



The role of media literacy in health literacy and Internet addiction among female postgraduate students

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Abstract

Internet addiction is prevalent among students who often do not have the desired level of health literacy. This study aimed to determine the role of media literacy in health literacy and Internet addiction. The statistical population of this study comprised of female graduate students in Tehran. 183 participants were selected using convenience sampling method. The participants responded to health literacy scale, internet addiction scale, and media literacy scale. The results showed that information literacy had a significant and positive relationship with health literacy; however, it had a significant negative relationship with Internet addiction. It seems that media literacy can predict internet addiction and health literacy. This finding implied the importance of media literacy in increasing media literacy and reducing of Internet addiction.

Keywords: Addiction, Health Literacy, Internet, Media

Introduction

One of the essential behaviors of life is the search for appropriate information in the field of health and management of this information usage. In fact, a person needs the skill of finding and using health information quickly and accurately. In today's world, everyone faces a huge flood of information in various areas, including health area. Health literacy can be considered as an application of information literacy in the field of health. In this regard, it can be said that a person should be equipped with the necessary skills of information literacy such as defining information needs, finding information, evaluating information, organizing information, and exchanging

(disseminating) information [1] in the field of health. Specifically, health literacy means a person ability, for example, to read drug guidelines, study medical information brochures, understand medical forms, and generally understand the medical system. That is, his/her ability to read, hear, analyze health purposes in health situations [2].

In the new era, the Internet has created new conditions for interpersonal relationships and online activities; for example leisure activities such as online games, social activities, such as online chat, and information activities such as online newspapers [3]. The increasing use of Internet in different parts

of the world [4] has led to a recent growing trend in the development of new research on youth and their use of new media technologies [5]. Much of this research has addressed the negative consequences of Internet overuse. In some cases, various stresses, such as educational stress [6], inability to manage the use of the Internet, and even inappropriate use for various reasons make individuals to develop a pathologic syndrome that the Internet addiction is the most prominent. The Internet addiction is characterized by severity of syndrome as highlighted in the fifth edition of the American Psychiatric Association as a psychiatric disorder [7,8]. An Internet addict is someone who spend at least 38 hours a week or 8 hours a day surfing on the Internet [9]. Internet addiction has several causes and it is known as a psychological disorder. However, some capabilities, including the capabilities associated with the use of information sources such as the media can affect Internet addiction [10]. Media literacy can be considered as the ability to examine and analyze the messages in the media from different perspectives and criticize the subject [11]. A person with media literacy uses the media rationally, effectively, and purposefully. He/she tracks the credibility of information from various sources, is aware of the media's influence on the formation of ideas, thoughts and values, and expresses his/her beliefs and views clearly and creatively through the media. In the current century, with unlimited access to science and information (content), the power to control the amount and manner of use to meet the needs is very important. Planning and selective use of media is one aspect of media literacy. Information literacy includes recognizing the effects of using the media and increasing the ability to judge and understand the benefits and disadvantages of them [11]. Studies have shown that media literacy can play an important role in optimizing the Internet use and reducing Internet-based harm. Media literacy can play an effective role in reducing Internet-based social harms [12]. The higher the level of media literacy of students is,

the more critical and more intelligent use of the Internet will be. Information literacy explains 40% of the health literacy variance, and most students acquire health information through the Internet [13]. According to Bergsma's research [14], media literacy plays an important role in promoting health. According to Song, Larose, Eastin, and Lin, the way of using the media can play a role in Internet addiction [15]. Media has a significant impact on health-related behaviors [16]. Given the prevalence of media use and the multitude of media, especially social media, Internet addiction can be a challenge for all people. A study found that the rate of Internet addiction among Iranian students was 86% [17]. Another study reported that 83% of students in clinical sciences and basic sciences suffered from Internet addiction [18]. Obviously, this high prevalence of Internet addiction also affects students and can reduce their academic performance and disrupt the education system. These consequences and negative outcomes can be even more problematic in postgraduate students. Particularly, dormitory students are more likely to be exposed to the use of the Internet overuse due to free Internet access. Proper use and management skills for using media can reduce such risks. Therefore, the purpose of this study was to determine the role of media literacy in health literacy and Internet addiction.

Method

The study population consisted of female postgraduate students residing in Tarbiat Modares university dormitory. The reason for choosing this university was that it only involves postgraduate students. The sample size was determined 200 students using the Morgan table. Two hundred questionnaires were distributed among female students of the university through a sampling method and 183 questionnaires were completed. The criteria for entering the research were residence in the student dormitory and aged

20 to 35 years. The exclusion criterion was not to answer more than half of the questionnaire questions.

Ashrafi Razi, Hasanzadeh, and Kazempour's media literacy tool was used to measure the media literacy of students [19]. The questionnaires were designed based on indigenous characteristics of Iranian society. Validity of the questionnaire was confirmed by library and information specialists. The reliability was 0.75 using Cronbach's alpha. The questionnaire has 36 items and 6 dimensions, including purposeful use of the media, media usage style, information combining, information sharing, and copyright observation. In this study, the overall score of media literacy was measured. This scale is graded using 5-point likert scale. The overall score of this scale is from 0 up to 180 where higher scores mean higher media literacy.

Health literacy tools designed by Montazeri et al, [20] were used to measure the health literacy of students. The questionnaire has 33 items and 5 dimensions, involving access, reading, comprehension, evaluation, decision making, and behavior. Items are graded using 5-point Likert scale. Scores range from 0 to 165, and higher scores indicate higher levels of health literacy. This questionnaire has been used in several studies and its validity is confirmed. Montazeri et al, [20] developed this tool according to the Iranian society and health priorities of the country and socio-cultural characteristics of Iran, and reported the alpha of Cronbach's syllables from 0.72 to 0.89, indicating that the reliability of the questionnaire is acceptable.

Yung's internet addiction test was used to measure Internet addiction. This scale consists of 20 questions that have been developed by Yung et al. This questionnaire scoring is done using 4-point Likert scale. The overall score of this scale varies from 0 to 100, indicating a higher degree of dependence on the Internet. A score of 0 to 19 represents a mild user, a score of 20 to 49 ordinary users, 50 to 79 average users, and a score of 80 to

100 representing the addicted user. This tool examines concepts such as psychological dependence, compulsory use, isolation, as well as problems related to occupation, asleep, family, and time management in terms of internal structure [19]. Content and convergence validity, retest ($r=0.82$), internal consistency ($\alpha=0.81$), and consistency ($r=0.72$) are reported for this scale.

This research was implemented using questionnaire implementation. The researchers, after identifying the community and sample, went to the girls' dormitories of Tarbiat Modarres University in order to collect the information. After explaining the purpose of the study for the students and attracting their attention, the researchers gained the samples' satisfaction. Then, the participants were given information literacy, self-regulation learning, and Internet addiction questionnaires, and they had 2 hours to complete the questionnaires. Then, the researcher collected the questionnaires. Finally, the data were analyzed by SPSS-18 and descriptive findings (using mean and standard deviation) and inferential findings (using multiple regression) were extracted ($p<0.05$).

Results

The mean age of participants was 26 years. 3.28. 77% of the participants were master students and 23% were PhD students. Descriptive findings, including mean and standard deviation for health literacy variables, media literacy and Internet addiction are presented in Table 1.

Table 2 shows the results of Pearson correlation for two variables of research. According to Pearson correlation coefficient, the correlation of media literacy with health literacy was 0.218, indicating a significant positive relationship between these two variables at the level of 0.01. Additionally, the correlation of media literacy with Internet addiction was -0.214, revealing a significant negative relationship between these two variables at the level of 0.01.

Table 1 Mean and standard deviation of health literacy and its dimensions, media literacy and Internet addiction among the participants

Variable	Standard deviation	Mean
Internet addiction	17.88	56.96
Media literacy	11.76	72.00
Health literacy	18.22	44.02
Availability	6.54	22.77
Reading	0.261	15.41
Comprehension	0.341	29.77
Decision making	0.585	42.48
Behavior	3.642	19.68

Table 2 Correlation between research variables

		Behavior (B)	Accessing (A)	Deciding (D)	Understanding (U)	Reading (R)	Health literacy (H)	Internet addiction (I)	Media literacy (M)
(M)	Pearson co-efficient	0.221*	0.059	0.227*	0.070	0.193*	0.218**	-0.214	
	p-value	0.002	0.447	0.003	0.361	0.0011	0.005	0.095	
(I)	Pearson co-efficient	0.103-0.149	-0.054	-0.108	-0.257**	-0.206**	-0.198*		0.135
	p-value	0.494	0.157	0.001	0.008	0.013		0.095	
(H)	Pearson co-efficient	0.711**	0.640**	0.760**	0.709**	0.743**		-0.198*	0.218**
	p-value	0.00	0.00	0.00	0.00	0.00		0.013	0.005
(R)	Pearson co-efficient	0.221**	0.335**	0.447**	0.512**		0.743**	-0.206**	0.193*
	p-value	0.00	0.00	0.00	0.00		0.00	0.008	0.0011
(U)	Pearson co-efficient	0.223**	0.327**	0.393**		0.512**	0.709**	-0.257**	0.070
	p-value	0.00	0.002	0.00		0.00	0.00	0.001	0.361
(D)	Pearson co-efficient	0.221**	0.327**		0.393**	0.447**	0.760**	-0.108	0.227*
	p-value	0.00	0.002		0.00	0.00	0.00	0.157	0.003
(A)	Pearson co-efficient	**0.221		0.227**	0.227**	0.335**	0.640**	-0.054	0.059
	p-value	0.00		0.002	0.002	0.00	0.00	0.494	0.447
(B)	Pearson co-efficient		*0.221	**0.221	0.223**	0.221**	0.711**	-0.103	*0.221
	p-value		0.00	0.00	0.00	0.00	0.00	0.149	0.002

** p<0.01

Linear regression was used to investigate the role of media literacy in Internet addiction of

students, the results of which are shown in Table 3.

Table 3 Summary of regression model, analysis of variance, and statistical characteristics of media literacy regression and Internet addiction

	SE	R ²	R	p	F	MS	df	SS
Regression	18.15	0.047	0.218	0.000	2.815	919.939	1	919.939
Remaining						326.815	151	55145.639
Total							152	50969.059

According to the results of Table 3, the observed p-value was significant ($p<0.001$) and 4% of the variance was associated with Internet addiction ($R^2=0.047$). Regression coefficients showed that media literacy can explain 4% of the variance of Internet addiction negatively with 0.99% confidence. By increasing media

literacy, Internet addiction decreased.

Linear regression was used to examine the role of media literacy in the health literacy of students, and the results are presented in Tables 3 and 4.

According to the results of Table 4, the observed p-value was significant ($p<0.001$)

and about 4% of the variance was related to health literacy ($R^2=0.03$). Regression coefficients indicated that media literacy can explain about 4% of health literacy variance

Table 4 Summary of regression model, analysis of variance, and statistical characteristics of media literacy and health literacy

	SE	R ²	R	p	F	MS	df	SS
Regression	6.61	0.037	0.059	0.000	8.217	2707.867	1	2707.869
Remaining						329.526	165	54373.436
Total							166	57081.305

Discussion

The findings indicated a significant positive correlation between media literacy and health literacy and a significant negative relationship between media literacy and Internet addiction. Moreover, media literacy could predict health literacy and addiction to the Internet. Therefore, our research hypotheses are confirmed. In addition, media literacy can predict health literacy and addiction to the Internet. These results are consistent with those revealed by Taghizadeh and Taghizadeh [12], Mahmoudi and Taheri [13], Bergsma [14], Song et al., [15], and Gonzales et al, [16]. Students receive much of the health-related information from the Internet, and less of them refer to resources such as brochures, booklets, and newspapers. As students' information ability increases, their health literacy also increases [13]. Media literacy requires the ability to work with information and use this information appropriately. Media literacy facilitates the ability to access, analyze, evaluate, and communicate with media messages, and it also increases critical thinking. Critical thinking works like a vaccine. If the use of the Internet is not accompanied by critical thinking, the damage induced by it will increase [12]. The media sends a lot of messages about health. As individuals learn more about how to use this information, they will have a higher level of health literacy [14]. Health literacy requires a variety of health decisions. The more an individual has the ability to find new sources of information and compare different sources, he/she will make better decisions [21].

That's where media literacy is closely related to information literacy. It can be said that

significantly and with confidence of 0.99. Therefore, it seems that by increasing the literacy of the media, the health literacy of participants also increases.

students with high media literacy actually have high information literacy which helps improve critical thinking skills, prevent to be distracted by the mass of existing information, and endow them the power of evaluation, analysis, and inference [22].

Basically, a person with more media literacy is better at looking for information, including health related information. A person with media literacy may also have a high level of information literacy. Mahmoudi and Taheri [13] reported that information literacy would make people receive more health-related information. media and the way of using them affect health behaviors [16]. The ability and skill of a person to seek and receive correct health information can also guide his/her behavior. More complete and more accurate information means better decision-making in relation to health.

When students have a high media literacy, they use the media wisely and purposefully and plan for it. They will also have a more critical looking and are willing to evaluate information and use it more consciously for useful purposes like health. Taghizadeh and Taghizadeh [12] also reported that people with higher media literacy had the optimal use of the Internet and were less vulnerable to Internet-based social harm. Block [7] and Bernardi and Palanti [8] also reported that the inability to manage Internet usage makes the individual to be prone to Internet addiction. People who can manage their Internet usage are less likely to develop this form of addiction. People with high media literacy receive information from different

sources and compare the information. They care about the credibility of the information and examine the information dissemination incentive. Media literacy can help a person assess and evaluate health-related information and make the right decision to use them to increase their health. Accordingly, the person will have the ability to manage time in the use of media, including the Internet and can control the use of the Internet; therefore, the risk of Internet addition is reduced. Media literacy helps the individual understand the symbolic meaning of information received and not to be merely the recipient of information, but plays an active role and to solve the information technology challenges [23]. Gonzalez et al. [16] also suggested that the way of using media could play a role in Internet addiction. It seems that if people do not have media literacy, they will drown in massive media flushes and do not consciously choose what information to receive, but with the help of media literacy, selective attention will be increased. One of the dimensions of media literacy is to increase the ability of an individual to use media content in real life. A person with media literacy finds useful programs and information and uses them appropriately [24-26].

Among the limitations of this study, it can be noted that only female students of a university were studied. Comparison of male and female students of different universities can provide more accurate information. In addition, research samples were restricted to dormitory students.

Conclusion

There is a lot of health information available on the Internet and access to it depends on the individual's capabilities to use information and communication technology. If a person does not have a proper level of ability to use information in the technology world, he/she does not appreciate the large amount of information available and cannot understand them correctly or cannot have access to various sources of information, compare, and evaluate them. As a result, it will not be effective in deciding on health information. Of course, it

is difficult to resist the rapid flow of Internet harms, but with the student media literacy, it is possible to direct them to the correct and optimal use of the Internet. Based on the findings of this study, it can be concluded that universities should, instead of imposing more restrictions on the Internet or providing direct health information to students, take indirect and effective solutions such as designing specific programs to increase students' media literacy. Future studies are recommended to cultivate more the role of media literacy.

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Contribution

Study design: MSh

Data collection and analysis: NTD

Manuscript preparation: AL

Conflict of Interest

"The author declare that they have no competing interests."

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