A Study on the Relationship between Quality of Life and Health Literacy among Students

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ABSTRACT

Background and Objectives: Quality of life reflects the health of individuals, physically and mentally. Health literacy is one of the factors that can be related to quality of life. Therefore, this study aimed to determine the relationship between quality of life and health literacy among students of Birjand University of Medical Sciences, Iran.

Materials and Methods: This descriptive-analytical study was conducted on 357 university students in 2020-2021. Data were collected using the standardized Health Literacy for Iranian Adults (HELIA) and the SF-36 scale. Data analysis was conducted using SPSS version 22. Descriptive statistics and the Pearson correlation coefficient were used for data analysis.

Results: The mean score of total QOL in university students was 70.88 ±15.73; among the eight dimensions of SF-36, the highest and the lowest scores were seen in physical functioning with 87.24 ±16.42, and role limitations due to emotional problems with 57.23 ±40.55. There was a positive significant relationship between the total mean score of HELIA and the general health dimension of SF-36. There was a positive significant relationship between reading, understanding, and appraisal dimension of HELIA with a mean score of general health dimension of SF-36. There was a positive significant relationship between understanding, and appraisal dimension of HELIA with mean score of mental health dimension of SF-36. There was a positive significant relationship between the understanding dimension of HELIA with mean score of physical health component score, and total mean score of SF-36. Also, there was a positive significant relationship between appraisal dimension of HELIA and mean score of physical health component score, mental health component score, vitality and total mean score of SF-36.

Conclusion: The study shows an association between health literacy and quality of life in medical university students. However, this association is not strong.

Paper Type: Research Article

Keywords: Health literacy, HELIA, Quality of life, SF-36, Students.

Introduction

Quality of life (QOL) is defined by the World Health Organization (WHO) as "an individual's perception of their position in life in the context of the culture and value systems in which they live, and in relation to their goals, expectations, standards and concerns" (1). Thus, it is a multi-dimensional concept, which covers an individual's mental health, physical health, degree of independence, attachment to surroundings, individual beliefs and their connection with the environment (2). According to some evidence, one of the factors that can be related to quality of life is health literacy (3). Health literacy (HL) is "the degree to which individuals have the ability to find, understand, and use information and services to inform health-related decisions and actions for themselves and others" (4). The evidence shows that low health literacy has been linked to poor health outcomes such as higher hospitalization rates, (5) less frequent use of preventive health services, (6) minimal prescription and care plan adherence, and death (7). These all lead to higher health care costs (8). University students worldwide are confronted with a panoply of stressors, including adaptation to new life circumstances, academic responsibilities, financial worries, concerns about the future, and all of which can harm the health of the students (9, 10). Some studies in Iran have investigated the relationship between HL and QOL among medical students, but the results seemed inconsistent (11, 12). This study therefore aimed to explore the relationship between quality of life and health literacy in a sample of students of Birjand University of Medical Sciences, Iran.

Materials and Methods

This research was a descriptive correlational study among students of Birjand University of Medical Sciences in the academic year 2020-2021.

Participants

In the academic year 2020-2021, there were nearly 3000 students at 5 schools (School of Medicine, School of Dentistry, School of Nursing and Midwifery, School of Allied Medicine, School of Health) of Birjand University of Medical Sciences. Thus, the sample size was estimated as 340 using Cochran formula. After adding a 5% non-response rate, the final sample size for this cross-sectional study became 357.

Stratified random sampling was used to choose the study participants. Each school was considered as a stratum. The number of participants for each stratum was determined in proportion to the number of students in each school. Then, using a random number table, simple random sampling was carried out in each stratum. The inclusion criteria in this study were as follows: Iranian nationality, aged between 18 and 30 years, and no history of chronic physical or mental illnesses.

Instruments

Data were collected using a demographic questionnaire, SF-36, and the HELIA.

The demographic questionnaire included questions about age, gender, and marital status.

Health Literacy Instrument for Adults (HELIA) comprises 33 items divided into five subscales: Reading (4 items), access to information (6 items), understanding (7 items), appraisal (4 items), and decision making/behavioral intention (12 items). The items are scored on a 5-point Likert scale,

ranging from 1 (quite difficult, never) to 5 (quite easy, always). The scale scores range from 0 to 100, which is divided into 4 classes of inadequate (0-50), not very adequate (50.1–66), adequate (66.1-84), and excellent (84.1–100). This questionnaire was developed and psychometrically examined by Montazeri et al. (13).

The SF-36 is a 36 item scale which measures eight subscales: physical functioning (PF, 10 items), role limitations due to physical health problems (RP, 4 items), bodily pain (BP, 2 items), general health (GH, 5 items), vitality (VT, 4 items), social functioning (SF, 2 items), role limitations due to emotional problems (RE, 3 items), and mental health (MH, 5 items). The first four scores can be summed to create the physical composite score (PCS), while the last four can be summed to create the mental composite score (MCS). The scale scores range from 0 to 100, with higher scores indicating a better health-related quality of life. The total score of QOL is classified into three groups based on total score: In low (<48), moderate (48-72) and high (>72).

Statistical analysis

Data were analyzed using SPSS v.22. Descriptive statistics were calculated where appropriate for each variable. The relationships between SF-36 and HELIA subscale scores were analyzed using the Pearson correlation analysis. P<0.05 was considered statistically significant.

Results

Out of the 357 questionnaires distributed, 9 questionnaires were completed partially and thus excluded from the study. The total number of participants in the current study was therefore 348, which accounts for a response rate of 97.4 percent. The participants' mean age was 20.87 (SD = 2.16) years and 205 (58.9%) of them were female. Only 19.3% of respondents were married.

The mean score of total QOL in university students was 70.88 (SD=15.73); among the eight dimensions of SF-36, the highest score was seen in physical function with 87.24 (SD=16.42), and the lowest score was seen in role limitations due to emotional problems with 57.23 (SD= 40.55). The SF-36 scores in each domain are presented in Table 1.

Table 1. Mean and standard deviation of SF-36 subscale and summary scores

Domain/item	Mean	SD
Physical functioning	87.24	16.42
Role limitations due to physical health problems	78.52	18.15
Bodily pain	76.40	17.36
General health	65.66	18.53
Vitality	63.23	17.87
Social functioning	73.13	20.17
Role limitations due to emotional problems	57.23	24.55
Mental health	64.63	19.91
Physical composite score	76.87	15.3
Mental composite score	64.8	19.63
Total score	70.88	15.73

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The mean health literacy score was 77.99 (SD: 12.84). The percentages of students with inadequate, problematic, adequate, and excellent health literacy levels were 0% (0), 20.9% (73), 41.6% (145), and 37.3% (130), respectively as shown in Table 2.

Table 2. Mean, standard deviation, and health literacy levels

Domain/item	Mean	SD	Inadequate health literacy N (%)	Problematic health literacy N (%)	Adequate health literacy N (%)	Excellent health literacy N (%)
Reading	78.59	15.85	16(4.6)	81(23.3)	114(32.7)	137 (39.4)
Access to information	83.04	14.2	14(4)	22(6.3)	151(43.4)	161(46.3)
Understanding	86.17	14.63	7(2)	31(8.9)	113(32.47)	197(56.6)
Appraisal	76.83	16.36	29(8.4)	94(27.02)	110(31.7)	115(33.05)
Decision-making/behavioral intention	70.33	19.08	65(18.68)	66(18.97)	123(35.34)	94(27.01)
Total score	78.99	12.84	0	73(20.9)	145(41.6)	130(37.3)

Considering the results of the Pearson correlation analysis between the total and subscale scores of SF-36 and the total and subscale scores of HELIA (Table 3), there was a positive significant relationship between the total mean score of HELIA and the general health dimension of SF-36. There was a positive significant relationship between the reading, understanding, and appraisal dimension of HELIA with mean score of general health dimension of SF-36. There was a positive significant relationship between understanding, and appraisal dimension of HELIA with a mean score of mental health dimension of SF-36. There was a positive significant relationship between the understanding dimension of HELIA with mean physical health component score and the total mean score of SF-36. Also, there was a positive significant relationship between appraisal dimension of HELIA and mean score of physical health component score, mental health component score, vitality and total mean score of SF-36.

Table 3. Pearson correlation analysis of QOL and health literacy

Variable	QOL	PCS	MCS	GH	PF	RP	RE	SF	BP	VT	MH
Health literacy	0.04	0.02	0.04	0.22 *	0.01	0.24	0.04	0.03	0.01	0.01	0.02
Reading	0.02	0.03	0.07	0.20 *	0.02	0.03	0.02	0.01	0.01	0.01	0.05
Access to information	0.01	0.06	0.02	0.02	0.05	0.09	0.04	0.04	0.04	0.06	0.01
Understanding	0.18 *	0.21 *	0.08	0.25 *	0.04	0.03	0.07	0.05	0.07	0.06	0.12 *
Appraisal	0.20 *	0.18 *	0.19 *	0.25 *	0.01	0.04	0.07	0.03	0.03	0.23 *	0.25 *
Decision making/behavioral intention	0.06	0.01	0.01	0.02	0.03	0.03	0.03	0.01	0.06	0.04	0.01

Notes: QOL, Quality of Life; PCS, Physical health Component Score; MCS, Mental health Component Score; GH, General Health; PF, Physical Functioning; RP, Role Physical; RE, Role Emotional; SF, Social Functioning; BP, Bodily Pain; VT, Vitality; MH, Mental Health

* $P<0.05$

Discussion

The present study aimed to investigate the relationship between quality of life and health literacy in a sample of medical university students. Results showed that the QOL of medical students was in a moderate level. This result is supported by the findings of previous studies (14, 15).

In the present study, most participants (N=145, 41.6%) had adequate health literacy. In addition, the mean score of health literacy was 78.99. Similar to the present research, in a study by Mashmouli et al. (12) among employees in a university of medical sciences, most participants (N=153, 53.7%) had adequate level of health literacy. Also, study by Khaleghi et al. (11) on university students showed that 52.9 % (147) of participants had an adequate level of health literacy. Different from our study, Ghaddar et al. (16) in the research on adolescents in South Texas using NVS inventory, showed that 47.9% of the participants had inadequate health literacy.

The current study also revealed that the highest mean score of SF-36 subscales was related to physical functioning. This result is consistent with previous studies (14, 17, 18).

The results of our study also indicated that the lowest mean score of SF-36 subscales was for role limitations due to emotional problems. The result of our study supported the findings of Sabbah et al. (19) reporting that role limitations due to emotional problems was the lowest mean score of SF-36 subscales among general population in Lebanon. Another study on university students in Jordan showed that vitality domain of SF-36 had the lowest mean score. The result of this study is inconsistent with our findings.

In the present study, the physical composite score had a higher mean score than the mental composite score and this issue was consistent with the results of a previous study on nurses in the public sector of Cyprus (20).

In a study on retired employees, the quality of life in the mental composite score was higher than the quality of life in the physical composite score, which is inconsistent with the findings of our study (21).

The current study revealed positive significant correlations between total mean scores of HELIA and the mean score of the subscale "general health" of SF-36. In one of the previous studies conducted on nurses in Iran, there was a significant positive relationship between total mean scores of HELIA and the mean score of the subscales "general health", "role limitations due to physical health problems", "vitality", and "mental health" of SF-36. Kheiri et al. (17).

We found significant positive relationship between the mean score of the subscales "understanding" and "appraisal" of HELIA and "physical health component score" of SF-36. Furthermore, a positive significant relationship was determined between the mean score of HELIA's subscale "appraisal" and "mental health component score" of SF-36. In a previous study on male patients with type II diabetes in Iran, a significant positive relationship was found between all subscales of HELIA with a "physical health component score" and "mental health component score" of SF-36 (22).

In another study on adults in Iran, there was a significant positive relationship between all subscales of HELIA with the

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"physical health component score" and "mental health component score" of SF-12 (23).

In our study, there was a significant positive relationship between the mean score of the subscales "understanding" and "appraisal" of HELIA, with a total mean score of SF-36. In a study by Kheiri et al. (17) there was a significant positive relationship between all subscales of HELIA with a total mean score of SF-36.

The current study revealed a positive significant relationship between the mean score of the subscales "understanding", and "appraisal" of HELIA with the mean score of the subscales "general health" and "mental health" of SF-36. We also found a positive significant relationship between the mean score of the subscale "appraisal" of HELIA with a mean score of the subscale "vitality" of SF-36. Another finding of the present study was a positive significant relationship between the mean score of the subscale "reading" of HELIA with mean score of the subscale "general health" of SF-36. The findings of our study are consistent with a previous research (17).

In our study, there were no strong association between health literacy and quality of life among medical students. This result is consistent with a previous study conducted on college students in China, which concluded health literacy score was not strongly associated with quality of life among the students (24).

Study Limitations and Strengths: The results of present study should be viewed in the light of the following limitations. Firstly, because our study was cross-sectional, determining the cause-and-effect

relationships between health literacy and quality of life is impossible. Secondly, this study relied on self-report questionnaires, which could lead to potential errors. Finally, the results of this research are only generalizable to medical students.

Conclusions

According to the findings of this study, students' quality of life score was moderate, and students' health literacy score was adequate. Also, there was a positive relationship between some domains of health literacy and some domains of quality of life among medical students.

Author contributions: The authors confirm contribution to the paper as follows: study conception and design: Ghiasi A; data collection: Ghiasi A; analysis and interpretation of results: Haseli A, Bagheri L; draft manuscript preparation: Ghiasi A,

Bagheri L. All authors reviewed the results and approved the final version of the manuscript.

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