ORIGINAL ARTICLE

Phenomenon of depression and anxiety related to precautions for prevention among population during the outbreak of COVID-19 in Kurdistan Region of Iraq: based on questionnaire survey

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Abstract

Purpose Since December 2019, the coronavirus disease 2019 (COVID-19) epidemic has swept the world, causing widespread burden and increasingly hospitalizations. Researchers from around the world have tried to study the virus and its effect with more precision in various fields. The purpose of this study is to identify levels of anxiety and depression with regard to precautionary for prevention of COVID-19, and to identify the relationship between demographic variables and both depression and anxiety.

Methods This was a descriptive cross-sectional study; data were collected by questionnaire via a mobile phone application in the Kurdistan Region of Iraq from 25 March, 2020 to 5 April, 2020. The sample size was 894 after deleting 20 cases because of duplication. The questionnaire consists of three main parts; part one is related to the sociodemographic characteristics of participants, the second and third parts consist of items related to depression and anxiety about COVID-19 using a 5-point Likert Scale (1 = of course no, 2 = no , 3 = normal for me, 4 = yes, and 5 = of course yes). Data was analyzed using SPSS V.25.

Results The majority of the participants were from Erbil (58.8%), most of them were male (58.4%); nearly 21.2% preferred quarantine and 41.7% chose curfew as a best way to to avoid being infected by COVID-19. Most of the participants had depression because of people's lack of knowledge about how to protect themselves from the virus (88.14%), while the majority of them had anxiety concerning shopping and contact with infected people (97%) and financial problems (97%). Females had higher rates of COVID-19 depression than did males. There was a significant correlation between age and home setting and anxiety, and a significant association between marital status and level of education and depression. There was no significant association between other variables and depression and anxiety

Conclusion The findings of the study indicated that the majority of participants were depressed and had anxiety about COVID-19. There was a significant association between gender and depression and anxiety, while there was no significant association between occupation and income, and depression and anxiety.

Keywords Depression · Anxiety · Population · Kurdistan Region of Iraq · COVID-19

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Introduction

Since December 2019, the coronavirus disease 2019 (COVID-19) epidemic has swept the world, causing widespread burden and increasingly hospitalizations (Wu and McGoogan 2020; Zhu et al. 2020). While public health and healthcare officers rushed to identify and control the unfolding of the virus, information was spreading uninhibitedly over traditional and social media platforms at a strikingly rapid pace. Both the impact of the disorder, and the dearth of information associated with it, permitted medical misinformation to unexpectedly appear and propagate on numerous social media platforms. Previous reports have highlighted a similar trend during recent public health emergencies, namely the

Ebola and Zika outbreaks (Miller et al. 2017; Oyeyemi et al. 2014). Such a misinformation phenomenon is alarming for both men and women and public health organisations to such an extent that governing bodies are realizing its gravity and attempting to limit its effects (Chou et al. 2018; Larson 2018). Distortion can be defined as a "claim of truth which is presently false because of lack of clinical evidence" (Raina and Merchant 2018). It propagates without constraints, does not entail any curation or peer-review, and does not require any professional verification. This allows it to propagate on social media and be amplified in the data silos and echo chambers of personally tailor-made content, specifically during times of public anxiety such as the contemporary COVID-19 pandemic (Zarocostas 2020). The Chinese government has given top priority to the safety of people's lives and health, and taken the prevention and control of COVID-19 epidemic as the most important activity at present. To control the COVID-19 outbreak, the National Health Commission of the People's Republic of China, along with the National Administration of Traditional Chinese Medicine and some other relative organizations, have organized experts to issue and update guidelines for COVID-19 diagnosis, treatment, prevention, and control in a timely manner. The guidelines were written based on the study, analysis, and summary of the treatment of previous coronavirus cases, and are used to guide medical staff and public health workers in China to better understand, prevent, and treat COVID-19 (Lipsitch et al. 2003). The risk of serious illness from COVID-19 increases with age. The highest rate of fatalities is among older people, particularly those with other serious health conditions or a weakened immune system. There is currently no cure or vaccine for COVID-19, or immunity in the community (Sohrabi et al. 2020). As COVID-19 is a newly identified pathogen, there is no known pre-existing immunity in humans. Based on the epidemiologic characteristics observed so far in China, everyone is assumed to be susceptible, although there may be risk factors increasing susceptibility to infection. This requires further study, as well as to know whether there is neutralizing immunity after infection (Singhal 2020). The unexpected and near-constant flow of news reviews about a virulent disease can cause all and sundry to feel worried. Get the facts, not the rumors and misinformation. Gather facts at regular intervals, from the WHO website and local health authority platforms, in order to help you distinguish facts from rumors. Facts can help to decrease fears (Mission 2020).

The purpose of this study is to identify levels of anxiety and depression related to precautions for prevention of COVID-19, and to identify the relationship between various variables and depression and anxiety. In addition, the value of this study is aimed at focusing on the mental or psychological status of people or society in confronting the new COVID-19 infection, which is an issue all over the world as the pandemic health crisis develops.

Research methodology

The study is a descriptive cross-sectional study; data were collected by using the questionnaire via a mobile phone application in the Kurdistan Region of Iraq from 25 March, 2020 to 5 April, 2020; the sample size was 894 after deleting 20 cases because of duplicates. The questionnaire consists of three main parts. Part one is related to the sociodemographic characteristics of the participants, which include: age, sex, place of residence, marital status, religion, family income status, level of education, occupation, monthly income, and Kurdish government prevention measures. The second third parts consist of items related to depression and anxiety about COVID 2019 using a 5-point Likert Scale (1 = of course no, 2 = no , 3 = normal for me, 4 = yes, and 5 = of course yes). Data were analyzed using SPSS V.25. Descriptive analysis was reported as frequency, percentage, and mean scores. Independent sample t-test and one-way ANOVA were used to analyze the relationship between the dependent (depression and anxiety), and independent variables (demographic characteristics of the participants). Spearman's correlation was used to assess the relationship between mean depression and anxiety scores. All the differences of estimated variables were considered statistically significant if $p < 0.05$. Inclusion criteria included all population in the area who desired to participate and exclusion criteria included all people who did not respond or refused to participate. The researcher obtained permission from the ethical and scientific committee of the College of Education at Salahaddin University-Erbil. Before starting the main study, the researchers conducted a pilot study with 25 cases to ensure the validity of the questionnaires; they also used Cronbach's alpha (0.73) to assess the consistency of the data (Blbas 2019).

Results

Table 1 shows the details of the sociodemographic characteristics of the participants. The majority of the participants were male (58.4%), and the most frequent age group was 20–29 years (40.7%), with an average age of 33 years. The majority of the respondents were from Erbil (58.8%), and about 63% of them had a university education, with the highest number being government employees (41.7%). The respondents considered curfew to be the best way to fight coronavirus (22.9%) used by Kurdistan government, followed by quarantine (21.2%), closing of road between cities and even inside cities (17%), hospital preparation (15%), use of thermal cameras (12.6%), and checkpoints (11.4%).The average income level was 726,000 Iraqi dinars.

Table 2 shows the level of depression about COVID19. The highest level of participants in the survey (88.14% with a mean score of 4.17) were depressed because of people's lack

Table 1 Sociodemographic characteristics (n = 894)

		F	%
Gender	Male	522	58.4%
	Female	372	41.6%
Age (years) (mean ± SD)		33 ± 10	
Age group	Under 20 years	23	2.6%
	20–29 years	364	40.7%
	30–39 years	309	34.6%
	40–49 years	133	14.9%
	50 years and above	65	7.3%
Place of residence	Erbil	526	58.8%
	Slemani	167	18.7%
	Duhok	98	11.0%
	Kirkuk	6	0.7%
	Halabja	7	0.8%
	Other cities	90	10.1%
Marital status	Single	326	36.5%
	Married	559	62.5%
	Divorced	9	1.0%
Religion	Muslim	875	97.9%
	Christian	5	0.6%
	Other religions	14	1.6%
Family economic status	Very bad	8	0.9%
	Bad	49	5.5%
	Middle	527	58.9%
	Good	290	32.4%
	Very good	20	2.2%
Level of education	Illiterate	14	1.6%
	High school	137	15.3%
	Diploma – Bachelor	565	63.2%
	Master	128	14.3%
	PhD	32	3.6%
	Others	18	2.0%
Occupation	Unemployed	95	10.6%
	Student	134	15.0%
	Housewife	31	3.5%
	Governed employee	373	41.7%
	Private employee	106	11.9%
	Self-employee	121	13.5%
	Others	34	3.8%
Income (dinars) (mean ± SD)		(726,000 ± 717,000)	
Income group	No income	200	22.4%
	under 500,000 dinars	153	17.1%
	500,000–999,000 dinars	286	32.0%
	1,000,000–1,999,000 dinars	188	21.0%
	2,000,000–2,999,000 dinars	45	5.0%
	3,000,000 dinars and above	22	2.5%
Which of the approaches that are prepared by Kurdistan government to fight coronavirus do you approve of? (you can choose more than one)	Quarantine	573	21.2%
	Curfew (lockdown)	618	22.9%
	Hospital preparation	404	15.0%
	Checkpoints	307	11.4%
	Closing of roads between cities and even inside cities	459	17.0%
	Thermal cameras	341	12.6%

of knowledge about how to protect themselves from the virus, followed by false information from different types of media (85.90%), the lack of a vaccine even though they have tried to find drugs (80.20%), different novel or explanation (72.26%), and they became a robot to know the final information (50.04%) about COVID-19.

Table 3 shows responses related to anxiety about COVID-19. The issues of shopping and contact with infected people caused the highest level of anxiety (97% with mean score of 4.62) followed by financial problems (97%), shortages of cleansing items and foods in the bazaar (93.8%), their families becoming infected (87.6%), lack of proper hygiene maintenance (86.7%) and so on, while the issue casuing them least anxiety was being in quarantine (30.5%).

Table 4 shows a significant association between gender, age, and place of residency and anxiety (p-value: 0.001, 0.006, 0.008), and a significant association between gender, marital status, and education level and depression (p-value: 0.03, 0.03, 0.04). However, there is a non-significant association between marital status, level of education, occupation, and income and anxiety as (p-value: 0.165, 0.448, 0.456, 0.836); there is also a non-significant association between age, place of residency,occupation, and income and depression (p-value: 0.175, 0.44, 0.363, 0.446).

Data were expressed as mean, SD (standard deviation). Independent Sample t-test and one-way ANOVA were tests used to a comparison between demographic characteristics with the score of depression and anxiety, * $p < 0.05$.

Discussion

The findings of the study revealed that a majority of the participants had depression (88.14%), while 97% of them had anxiety because of multiple factors such as false information from media, no clear characteristics of virus and its effects, and there being no final vaccine or drugs for COVID-19. These findings were similar to a WHO report which mentioned that a near-constant stream of news reports about an outbreak can cause anyone to feel anxious or distressed. Iit was recommended to seek information updates and practical guidance at specific times during the day from health professionals and the WHO website, and to avoid listening to or following rumors that make you feel uncomfortable (Bedford et al. 2020). This finding was echoed by a report from helpguide.org which said that fears about COVID-19 can take an emotional toll, especially if you're already living with an anxiety disorder [Smith and Robinson (2020)]. But you're not powerless. These tips can help you get through this stressful time (Jernigan 2020). In our opinion, people have depression and anxiety in such pandemic health crises because of fear from death and in order to protect themselves from the diseases: we think that a low level of such feelings are normal,

Table 2   Depression of healthcare people toward COVID-19

	Of course no		No		Normal for me		Yes		Of course yes		Total (Yes)	Mean	SD
	F	%	F	%	F	%	F	%	F	%	%		
Q1	8	.9%	41	4.6%	77	8.6%	357	39.9%	411	46.0%	85.9%	4.26	0.86
Q2	58	6.5%	157	17.6%	178	19.9%	324	36.2%	177	19.8%	56.0%	3.45	1.18
Q3	10	1.1%	48	5.4%	48	5.4%	459	51.3%	329	36.8%	88.1%	4.17	0.84
Q4	31	3.5%	75	8.4%	133	14.9%	325	36.4%	330	36.9%	73.3%	3.95	1.08
Q5	20	2.2%	46	5.1%	111	12.4%	382	42.7%	335	37.5%	80.2%	4.08	0.95

Table 3   Anxiety of healthcare people toward COVID-19

	Of course no		No		Normal for me		Yes		Of course yes		Total (Yes)	Mean	SD
	F	%	F	%	F	%	F	%	F	%	%		
Q1	43	4.8%	38	4.3%	211	23.6%	269	30.1%	333	37.2%	67.3%	3.91	1.10
Q2	32	3.6%	31	3.5%	48	5.4%	227	25.4%	556	62.2%	87.6%	4.39	0.99
Q3	52	5.8%	55	6.2%	109	12.2%	317	35.5%	361	40.4%	75.8%	3.98	1.14
Q4	12	1.3%	44	4.9%	63	7.0%	330	36.9%	445	49.8%	86.7%	4.29	0.90
Q5	10	1.1%	16	1.8%	29	3.2%	302	33.8%	537	60.1%	93.8%	4.50	0.75
Q6	38	4.3%	53	5.9%	158	17.7%	274	30.6%	371	41.5%	72.1%	3.99	1.10
Q7	30	3.4%	161	18.0%	95	10.6%	329	36.8%	279	31.2%	68.0%	3.74	1.17
Q8	170	19.0%	224	25.1%	227	25.4%	155	17.3%	118	13.2%	30.5%	2.81	1.29
Q9	8	.9%	10	1.1%	9	1.0%	258	28.9%	609	68.1%	97.0%	4.62	0.66
Q10	17	1.9%	43	4.8%	120	13.4%	379	42.4%	335	37.5%	79.9%	4.09	0.93

Table 4   Relationship between both (overall depression and overall anxiety) separately and demographic variables about COVID-19

		Overall depression				Overall anxiety			
		Mean	SD	F-value (t-value)	P-value	Mean	SD	F-value (t-value)	P-value
Gender	Male	3.93	0.67	(−2.94)	0.003*	3.97	0.57	(−4.04)	0.001*
	Female	4.06	0.63			4.12	0.52		
Age group	Under 20 years	4.24	0.67	1.760	0.135	4.03	0.59	3.632	0.006*
	20–29 years	3.98	0.71			4.06	0.54		
	30–39 years	4.01	0.62			4.05	0.57		
	40–49 years	3.94	0.62			4.01	0.52		
	50 years and above	3.86	0.60			3.79	0.57		
Place of residence	Erbil	3.97	0.67	1.010	0.411	4.05	0.55	3.149	0.008*
	Slemani	4.04	0.61			4.04	0.50		
	Duhok	3.94	0.61			3.88	0.60		
	Kirkuk	4.33	0.73			4.52	0.44		
	Halabja	4.26	0.53			4.36	0.40		
	Other cities	3.93	0.73			3.99	0.60		
Marital status	Single	3.91	0.74	3.430	0.030*	3.99	0.59	1.800	0.165
	Married	4.03	0.60			4.06	0.53		
	Divorced	4.04	0.82			4.11	0.58		
Level of education	Illiterate	3.87	0.78	2.330	0.041*	3.88	0.90	0.950	0.448
	High school	4.04	0.71			3.99	0.67		
	Diploma – Bachelor	4.01	0.64			4.06	0.53		
	Master	3.87	0.65			3.98	0.48		
	PhD	3.73	0.67			4.00	0.48		
	Others	3.92	0.63			4.10	0.42		
Occupation	Unemployed	4.05	0.71	1.096	0.363	4.07	0.59	0.953	0.456
	Student	4.00	0.73			4.04	0.54		
	Housewife	4.15	0.56			4.21	0.43		
	Governed employee	3.94	0.61			4.00	0.52		
	Private employee	3.94	0.66			4.08	0.57		
	Self-employed	4.05	0.69			4.02	0.62		
	Others	3.96	0.67			4.02	0.58		
Income group (dinars)	No income	4.06	0.68	0.953	0.446	4.05	0.60	0.418	0.836
	under 500,000	3.95	0.75			4.02	0.63		
	500,000 – 999,000	3.97	0.60			4.04	0.52		
	1,000,000 – 1,999,000	3.98	0.64			4.04	0.48		
	2,000,000 – 2,999,000	3.88	0.65			3.97	0.59		
	3,000,000 and above	3.89	0.62			3.91	0.45		

but severe depression and anxiety may be not normal and require invention from a psychologist. Other findings of the study indicated that there was a significant association between gender and depression and anxiety, and also between age, place of residence, and overall anxiety (this would be expected especially during such a health crisis as COVID-19). There was no significant association between anxiety and other variables such as marital status, education level, occupation, and income. The was also no significant association between depression and the variables age, place of residency, occupation, and income. It may be assumed that this is because all people have anxiety and depression during such pandemic health crisis without any differences between rich and poor, and independent of place of residency, occupation and other variables because this infectious disease is aggressive and its onset included all levels of population as mentioned in WHO report guidelines 2020 (Jiloha 2020).

Conclusion

The findings of the study indicated that the majority of the participant were depressed and had anxiety about COVID-19; there was a significant association between anxiety and gender, age, and place of residence, and no significant association between anxiety and (education level, marital status occupation, income and anxiety). There was significant association between (gender, marital status, and education level) with depression, while no significant association between (age, place of residency, occupation and income with depression).

Compliance with ethical standards

The questionnaire survey is in full compliance with ethical standards.

Conflict of interest statement The authors declare that they have no known competing financial interests or personal relationships that could have appeared to influence the work reported in this paper.

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