Risk Perception and Public Attention toward COVID-19 Outbreak in Iraq

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ABSTRACT :

Background: The Novel Coronavirus Disease (COVID-19) reported by WHO as an emerging global public health; it is well recognize that the spreading of any infectious disease is affected by a person's readiness to comply with a specific preventive behavior, which is mainly accompanying with a person's risk perception.

Methodology: A cross-sectional online survey was conducted from 18[th]March to 24[th]May 2020, among Iraqi residents to identify the risk perception and public attention toward the outbreak of COVID-19. A non-probability convenience sample consisted of 2.341 respondents from all Iraqi governorates except Kurdistan region was involved in this survey.

Findings: the majority (64.2%), and (69%) of the participants perceived a high risk for getting COVID-19 infection, and have a high level of attention about the application of preventive measures toward COVID-19 disease respectively. Furthermore, the majority (93%) of them has a high degree of self-efficacy and efficacy about implementation measures of prevention, and some of them facing a significant barriers affect them to participate in such activities, with 59.1% of respondents had insufficient motivation to implement these prevention measures.

Conclusion: Iraqi residents perceived a high in the level of risk regarding getting COVID-19 infection and raised in the level of attention regarding the application of preventive measures, but they have reported significant barriers, with insufficient motivation to implement these preventative measures.

Keywords: Risk perception; Public Attention; COVID-19; Outbreak.

Introduction:

According to the World Health Organization (WHO), viral diseases still the emerging infectious disease and appear as a severe issue to the health of global. Over the last two decades, the world has faced several outbreaks of contagious disease included SARS-CoV in 2002-2003 and (H1N1) Influenza A in 2009 while MERS-CoV during 2012, and the new recently virus was called Novel Coronavirus Disease 2019 (COVID-19) [1]. It was firstly reporting in China, Wuhan city, in the late December 2019 and then quickly spreading to other countries globally [2-4]. The WHO Emergency Committee proclaimed this disease as a global health emergency on 30[th]January 2020 [3, 5]. In Iraq, the primary status of COVID-19 confirmed in 24[th]February 2020 in Al-Najaf city, after this time, the Republic of Iraq has banned the entry of foreign nationalities and closed its borders to many other countries [6].

Globally, until the time of this paper writing, as of 22[th]May 2020, the WHO reported that there have been 4,995,996 confirmed cases of COVID-19, including 327,821 deaths. At this time, the total number of confirmed cases of COVID-19 in Iraq was 3,877 with 140 deaths [7]. This is the high rate of COVID-19 transmission, as well as the absence of specific vaccines and certain pharmacological treatments have posed serious challenges to the control of COVID-19 transmission. Therefore, it is essential to implement measures of prevention such as behaviors of personal protection (e.g. personal hygiene, and the use of facemask), maintaining social distance, and travel restrictions [4]. In Iraq, many challenges facing the controlling of COVID-19, from which a shortage in quarantine facilities number, the availability of the testing laboratories, a shortage in personal protective equipment, a high rate of antibiotic resistance in case of secondary bacterial infection [8].

Public behavior could play a significant role in the transmission and controlling of infectious diseases [9]. A person's risk perception, perceived susceptibility or possibility of a disease are determined as the most important factors that may effects readiness and motivation to implement preventive behaviors. Theories suggest that personal efficacy and self-efficacy are other vital predictors of motivation [9]. This survey was conducted to identify the risk perception and public attention toward COVID 19 outbreak in Iraq, and to explore the association between the level of risk perception and public attention towards COVID 19 outbreak and their characteristics of socio-demographic.

Methodology:

Design of study and participants: A cross-sectional (survey) has been perform during a period of 18th March to 24th May 2020 among Iraqi residents in order to identify the risk perception and public attention toward the outbreak of COVID-19. We decided to collect data online because the curfew is during this period and therefore survey and sample collection cannot be done directly from the community so used a link shared on sites of a social network; data were collected between 5th-20th April, 2020. A convenience sampling consisted of 2.341 participants from both genders were involved in this survey without any restriction on the participant's number from all Iraqi governorates except Kurdistan region.

Study instrument: An electronic questionnaire contained brief objectives of the study, as well as the link of the online responses sent to each participant. The questionnaire was developed based on an existing questionnaire used in studies on anxiety, perceived of risk, and responses of behavioural for the general public in the Netherlands within the early period of the prevalence of H1N1 pandemic (Influenza A) [10], it was first prepared in the English language and then translated into the Arabic language, the native language in Iraq. A translated Arabic language version of the questionnaire was done by the researchers and two bilingual faculty members at Kerbala University who are proficient in English and Arabic language through the using of a forward-backward translation method in order to get translation validity and to avoid translation mistakes. The validity of the questionnaire has been test by the experts in the field of the specialty to examine the questionnaire as to be a suitable means for obtaining the data needed for this survey. The pilot study has been conducted to determine the reliability of the research instrument consisted of 25 participants, the Cronbach alpha coefficient test was use to analyzed the internal consistency reliability, the reliability score was 0.72. After the pilot study had been completed, an appropriate revision have made to the instrument before the major survey began.The questionnaire consist of two parts; part (I) involves the socio-demographics data of participants includes gender, age, status of marital, level of education, occupation, governorate and place of residency; part (II) involves questions related to the risk perception and public attention toward COVID-19 outbreak, it is include 29 questions: 6 questions about knowledge of COVID-19 outbreak, 8 questions to explore the perception of seriousness of COVID-19 infection, 3 questions to assess the participant perceptions' about the susceptibility of COVID-19 infection, and 11 questions to investigate the public attention toward COVID-19 outbreak through the perception of efficacy and self-efficacy, motivating factors, hindering factors, and information needs.

Statistical Analysis: Data were analyzed by using the version 24 from SPSS program. Both descriptive statistical analysis procedures {percentage, frequency, means of scores and standard deviations}, were used to explore various level of perceptions and public attention, and inferential statistical analysis was used to analyze the association

between perception and public attention with their socio-demographic characteristics. A p-value is ≤ 0.05 was considering significant.

The Study Results:

Table (I): Distribution of the samples regarding their characteristics of socio-demographic (N= 2.341):

Variables	Categories	Frequency	Percent
Age groups (years)	< 20	259	11.1
	20-29	1.207	51.6
	30-39	485	20.7
	40-49	287	12.3
	50-59	86	3.7
	≥ 60	17	0.7
Gender	Male	1.286	54.9
	Female	1.055	45.1
Marital status	Single	1.269	54.2
	Married	1.041	44.5
	Widowed	9	0.4
	Divorced/separated	22	0.9
Educational level	Read and write	20	0.9
	Primary school	34	1.5
	Intermediate school	92	3.9
	Secondary	585	25.0
	University graduates	997	42.6
	Master degree	404	17.3
	PhD Degree	209	8.9
Residency	Rural	397	17.0

	Urban	1.944	83.0
Occupation	Housewife	122	5.2
	Retired	18	0.8
	Student	939	40.1
	Governmental employer	983	42.0
	Private employer	136	5.8
	Free employer	143	6.1

Results in table (I) show that most (51.6%) of the participants were within age group of 20-29 years, and more than one half (54.9%), (54.2%) of them were males, and singles respectively. About two-thirds (68.8%) of them were university graduates and postgraduate, and the highest percent (42%) of them were a governmental employer.
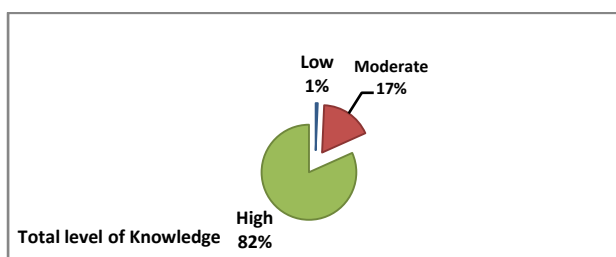

Figure (1): Total participant's level of knowledge concerning COVID-19.

With regard to the knowledge towards the outbreak of COVID-19, the results in this figure show majority of participants (82%) had a high level of knowledge regard to the outbreak of Covid-19.
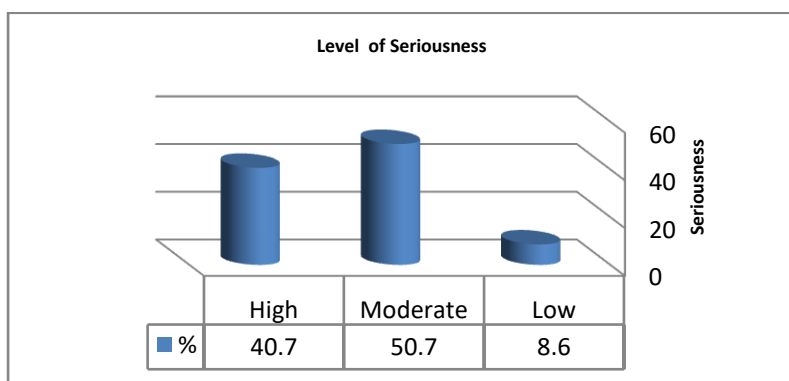

Figure (2): Total level of perceived seriousness to the COVID-19.

Result in figure (2) indicates that more than half (50.7%) of the participants perceived the COVID-19 disease as moderate in serious, while, 40.7% of them perceived the disease as high in seriousness.
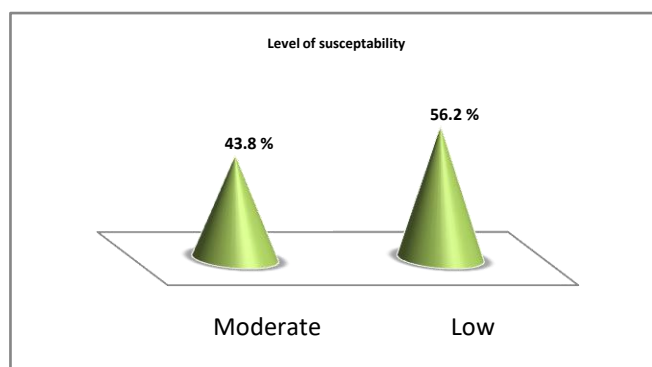

Figure (3): Total level of perceived susceptibility to the COVID-19 infection.

This figure shows that 56.2% and 43.8% of participants perceived low and moderate level of susceptibility for getting a chance of contracting a COVID-19 infection respectively.
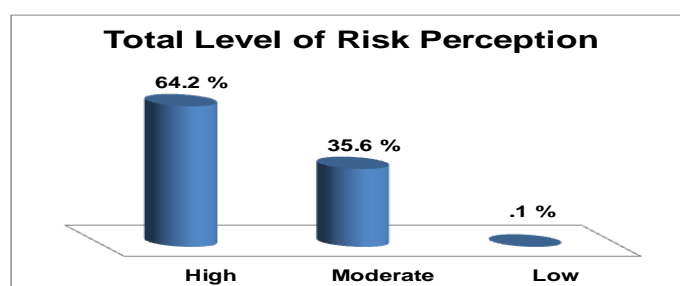

Figure (4): Total risk perception level.

Result in figure (4) exposed that approximately two third (64.2%) of the participants perceived the COVID-19 disease as high risk, while, about one third (35.6%) of them perceived the disease as moderate risk.

Table (III): Perceived efficacy and self-efficacy (N=2341):

Items	Mean	SD	Evaluation
1. Staying at home is helpful in preventing of COVID-19?	4.758	0.593	High
2. Washing your hands frequently with water and soap or rubbing your hands with alcohol is helpful in preventing of COVID-19?	4.620	0.661	High

3.	Maintaining social distance helps in preventing the transmission of COVID-19?	4.803	0.509	High
4.	Avoiding touching your eyes, nose, and mouth with unclean hands helps in preventing of COVID-19?	4.604	0.739	High
5.	Cleaning and disinfecting homes, environment, and surfaces with detergents and disinfectants will help in preventing the spread of COVID-19?	4.621	0.671	High
6.	Practice of respiratory hygiene, for example (covering the nose and mouth with a tissue then disposing of the tissue used immediately or in your folded arm when coughing or sneezing) is helpful in preventing the transmission of COVID-19?	4.719	0.573	High
7.	Eating healthy foods rich in vitamins and protein helps to prevent COVID-19?	4.422	0.807	High
Total efficacy		4.649	3.009	High

Low=Low level self-efficacy and efficacy (Mean=1-2.9); Moderate = Moderate level self-efficacy and efficacy (Mean=3-3.9); High= High level self-efficacy and efficacy (Mean=4-5).
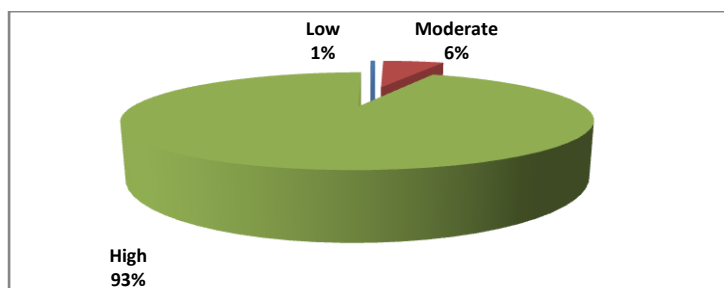

Figure (5): Total perceived efficacy and self-efficacy (N. 2.341)

The results in table (III), and figure (5) exposed that the majority of the sample who participated in the study (93%) have a high level of efficacy and self-efficacy andthey intend to adhere with the preventive measures and believe they are able to implement these measures.

Table (IV): Total percent of motivating and hindering factors:

Motivating factors				Hindering factors			
Level	F	%	Cum. %	Level	F	%	Cum. %
Low	1.383	59.1	59.1	Non	607	25.9	25.9

Moderate	605	25.8	84.9	Low	1.391	59.4	85.3
High	353	15.1		Moderate	240	10.3	95.6
Total	2.341	100.0	100.0	High	103	4.4	100.0
				Total	2.341	100.0	

Figure (6): Total attention level
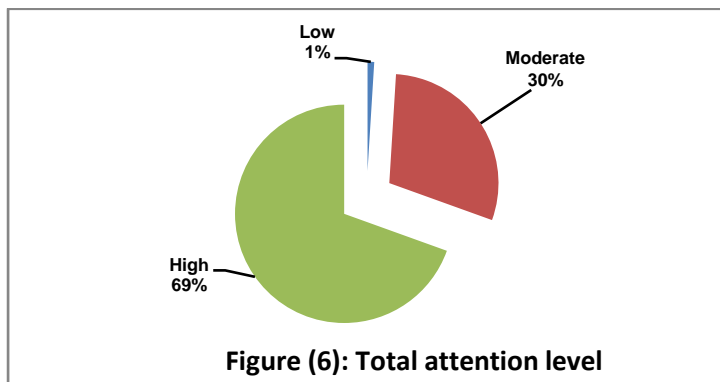
The results in table (IV), and figure (6) reveals that the most (59.1%), and (59.4%) of the respondents had a low motivation level and low hindering factors about the implement of measure that helps to prevent COVID-19 outbreaks. About two third (69%) of the participants have high level of attention about the application of preventive measures toward COVID-19 disease.

Table (V): Distribution of the information needs by participants to prevent COVID-19:

Items		Frequency	Percent
1.	How COVID-19 is transmitting?	937	40.0
2.	Symptoms of COVID-19 are?	668	28.5
3.	The chance that you contract COVID-19?	659	28.1
4.	How COVID-19 can be treating?	997	42.6
5.	The chance that COVID-19 is serious?	636	27.2
6.	Incubation time is (the time between infection and symptoms)?	899	38.4
7.	What can you do to prevent contracting COVID-19?	1.144	48.9

8.	Does a person who has recovered from virus again contract the same virus?	4	0.17
9.	Does the heat really kill the virus and limit its spread?	3	0.12
10	How to distinguish accurately between influenza and COVID-19?	3	0.12
11	Will infection pass to fetus if pregnant mother is infecting with COVID-19?	2	0.08
12	I do not need any information.	229	9.8

Results in table (V) show a large percent (48.5%) of participant need information about what they can do to prevent contracting with COVID-19, and 42.6% on how to treat COVID-19, while 40% of them need to know how the COVID-19 transmission, and 38.4% of them need to clearly know the incubation period of COVID-19.

Table (VI): Sources from which participants would like to receive information that helps them prevent the outbreak of COVID-19:

Items		Frequency	Percent
1.	A letter from the general practitioner.	2.291	97.9
2.	A letter from the local authority.	27	1.2
3.	Adverts on the (regional) TV/radio.	898	38.4
4.	Information on an internet search engine (e.g. Google)	633	27.0
5.	Leaflets from the local authority.	484	20.7
6.	Information in local newspapers.	644	27.5
7.	Information on the website from the Municipal Public Health Service.	1.076	45.8

The results in table (VI) show the majority (97.9%) of respondents considers the information obtain by the general practitioner letters is reliable to prevent COVID-19.

Table (VII): Association between socio-demographic characteristics and the participant's perception and attention about COVID-19 outbreak.

	Items	Susceptibility (Sig.)	Seriousness (Sig.)	Knowledge (Sig.)	Total Risk Perceptions (Sig.)	Efficacy (Sig.)	Motivation Factors(Sig.)	Hindering Factors(Sig.)	Total Attention (Sig.)
1.	Age	0.541 N. Sig	0.868 N. Sig.	0.000 H. Sig.	0.382 N. Sig.	0.009 H. Sig.	0.001 H. Sig.	0.505 N. Sig.	0.017 H. Sig.
2.	Gender	0.806 N. Sig.	0.042 Sig.	0.692 N. Sig.	0.838 N. Sig.	0.547 N. Sig.	0.031 Sig.	0.601 N. Sig.	0.945 N. Sig.
3.	Marital status	0.602 N. Sig.	0.488 N. Sig.	0.004 H. Sig.	0.016 H. Sig.	0.891 N. Sig.	0.029 Sig.	0.341 N. Sig.	0.280 N. Sig.
4.	Educational level	0.303 N. Sig.	0.139 N. Sig.	0.000 H. Sig.	0.847 N. Sig.	0.494 N. Sig.	0.000 H. Sig.	0.002 H. Sig.	0.301 N. Sig.
5.	Residency	0.493 N. Sig.	0.576 N. Sig.	0.696 N. Sig.	0.478 N. Sig.	0.622 N. Sig.	0.080 N. Sig.	0.002 H. Sig.	0.070 N. Sig.
6.	Occupation	0.019 H. Sig.	0.176 N. Sig.	0.000 H. Sig.	0.123 N. Sig.	0.100 N. Sig.	0.000 H. Sig.	0.084 N. Sig.	0.004 H. Sig.

Sig= (Significant at P≤ 0.05 to > 0.01); N. Sig = (Non-Significant. at P> 0.05).

Discussion:

During the COVID-19 outbreak, the risk perception and public attention can play a significant role in controlling of this infectious disease, therefore, this is the first online survey directed to identify the perceived risk, and public attention about COVID-19 outbreak among Iraqi residents.

Socio-demographic characteristics provide a descriptive summary about the study participants. As shown in table (I) the results indicate a slightly more than one-half of the samples were within the age (20-29) years, males, and singles. Concerning the education level, the results indicate that are more than two-thirds of the participants were university graduates, and postgraduates. In relation to the place of residency, the results reveal the majority of participants were from urban residency. Finally, and based on the participants' occupations, the results show that 42% of them were a governmental employer and 40.1 % were students.

Regarding the level knowledge about infection of COVID-19, the figure 1 indicate that are a majority of participants are knowledgeable, it is shown that are the majority of them have had a sufficient level of knowledge regarding COVID-19 infection. This finding is similar to the finding study of an Egyptian (cross-sectional), implemented to estimate the public knowledge, their attitude, and perceptions about COVID-19 infections among 559 persons, in which the majority of respondents had a good knowledge concerning the outbreak of COVID-19 and preventive measures [11]. In a rapid online survey to assess general public perceptions and knowledge of the outbreaks COVID-19 between 3000 adults in United Kingdom (UK) and 3000 adults in United States (US), concluded that the participants in the study had a good knowledge concerning the common symptom and the chief route of transmission

concerning COVID-19 [12]. This survey was conducted in the third week of the COVID-19 outbreak in Iraq, meaning that the Iraqi population began to address the essential role of prevention in a short time. Surly, populations have been actively learned knowledge about the prevention of this infectious disease outbreak.

Perceived seriousness measured the participant's belief about the severity of COVID-19 infection, and the perceived susceptibility measured the participant's belief about the chance of developing COVID-19 infection, as shown in figure (2-3), one of the main findings, is that the participants recognized COVID-19 infection as a serious problem, and estimated the opportunity perception about the susceptibility of contracting COVID-19 disease. The majority of participants perceived high risk for getting COVID-19 infection as shown in figure (4); therefore, this will help him to engage in preventive behaviors. Athbi, and Hassan, (2019) reported that a person's susceptibility perception refers to the personal awareness about the possibility of getting a disease that will have a harmful effect on his/her health, perceived seriousness or severity mean the person's beliefs about the severity of the disease condition and therefore aware about the importance of preventing disease [13].

Perceived self-efficacy and efficacy were used to explore the participant beliefs about the importance for engaging in measures of prevention to avoid the transmission of COVID-19 infection. The results within the table (III), and figure (5) show the majority of the participants have a height in the level of self-efficacy and efficacy and they believed that the adherence to the preventive measures helps in preventing the transmission of COVID-19 infection. In turn, the level of perceived personal seriousness and susceptibility of COVID-19 predicts the resident's efficacy beliefs about the preventive measures such as hand washing and social distancing. In a computer-assisted phone survey conducted by De Zwart, et al., (2009) reported that perceived of SARS infection susceptibility was at a medium level when compared with other conditions of diseases, the risk perception in case of SARS outbreak was more than other diseases. Self-efficacy and efficacy for SARS were low in European compared to Asian countries [9].

Regarding the motivation of Iraqi residents to carry out measures of preventions to avoid the transmission infection of COVID-19, our results in the table (IV) indicates that the personal motivation score was low among respondents. This result predicts the needs of additional effort to be providing by governmental organizations to increase resident motivation to attention about the applying of preventive measures, because the transmission of this virus depends on daily personal behaviors. This result disagrees with the results of cross-sectional telephone surveys in the Netherlands, conducted by Van der Weerd, et al., (2011) reported an increased in perceived susceptibility level and public intention about the implement of preventive measures of H1N1 pandemic [14]. In the same direction, Khosravi, (2020) reported that the public initial trust and emotional concerns about COVID-19 pandemic can play a vital part in enhancing the expanding public participation, the perceived of risk and in implementing the measures of prevention [4].

Moreover, the concept hindering factors or perceived barriers measured the participant's beliefs regarding factors prevents Iraqi resident'sto carry out the measures that's helping to prevent COVID-19 infection, the results in table (IV) exposed a significant barriers prevent participant to implement specific preventive measures that help to prevent of COVID-19. On the other hand, and regarding the information needto helps a person to prevent COVID-19 outbreak, the results in a table (V) show that are most of the respondents need to know how the corona viruses are transmitted, what they can to do to prevent contracting COVID-19, how to treat COVID-19, and need information regard the period of incubation for COVID-19. In addition, the majority of respondents considered that the information they obtaining by letters from the general practitioner are reliable to prevent coronavirus (table VI). Van der Weerd, et al., (2011) reported that most participants willing to obtained infection prevention information from public health facilities, health care providers, and social media [14].

Furthermore, there is a highly significant association at P≤ 0.05 between some socio-demographic characteristics and the level of risk perception and public attention about COVID-19 outbreak as shown in table (VII), and a highly significant association between participants' age group and their knowledge, self-efficacy, motivating factors and total attention. This result comes along with the result of different studies, in an online platform survey conducted in USA by McFadden, et al., (2020) concluded that the adult American is well realized their risk regarding COVID-19 outbreak [15]. Another online survey, conducted by Gerhold, (2020), concluded that younger people estimate the COVID-19 risk more than older people and this can lead to adherence with preventive measures such as social distancing. In addition to that, this study results revealed that men are less worried about COVID-19 than women, and about 22.7% of participants believed that they are very possible or possible to be infecting with COVID-19 in the near future [16].

The educational level also has a highly significant association with the participants' knowledge, motivating, and hindering factors. The researchers believe that the educational level may have a significant role for the prevention the infection of COVID-19, when the person have high a level of education this means that person can expand his/her knowledge about this infectious disease and therefore comply with preventive measures. Furthermore, the places of residency also having a highly significant association with hindering factors that limit the residents from followed the preventive measures. Conversely, the findings of study showed that is a highly significant association among participants' occupation and their perceived susceptibility, level of knowledge, motivating factors and total attention. In addition to that, there is a significant association between participants' gender and their perceived seriousness, and motivating factors; also, a highly significant association was found between the marital status of participants and their knowledge total risk perception, and motivating factors at P≤ 0.05. A study result that was done by Brug, et al., (2004) come to an agreement with our result, in which concluded that men have

lower risk perceptions for getting SARS than women, and individuals with less education stated more concerns about the disease, and have a higher risk perceptions when compared with other persons [17]. Another study conducted by Abdelhafiz, et al., (2020) concluded that the level of significantly knowledge was lower between the elderly people, less educated, rural residents, and the majority of samples were worried toward the risk of infection [11]. In a cross-sectional survey conducted by Zhong, et al., (2020) at Hubei Province in China, reported that the Chinese residents especially women, have had a respectable knowledge level and suitable practices regarding the outbreak of COVID-19 [18].

Conclusion:

Our findings indicate that are most of the Iraqi residents had a sufficient knowledge related the infection of COVID-19, and the majority of them perceived high risk for getting COVID-19 infection, in addition to that, the majority of participants are well aware about the effectiveness and efficiency of preventive measures. The findings also show that the residents facing a significant barriers, with insufficient motivation to implement these preventive measures. In addition to that and despite the level of knowledge, our findings indicate that are many members of society have expressed the need to additional information about the COVID-19. Furthermore, the lack of attention of some members of society to the risks with their need for information and the presence of barriers, all of these factors indicate that the presence of the risk of infection with COVID-19 is still present.

Recommendations:

The study recommended that all governmental and non-governmental organizations should be cooperate to encourage members of society to complying with preventive measures to avoid COVID-19 infection by providing incentives that help them in implementing these measures and smooth all barriers that hinder the implementation of such preventive measures. Furthermore, providing the community members with the new information and inquiries about the COVID-19, this helps to reduce the risk of disease spreading among society.

Ethical consideration:

An authorization was acquired from the Scientific Research Ethical Committee at the Nursing College/University of Kerbala. In addition to that, each respondent has been questioned to ensure his or her readiness to participate willingly in this survey. Furthermore, each respondent given the right to be withdrawn from the survey any time if they felt uncomfortable answered any question.

Acknowledgements:

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