The Relationship Between Health Information Literacy and the Ability to Face the COVID-19 Infodemic Among the Students of Razi University

Ebtehaj Darafarin[1], Amin Zare[2], Gholamreza Heidari[3]

Abstract

Purpose: The outbreak of the coronavirus in 2019 and the spread of the disease of COVID-19 led the World Health Organization to declare a pandemic, and the need for reliable and accurate information to deal with this virus and disease became a serious need. Therefore, the importance of health information literacy became more evident than in the past. According to these cases, the current study aimed to investigate the relationship between health information literacy and the ability to cope with the infodemic of Covid-19 among the students of Razi University.

Methodology: The current research was carried out using a survey method and the data collection tool was a questionnaire.

Findings: This research was carried out using a survey method and the data collection tool was a questionnaire. The research population consisted of all students of Razi University and the sample size was calculated using Cochran's formula. The collected data were analyzed using descriptive statistics (frequency distribution, mean and standard deviation) and inferential statistics (Kolmogrov-Smirnov and Pearson correlation).

Conclusion: Individuals with a more suitable and favorable situation in terms of health information literacy level can better face psychological and behavioral crises resulting from infodemic. In fact, health information literacy can act as a shield against infodemics and vaccinate people against it.

Value: Research in the field of the relationship between health information literacy and the ability to face infodemia is unprecedented.

Keywords*: Health Information Literacy, Infodemic, COVID-19.*

1. M.A. in Information Science, Faculty of Social Science, Razi University, Kermanshsh, Iran.
2. Associate Professor, Department of Information Science, Faculty of Social Science, Razi University, Kermanshsh, Iran. (Corresponding Author) a.zare@razi.ac.ir
3. Associate Professor, Department of Information Science, Faculty of Social Science, Razi University, Kermanshsh, Iran.

Extended Abstract

Introduction: The spread of the coronavirus in 2019 and the spread of COVID-19 led the World Health Organization to declare a pandemic, and the need for reliable and accurate information to deal with this virus and disease became urgent. In such a way, many people started searching for news and information about this disease and ways to prevent or treat it. On the other hand, infodemic has been considered the widespread and uncontrollable spread of news and information in a specific field. In an infodemic environment, a lot of information regarding the various dimensions of COVID-19, the control and prevention methods and its consequences through social media, television channels, and news agencies is Published without checking its accuracy. According to these cases, the current research aims to investigate the relationship between health information literacy and the ability to cope with the COVID-19 infodemic among Razi University students.

Purpose: The purpose of this research is to answer to the following questions:
1. Is there a significant relationship between recognizing the need for health information and the ability to cope with the COVID-19 infodemic?
2. Is there a significant relationship between identifying information sources and their use to retrieve health information and the ability to cope with the COVID-19 infodemic?
3. Is there a significant relationship between understanding health information and the ability to cope with the COVID-19 infodemic?
4. Is there a significant relationship between evaluating health information and the ability to cope with the COVID-19 infodemic?

Methodology: The present research was conducted using a survey method, and the data collection tool was a questionnaire. The research population consisted of all students of Razi University, and the sample size was calculated using Cochran's formula. The collected data were analyzed using descriptive statistics (frequency distribution, mean, and standard deviation) and inferential statistics (Kolmogorov-Smirnov and Pearson correlation). Table 1 presents the number of students in each faculty and the corresponding sample size.

Table1: Number of students and sample

Faculty	Number of Students	Sample Size
Literature And Humanities	۱۸۷۸	۶۳
Sport Science	۵۶۶	۱۹
Science	۱۴۳۱	۴۸
Engineering	۲۸۸۶	۹۶
Social Science	۱۹۲۰	۶۳
Agriculture	۱۴۰۶	۴۸
Veterinary	۴۱۳	۱۵
Innovative Science and Technology	۳۱	۱
Chemistry	۵۲۷	۱۹
Total	۱۱۰۵۸	۳۷۲

The validity of the questionnaire was assessed using the opinions of professors and experts, and its reliability was measured using Cronbach's alpha coefficient. The collected data were analyzed using descriptive statistics (frequency distribution, mean, and standard deviation) and inferential statistics (Kolmogorov-Smirnov and Pearson correlation).

Findings: Table 2 shows the composition of respondents to the questionnaire based on demographic variables.

Table 2. Respondents to the Questionnaire

Gender	Freq	Percent
Female	247	66.4
Male	125	33.6
Total	372	100
Education Level	**Freq**	**Percent**
Bachelor	250	67.2
Master	83	22.3
Ph.D	39	10.5
Total	372	100
Age	**Freq**	**Percent**
18-22	171	46
23-27	141	37.9
28-31	33	8.9
+31	27	7.3
Total	372	100
Marital Status	**Freq**	**Percent**
Single	338	90.9
Married	34	9.1
Total	372	100

The findings showed that the average responses of all variables of health information literacy are above the mean, with the highest value for the variable recognizing the need for health information and the lowest for the variable of decision-making and use of information. On the other hand, the average responses of all infodemic variables are also above the mean. Among the infodemic variables, the highest value belongs to different forms of information and the lowest to information speed. Moreover, the regression test results showed that 31% of the variance in the dependent variable (ability to cope with the COVID-19 infodemic) can be predicted by the independent variable (health information literacy). This indicates that by improving health information literacy, it is possible to predict and manage up to one-third of the consequences caused by infodemic COVID-19 (Table 3).

Table: Regression Model Summary

Model	R	R²	Coefficient of Determination	Standard Error	Durbin–Watson
	0.56	0.32	0.31	0.47	1.92

Conclusion: According to the research results and the confirmed relationship between health information literacy and the ability to cope with infodemic conditions, it seems necessary for managers in the health system, education, higher education, national media, and other relevant institutions to address the issue and implement practical solutions to improve the level of health information literacy. Some of these solutions may include preparing educational content, producing video clips, holding educational workshops, integrating health information literacy into education and higher education courses, and similar actions.

Value: Research in the relationship between health information literacy and the ability to cope with infodemics is limited. considering the role of health information literacy as a shield in confronting the infodemic, this research addresses a valuable and relevant topic.

Keywords: Health Information Literacy, Infodemic, COVID-19.

References

Allahverdipour, H. (2020). Global challenge of health communication: infodemia in the coronavirus disease (COVID-19) pandemic. *Journal of Education and Community Health*, *7*(2), 65-67. doi: 10.29252/jech.7.2.65 [In Persian]

Bastani, P., & Bahrami, M. A. (2020). COVID-19 related misinformation on social media: a qualitative study from Iran. Journal of medical Internet research. https://doi.org/10.2196/18932

Bigdeli, Z., & Sharifi, S. (2010). The concept of "texture" in the field of information behavior.. *Library and Information Sciences*, *13*(3), 31-51. [In Persian]

Laleh-Zarian, A. (2014). Study of the health status of patients who underwent Lango model in Isfahan in 2013. (Unpublished Master's thesis). Isfahan University of Medical Sciences. [In Persian]

Mokhatri-Hesari, P., Moezzi, B., & Montazeri, A. (2020). Infodemic, misinformation and the COVID-19. *Payesh (Health Monitor)*, *19*(3), 349-353. Doi: 10.29252/payesh. 19.3.349 [In Persian]

Zare, A. (2022). Health Information Seeking for a Disease Epidemic: A Case Study of Kermanshah Citizens in the Covid 19. *Journal of Studies in Library and Information Science*, *14*(Special Issue: COVID-19), 1-13. https://doi.org/10.22055/slis.2020.330 88.1715 [In Persian]

Zare-Farashbandi, F., Lalazaryan, A., Rahimi, A., & Hasssanzadeh, A. (2016). The effect of contextual factors on health information–seeking behavior of Isfahan diabetic patients. *Journal of Hospital Librarianship*, *16*(1), 1-13. [In Persian] Zare Gavgani, V. (2020). Infodemic in the global coronavirus crisis. *Depiction of Health*, *11*(1), 1-5. doi**:** 10.34172/doh.2020.01 [In Persian]

Eysenbach, G. (2020). How to Fight an Infodemic: The Four Pillars of Infodemic Management. *medical Internet research*, *22*(6), e21820. https://doi.org/10.2196/21820

Gisondi, M. A., Chambers, D., La, T. M., Ryan, A., Shankar, A., Xue, A., & Barber, R. A. (2022). A Stanford Conference on Social Media, Ethics, and COVID-19 Misinformation (INFODEMIC): Qualitative Thematic Analysis. *medical Internet research, 24*(2), e35707. https://doi.org/10.2196/35707

Hirvonen, N., Enwald, H., Mayer, A. K., Korpelainen, R., Pyky, R., Salonurmi, T., Savolainen, M. J., Nengomasha, C., Abankwah, R., Uutoni, W., Niemelä, R., & Huotari, M. L. (2020). Screening everyday health information literacy among four populations. *Health information and libraries journal*, 37(3), 192–203. https://doi.org/10.1111/hir.12304

Islam, M. S., Sarkar, T., Khan, S. H., Mostofa Kamal, A. H., Hasan, S. M. M., Kabir, A., Yeasmin, D., Islam, M. A., Amin Chowdhury, K. I., Anwar, K. S., Chughtai, A. A., & Seale, H. (2020). COVID-19-Related Infodemic and Its Impact on Public Health: A Global Social Media Analysis. *tropical medicine and hygiene*, *103*(4), 1621-1629. https://doi.org/10.4269/ajtmh.20-0812

Savolainen, R. (1995). Everyday life information seeking: Approaching information seeking in the context of "way of life". *Library & information science research*, *17*(3), 259-294. https://doi.org/10.1016/0740-8188(95)90048-9

Webber, S., & Johnston, B. (2000). Conceptions of information literacy: new perspectives and implications. *Journal of information science*, *26*(6), 381-397. https://doi.org/10.1177/01655515000260060

Williamson, K. (1998). Discovered by chance: The role of incidental information acquisition in an ecological model of information use. *Library & information science research*, *20*(1), 23-40. https://doi.org/10.1016/S0740-8188(98)90004-4

Wilson, T. (2000). Human Information Behavior. *Information Science*, *3*(2), 49-56. https://inform.nu/Articles/Vol3/v3n2p49-56.pdf

Zielinski, C. (2021). Infodemics and infodemiology: a short history, a long future. *Revista Panamericana de Salud Publica*, *45*, e40. https://doi.org/10.26633/RPSP.2021.40