Original Article

Assessment of COVID-19 Related Misinformation among the Community in Basrah, Iraq

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ABSTRACT

Background: There has been a rapid rise in cases of COVID-19 infection and its mortality rate since the first case reported in February 2020. This led to the rampant dissemination of misinformation and rumors about the disease among the public.

Objectives: To investigate the scale of public misinformation about COVID-19 in Basrah, Iraq.

Methods: A cross-sectional study based on a 22-item questionnaire to assess public knowledge and understanding of information related to the COVID-19 infection.

Results: A total of 483 individuals completed the questionnaire. The most frequent age group was 26–35 years (28.2%); there were 280 (58%) males and 203 (42%) females. Of the participants, 282 (58.4%) were with an education level below the Bachelor's degree, 342 (70.8%) were married, and 311 (64%) were living in districts in Basra other than the central district. Overall, 50.8% (11.8/ 22 * 100%) of individuals had the correct information regarding COVID-19. There was a significant association between the level of COVID-19 related misinformation and participants' educational levels and occupation (p <0.05). However, there was no significant difference found across sex, age group, marital state, and area of residence.

Conclusions: Misinformation related to COVID-19 is widely spread and has to be addressed in order to control the pandemic.

Keywords: COVID-19, misinformation, knowledge, Iraq

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INTRODUCTION

The coronavirus disease 2019 (the COVID-19) is a respiratory disease first detected in December 2019 in Wuhan, China.[1] It is caused by a novel coronavirus, the Severe Acute Respiratory Syndrome CoronaVirus 2 (SARS-CoV-1).The disease is highly infectious, with clinical symptoms that include dry cough, dyspnea, fever, fatigue, and myalgia.[2] The disease quickly spread to many countries around the world and, by January 30, 2020, the World Health Organization (WHO) had declared it a public health emergency on a global level and demanded the collaborative efforts of all countries around the world to prevent its rapid spread. On February 15, 2020, there were 51,857 confirmed cases of COVID-19 and a total of 1669 deaths in 26 different countries.[1, 3] Despite the various measures taken against the outbreak, the number of cases as well as the number of countries reporting their first cases, continued to increase. On March 11, 2020, WHO announced that the disease had become a pandemic and could affect all countries and people around the globe.[1] The Republic of Iraq officially reported its first confirmed case of COVID-19 on February 22, 2020 in the Al-Najaf Governorate.[4] By April, there were confirmed cases in all 18 Iraqi Governorates, and the total numberof confirmed cases had exceeded one hundred.[4] The Basrah Governorate has been seriously hit by the COVID-19 epidemic. From the beginning, the authorities adopted some unprecedented measures to control transmission of the virus in Basrah city as well as its districts. These measures included actions ranging from broadcasting educational material in social media to closing down public spaces and enforcing a curfew on March 16, 2020.[5] At the time of writing this manuscript, the battle against COVID-19 is continuing in Iraq. In order to guarantee success against the current epidemic, it is essential that people adhere to preventive measures. This is largely dependent on their background knowledge towards the COVID-19 infection. However, it is also important to prevent the spread ofmisinformation regarding COVID-19 among the public, as it hinders the progress of control measures taken. WHO has dedicated a section in its website to clarifying such false information regarding COVID-19.[6] To effectively implement a successful control pan, it is important to assess the public's awareness regarding COVID-19. In this study, we tried to investigate the level of COVID-19 related misinformation among the community in Basrah and discover possible factors that may be associated with it.

METHODS

Participants

This cross-sectional study was conducted in the Basrah Governorate between the April 1 and May 10, 2020, around two months after the first confirmed case was reported in Iraq. The participants werelocal people living in Basrah city and the Basrah districts. Because of the curfew enforced by the authorities early on, the movement of people was restricted to certain areas such as food stores, bakeries, and health institutions (primary health care centers present in almost every area in Basrah). The research team visited these facilities, introduced themselves, and provided a brief summary of the research. Individuals who showed a willingness to participate in the research were given a brief explanation, in which they received a brief introduction to the background, procedures,

and objective of the research. They were informed about the voluntary nature of participation, declarations of anonymity and confidentiality, and were provided notes on how to fill in the questionnaire. Individuals of Iraqi nationality, aged 15 years or more, who could understand the information given during the meetings, and who showed willingness to participate, received the self-report questionnaire and instructions on how to complete it. Ethical approval for this study was obtained from the Ethical Committee at the Basrah Health Directorate (No.189 in April 16, 2020).

Measures

The questionnaire consisted of two parts: demographics and information.Demographic variables included age group, gender, marital status, level of education, type of occupation, and place of residence.

The information variables included 22 questions about common misinformation spread in the community during the COVID-19 outbreak. Most of this misinformation was spread all over the world, mainly through social media, and was highlighted in the section named "Coronavirus disease (COVID-19) advice for the public\Myth busters", which is still available on the WHO website.[6] For each question, the participant had to answer (Yes), (No), or (Maybe). Another question in the survey asked the participant to select the most common source of information that they usually used to get information about the outbreak.

Statistical analysis

The frequency of the correct answers is shown using frequency tables. Answers were collected for each participant and one final score was calculated for each. Multivariable linear regression analysis using the demographic variables as independent variables and the final score as the dependent variable. The unstandardized regression coefficients (β) and their 95% confidence intervals (CIs) were used to quantify the associations between variables and the participants' final scores. Data analyses were conducted with SPSS version 25. The statistical significance level was set at $p \leq 0.05$(two-sided).

RESULTS

A total of 492 participants completed the questionnaire. After 9 questionnaires were excluded because the respondents had selected more than one option or did not complete the questionnaire, the final sample size became 483 participants. Among the final sample, the largest age group was 26–35 years (28.2%); there were 280 (58%) males and 203 (42%) females. Of the participants, 282 (58.4%) were with an education level below the Bachelor's degree, 342 (70.8%) were married, 172 (35.6%) lived in Basrah city and 311 (64.4%) lived in other Basrah districts. Regarding occupations, 280 (58%) were not employed (students, un-employed, or retired), 164 (34%) worked in the government or private sectors, and 39 (8.1%) were employed in the health sector (Table 1).

Table 1: Demographic features of the participants (N=483)

Gender:	Number (%)
Male	280 (58%)
Female	203 (42%)
Age group:	
15–25 years old	120 (24.8%)
26–35 years old	136 (28.2%)
36–45 years old	127 (26.3%)
46–55 years old	69 (14.3%)
more than 55 years old	31 (6.4%)
Area of Residence	
In Basrah City	172 (35.6%)
In other Basrah Districts	311 (64.4%)
Education Level	
Education level below Bachelor's degree	282 (58.4%)
Education level equal or above Bachelor's degree	201 (41.6%)
Marital Status	
Married	342 (70.8%)
Other (single, divorced, or widow)	141 (29.2%)
Working status	
Not employed	280 (58%)
Working (in governmental or private sectors	164 (34%)
Employed in the health sector	39 (8.1%)
Total	483 (100%)

22 COVID-19 misinformation-related questions in the survey and number and percentage of individuals who managed to correctly identified them as false information are shown in (Table 2).

Each participant was awarded one point if they had correctly identified the misinformation by choosing "No", whereas zero points were awarded if they chose "Yes" or "Maybe". The points from correct answers were added to obtain one final score. The final scores for correct answers for the participants ranged from (0) to (22), with mean equal to (11.18, SD= 4.29), suggesting an overall 50.8% (11.8/22 * 100%) accuracy rate for the entire sample. While the final scores for correct answers were significantly different across education levels and type of occupation (p < 0.05), there was no significant difference found across sex, age group, marital state, and current residence (Table 3).

Table 2: COVID-19 misinformation related questions and the number and percentage of individuals who identified them as false information (N= 483)

	The misinformation	Number of participants who correctly identified it as false information
1.	There is no outbreak of COVID-19 disease in Iraq and what is happening now is just a media scare	379 (78.5%)
2.	SARS-CoV-2 virus was manufactured in another country	147 (30.4%)
3.	Daily ablution for prayer is enough to prevent the disease from spreading	230 (47.6%)
4.	Exposure to the sun and heat is recommended because it is useful in preventing the transmission of the disease to you	129 (26.7%)
5.	SARS-CoV-2 virus is not spread in hot and sunny countries	237 (49.1%)
6.	If you recover after suffering from COVID-19 disease, you will remain the carrier of the disease in your body for life	297 (61.5%)
7.	If you can hold your breath for 10 seconds without feeling suffocated or distressed, you are not infected with the coronavirus	181 (37.5%)
8.	Drinking alcoholic drinks reduces the possibility of coronavirus infection, as it works to sterilize and kill the virus	339 (70.2%)
9.	Taking a hot bath will protect you from the COVID-19, as hot water kills coronavirus	184 (38.1%)
10.	Coronavirus can be transmitted through bug bites, flies, or mosquitoes	295 (61.1%)
11.	The hot air dryer is useful for hand sanitization, killing the virus, and is recommended for prevention	192 (39.8%)
12.	Coronavirus infection can be detected by using a thermometer, as it is currently used in airports	141 (29.2%)
13.	if you get infected with COVID-19, it is advised to spray chlorine, iodine, or alcohol on the body to speed up your recovery process.	210 (43.5%)
14.	The chances of you getting coronavirus decrease if you are vaccinated against influenza or pneumonia	190 (39.3%)
15.	Regularly washing the nose with water or water and salt protects you from coronary diseases	161 (33.3%)
16.	Eating garlic regularly will prevent coronavirus	194 (40.2%)
17.	Using Alhraml at home is useful in preventing coronavirus	316 (65.4%)
18.	Coronavirus affects only the elderly	374 (77.4%)
19.	Coronavirus does not affect children	357 (73.9%)
20.	The use of antibiotics contributes to the prevention of coronavirus	164 (34.0%)
21.	A specific treatment that eliminates COVID-19 disease has been discovered	330 (68.3%)
22.	A specific vaccine against the COVID-19 disease has been discovered	355 (73.5%)

Table 4: The mean and the SD of the final score for the participants (N=831)

Gender :	Number (%)	Mean	SD
Male	280 (58%)	10.89	4.345
Female	203 (42%)	11.60	4.196
Age group :			
15–25 years old	120 (24.8%)	11.39	4.159
26–35 years old	136 (28.2%)	11.06	4.606
36–45 years old	127 (26.3%)	11.02	4.294
46–55 years old	69 (14.3%)	11.17	4.029
more than 55 years old	31 (6.4%)	11.61	4.153
Area of Residence			
In Basrah City	172 (35.6%)	11.17	4.582
In Basrah Districts	311 (64.4%)	11.19	4.132
Education Level *			
Education level below Bachelor degree	282 (58.4%)	10.44	4.160
Education level equal or above Bachelor's degree	201 (41.6%)	12.22	4.270
Marital Status			
Married	342 (70.8%)	11.04	4.381
Other (single , divorced or widow)	141 (29.2%)	11.55	4.063
Current Occupation *			
Not working currently (students, retired, housewife)	280 (58%)	10.77	4.278
Working (in government or private sectors)	164 (34%)	11.29	4.076
Employed in the health sector	39 (8.1%)	13.72	4.495
Total	483 (100%)	11.18	4.293

* p value < 0.05

Multivariable linear regression analysis showed that healthcare workers (vs. workers in other sectors or non workers, β:0.9, p<0.05), and participants with education level equal or above Bachelor's degree (vs. education level below Bachelor degree, β: 1.432, p< 0.05) were significantly associated with higher final scores (Table 4).

Table 3: Results of multiple linear regressions on factors associated with the level of misinformation about COVID-19 (N=831, R Square.066)

Variable	Coefficient	Standard error	P value
Sex	.663	.392	.091
Age group	.076	.181	.675
Marital state	.745	.478	.120
Place of living	.623	.413	.133
Education *	1.432	.426	.001
Current work*	.909	.337	.007

* P value < 0.05

Regarding the single most common source of information that the participants depended on to obtain information about COVID-19, 41% of the respondents mentioned the internet and Facebook, whereas 30.6% preferred television (Table 5).

Table 5: The most common source of information used by the participants (N =831)

Source of information	Frequency	Percentage
Facebook	98	20.3 %
TV	148	30.6%
Radio	3	.6%
WhatsApp	46	9.5%
Tweeter + Instagram	45	9.3%
Friends and family	31	6.4%
Websites	100	20.7%
OTHER	12	2.5%
Total	483	100.0

Al-Rubaye Ali Kadhim, Durgham A Abdulwahid , Albadran Aymen , Ejbary Abbas, Alrubaiy Laith .

DISCUSSION

This is the first study examining the misinformation spread in a community in Iraq. There was an overall correct answer rate of 50.8% among the 483 participants in the study, reflecting a high level of misinformation spread in the community, A study conducted to assess knowledge in the Middle East regarding COVID-19 also found that participants possessed relatively poor knowledge about the disease[7], whereas another study on Chinese citizens found an overall accuracy rate of around 90%, indicating that most respondents were knowledgeable about COVID-19.[8] Finding a low overall correct rate among the participants in this study was expected as the study was conducted during the very early stages of the outbreak. The serious nature of the pandemic and numerous news reports may have also been a factor in the spread of misinformation, as people often try to help others by sharing information they receiveeven before it is verified by health experts.

The study showed that the final scores increased as the education level increased (p < 0.05). Other studies also reported similar findings about the association between the population's knowledge about COVID-19 andeducation level.[7,8] This study also showed a significant relationship between working status of the participants and the scores for in the questionnaire.. Being employed in the health care sector (compared with those currently non-working) was also significantly associated with a high score in the questionnaire (p < 0.05). This finding was consistent across different studies.[9-11] The study also showed that the internet was the key source of information for around half the participants., whereas the TV and radio channels were primary sources of information for a third of the participants. This finding is especially beneficial for the authorities as they can prioritize their effort in the fight against the misinformation.

CONCLUSION

the best possible way of fighting against COVID-19 is through preventive behavioral measures. However, these measures are significantly dependent on the level of correct information the people hold. The findings suggest that there is a high rate of misinformation spread among the population in Basrah. The most important recommendation to the authorities would be to develop an effective plan to target the sources of such misinformation as part of their effort against the misinformation outbreak.

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