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Original Research

The Relationship between Media Literacy and the Ability to Detect Fake News in COVID-19 Pandemic

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Abstract

Following the increase of false news about the COVID-19 disease and the psychological and social effects that have resulted, detecting fake news during the COVID-19 pandemic is one of the critical things that can be effective in this field. Therefore, the current study investigated the relationship and role of media literacy in predicting students' ability to detect fake news during the COVID-19 pandemic. This research was applied using a descriptive survey method. The statistical population of this research consists of all the students of Razi University; 371 students were selected as the sample population by stratified random sampling. A standard media literacy questionnaire with 20 questions was used to collect data and a researcher-made questionnaire on the ability to detect fake news in the COVID-19 pandemic based on the eight components of the IFLA notification in 34 questions. The results showed that the level of media literacy and the ability to detect fake news during the COVID-19 pandemic is average. Media literacy, with a correlation coefficient of 0.56, has a positive and significant relationship with the ability to detect fake news during the COVID-19 pandemic. Moreover, with a path coefficient of 0.64, the predictive power detects fake news in the COVID-19 pandemic more than students. Training and measures should be taken to improve students' media literacy skills and increase their ability to deal with fake news.

Keywords: Fake News; COVID-19 pandemic; Media Literacy; Student; Razi University

Introduction

In early January 2020, after China reported the first cases of the new COVID-19 pandemic in Wuhan, unreliable and fake information began spreading faster than the virus itself. People have experienced an infodemic besides this epidemic, that is, much information, some of which is misleading or even harmful, and has spread widely (Mazzeo, Rapisarda & Giuffrida, 2021). Some studies have shown that fake news and misinformation may spread faster and more widely than fact-based news (Vosoughi, Roy & Aral, 2018). The Internet, particularly social networks, is a breeding ground for all kinds of true and false content and rumors about the COVID-19 pandemic virus because of its democracy and open access. If the spread of incorrect information about the COVID-19 pandemic is not controlled, people will distrust reliable sources of information (Zarea Gavgani, 2020). Of course, the type of network also plays a role in determining fake news. It was observed that the spread of fake news and misinformation

among anonymous and informal accounts (individual and group) on social media is faster than the official media and official accounts (Kouzy et al., 2020). A COVID-19 pandemic survey in the UK found that almost half (46%) of the British population is exposed to fake news about the COVID-19 pandemic (Ofcom, 2020). In addition, a recent analysis of the most viewed COVID-19 pandemic videos on YouTube showed that more than 25% of the top videos about the virus contained misleading information and reached more than 62 million views worldwide (Lee et al., 2020). There are also several initiatives to combat this problem. In January, the World Health Organization (WHO) launched the Epidemic Information Network (EPI-WIN) to combat misinformation by providing timely, accurate information from reliable sources. In addition, through partnerships with companies such as Facebook, Google, Tencent, Baidu, Twitter, T-Katak, Weibo, and Pinterest, as well as influential people (influencers) in the virtual world, the WHO has provided accurate news about COVID-19 pandemic disease. Prominent social networks have also taken steps to provide credible news and reduce false news (McKew, 2020).

Following the COVID-19 pandemic outbreak, the WHO has launched social media chatbots on WhatsApp and Viber to provide accurate information about the COVID-19 pandemic. The WHO has also created a dedicated web page to correct misinformation about the disease. However, while messages that expose misinformation on social media may have a positive effect, it has been observed that such messages can also contribute to the persistence of misinformation (Gabarron, Oyeyemi & Wynn, 2021). The influence of COVID-19 pandemic-related misinformation can be mitigated by (1) social media users who should avoid posting misinformation; (2) social media platforms, which must identify incorrect information and label or delete it as incorrect information; and (3) public health officials and health care providers who need to increase their COVID-19 pandemic-related presence and activities on social media (ibid).

Thus, how do people detect fake news on social media during the COVID-19 pandemic? Or how can you accidentally prevent sharing incorrect information on the Internet? Here are eight points IFLA has made to identify misinformation about the COVID-19 pandemic disease:

1) **Consider the source**: Is there an author? Check out their credentials on relevant issues.

2) **Read beyond**: Headlines can be outrageous to get clicks. What is the whole story?

3) **Do others agree**? Are any other sites reporting this? What sources are they citing?

4) **Supporting sources**: Click on links or check with official sources. Do they support the story?

5) **Look before You share:** Do not share posts or stories you have not checked out first!

6) **Is it a joke**? If it is too outlandish, it might be satire. Research the source to be sure.

7) **Check Your biases**: Consider whether your beliefs or concerns could affect your judgment.

8) **Ask experts**: Ask a librarian or consult a fact-checking site official source like the WHO. (IFLA, 2017).

In the meantime, people who do not know enough about the accuracy of many media news outlets and consider the media an indisputable fact are vulnerable. Such people are readily accepted in the face of fake news, and this misinformation may affect their beliefs, opinions, and behavior because they have not been given the necessary training for this purpose, and their critical view of the world around them has not been strengthened. Therefore, the spread of various media, programs, and messengers and their influx towards the audience requires that

they be equipped with knowledge due to recognizing the validity of information (Azizi & Moradi, 2022). On the other hand, some studies (Bashir, 2020; Alias, Md Radzi, Ahmad Zukarnain, Hamidon & Arifin, 2020; Greene & Murphy, 2020; Tejedor, Portalés-Oliva, Carniel-Bugs & Cervi, 2021; Veeriah, 2021) show media literacy's effect on detecting fake news. They emphasized this point to detect fake news. It is the audience who must improve literacy. Media literacy gives the audience the ability to verify the news.

Nowadays, media literacy has become a global necessity. In fact, without media literacy, it is impossible to understand, analyze properly, and critique media content. Media literacy has many definitions, but the following definitions will be brought up in this article. Media literacy is examining and analyzing informative, entertaining messages delivered daily. Media literacy uses critical thinking skills and its relationship with all media (Nasiri & Hashemi, 2014). Media literacy can have a direct impact on the crucial role of the media consumption regime, preventing news paralysis, which has many psychological consequences on society. It also impacts how events are viewed from a media perspective and, as a result, how people think in terms of media power. According to the definitions and nature of media literacy, this literacy increases the ability to analyze, recognize, understand, and choose the media message and makes people resistant to the influences caused by the power of the media. It is a necessary skill, and it seems necessary to moderate the adverse effects of the media and allow the audience to process the media's message with full awareness. Therefore, predicting the audience's ability to detect fake news is essential. Table 1 discusses the COVID-19 pandemic crisis (Bashir, 2020). This issue also shows the relationship of this variable with media literacy. Both emphasize the concept of information and skills needed to use media news.

Table 1
Ways to deal with the COVID-19 pandemic crisis

Media responsibility	**Social solidarity**	**Media cooperation**	**Culture and public Education**
-The need for media responsibility - To publish useful and constructive news	-Strengthening social solidarity -Avoiding unempathetic actions - Mobilizing the people against fake news	-Empathy and media solidarity -Cooperation of mass media with radio and television	-Culturalism -Social Education -Expansion of preventive education

Therefore, this paper aims to study the relationship between media literacy and the ability to detect fake news of the COVID-19 pandemic among students as a large segment of Iranian society and determine the role of media literacy in predicting the ability to detect fake news of COVID-19 among university students. Educating students and guiding them to gain the ability to detect fake news and advancing their skills are the issues be achieved in various ways, such as through education through all programs and increasing literacy, on the one hand. On the other hand, universities can play a role in successfully delivering this education to students. Therefore, the academic community can be studied to find better solutions to improve individuals' skills so that they can take steps to meet the information needs of students in the

era of the COVID-19 pandemic crisis. It is worth mentioning that no research has been observed in this field so far, and all the previous cases are evidence of the necessity of such research. By conducting this study, it is possible to get the attention of the authorities to the importance of annual literacy in detecting fake news during the COVID-19 pandemic and providing education in this field.

Literature Review

A review of studies reveals that limited research has been conducted on the relationship between media literacy and the ability to detect fake news during the COVID-19 pandemic, the most relevant of which are outlined in Table 2.

Table 2

Previous research on The Relationship between Media Literacy and the Ability to Detect Fake News in the COVID-19 PANDEMIC

Authors and Publication Date	Methodology	Results
El Rayess, Chebl, Mhanna & Hage (2018)	Survey- Qualtrics- undergraduate students-	students were not proficient in assessing the validity of information sources. They introduced the role of librarians and the importance of media and information literacy in students' curricula as essential factors in this regard.
McDougall (2019)	ethnographic- interviews- journalists, teachers, students, librarians and information professionals	concluded that critical media literacy equips citizens to deal with fake information if accepted as a compulsory subject in schools and taught dynamically.
Tejedor et al. (2021)	Surveys- questionnaire- journalism students, professors, and experts in Multimedia Journalism	showed that students did not trust their ability to detect fake news and concluded that promoting media literacy and news literacy plays a crucial role in educating students.
Veeriah (2021)	Survey- questionnaire- young adults	Results showed that despite being confident in distinguishing fake news from real news, young adults have difficulties differentiating between verifiable news and fake news, and young adults also have a moderate level of new media literacy.
Austin, Austin, Willoughby, Amram, & Domgaard (2021)	surveys- questionnaire- U.S. National	concluded that media literacy and scientific literacy skills help adopt COVID-19 pandemic protective behaviors by creating knowledge and expectations.
Lee, Lee & Lee (2022)	Survey- questionnaire- Citizens aged 20-60 South Korean residents	the components of new media literacy contributed to transmitting unverified information among citizens unless the risk of fake news was understood.
Usman, Eric Msughter & Olaitan Ridwanullah (2022)	Survey- questionnaire- students	the students possess the requisite literacy to identify fake, and that has a significant on their perception of COVID-19, despite the consumption of fake news related to the disease
Azizi and Moradi (2022)	Survey- questionnaire- public library librarians	examined the role of media literacy in detecting fake news librarians in public libraries and concluded that media literacy affects all aspects of the ability to detect fake news librarians except questioning experts.

A review of research abroad shows that several articles have been written about the ability to detect fake news and media literacy, but none of them determined specific and comprehensive dimensions for the ability to detect fake news, and they can only cover a small portion of this research. In other words, no research has precisely measured the relationship between media literacy and improved ability to detect fake news during the COVID-19 pandemic based on the dimensions identified by IFLA. In the country, the only study found on the role of media literacy in the ability to recognize fake news is related to the article by Azizi and Moradi (2022), who examined the role of media literacy in the ability to recognize fake news (in general) of public library librarians. Therefore, based on the existing research gap, this paper intends to investigate this issue among the students of Razi University.

Research Questions

RQ 1. What is the level of media literacy and the ability to detect fake news about the COVID-19 pandemic among the students of Razi University?

RQ 2. What is the relationship between media literacy and the ability to detect fake news about the COVID-19 pandemic among the students of Razi University?

RQ 3. What is the role of media literacy in predicting the ability to detect fake news of the COVID-19 pandemic among the students of Razi University?

Materials and Methods

When we do research intending to have the results of the findings to solve existing problems, we call it applied research. Therefore, the current research is applied in terms of purpose and descriptive research method. Descriptive studies are conducted to determine and describe the characteristics of the variables of a situation (Uma & Bougie, 2013). The data collection was done using a survey method. Considering the number of the country's young population and significantly the increase of students in recent years, as well as their greater use of media and social networks (According to ISNA report in 2018, 88% of social network users are between 18 and 29 years old), the choice of the statistical population of the research included the students of Razi University of Kermanshah in the year 2021-2022 as the nearest population available during the outbreak of COVID-19, which were 10570 individuals. It based on Krejcie and Morgan's table, 371 people were selected as a sample through stratified random sampling (Krejcie & Morgan, 1970). The sampling steps of this research were as follows:

In the first stage, the students were classified according to the 12 faculties of the place of study and their three levels of education. The distribution of the people in the society among each class was determined.

Then, the percentage ratio and share of each class in the total population of the society were calculated.

According to the share of each class in the society, the ratio and share of that class in the sample people were also determined.

Finally, by applying the simple random sampling method, the number of sample people from each class was selected from the whole class.

To investigate the relationship between media literacy and the ability to detect fake news, a questionnaire (Falsafi, 2014) in 5 components (understanding the content of media messages, awareness of the hidden purposes of media messages, conscious selection of media messages, critical view of media messages; and analysis of media messages) and 20 questions with

modifications for the use of students, and a researcher-made questionnaire on the ability to detect fake news in COVID-19 pandemic based on eight components (checking the source, reading news text, checking the agreement of other sources on the subject, checking support sources, checking the news before sharing it, checking fakeness or the seriousness of the news, the avoiding personal prejudice, and the asking experts) were distributed. IFLA (2017) has considered them to be able to detect fake news during the COVID-19 pandemic, and it is designed with 34 questions. The questions were rated on a 5-point Likert scale from very high to very low. Most of the questionnaires were distributed online in social networks due to the COVID-19 pandemic disease, and some were given to the students by direct reference. Finally, according to the number of research samples, 371 questionnaires were completed and gathered. The opinions of several experts in information science were considered to assess the validity of the content of the questionnaires. Cronbach's alpha method was used to assess the reliability of the questionnaires. Cronbach's alpha coefficient for the media literacy variable was 0.85, and Cronbach's alpha coefficient for detecting fake news was 0.92, indicating the research tool's high reliability. Descriptive and inferential statistics were used to analyze the findings using SPSS and Amos software.

Results

Table 3 illustrates data on descriptive statistics of students' media literacy variables. As can be seen in Table 3, the mean and standard deviation of the media literacy variable are 3.23 and 11.13, respectively. Moreover, among the dimensions of media literacy, the highest average, 3.62, is related to the conscious selection of media messages, and the lowest average, 2.95, is related to the critical view of media messages. Considering that the average of most variables is slightly higher than the average value of 3, it can be said that the condition of media literacy and its dimensions is moderate.

Table 3
Statistics Descriptive variable media literacy

Less	Most	Deviation Criterion	Average	variable
4.00	20.00	3.45	3.21	Understanding the content of media messages
4.00	20.00	3.22	3.39	Awareness of the hidden purposes of media messages
4.00	20.00	3.00	3.62	Conscious selection of media messages
4.00	20.00	2.69	2.97	A critical look at media messages
4.00	20.00	2.81	2.95	Analyzing media messages
20.00	100.00	11.13	3.23	Media literacy

According to Table 4, the mean and standard deviation of the COVID-19 pandemic fake news detection variable are 3.26 and 20.89, respectively. In addition, among the dimensions of COVID-19 pandemic fake news detection, the highest average, 3.58, is related to reviewing the news before sharing it, and the lowest average, 2.21, is related to the dimension of asking experts. Considering that the average of most variables is slightly higher than the average value

of 3, it can be said that detecting fake news during the COVID-19 pandemic and its dimensions is average.

Table 4
Statistics Descriptive variables for detecting fake news COVID-19 pandemic

Less	Most	Deviation of standard	Average	variable
6.00	25.00	4.04	3.43	Checking the source
5.00	20.00	3.05	3.43	Reading the news text
4.00	20.00	4.09	3.25	Checking the agreement of other sources on the subject
6.00	25.00	3.82	3.36	Checking support resources
7.00	20.00	3.36	3.58	Checking the news before sharing it
6.00	20.00	2.71	3.09	Checking the fakeness or seriousness of the news
7.00	25.00	3.01	3.32	Avoiding personal prejudices
3.00	15.00	2.54	2.21	Asking experts
60.00	162.00	20.89	3.26	Ability to detect fake COVID-19 pandemic news

Kolmogorov-Smirnov test was applied to ensure the normal distribution of research variables. In this test, if the significance level of the Kolmogorov-Smirnov z statistic is less than 0.05, the distribution of the variables is non-thermal, and if the significance level is greater than 0.05, the distribution of the variables is normal. The results of the test for normality of research variables are presented in Table 5. Since the significance level for the Kolmogorov-Smirnov statistic for the media literacy variable is less than 0.05, it does not have a normal distribution. However, the fake news detection variable has a normal distribution. Therefore, to apply the Pearson correlation test, there is a default for the normality of the dependent variable distribution, which here is the variable of the ability to detect fake COVID-19 pandemic news.

Table 5
Results of the Kolmogorov-Smirnov test to check the normality of variables

Significance level	Statistics Kolmogorov-Smirnov	Variables
0.00	0.08	Media literacy
0.20	0.04	Ability to detect fake news COVID-19 pandemic

Considering that the significance level of all correlation coefficients is smaller than 0.05, it can be said that there is a meaningful relationship between media literacy and the components of the ability to recognize fake news (source review, reading news text, review of agreement of other sources on the subject, review of support sources, review of news before sharing it, checking the fakeness or seriousness of the news, avoiding personal prejudices, and asking experts) respectively.

After evaluating the correlation coefficient and determining the significance and direction of the relationship, the intensity of the relationship should be evaluated. Various divisions have been presented to interpret the intensity of the relationship between two variables. Miller's division (2001) is one of them, which interprets the coefficient between 0.4 and 0.6 as representing an average relationship. Therefore, it can be said that there is a positive relationship between media literacy and the ability to recognize fake news of the COVID-19 pandemic among students, and its intensity is 0.56 (Table 6).

Table 6

Pearson's correlation coefficient between media literacy and components of the ability to detect fake news of the COVID-19 pandemic

media literacy			**components of the ability to detect fake news of COVID-19 pandemic**
Result	**Sig.**	**Pearson's correlation coefficient**	
Confirmed	0.00	0.42	Checking the source
Confirmed	0.00	0.43	Reading the news text
Confirmed	0.00	0.51	Checking the agreement of other sources on the subject
Confirmed	0.00	0.46	Checking support resources
Confirmed	0.00	0.44	Checking the news before sharing it
Confirmed	0.00	0.42	Checking the fakeness or seriousness of the news
Confirmed	0.00	0.38	Avoiding personal prejudices
Confirmed	0.00	0.46	Asking experts
Confirmed	0.00	0.56	Ability to detect fake COVID-19 pandemic news

To test the prediction of the ability to detect fake news during the COVID-19 pandemic based on media literacy, structural equation modeling was used through the maximum likelihood method in Imus software. In this model, the ability to detect fake news of the COVID-19 pandemic was considered as an exogenous dependent variable, and the media literacy variable was taken as an endogenous dependent variable. The fit indices of the structural equation model were used to fit the research model, based on which the indices were estimated as follows (Table 7). As shown in Table 7, all the fit indices indicate an acceptable fit of the proposed model with the data.

Table 7

Range of index range and goodness of fit

Calculated value	A Good Fit	Fit index
9.921	0≤ CMIN/DF≤ 3	CMIN/DF[1]
0.072	0≤ RMSEA ≤0/08	RMSEA[2]
0.961	0/90≤ IFI ≤1	IFI[3]
0.942	0/90≤ NFI ≤1	NFI[4]

[1]. Normed Chi-Square
[2]. Root Mean Square Error of Approximation
[3]. Incremental Fit Index
[4]. Normal Fit Index

Calculated value	A Good Fit	Fit index
0.652	0/50≤ PNFI≤1	PNFI[5]
0.961	0/90≤ CFI ≤1	CFI[6]

Figure 1 represents the structural relationships between research variables. According to the obtained results, media literacy has a path coefficient of 0.82 based on the source review (Aa), with a path coefficient of 0.78 on reading the news text (Ab) and a path coefficient of 0.88 on examining the agreement of other sources about Subject (Ac), with a path coefficient of 0.87 on the investigation of supporting sources (Ad), with a path coefficient of 0.71 on the investigation of the news before sharing it (Ae), with a path coefficient of 0.59 on the investigation of humor or seriousness of the news (Af), with a path coefficient of 0.72, all they of them play a significant role in avoiding personal prejudices (Ag) and with a path coefficient of 0.57, they play a role in asking experts (Ah). Meanwhile, with a path coefficient of 0.64, it is meaningful in terms of the variable of the ability to detect fake news of the COVID-19 pandemic.

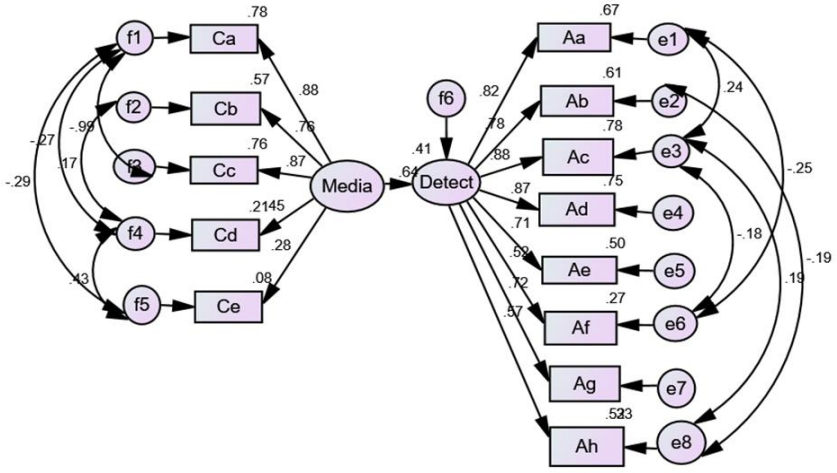

Figure 1: Structural equation model in the case of standardized coefficients

Discussion

Individuals' inability to detect fake news about the dangerous COVID-19 pandemic disease can spread it and have irreparable consequences, as it may distract people from taking appropriate measures that help protect their health and others'. Therefore, it leads them to act and misbehave and the spread of the disease. As a result, awareness of accurate information and detection of fake news should be considered necessary in combating this dangerous epidemic. Media literacy is one factor that plays a role in this field and affects individuals' ability to detect fake COVID-19 pandemic news. According to the current study, the average variable of the ability to detect fake news during the COVID-19 pandemic is equal to 3.26 (out of the average value of 3), and the average variable of media literacy is equal to 3.23 (out of the average value of 3), which can be said to be the status of the ability to detect fake news in COVID-19 pandemic and students' media literacy which is moderate. This finding is consistent

[5] . Parsimony Normed Fit Index
[6]. Comparative Fit Index

with the research results of Azizi and Moradi (2022), McDougall (2019), Veeriah (2021), and Austin et al. (2021). In addition, media literacy has a positive and significant relationship with the level of eight components of the ability to detect fake news in the COVID-19 pandemic (source review, reading news text, review of agreement of other sources on the subject, review of support sources, review of news before sharing it, checking the humor or seriousness of the news, avoiding personal prejudices, and asking experts) among Razi University students. IFLA (2017) has identified dimensions of the ability to detect fake COVID-19 pandemic news. This finding is consistent with the research results of Usman et al. (2022). However, this is contrary to the results of Lee, Lee and Lee (2022), which state that the components of new media literacy help the transmission of unverified information about COVID-19 among citizens. While their other results showed that if people understood the danger of fake news well, they would not share unconfirmed information.

the greatest role of media literacy is related to predicting the amount of the component of examining the agreement of other sources on the subject and the least role is related to predicting the amount of the component of asking experts. In expressing the results of the present study, it can be said that since media literacy involves a critical look at media messages, these skills are effective in examining the agreement of other sources on the subject and play a more significant role in the ability to detect fake COVID-19 pandemic news. On the other hand, media literacy is expected to emphasize the component of asking experts. By referring to the websites of reputable organizations such as UNICEF and the World Health Organization, everyone can be sure of the authenticity of the news or ask questions related to doctors, specialists, and those with better knowledge in this field. Therefore, specialized and reliable organizations and individuals must verify the information to help in this field.

Examining the fakeness or seriousness of the news is also one of the topics that should be taken seriously since fake news is shared on social networks. People often confuse fake news with real news (Burfoot & Baldwin, 2009; Ermida, 2012). Misunderstandings occur so much that Facebook tests a "fake" label (Dewey, 2014). The RealorSatire.com website was created so that users can search to see if a web page is fake (Prichard and Rucynski, 2018). Awareness of fakeness or seriousness of the news causes people not to be confused, not believe fake news, and publish it, so in this regard, it can be stated that improving the peoples' ability to be aware of fakeness or seriousness of news. It means that they have decision-making resources and accurate information. In other words, this skill paves the way for them to distinguish between true and false news and not inadvertently present it as actual news. It can be achieved by teaching fakeness or seriousness to students and other members of society.

Conclusion

Undoubtedly, the COVID-19 pandemic will not be the last epidemic crisis in the world, and other endodermic crises will undoubtedly occur. Individuals' skills and abilities to deal with fake news in various fields will determine how to solve the problem and detect fake news. Moreover, it is the governments' and officials' duty to prevent the further spreading of fake news by developing the necessary planning and training for citizens, recognizing the dangers of fake news about the COVID-19 pandemic disease, and finding appropriate solutions. Dealing with this issue is a step towards solving information services challenges and community peace. One of these measures is to increase students' media literacy. This training is better done through educational centers and universities. Therefore, with appropriate information and

capacities in this field, university libraries can improve students' knowledge and provide a platform for education.

Education and universities can play a crucial role in this respect. Nowadays, different societies have taught media literacy to students. Then, it is necessary to make progress on this significant issue through wise and principled planning in order to avoid the dangers of spreading fake COVID-19 pandemic news. The findings of such studies can change the existing attitudes toward literacy and the importance of detecting fake COVID-19 pandemic news, as well as behavioral and functional changes in society. Furthermore, considering that this study has examined the youth and student community of the country, its findings can be applied to increase media literacy and detect fake news during the COVID-19 pandemic. So, detecting fake news during the COVID-19 pandemic is essential in professional training, and research into the effectiveness of various approaches to dealing with misinformation provides valuable information.

Limitations

Undoubtedly, every research is accompanied by a series of problems and limitations that affect the research process and result, either intentionally or unintentionally; like other research works, this research faced several limitations so that knowledge will be effective in future works. The first thing is that in this research, only the relationship between media literacy and the ability to detect fake news about the disease of COVID-19 has been studied, and it is evident that there are many other factors related to the topic of this research that can be related to the ability to detect fake news of the disease. In relation to COVID-19, in addition to the variables examined in this study, future researchers can pay attention to other variables, such as the role of personality traits and risk perception.

Another thing is that in collecting the information for this research, a questionnaire was used as a self-report so that other study methods could have different results. Therefore, the results of this work can be generalized considering the desired measurement method and tool, and future researchers are suggested to conduct two-stage research (pre-test and post-test) and teach media literacy to selected students during a workshop in order to determine the effect of this training on the ability to detect fake news. Also, one of the limitations of the research is that the research community includes students and does not consider different age groups and illiterate people. Therefore, this sample cannot represent the whole society. It is suggested that such research be evaluated in other research societies and different age groups.

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References

Alias, R., Md Radzi, S., Ahmad Zukarnain, Z., Hamidon, H. & Arifin, N. (2020). An analysis of the academic literature on fake news during a COVID-19 pandemic. *Journal of Contemporary Social Science Research*, 4(2), 40-48. Retrieved from https://ir.uitm.edu.my/id/eprint/40179/

Austin, E. W., Austin, B. W., Willoughby, J. F., Amram, O. & Domgaard, S. (2021). How media literacy and science media literacy predicted the adoption of protective behaviors amidst the covid-19 pandemic. *Journal of Health Communication*, 26(4), 239–252. https://doi.org/10.1080/10810730.2021.1899345

Azizi, Z. & Moradi, M. (2022). Investigating the role of media literacy in the ability to detect fake news from librarians in public libraries. *Sciences and Techniques of Information Management*. https://doi.org/10.22091/stim.2021.6194.1472 [in Persian]

Bashir, H. (2020). News analysis- relation between Coronavirus Crisis. *Rasaneh*, 31(2), 5-30. https://dorl.net/dor/20.1001.1.10227180.1399.31.2.1.7 [in Persian]

Burfoot, C. & Baldwin, T. (2009, August). Automatic satire detection: Are you having a laugh? In *Proceedings of the ACL-IJCNLP 2009 conference short papers* (pp. 161-164).

Dewey, C. (2014, August 19). *Facebook "satire" tag could wipe out the Internet's terrible hoax-news industry*. The Washington Post. Retrieved from www.washingtonpost.com

El Rayess, M., Chebl, C., Mhanna, J. & Hage, R.-M. (2018). Fake news judgment: The case of undergraduate students at Notre Dame University-Louaize, Lebanon. *Reference Services Review*, 46(1), 146-159. Retrieved from https://www.emerald.com/insight/content/doi/10.1108/RSR-07-2017-0027/full/pdf?title=fake-news-judgement-the-case-of-undergraduate-students-at-notre-dame-university-louaize-lebanon

Ermida, I. (2012). News satire in the press: Linguistic construction of humour in spoof news articles. In J. Chovanec & I. Ermida (Eds.), *Language and humour in the media* (pp. 185-210). Newcastle upon Tyne, UK: Cambridge Scholars Publishers.

Gabarron, E., Oyeyemi, S. O. & Wynn, R (2021). COVID-19-related misinformation on social media: A systematic review. *Bulletin of the World Health Organization*, 99(6), 455-463. https://doi.org/10.2471%2FBLT.20.276782

Greene, C. M. & Murphy, G. (2020). Individual differences in susceptibility to false memories for COVID-19 fake news. Cognitive Research: Principles and Implications, 5, 63. https://doi.org/10.1186/s41235-020-00262-1

IFLA. (2017). *How to spot fake news-COVID-19 edition*. Retrieved from https://www.ifla.org/resources/?oPubId=11174

ISNA (2018). What is the age group of social network users in the world? 2018/3/11. Retrieved from https://www.isna.ir/news/96122010690/

Kouzy, R., Abi Jaoude, J., Kraitem, A., El Alam, M. B., Karam, B., Adib, E., Zarka, J., Traboulsi, C., Akl, E. W. & Baddour, K. (2020). Coronavirus goes viral: Quantifying the COVID-19 misinformation epidemic on Twitter. *Cureus*, 12(3), e7255. https://doi.org/10.7759/cureus.7255

Krejcie, R. V. & Morgan, D. W. (1970). Determining sample size for research activities. *Educational and Psychological Measurement*, 30(3), 607-610. https://doi.org/10.1177/001316447003000308

McKew, Q. (2020). Viral Lies: Misinformation and the Coronavirus. *La Iniciativa de Comunicación*, 19. Retrieved from https://www.comminit.com/la/content/viral-lies-misinformation-and-coronavirus

Lee, E. H., Lee, T. (David) & Lee, B.-K. (2022). Understanding the role of new media literacy in the diffusion of unverified information during the COVID-19 pandemic. *New Media & Society*. https://doi.org/10.1177/14614448221130955

Mazzeo, V., Rapisarda, A. & Giuffrida, G. (2021). Detection of fake news on COVID-19 on web search engines. Frontiers in physics, 9, 685730. https://doi.org/10.3389/fphy.2021.685730

McDougall, J. (2019). Media literacy versus fake news: Critical thinking, resilience and civic engagement. *Medijske Studije: Media Studies*, 10(19), 29-45. Retrieved from file:///C:/Users/Reza/Downloads/8786-Article%20Text-33252-1-10-20191021.pdf

Miller, D. (2001). *Guide to social assessment and research* (H. Naebi, Trans.). Tehran: Ney Publishing. [In Persian]

Nasiri, B. & Hashemi, S. M. (2014). The importance of media literacy education in the 21st century. *Media Studies*, 7(18), 149-158. Retrieved from https://mediastudies.srbiau.ac.ir/article_4267_99d758049652a92145c0e4be31958374.pdf [in Persian]

Ofcom (2020). *Half of UK adults exposed to false claims about coronavirus*. Retrieved from https://www.ofcom.org.uk/news-centre/2020/half-of-uk-adults-exposed-to-false-claims-about-coronavirus

Falsafi, Gh. (2014). *Investigating the relationship between media literacy and lifestyle (case study) of 15-18-year-old high school adolescents in the sixth district of Tehran*. Master Thesis, Islamic Azad University. East Tehran Branch. [in Persian]

Prichard, C. & Rucynski, J. (2018). Second language learners' ability to detect satirical news and the effect of humor competency training. *TESOL Journal*, 10(1), e366–. https://doi.org/10.1002/tesj.366

Tejedor, S., Portalés-Oliva, M., Carniel-Bugs, R. & Cervi, L. (2021). Journalism students and information consumption in the era of fake news. *Media and Communication*, 9(1), 338–350. https://doi.org/10.17645/mac.v9i1.3516

Uma, S. & Bougie, R. (2013). *Research methods for business*. 6th edition. New Jersey: John Wiley & Sons.

Usman, B., Eric Msughter, A. & Olaitan Ridwanullah, A. (2022). Social media literacy: Fake news consumption and perception of COVID-19 in Nigeria. *Cogent Arts & Humanities*, 9(1), 2138011. https://doi.org/10.1080/23311983.2022.2138011

Veeriah, J. (2021). young adults' ability to detect fake news and their new media literature in the wake of the COVID-19 pandemic. *Journal of Content, Community & Communication*, 13(7), 372-383. https://doi.org/10.31620/JCCC.06.21/31

Vosoughi, S., Roy, D. & Aral, S. (2018). The spread of true and false news online. *Science*, 359(6380), 1146–1151. https://doi.org/10.1126/science.aap9559

Zarea Gavgani, V. (2020). Infodemic in the Global Coronavirus Crisis. *Depiction of Health*, 11(1), 1-5. https://doi.org/10.34172/doh.2020.01