Misconceptions of COVID-19 Pandemic Among a Sample of General Public in Baghdad Iraq 2021: A Cross Sectional Survey

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Abstract

Objectives: To determine the misconceptions regarding COVID-19 pandemic among adults attending the three primary healthcare centers in Baghdad, Iraq.

Methods: Three primary health care centers were conveniently chosen to recruit adults attending them (using systematic sampling technique of every fifth attendee) and interview them to answer a special questionnaire form concerned with globally and locally spreading myths and misconceptions regarding COVID-19 pandemic and consisted of two part one for reporting demographic characteristics and the other consisted of 19 questions to assess people perceptions towards COVID-19 pandemic. Each question had two scores either zero for wrong response or one for correct one. Scores below 10 were considered bad perception and ≥10 were considered good perceptions.

Results: The study included 400 participants; 235 (58.8%) were females with a female: male ratio of 1.4:1, their age ranged from 18–82 years with a mean of 40.2 ± 14.6 years SD, more than half of them (224; 56.0%) were ≤40 years of age, 272 (68.0%) were either governmental employee or working in private sector, 214 (53.4%) were with college education and higher and 300 (75.0%) were ever married. Good perception scores were found in 21.2% of the participants, Males, younger age groups, higher educational levels, ever married participants and those who were working privately had higher proportions of good perceptions toward COVID-19 pandemic, yet the associations were only statistically significant with age group and educational level.

Conclusion: Good perception regarding COVID-19 pandemic was low.

Keywords: Misconception, COVID-19, primary health care, Baghdad

Introduction

Since 2020, the entire globe has been confronted with a severe challenge: A global pandemic disease known as (corona virus 2019 disease), COVID-19 which has caused catastrophic harm all across the world. On March 16, 2020, the infection spread throughout the world the number of cases reported globally exceeds 177 million, and mortality remains high with more than 9000 deaths had been reported worldwide in June 2021.[1] In Iraq, the first confirmed case of COVID-19 was reported in Najaf province, on February 24, 2020, for an Iranian student who had traveled from Iran, followed by four instances from one family in Kirkuk area on February 25, all of whom had been traveled to Iran. By May 24, 2020, there had been 4469 confirmed cases of COVID-19, with 160 deaths reported, and 2738 patients had recovered from the infection.[2] The Centers for Disease Control and Prevention (CDC) and the World Health Organization (WHO) treatment guidelines place a strong emphasis on symptomatic management and infection prevention.[3] Myths and misconceptions are beliefs and concepts that a group of people believe or hold that have not been scientifically confirmed.[4,5] Misconceptions are misleading and erroneous pieces of information. They could be regarded as mistaken thoughts or ideas that have been trending in society, mostly leading to malpractices in terms of health beliefs and health seeking behaviors.[6] During this pandemic social media served as a double-edged sword. The platforms supplied accurate and useful information on the pandemic. The explosion of information and the platforms' algorithmic reality made it difficult to discriminate between authentic and fraudulent information myths emerge independent of time, subject matter, or geographic location. Debate raged on social media platforms

between proponents and detractors of the epidemic's existence. Many opposing opinions regarding this disease have surfaced on social media platforms, particularly Facebook. Is it real or is it a political game between major countries? Iraq and some surrounding Arab countries were the victims of this media hype, which used non-scientific methods to propagate information about the disease.[7] At first, the Iraqi government, under the supervision of the Iraqi Ministry of Health and the crisis cell, remarkably spread awareness, so that it convinced people that this epidemic is dangerous and should be prevented through social divergence and a curfew in the day and at night. During that time, there were only a few hundred casualties, and the epidemic was under control. Many countries throughout the world, as well as the World Health Organization (WHO), believed Iraq to be one of the countries in charge of the pandemic.[8] After the Iraqi lockdown was lifted the situation spiraled out of control, resulting in an increase in the number of cases and fatalities reported by the Ministry of Health and many civilians were unaware of the problem. Charlatans, as well as herbalists, played a role in describing anti-Covid-19 medications and persuading many people that peganum seeds, garlic, and onions play a key part in eradicating the epidemic.[9] People who are aware of the deadly epidemic and follow the correct information and instructions, on the other hand, have become obsessed with sterilizing with chlorine and alcohol, which has resulted in dermatitis, respiratory allergies, anxiety sadness, and obsessive-compulsive disorders, among other health difficulties.[10] Because of the rapid growth of Covid-19 cases and the lack of a vaccine, widespread misunderstandings and misconceptions about the disease's transmission created an "infodemic," according to the World Health Organization (WHO).[11] The aim of study to identify

misconceptions of Covid-19 pandemic among a sample of general public in Baghdad – Iraq 2021.

Methods

A cross sectional study was conducted, during the period from January – August, 2021, in three primary Health Care Centers (PHCCs) in Baghdad City; from AL-Karkh side of Baghdad: AL-Yarmouk PHCC, AL-Mansour PHCC and AL-Salam PHCC. **Inclusion criteria**: Adult people (≥18 years' age), Iraqi nationality, living in Baghdad city during the study period and attending the assigned PHCCs were eligible to be included in the current study. **Exclusion criteria**: Medical professionals (doctors, nurses, healthcare providers), and COVID-19 patients were excluded from the current study. Three PHCCs, from AL-Karkh side of Baghdad were chosen conveniently for recruiting the study participants. Each PHCC was visited once weekly or every other week, depending on the situation during the pandemic, in each visit a systematic sample of adults (every fifth attendee), if agreed to participate after explaining the aim of the study, were interviewed and included in the current study. A questionnaire was prepared by the researcher and revised by the supervisor after reviewing scientific literature (65) was used in the current study and the data was collected by the researcher through direct interview with the participants. The questionnaire consisted of two parts: **Part one:** Demographic characteristics; Age in years, gender, educational status (Intermediate, secondary and college or higher), social status (single, married, divorced and widow) and occupation. **Part two:** Consisted of nineteen questions about misconceptions of COVID-19 answered as true or false. The misconception questions score ranged from 1 to 19 (correct (true) answer = 1 score, wrong (false) answer = 0 score) and scores ≤50% (1–9) were considered to be poor concepts, and individuals with >50% score (10–19) were considered good concepts (positive perception towards the COVID-19). A copy is present in the Annex. Statistical Package for Social Sciences (SPSS), version 27, was used in data entry and analysis. Continuous variables were presented as mean ± standard deviation and categorical variables were presented as frequencies and relative frequencies. Chi square test was used to test the significant association between categorical variables. *P*-value of <0.05 was used to assess the level of significance. **Ethical issues**: 1. Official agreement to perform the research was obtained from the scientific Committee at the Department of Family and Community Medicine – College of Medicine, University of Baghdad and approved by the College Council. 2. Verbal consent was obtained from each participant after briefing the objectives of the study and assured confidentiality.

Results

In the current study 400 participants from people attending the assigned three PHCCs who fulfilled the inclusion criteria were included; 235 (58.8%) were females with a female: male ratio of 1.4:1, their age ranged from 18–82 years with a mean of 40.2 ± 14.6 years SD, more than half of them (224; 56.0%) were ≤40 years of age, 272 (68.0%) were either governmental employee or working in private sector, 214 (53.4%) were with college education and higher and 300 (75.0%) were ever married (Table 1). Table 2 showed the distribution of participants

Table 1. **Demographic characteristics of the participants**

Characteristics	No.	%
Age groups (in years)		
≤40	224	56.0
41–60	127	31.8
>60	49	12.2
Education level		
Intermediate	47	11.8
Secondary	139	34.8
College and higher	214	53.4
Occupation		
Governmental employee	159	39.8
Private sector	113	28.2
Housewives	46	11.5
Not working	82	20.5
Marital status		
Single	100	25.0
Married	259	64.8
Divorced	18	4.5
Widow	23	5.7

by the frequency and relative frequency of correct answers for each question. It was found that the highest percentage of correct answers were for the possible harmful effect of alcohol or chlorine on the skin and mucous membrane as 203 (50.75%) participants were with correct answer, followed by 200 (50%) who knew that COVID-19 virus can be transmitted in areas with hot and humid climates, 196 (49.0%) knew that people of all ages can be infected by COVID-19, 190 (47.5%) knew that hand dryers are not effective in killing the emerging corona virus, 187 (46.75%) knew that the new corona virus cannot be transmitted through mosquito bites and 178 (44.5%) knew that COVID-19 virus can spread through shoes and clothes. Whereas only 107 (26.75%) of the participants knew that Vitamin C cannot cure the infection and 114 (28.5%) participants knew that this Coronavirus was not originated from a lab. Among males; 39 (23.6%) of the participants were with good perceptions regarding COVID-19 infection, prevention, transmission and treatment compared to 46 (19.6%) of the females. Although the percentage of good perceptions was more among males yet the association was statistically not significant (χ^2 test; df = 1, $P = 0.3$) (Table 3). As for age groups (in years) the highest percentage of good perception was among those aged ≤40 years (24.5%), followed by those aged 41-60 years (21.3%) and the least was among those older than 60 (6.1%) and the association was statistically significant (χ^2 test; df = 2, $P = 0.12$) (Table 3). As for the social status; 20.0% of single participants have good perception compared to 21.7% among those ever married and the association was statistically not significant (χ^2 test; df = 1, $P = 0.7$) (Table 3). Regarding occupation; good perceptions regarding COVID-19 infection, prevention, transmission and treatment were found to be higher among those working in private sector (29.2%), followed by housewives (21.7%), then among governmental

Table 2. **Distribution of participants' responses to the questions**

Questions	Correct response	
	No.	%
The COVID-19 virus cannot be transmitted in areas with hot and humid climates	200	**50.0**
The new corona virus can be transmitted through mosquito bites	187	**46.75**
Hand dryers are not effective in killing the emerging corona virus	190	**47.50**
Spraying alcohol or chlorine all over the body cannot harm the skin and mucous membranes	203	**50.75**
Bleach and alcohol can treat COVID-19	151	**37.75**
Vaccinations against pneumonia can protect you from new Corona virus	148	**37.0**
Eating garlic helps prevent infection with the emerging corona virus	129	**32.25**
Holding your breath for more than 10 seconds is a test for COVID-19	161	**40.25**
Medicines are available in global markets to prevent or treat the emerging corona virus	149	**37.25**
COVID-19 is transmitted by water	167	**41.75**
Antibiotics can kill coronavirus	156	**39.0**
COVID-19 spreads through shoes and clothes	178	**44.50**
Ayurveda, homeopathic and other herbal medicines can cure/prevent the coronavirus	131	**32.75**
Vitamin C helps cure the infection	107	**26.75**
People of all ages can be infected by COVID-19	196	**49.0**
Onset of summers mean a decline of the virus	138	**34.50**
Taking a hot bath or drinking hot water can prevent the virus from infecting you	147	**36.75**
Coronavirus probably originated from a lab	114	**28.50**
Wearing masks can deplete oxygen levels	132	**33.0**

Table 3. **Distribution of the participants by their perception and demographic characteristics**

Characteristics	Good perception		Bad perception		Total		P-value
	No.	%	No.	%	No.	%	
Gender							
Males	39	23.6	126	76.4	165	41.2	0.3
Females	46	19.6	189	80.4	235	58.8	
Age groups (in years)							
≤40	55	24.6	169	75.4	224	56.0	0.02*
41–60	27	21.3	100	78.7	127	31.8	
>60	3	6.1	46	93.9	49	12.2	
Education							
Intermediate	7	14.9	40	85.1	47	11.8	0.036*
Secondary	22	15.8	117	84.2	139	34.8	
College & higher	56	25.8	158	73.8	214	53.4	
Occupation							
Governmental employee	28	17.6	131	82.4	159	39.8	
Private	33	29.2	80	70.8	113	28.2	0.09
Housewives	10	21.7	36	78.3	46	11.5	
Not working	14	17.1	68	82.9	82	20.5	
Marital status							
Single	20	20.0	80	80.0	100	25.0	0.7
Ever married	65	21.7	235	78.3	300	75.0	

The associations were statistically significant ((χ^2 test; $P < 0.05$)

employee (17.6%) and the least was among those who were not working (17.1%), yet the association was statistically not significant (χ^2 test; df = 3, $P = 0.09$) (Table 3). Regarding educational level; good perceptions regarding COVID-19 infection, prevention, transmission and treatment were found to be higher among those with college and higher education (26.2%), followed by those with secondary level of education (15.8%), then those who were with intermediate level of education (14.9%), and the association was found to be statistically significant (χ^2 test; df = 2, $P = 0.036$) (Table 3).

Discussion

Identifying myths and misconceptions is crucial in disease outbreak. From the inception of the outbreak of the virus in the world; many unverified information and beliefs have been going round probably due to insufficient information about the behavior and characteristics of the virus. Misconceptions are misleading and erroneous pieces of information. They could be regarded as mistaken thoughts or ideas that have been trending in society, mostly leading to malpractices in terms of health beliefs and health seeking behaviors.[6] The current study included 400 participants of general population (165 of participants (41.2%) were males, while 235 of participants (58.8%) were females. mean age was 40.2 (range, 18–82) years. In our study, according to misconceptions questions score we found that we found that 21.2% of all participants had good perceptions about COVID-19 while 78.8% had poor perceptions (misconceptions) so the misconceptions were high among population in this study which is also the same in Baig M. et al. which reported that two-thirds of the study participants (66%) had misconceptions while one-third of the participants (34%) had good perceptions.[12] our study revealed that males had more good perceptions than females (23.6% for males, 19.6%) for females. Baig M. et al. reported that males also showed good perceptions as compared to females (38%, 29%, respectively).[12] Almofada et al. showed that males exhibited a higher level of awareness than females among the Saudi Arabian population when asked regarding the effectiveness of wearing masks in protection from COVID-19.[13] According to our study, we found that the participants working in private sector had more good perceptions about COVID-19 (29.2%) than the employed, housewives and not working participants. Also, similar Baig M. et al. who reported that students and

people in private-sector and government jobs had good perceptions compared to housewives and businessmen ($P < 0.001$).[12] Mekonnen et al.[14] reported that unemployed participants were 1.79 more likely to have a misconception about COVID-19 compared to participants with employed occupational status. But our study showed that not working participants had slightly less misconception about COVID-19 compared with employed participants and more misconception than housewives and those who were working in private sector. In our study, we found that the participants who finished the college or high had more good perceptions (25.8%) than participants who finished secondary and intermediate school. Similar to Baig M et al. reported that highly educated people (college, Master's degrees, PhD) showed good perceptions compared to people with primary school and high school education.[12] Zhou J et al. reported that health perception and the ability to detect rumors was significantly lower among some vulnerable populations, including participants with lower educational and income levels.[15]

Conclusion

Good perception regarding COVID-19 pandemic was low (21.2%). Males, younger age groups, higher educational levels, ever married participants and those who were working privately had higher proportions of good perceptions toward COVID-19 pandemic, yet the associations were only statistically significant with age group and educational level.

Conflicts of Interest

None. ■

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