.10, α = 0.05, and based on a previous study (24).

Inclusion and exclusion criteria

All healthy secondary middle students, without mental disorders (based on self-report), willing to participate in the study, with their parent's consent entered the study, and the half-finished questionnaires were excluded.

Sampling method

Initially, the schools were divided into 3 clusters based on the city's sections. Then, for each section, one boy school and one girl school were selected by simple random sampling method (total: 6 schools). In each school, students were entered to study based on the list of students and available sampling method, if they had informed consent for participation. The sampling continued until reaching the necessary sample size. It should be noted that students aged <16 years of age entered the study if their parents were satisfied.

Data collection tool

Data collection tools included questionnaires of demographic and standard mental health literacy scale (MHLS) (29 questions).

Demographic questionnaire

includes questions such as sex, marital, the child live with who?, field of study, mother's job, family income, mother's education, father's education, use of school dormitory, grade, and father's job.

The Mental Health Literacy Scale (MHLS)

was designed and evaluated in 2015 by O'Connor et al. (25) and translated and localized by Jafari et al. (24) and its internal consistency was confirmed by Cronbach's alpha coefficient equal to 0.87, which was acceptable and above 0.70 for the separate structures. In Iran, Noroozi et al. (2018) assessed the validity and reliability of this questionnaire in Iran. They reported an alpha coefficient of 0.72 and a content validity ratio (CVR) of 0.90 for this questionnaire (26). In this study, Cronbach's alpha coefficient for the questionnaire was calculated as 0.76. Cronbach's alpha coefficient for the dimensions of the questionnaire is presented in Table 1.

This scale includes 6 dimensions: the ability of individuals to recognize mental disorders (8 questions), knowledge of where to seek information (4 questions), knowledge of risk factors and causes (2 questions), knowledge of self-treatment (2 questions), knowledge of the Professional help available (3 questions) and attitudes that promote recognition or appropriate help-seeking behavior (10 questions), and scored between 29 and 130. Questions are rated on a 4-point scale from 1 (very unlikely/unhelpful) to 4 (very likely/helpful) and on a 5-point scale from 1 (strongly disagree/ unwilling) to 5 (strongly agree / definitely like the reverse). Also, questions 10, 12 and 13 and questions 20 to 29 have been scored in reverse (24). Scores from 29 to 79.5 were considered low health literacy and scores from 79.6 to 130 were considered as high MHL. Also, dimensions scores were classified as follows: Ability of

individuals to recognize mental disorders (8-20.5, low; 20.6-32, high), Knowledge of risk factors and causes (2-5.5, low; 5.6-8, high), Knowledge of self-treatment (2-5.5, low; 5.6-8, high), knowledge of the Professional help available (3-7, low; 8-12, high), Knowledge of where to seek information (4-12.5, low; 12.6-20, high), and attitudes that promote recognition or appropriate help-seeking behavior (10-30.5, low; 30.6-50 high). Higher scores indicate a higher level of MHL (25).

Table 1. Cronbach's alpha coefficient for the questionnaire dimensions

Dimension	Cronbach's alpha coefficient
Ability to recognise disorders	0.728
Knowledge of risk factors and causes	0.742
Knowledge of self-treatment	0.723
Knowledge of the professional help available	0.752
Knowledge of where to seek information	0.761
Attitudes that promote recognition or appropriate help-seeking behavior	0.841

Data analysis

The data was analyzed using SPSS software version 23. Data description was done using frequency, frequency percentage, mean and standard deviation (SD) indices. The normality of the data was assessed using the Kolmogorov-Smirnov test. The Mann-Whitney U-test and Kruskal-Wallis test were used for data analysis at a significance level of $\alpha=0.05$.

Results

The data analysis was performed on a sample of 348 participants, without any loss of data. Their a μ (SD) age was 16.27 (0.89) years. The results showed that 50.6% of the participants were female and 87.6% were single. Most students (44.5%) were in the tenth grade and pursued humanities (57.8%). 94.5% of students resided with their parents, and 80.7% did not utilize school dormitories. Additionally, 95.1% of participants had mothers with a diploma or less, and 85.6% had fathers with a diploma or less. The father's most common occupation was self-employment (43.1%), while the mother's was homemaker (90.2%). 53.2% belonged to the middle-income bracket. (Table 2)

According to the study, a majority of students (53.2%) had a low level of MHL, with a mean (SD) score of 79.3 (9.2). Specifically, the dimensions of "ability to recognize disorders," "information search," and "professional knowledge" had comparatively high scores, while the dimensions of "self-care," "awareness of risk factors," and "help-seeking attitude" had low scores. (Table 3)

According to a study, the most common source of mental health knowledge is from the internet and friends (65.5%). In terms of self-treatment knowledge, girls scored significantly higher than boys (P<0.04), while there was no significant difference in other dimensions between the two genders. The mean score for "Attitudes that promote recognition or appropriate help-seeking behavior" was significantly higher in natural (P<0.03) and technical science (P<0.02) students compared to humanities students. There was a significant difference in the mean score of MHL, the ability to recognize

disorders, and the attitudes that promote recognition or appropriate help-seeking behavior based on the father's occupation. The mean scores of MHL and help-seeking attitudes were found to be higher in self-employed fathers compared to those in farmer and animal husbandry occupations.

Table 2. Distribution of demographic variables in high school students (n=348)

Variable		Frequency (No)	%
Child Sex	Boy	172	49.4
	Girl	176	50.6
marriage status	Single	305	87.6
	Married	43	12.4
Living with	Parents	328	94.5
	One of the parents	20	5.7
Field of Study	Humanities	201	57.8
	Natural sciences	116	33.3
	Technical sciences	31	8.9
Mother's job	Housewife	314	90.2
	Employed	22	6.3
	Self-employed	12	3.4
Family income	Excellent	21	6
	Good	81	23.3
	Medium	185	53.2
	Weak	61	17.5
Mother's education	Diploma and less	95.1	331
	Academic	4.9	17
Father's education	Diploma and less	85.6	298
	Academic	14.4	50
Use of school dormitory	No	80.7	281
	Yes	19.3	68
Educational grade	Ten	44.5	155
	Eleven	32.2	112
	Twelve	23.3	81
Father's job	Teacher	10.6	37
	Employed	11.2	39
	Self-employed	43.1	150
	Farmer & animal husbandry	35.1	122

The difference was statistically significant (P<0.0001). Additionally, it was found that the average score for the "Ability to recognize disorders" among students whose father was a teacher was higher than those whose father had a different occupation (P<0.00). However, there was no significant difference in the mean scores based on income, parents' education, or mother's occupation. Also, it was found that the average scores for Knowledge of self-treatment and Knowledge of the professional help available were significantly higher in ages <17 years old (P<0.05) (Table 3).

Table 3. Comparison of the Mean (SD) scores of the MHL and its dimensions based on the student characteristics

Variable	Dimensions	Frequency (No)	Ability to recognise disorders (Mean (SD*))	Knowledge of risk factors and causes (Mean (SD*))	Knowledge of self-treatment (μ (SD*))	Knowledge of the professional help available (Mean (SD*))	Knowledge of where to seek information (Mean (SD*))	Attitudes that promote recognition or appropriate help-seeking behavior (Mean (SD*))	Total MHL score (Mean (SD*))
MHL dimensions score			23 (3.14)	5.27 (1.18)	5.31 (1.09)	8.41 (1.14)	13.68 (2.80)	23.62 (7.66)	79.30 (9.25)
Child Age	<17 years	219	23.01 (3.04)	5.19 (1.21)	5.41 (1.17)	8.52 (1.12)	13.52 (2.57)	23.51 (7.22)	79.17 (8.72)
	≥17 years	129	22.98 (3.32)	5.42 (1.28)	5.15 (0.93)	8.22 (1.17)	13.95 (3.30)	23.82 (8.38)	79.54 (10.15)
	p-value		0.916	0.079	0.03	0.02	0.169	0.716	0717
Child Sex	Male	49.4	23.03 (2.80)	5.15 (1.12)	5.19 (1.15)	8.41 (1.09)	13.51 (2.83)	24.23 (7.99)	79.54 (9.10)
	Female	50.6	22.96 (3.45)	5.39 (1.23)	5.42 (1.01)	8.40 (1.19)	13.85 (2.77)	23.03 (7.29)	79.07 (9.43)
	p-value		0.62	0.11	0.04	0.98	0.29	0.17	0.65
Child Marital status	Single	87.6	23.10 (3.03)	5.24 (1.15)	5.29 (1.12)	8.41 (1.11)	13.60 (2.76)	23.65 (7.61)	79.32 (9.22)
	Married	12.4	22.27 (3.78)	5.44 (1.38)	5.41 (0.87)	7.37 (1.36)	14.23 (3.03)	23.41 (8.09)	79.16 (9.62)
	p-value		0.25	0.95	0.5	0.69	0.12	0.74	0.99
The Child Lives with	Parents	94.3	22.99 (3.15)	5.26 (1.18)	5.27 (1.07)	8.42 (1.12)	13.66 (2.82)	23.71 (7.75)	79.33 (9.40)
	One of the parents	5.7	23.10 (2.98)	5.35 (1.30)	6 (1.21)	8.1 (1.41)	14.05 (2.41)	22.25 (5.94)	78.85 (6.65)
	p-value		0.91	0.94	0.00	0.27	0.87	0.53	0.86
Child Field of Study	Humanities	57.8	23.01 (2.98)	5.21 (1.15)	5.22 (1.08)	8.42 (1.09)	13.75 (2.78)	22.83 (7.87)	78.46 (9.02)
	Natural sciences	33.3	23.17 (3.5)	5.29 (1.16)	5.45 (1.12)	8.43 (1.18)	13.55 (2.58)	24.31 (6.95)	80.21 (9.61)
	Technical sciences	8.9	22.29 (2.72)	5.54 (1.43)	5.35 (0.98)	8.25 (1.29)	13.7 (3.67)	26.22 (8.22)	81.38 (9.05)
	p-value		0.22	0.84	0.15	0.57	0.61	0.02	0.09
Mother's job	Housewife	90.2	22.96 (3.16)	5.29 (1.19)	5.34 (1.08)	8.43 (1.13)	13.57 (2.82)	23.65 (7.76)	79.27 (9.32)
	Employed	6.3	23.77 (2.72)	4.86 (0.88)	5.04 (1.21)	8.13 (1.39)	15 (2.76)	23.81 (6.54)	80.63 (9.50)
	Self-employed	3.4	22.58 (3.47)	5.50 (1.31)	5.08 (1.16)	8.25 (0.96)	14 (1.85)	22.41 (7.27)	77.83 (7.03)
	p-value		0.73	0.14	0.28	0.34	0.14	0.85	0.75
Father's job	Teacher	10.6	24.21 (2.8)	5.24 (0.89)	5.02 (1.11)	8.21 (1)	13.86 (2.78)	23.7 (6.79)	80.27 (10.36)
	Employed	11.2	22.74 (2.16)	5.17 (0.91)	5.15 (1.15)	8.61 (0.93)	14.12 (2.6)	22.66 (6.71)	78.48 (8.08)
	Self-employed	43.1	23.03 (3.3)	5.29 (1.38)	5.38 (1.1)	8.4 (1.15)	13.82 (2.78)	25.05 (8.38)	80.98 (9.18)
	Farmer & Animal husbandry	35.1	22.67 (3.24)	5.28 (1.08)	5.36 (1.03)	8.41 (1.23)	13.31 (2.88)	22.15 (6.99)	77.22 (9)
	p-value		0.02	0.97	0.2	0.35	0.28	0.03	0.01

Variable	Dimensions	Frequency (No)	Ability to recognise disorders (Mean (SD*))	Knowledge of risk factors and causes (Mean (SD*))	Knowledge of self-treatment (μ (SD*))	Knowledge of the professional help available (Mean (SD*))	Knowledge of where to seek information (Mean (SD*))	Attitudes that promote recognition or appropriate help-seeking behavior (Mean (SD*))	Total MHL score (Mean (SD*))
Mother's education	Diploma and less/	95.1	22.92 (3.14)	5.27 (1.19)	5.32 (1.08)	8.43 (1.13)	13.63 (2.82)	23.67 (7.74)	79.26 (9.17)
	Academic	4.9	24.52 (2.93)	5.29 (1.04)	5 (1.17)	7.88 (1.16)	14.64 (2.31)	22.7 (6.48)	80.05 (11.02)
	p-value		0.05	0.98	0.17	0.08	0.24	0.67	0.99
Father's education	Diploma and less/	85.6	22.97 (3.16)	5.29 (1.21)	5.33 (1.07)	8.41 (1.17)	13.55 (2.87)	23.6 (7.69)	79.19 (9.07)
	Academic	14.4	23.16 (3.05)	5.12 (1)	5.16 (1.18)	8.36 (0.96)	14.44 (2.25)	23.76 (7.52)	80 (10.34)
	p-value		0.57	0.32	0.27	0.82	0.05	0.76	0.53
Use of school or school dormitory	No	80.7	22.93 (3.16)	5.25 (1.19)	5.35 (1.08)	8.38 (1.12)	13.77 (2.64)	23.65 (7.47)	79.37 (9.08)
	Yes	19.3	23.26 (3.08)	5.32 (1.15)	5.14 (1.13)	8.5 (1.21)	13.29 (3.38)	23.49 (8.45)	79.04 (10.02)
	p-value		0.63	0.91	0.21	0.55	0.31	0.58	0.8
Child Grade	Ten	44.5	22.93 (3.02)	5.22 (1.09)	5.46 (1.17)	8.52 (1.08)	13.74 (2.66)	23.03 (7.08)	78.92 (8.75)
	Eleven	32.2	23.03 (3.32)	5.18 (1.22)	5.34 (1.05)	8.41 (1.17)	13.62 (2.91)	23.99 (8.01)	79.6 (9.38)
	Twelve	23.3	23.07 (3.15)	5.48 (1.29)	4.97 (0.9)	8.17 (1.18)	13.65 (2.95)	24.25 (8.23)	79.61 (10.06)
	p-value		0.92	0.19	0.00	0.04	0.82	0.52	0.81
Family income	Excellent	6	21.71 (3.64)	5.19 (3.74)	5.33 (1.35)	8.28 (1.14)	13.85 (3.13)	22.33 (7.23)	76.71 (8.31)
	Good	23.3	23.62 (2.92)	5.39 (1.2)	5.25 (1.14)	8.46 (1.14)	13.8 (2.62)	24.13 (7.21)	80.69 (8.38)
	Medium	53.2	22.80 (3.12)	5.25 (1.21)	5.29 (0.99)	8.32 (1.14)	13.79 (2.9)	23.07 (7.71)	78.56 (9.72)
	Low	17.5	23.19 (3.18)	5.18 (1.20)	5.42 (1.21)	8.62 (1.12)	13.13 (2.6)	25.06 (8.13)	80.62 (8.96)
	p-value		0.12	0.84	0.71	0.17	0.39	0.23	0.1

* standard deviation

Discussion

In this cross-sectional study that examined the level of MHL in high school students, more than half of the students had low MHL. These results were consistent with the findings of Shojaei et al.'s study (27) and various studies in China (27), Vietnam (16), Nigeria (18) and Iran (19). This indicates that the MHL level in most societies is low. However, it was inconsistent with the results of Jafari et al.'s study which reported a mean score of MHL 113.54 (10.34) (24). This difference could be due to the higher average age in the Jafari et al. study. Results of other studies have reported a positive relationship between age and MHL (25, 28).

Also, in the present study, the scores for the ability to recognize disorders, knowledge of where to seek information, and knowledge of professional help available were high. However, the scores for knowledge of self-treatment, knowledge of risk factors and causes, and attitudes that promote recognition or appropriate help-seeking behavior were low. In the research of Jafari et al. (24) ، the mean scores in the dimensions of help-seeking attitude, "Knowledge of where to seek information" and "Knowledge of the professional help available" were high, but in the dimensions of "ability to recognize disorders" and "Knowledge of risk factors and causes" and "Knowledge of self-treatment", they were low, which in some dimensions are consistent with the present study. In the present study, "Internet" was the main source of mental health knowledge, and this finding was consistent with the study of Jafari et al. But in Rickwood et al.'s study, the main source of mental health knowledge was family and friends (29). The results of another

study also showed that most people request help from friends and family to use mental health services (30). The observed difference in these results can be due to the time of implementation of the study in the Rickwood et al. study for the lower prevalence of using virtual space among students in the year of study conduction (2007) and the difference in the target group (general public) which investigated in the Ghadirian et al. study. The availability of reliable sources of information in the field of mental health and their use by students is one of the most important solutions in improving the level of mental health literacy among students (31). Despite the Internet's increase in access to information and decrease in unmet needs, it still has problems like information overload, poor information quality, potential harm, and lack of scientific evaluation (32, 33). Therefore, teaching students how to use the Internet properly and introducing genuine psychology websites is essential. In addition, it is necessary to introduce psychologists, psychiatrists and healthcare providers as the best sources of mental health information (34).

Also, showed that there was a significant relationship between gender and MHL. So MHL is more in women than in men, which was consistent with the results of other studies (8, 24, 35, 36). In the dimension of "Knowledge of self-treatment", the mean scores of girls were significantly higher than boys, but other dimensions did not differ between the two sexes.

Also, the results of the present study showed that the mean score of help-seeking attitudes among experimental science students and conservatory students was significantly

higher than that of humanities students, and according to the researcher's search in various databases, no study was found that investigated the discussed dimension. There is a significant difference in the average scores of MHL, the ability to recognize disorders, and the attitudes towards seeking help based on the father's occupation. Based on this study, it was found that the average scores for MHL and help-seeking attitudes were higher in freelance work as compared to agriculture and livestock farming. Moreover, students whose fathers were teachers showed a higher average score of "ability to recognize disorders" than others. However, there was no significant difference in the average scores concerning income, parent's education, and mother's occupation. In Jafari et al.'s study (24) there was a significant relationship between education level and MHL, and MHL was higher in people with academic education. Other studies have demonstrated a significant correlation between education levels and MHL. As education levels increase, MHL levels also improve (37, 38), which was not consistent with the findings of the present study. Perhaps the difference in age, regional culture, and general literacy level of the subjects studied could have influenced the reported findings. The socio-demographic age, marital status, socioeconomic status, living in rural areas, occupation, educational status, year of experience, social support, previous contact with the mentally ill, presence of a relative with a mental disorder, media, altered quality of life by problems with mobility, and information of mental health are mentioned as related factors with the level of mental health literacy (25, 28, 39)

Generally, mental disorders are currently one of the most significant global health challenges (5). Despite public opinion, children and teenagers are more vulnerable to mental and emotional disorders than other populations, but they have less support and care than adults (9). As stated at the beginning of the study, mental health, especially in adolescents, is one of the most important health topics in the world and Iran. Therefore, the importance of increasing mental health literacy and especially seeking help for mental health issues in school students cannot be overstated. The results of the study of Sokolová et al. (2024) showed that high school students with higher levels of mental health literacy reported lower levels of self-perceptions related to seeking professional mental health help (40). Previous studies have demonstrated that individuals with high levels of MHL may actively seek social support and professional help to enhance their mental health, while people with lower levels of MHL may be reluctant to seek help or delay seeking it (40, 41). The most frequent reason given by students for not seeking help is a feeling of shame or discomfort (42). However, people may also experience self-stigmatization when seeking professional help. Some studies also support the hypothesis that people with higher MHL experience less self-stigmatization when seeking help (40, 43). It is unfortunate that despite the high prevalence of mental health problems among adolescents, there is a lack of appropriate help-seeking for these concerns (44). Indeed, there is a need to promote help-seeking to reduce the increasing prevalence of mental health problems among adolescents, as well

as promote mental health literacy as a key strategy to promote help-seeking among adolescents (45, 46). According to the results of previous studies on the effect of mental health education on students in improving their mental health literacy level (47, 48), it seems necessary to implement health education programs for school-aged children. Schools are an ideal place to improve MHL because they contain high-risk age groups, therefore, the implementation of school-based mental health programs can have wider societal impacts (47). In addition, the role of teachers cannot be ignored in this context. Because, with their persuasive personality, teachers can play an important role in strengthening students' mental health literacy and give them courage and self-confidence in seeking help and communicating with others.

Study Limitations and Strengths: This study, like other studies, had limitations such as descriptive method, use of questionnaire and small study population. It is suggested that this research be done in different populations and with an interventional method.

Conclusion

Based on the results of the study, the level of MHL of the students participating in the study was not favorable. Therefore, it is necessary to develop educational interventions for students and their parents. Also, it seems necessary to implement mental health education programs in schools and by using the capacity of teachers.

Availability of data and materials: The nameless datasets used and/or analyzed during the current study are available from the corresponding author on reasonable request.

Conflict of interest: The authors involved in the study do not have any conflicts of interest.

Consent for publication: Not applicable

Ethical approval and consent to participate: The ethics committee of Birjand University of Medical Sciences, with code IR.BUMS.REC.1402.194 approved this study. In addition, the study was performed in line with the principles of the Declaration of Helsinki. Furthermore, the questionnaires were completed anonymously and the participants were assured of the confidentiality of the information.

Furthermore, the study was performed in line with the principles of the Declaration of Helsinki. All respondents and the school principal of each school gave consent for participation after reviewing the study protocol and questionnaire items.

Author contributions: Azam Majdi, Iman Mousaei: Data curation, Formal analysis, writing original draft. Gholam Reza Sharifzadeh: Methodology,Formal analysis, Writing: review & editing. Ensiyeh Norozi: Conceptualization, review & editing the English draft,review & editing, Formal

analysis. Abbas Javadi: Conceptualization, Methodology, Project administration, Supervision, Validation, Writing: review & editing.

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