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Investigating the Relationship between Media Literacy and Health Literacy in Iranian Adolescents, Isfahan, Iran

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Abstract

Background: Today, most of the information related to the health system is provided by the mass media. Learning about health issues requires understanding and recognizing their influence on health behavior and critical analysis of media content by the target audience, especially the most frequent and the most vulnerable one, adolescents. We aimed to determine the relationship between media literacy and health literacy in adolescents.

Materials and Methods: In this descriptive-analytical study, 217 students in the first year of high school, eligible for inclusion in the study, were randomly selected from six districts of education in Isfahan and completed the media literacy and the health literacy Measure for Adolescents questionnaires. Data were analyzed using SPSS software version 16.0.

Results: The mean score of media literacy and health literacy in adolescents was 70.26 ± 9.88 (total score= 100) and 152.20 ± 25.78 (total score= 205), respectively. Among the dimensions of media literacy, the two dimensions of media message content perception (15.07 out of 20), and conscious choice of media messages (15.08 out of 20) had the highest mean score and the dimension of media message analysis (12.44 out of 20) had the lowest one. The multiple linear regression model showed that among the media literacy dimensions, the best predictors for health literacy scores were the two dimensions of media message content perception and awareness of the hidden purposes of media messages.

Conclusion

The results of the present study showed that there was a direct correlation between the media literacy with the health literacy and all of its dimensions except for the critical look at media messages.

Key Words: Adolescents, Health Literacy, Media Literacy.

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1- INTRODUCTION

In line with the technological revolution of the 21st century, the world has taken a new step. The media that play an important role in shaping and changing the attitudes, thoughts and behaviors of the audience is among these changes (1-3). Therefore, the concept of media literacy has become one of the most important components used in media and communication policymaking in the last half-century by different countries to analyze, educate, and build awareness of media impacts on different walks of society (4), and having sufficient media literacy can lead to a better understanding of reliable information and valid resources (5). Media literacy as a social skill along with critical and discursive thinking can actively familiarize the audiences with media messages and productions (6).

Besides, the media can provide easy and convenient access to health information such as diseases and their symptoms, physical and behavioral abnormalities, disease prevention and health promotion, and training sexual issues as well as treatment methods (7, 8). The impact of mass media on health promotion contributes to the provision of information related to health, lifestyle model, and health-promoting norms, as well as to the implementation of campaigns to reduce high-risk behaviors (9). Having health literacy is one of the factors affecting health (10). The World Health Organization (WHO) defines health literacy (HL) as "the cognitive and social skills which determine the motivation and ability of individuals to gain access to, understand and use information in ways which promote and maintain good health" (11). Health literacy can empower individuals to play an active role in changing environments to affect health (12). Focusing on information transfer or information exchange is considered as the main application of health literacy. The key to health literacy is personal, social, and interactive empowerment, focusing on developing and broadening personal skills to promote a supportive environment for health, and a deep understanding of how the media is used to promote health behaviors (13). Unlike the health care system, that produces health information and content for society, the health content in the media is often unclear and can both promote and endanger individuals' health (14). The impressive and comprehensive role of the media in the daily lives of adolescents cannot be ignored. Because this age group is in the best possible condition in terms of problem analysis, independent thinking and critical thinking (15). Iranian society is a young society and since this age group has the most users of new media, so the media usage penetration rate, will be higher among this group as compared to other age groups.

Therefore, the lifestyle of adolescents without a high level of media literacy will naturally be highly vulnerable to the impacts of media messages (16). The results of a qualitative study in the UK, showed that the problems arising from the perception and inference of health-related information in the media (especially the content available on the Internet) reduce adolescents' willingness to use information related to health and health behaviors through the media and to get help from their teachers and parents to obtain health-related information (17).

In addition, the results of a US study on the relationship between media literacy and health literacy showed that enhancing one's skills to have adequate health knowledge, as well as an effective interaction between media services and users through informed decision-making and empowerment of individuals are the key factors in promoting public health among adolescents (18). In our country, very few studies have been conducted on the evaluation of health literacy and media

SotoudehRad literacy, with very few studies on the evaluation of adults' literacy (19-21). Considering the importance of the age group of adolescents in using health literacy and media literacy, and in order to have a healthy generation in middle age and old age in the future of the country, conducting a study on the evaluation of health literacy and media literacy in adolescents to predict and plan for the measures and other considerations required for promoting adolescent health seems necessary. Therefore, this study aimed to investigate the relationship between media literacy and health literacy in adolescents in Isfahan.

2- MATERIALS AND METHODS

2-1. Study design

This study was a descriptive-analytical study conducted following a correlational research design. The statistical population of the present study consisted of all male and female students, aged 12-16 years, in the first grade of public high schools in six districts of education in Isfahan, out of which 217 (121 girls and 96 boys) individuals were selected through cluster random sampling. Considering a confidence interval (CI) of 95%, the relevant formula, 80% test power, and an estimate of the correlation coefficient between health literacy and media literacy scores considered at least 0.2, the sample size was determined to be 190, and with a probability of 10% attrition, 217 individuals were studied.

2-2. Method

For sampling, two districts were first selected from six districts of education by drawing lots. Then, the list of girls' and boys' high schools in these two districts was separated and 7 schools were randomly selected from each district by drawing lots. The draw of lots was also conducted between the classes of the selected schools. After this, the students of the classes whose names were selected by drawing lots were included in the study. After contacting the schools for the necessary coordination and introducing himself/herself to the research units and explaining the aims of the research and after obtaining informed consent, the researcher distributed the questionnaires to the students. Questionnaires were completed by a self-report method. All eligible students participated in the study and no sample was excluded.

2-3. Measuring tools

Data collection tools were demographic questionnaire, Media Literacy Questionnaire and the Health Literacy Measure for Adolescents (HELMA). The demographic questionnaire consisted of 10 questions related to age, gender, educational level, parents' education, parents' job, health interest, health status, and health information resource. Falsafi et al designed the Media Literacy Questionnaire. It consists of 20 items in 5 dimensions, including media message content perception (4 items), awareness of the hidden purposes of media messages (4 items), conscious choice of media messages (4 items) critical look at media messages (4 items), and media message analysis (4 items). It is scored on a five-point Likert scale ranging from 1 (strongly disagree) to 5 (strongly agree). The lowest score obtained is 20 and the highest one is 100. Scores of 20-46.67 and 46.68-73.34 and scores above 73.34 are considered as the low, middle and high levels of media literacy, respectively. The reliability of the questionnaire confirmed by calculating Cronbach's alpha coefficient was reported to be 77%, 82%, 79%, 80%, and 75% for each subscale of awareness of the hidden purposes of media messages, media message content perception, conscious choice of media messages, critical look at media messages, and media message analysis, respectively (22). Another tool was the Health Literacy Measure for

Adolescents (HELMA) designed by Ghanbari et al. It consists of 41 items in 8 dimensions, including access to health information (9 items), reading skill (5 items), health information perception (10 items), assessment (5 items), use of health information (4 items), communication (4 items), and self-efficacy (4 items). It is scored on a five-point Likert scale, ranging from never to always (1 = never, 2 = rarely, 3 = sometimes, 4 = often, and 5 = always). The lowest score obtained from the questionnaire is 41 and the highest score is 205. Scores of 41-95, 96-150, and 151-205 indicate inadequate, adequate, and excellent levels of health literacy, respectively. The reliability of the questionnaire confirmed by calculating Cronbach's alpha coefficient ranged from 0.61 to 0.89 for each of the dimensions of the questionnaire and was 0.93 for the whole instrument (23).

2-4. Ethical considerations

This study with No: the Ethics Committee of Isfahan University of Medical Sciences approved IR.MUI.REC.1396.3.469. Informed written consent was also obtained from the participants in this study. Participation in the study was voluntary and participants were informed they could withdraw from the study at any time. The information was generally interpreted and writing of the first and the last names was not necessary.

2-5. Inclusion and exclusion criteria

The inclusion criteria were those of students in the first year of high school who had expressed their consent to participate in the study. Exclusion criteria was dissatisfaction with continuing to cooperate with the researcher for any reason while completing the questionnaire.

2-6. Data Analyses

Statistical analysis was performed using SPSS version 16 and descriptive and inferential statistics. The Kolmogorov-Smirnov test was used to determine the normal distribution of the data. The Pearson correlation coefficient and linear regression analysis were used to determine the relationship between media literacy score and health literacy score in adolescents.

3- RESULTS

A total of 217 high school students (16-12 years) selected from the two districts of six districts of education in Isfahan and who met the inclusion criteria were included in this study. The mean and standard deviation of adolescents' age was 13.83 ± 0.88 years. Other demographic characteristics of the studied samples are listed in **Table.1**.

Table-1: Baseline Characteristics of Participants (n=217).

Variables	Sub-group	Number (%)
Gender	Girl	121(55.8)
	Boy	96(44.2)
Educational Level	Seventh	58(26.7)
	Eighth	105(48.4)
	Ninth	54(24.9)
	Other	7(3.2)
Interest in health topics	Low	11(5.1)
	Somewhat	86(39.7)
	Much	53(24.4)
	Very Much	60(27.6)
Health Status	Bad	1(0.5)
	Medium	16(7.4)
	Good	44(20.3)
	Very Good	156(71.8)

Mother's Job	Housewife	188(86.6)
	Employed	29(13.4)
Father's Job	Employed	199(91.7)
	Jobless	14(6.5)
	Retired	4(1.8)
Mother's level of education	Illiterate	26(12)
	Elementary	41(18.9)
	Guidance School	56(25.7)
	High School	47(21.7)
	Academic	47(21.7)
Father's level of education	Illiterate	15(6.9)
	Elementary	39(18)
	Guidance School	39(21.7)
	High School	53(24.4)
	Academic	63(29)

The results showed that the mean and standard deviation of the total media literacy score in the studied adolescents was 70.26 ± 9.88 out of 100. Among the dimensions of media literacy, the two dimensions of media message content perception (15.07 ± 2.6 out of 20), and conscious choice of media messages (15.08 ± 2.92 out of 20) reported the highest mean score and the dimension of media message analysis (12.44 ± 3.18 out of 20) had the lowest mean score. The mean total score of health literacy in the studied adolescents was 152.20 ± 25.78 out of 205 and the two dimensions of health information perception (40.02 ± 7.15 out of 50), and access to health information (33.22 6 6.93 out of 45) had the highest score and the dimension of communication (13.48 ± 4.02 out of 20) reported the lowest score. The results of the Kolmogorov-Smirnov test showed the normal distribution of the data obtained from the research variables and no significant difference was observed in this regard. Moreover, Ita coefficient and regression variance analysis were used to examine the linearity of the relationship and the results showed that the relationship between the variables was linear. The Pearson correlation coefficient showed that there was a direct and significant relationship between media literacy and health literacy ($r = 0.403$, $P<0.001$) (**Table.2**). Besides, there was a direct relationship between health literacy and all dimensions of media literacy except for the critical look at media messages (**Table.3**).

Table-2: Pearson correlation coefficient between total score of media literacy and total score of health literacy and its dimensions.

Dimensions	Total Score of Media Literacy	
	Pearson correlation coefficient	P-value
Access to health information	0.291	<0001
Reading skills	0.354	<0001
Health information perception	0.341	<0001
Evaluation of information	0.291	<0001
Use of health information	0.198	0.004
Connection	0.261	<0001
Efficacy	0.292	<0001
Total health literacy score	0.403	<0001

Table-3: Pearson correlation coefficient between total health literacy score and total media literacy score and its dimensions.

Dimensions	Total Health Literacy Score	
	Pearson correlation coefficient	P-value
Understand the content of media messages	0.341	<0001
Awareness of the hidden purposes of media messages	0.352	<0001
Conscious selection of media messages	0.297	<0001
A critical look at media messages	0.109	0.11
Analysis of media messages	0.208	0.002
Total Media Literacy Score	0.403	<0001

In order to explain health literacy based on the dimensions of media literacy, the variable of media literacy dimensions and health literacy index, which were respectively considered as a predictor variable and as a criterion variable in the regression equation, were entered into the analysis. The regression model predicting health literacy indicated that there was a significant relationship between media message content perception and awareness of the hidden purposes of media messages (F = 10.66, P < 0/001) and no significant relationship was found between the conscious choice of media messages and media message analysis (F = 10.66, P > 0.001) (**Table.4**). In general, the model was able to predict 0.22 variance (R2 = 0.224). It means that among the dimensions of media literacy, the best predictors for health literacy scores were the two dimensions of media message content perception and awareness of the hidden purposes of media messages, and in the presence of these two dimensions, other dimensions of media literacy were not found to be significant predictors of health literacy scores.

Table-4: Multiple linear regression model of health literacy total score based on media literacy dimension score.

Score	Beta	T	P-value
Understand the content of media messages	0.231	3.45	0.001
Awareness of the hidden purposes of media messages	0.223	3.12	0.002
Conscious selection of media messages	0.083	1.13	0.26
A critical look at media messages	-0.018	0.27	0.78
Analysis of media messages	0.103	1.54	0.12

4- DISCUSSION

The purpose of this study was to investigate the relationship between media literacy and health literacy in adolescents in Isfahan. Based on the results of the present study, the mean score of media literacy in adolescents was 70.26 ± 9.88 (out of 100) indicating a high level of media literacy among the studied adolescents. Among the dimensions of media literacy, the highest media literacy mean scores were associated with media message content perception and conscious choice of media messages and the lowest mean score was reported for the dimension of media message analysis. The results of the study by Chang et al. also showed that the studied adolescents had a higher than desirable level of media literacy (24), which is in line with the results of the present study. These results may suggest the widespread impact of mass media on health-related behaviors in adolescents, especially when media programs and media content are presented as real-life patterns. On the other hand, McLean et

al.'s study showed that the mean score of media literacy among female students was low (25). The reason for the inconsistency of the results may reside in the cultural differences between the two studies, the difference between the inclusion criteria and the difference between the participants in terms of age and educational level. In the present study, the higher mean score of media literacy of the studied adolescents in terms of the two dimensions of media message content perception and conscious choice of media messages compared to other dimensions of media literacy among adolescents indicated the special attention of adolescents to media choice and how they plan to receive the content of media messages. Therefore, adolescents in this study had the necessary knowledge about the clever use of media content.

On the other hand, the lower mean score of media message analysis dimension compared to other dimensions may indicate that the studied adolescents had a lower ability to make conscious choices about the content of media messages. This lack of awareness about the nature of media messages confuses adolescents as they faced different contents of media (22). In order to utilize media literacy among adolescents, it is necessary to improve competencies such as skills, knowledge, and attitude toward media technologies in this age group (26). The findings of the present study also indicated an adequate level of health literacy among students. The results of other studies that are consistent with the results of the present study showed an appropriate level of health literacy among adolescents (27, 28). On the other hand, the results of Panahi et al.'s study showed that 42.6% of college students had an inadequate level of health literacy and 27.6% of them had insufficient health literacy level, which is inconsistent with the results of the present study. The possible reasons for such discrepancy may reside in the higher health literacy level of college students, their greater compliance with medical advice such as performing periodic examinations, and their greater interest in learning and acquiring health information because of their age requirements as compared to adolescents (29). The results of the present study showed that there was a direct relationship between the mean score of media literacy with the mean scores of health literacy and all its dimensions except for the critical look at media messages. New information technologies have great potential for increasing health-related knowledge levels of adolescents. In other words, the mass media is one of the most important social factors influencing youth health behaviors today (30). In Quinn et al.'s study, there was a significant relationship between college students' health literacy and media and information literacy (MIL), with 87% of students reporting that media literacy was helpful in their decision making to obtain correct information about health (27). In the study of Mahmoodi and Taheri, information literacy also accounted for 60.4 percent of changes in adolescent health literacy (31).

One of the possible approaches to addressing problems related to health information acquisition skills is to promote public health along with health information validation criteria. Providing standard evaluation criteria can help those individuals seeking information in this sense, identify inappropriate information resources (27). Surveying a large number of students from different areas of Isfahan was one of the strengths of this study. One of the limitations of this study had to do with the fact that although the results indicated that adolescents had the desired levels of media literacy and health literacy, the study was conducted only in a limited research community. Therefore, other studies need to be carried out on other students in this area to determine their

status and to make better judgments in the field of media literacy and health literacy.

5- CONCLUSION

The results of the present study showed that there was a direct correlation between the media literacy with the health literacy and all its dimensions except for the critical look at media messages. Providing standard evaluation criteria can help people identify inappropriate information resources so that they can best make their health decisions through media literacy. It is also necessary to introduce reliable resources of health information to improve adolescent health literacy.

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7- CONFLICT OF INTEREST: None.

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