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The Psychological Impact of COVID-19 in Kuwait

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Abstract
Objective: The COVID-19 pandemic had a significant impact on countries globally in terms of changing their economies, policies, and social norms in both personal and professional lives. Research shows that this pandemic also had a psychological impact on people. However, there is a lack of evidence regarding this in the context of Kuwait. Thus, this study aims to assess the psychological impact of COVID-19 on the Kuwaiti population and suggest ways to improve their quality of life (QoL).
Methods: A cross-sectional survey was conducted from 26-Sep-2020 to 26-Oct-2020. The questionnaire consists of demographic questions, the generalized anxiety disorder scale (GAD-7 scale), the Centre for Epidemiology Scale for Depression (CES-D) scale, and the Pittsburgh Sleep Quality Index (PSQI). Data is analyzed using frequency and Chi-Square tests using IBM SPSS software.
Results: A total of 998 respondents were included. A higher prevalence of GAD was reported by women (62%), and participants with more than three family members (50%) which were 88.7% of the sample size. Moreover, 94% of participants experienced poor sleep quality during COVID-19, however, they did not take any sleep medications (89.5%). Respondents faced physical issues including general pain (61.4%), coughing or snoring loudly (37.2%), and waking up in the middle of the night (44.7%). A range of depressive symptoms were experienced by a majority of respondents as well.
Conclusions: Mental health problems were strongly associated with gender, age, marital status, education level, occupation, number of people living in the same household, working in close contact with people with COVID-19, and knowledge of COVID-19 from news and social media. Overall, the COVID-19 pandemic had a significant impact on the Kuwaiti population's mental health, particularly women.

Keywords: COVID-19, Anxiety, Depression, Sleep quality, SARS-CoV-2, Pandemic

1. Introduction

COVID-19 is one of the greatest global pandemics in the last century. SARS-CoV-2 (severe acute respiratory syndrome coronavirus-2) virus that belongs to the Betacoronavirus genus causes this acute respiratory syndrome caused by (Bakhiet & Taurin, 2020). This genus is part of other severe respiratory viruses such as severe acute respiratory syndrome coronavirus (SARS-CoV) and the Middle East respiratory syndrome (MERS). Since the initial cluster of pneumonia cases in the Wuhan province of China, this novel coronavirus quickly spread across the globe, infecting 106,321,987 people globally and killing 2,325,282 people. According to a WHO report (2020b), the first cases of COVID-19 were reported in Kuwait on the 24th of February 2020 by the Kuwaiti Ministry of Health. Its epidemic rapidly spread in Kuwait and now accounts for 172,996 cases and 975 mortalities as of the 10th of February, 2021 (WHO, 2020). Moreover, the Ministry of Health confirmed a further 957 mortalities from the complications of this disease (Gasana & Shehab, 2020; Health, 2020).

Kuwait Ministry of Health took a number of initiatives to deal with the situation; launched a voluntary stay-at-home initiative on the 11th of March 2020, temporarily suspended all government employees' work except for the emergency services, suspended all passenger flights and cross-border travels on the 14th of March, and launched a partial curfew on the 22nd of March 2020 from 5 pm until 4 am, which was amended on the 6th and the 24th of April 2020 from 4 pm until 6 am and 4 pm until 8 am,

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respectively. Later, a total curfew was imposed with the increase in the number of cases from the 10th of May until the 30th of May 2020. These implementations brought a steady return to normalcy. In order to follow up on the repatriated citizens and their obligatory home quarantine, they implemented an application named "Shlonik" on the 11th of May (Almutairi, Almutairi, & Alazemi, 2022).

During the previous outbreaks of SARS and Ebola, frontline healthcare workers reported acute stress disorder, depression, anxiety, insomnia, burnout, and post-traumatic stress disorder. Similarly, frontline healthcare workers have to work for more than 12 hours per day on average during COVID-19 (Chigwedere et al., 2021). The lockdown has also negatively affected migrant workers' income, and breach of curfew led to various deportations. Additionally, most workers are in fear of either losing their jobs or getting deported (Alahmad et al., 2020).

Conflicting reports have shown different populations at risk. For instance, Mazza et al., 2020) indicated individuals aged between 18 - 30 years, and Qiu et al. (2020) showed individuals aged more than 60 years had the highest rates of psychological problems during COVID-19. Others found no relation between age and mental health distress during the COVID-19 pandemic (Gao et al., 2020; Wang et al., 2020). Overall, there is a lack of studies on the ramifications of the coronavirus pandemic on mental health in the Kuwaiti population. Therefore, this project investigates the psychological impact of the COVID-19 epidemic on the Kuwaiti population. This study revealed the pandemic's footprint on psychological conditions such as depression, anxiety disorders, stress, anger, sleep disorders, and emotional trouble.

2. Material and Methods

2.1 Study design and participants

An online questionnaire survey was carried out among people living in Kuwait from the 26th of September till the 26th of October 2020 after the lockdown to get a fresh perspective of the people. A random convenience sampling method was used to recruit participants on social media accounts such as WhatsApp, Twitter, or Instagram and answered voluntarily. Approximately, 1,146 Kuwaiti adults from 18 to 60 years of age were approached and data from 998 was selected to analyze after data excluding the surveys that were finished within less than 1 minute or more than 15 minutes.

2.2 Data Collection Instrument

2.2.1 Sociodemographic variables

The sociodemographic variables include age, sex, education level, marital status, household, nationality, employment, and information related to COVID-19 were collected.

2.2.2 Generalized Anxiety Disorder (GAD)

As per a Bangladeshi study, the GAD-7 scale ranging from 0 to 21 demonstrates an excellent reliability score (Cronbach's alpha= 0.895) (Dhira et al., 2021). Thus, it is used to assess the level of anxiety experienced by participants over the past two weeks. Participants scoring 10 and above were identified with severe anxiety. The GAD-7 scale is used to identify three common anxiety disorders such as (i) panic disorder with (ii) social anxiety disorder, and (iii) post-traumatic stress disorder (Dhira et al., 2021).

GAD is studied using seven items that focus on the following: (1) feeling nervous, anxious, or on edge, (2) stopping or controlling worrying, (3) worrying about different things, (4) trouble relaxing, (5) hard to sit still (restless), (6) becoming easily annoyed or irritable, (7) feeling afraid.

2.2.3 Pittsburgh Sleep Quality Index (PSQI)

The PSQI is a self-rated questionnaire designed by Buysse et al. (1989) to measure sleep quality and disturbance in healthcare populations over a month. It has 19 questions to yield seven items: subjective sleep quality, sleep latency, sleep duration, habitual sleep efficiency, sleep disturbance, usage of sleeping pills, and daytime dysfunction due to sleepiness. Its overall score ranges from 0 to 21. Participants who scored higher than 5 are considered as poor sleepers.

2.2.4 Centre for Epidemiology Scale for Depression (CES-D)

The Center for Epidemiology Scale for Depression (CES-D) designed by Radloff (1977) is used to assess the depressive symptoms experienced during the past two weeks. It has twenty items to assess the occurrence of depressive symptoms on a 4-point Likert scale ranging from 0 (rarely) to 3 (all the time). Score is assigned as follows: not depressed (0–9 points), mildly depressed (10–15 points), moderately depressed (16–24 points), or severely depressed (more than 25 points). In this study, a

CES-D score higher than 25 points is denoted as depressive symptoms.

2.3 Statistical analysis

Frequency analysis is used to explain the sociodemographic characteristics, anxiety, and depression levels among the participants. The chi-square test ($\chi 2$) is used to compare GAD and demographic characteristics. Statistical Package for Social Sciences (SPSS) version 25.0. Cronbach's Alpha is used to test the reliability of established good reliability of the questionnaire (Huang & Zhao, 2020).

2.4 Ethical Considerations

This study is conducted in accordance with the Declaration of Helsinki and was approved by the Ethics Committee of the Kuwait Ministry of Health under number (1578/2020). An electronic informed consent was obtained from each participant prior to starting the questionnaire and they were informed of their right to withdraw from the survey at any time without providing any explanation if they wish.

3. Results

3.1 Demographic characteristics

Table 1 shows that a total of 998 Kuwaiti respondents were included comprising men and women evenly (50%). Their ages are mostly between 31-60 years (40%), followed by 18-30 years (32%) and 60+ (27.5%). The majority of them were qualified with a Bachelor's degree (59.3%), fewer with a College Diploma (15%), Master's degree (9.6%), high school (7.5%), PhD (5.6%) and Primary school (2.8%). In terms of marital status, most are married (75.5%), while a smaller portion is single (19.9%) or divorced (3.7%). Most respondents have three or more family members (88.7%). During the COVID-19 pandemic, 59.2% were full-time employees, 17.5% retired, and a minority were part-time workers (8.9%), while, 10.9% were students, 3.3% were unemployed. Lastly, 21.7% were healthcare workers among the participants.

Table 1 Demographic Statistics

Variable		**Frequency, n (%)**
Total Participants		998 (100)
Gender		
•	Woman	499 (50.0)
•	Man	499 (50.0)
Age		
•	18-30 years	320 (32.0)
•	31-60 years	403 (40.3)
•	60+ years	275 (27.5)
Education		
•	Primary school	28 (2.8)
•	High school	75 (7.5)
•	College (Diploma)	150 (15.0)
•	Bachelor's degree	593 (59.3)
•	Master's degree	96 (9.6)
•	PhD degree	56 (5.6)
Marital Status		
•	Single	199 (19.9)
•	Marriage	755 (75.5)
•	Divorced	37 (3.7)
•	Widower	7 (0.7)

Family Members		
•	None	11 (1.1)
•	One	46 (4.6)
•	Two	54 (5.4)
•	Three or more	887 (88.7)
Employment Status during the COVID-19 pandemic		
•	Full-time	592 (59.2)
•	Part-time	89 (8.9)
•	Students	109 (10.9)
•	Unemployment	33 (3.3)
•	Retired	175 (17.5)
Healthcare Worker		
•	Yes	217 (21.7)
•	No	783 (78.3)

3.2 Reliability analysis

The internal consistency (reliability) of the research scale is determined using Cronbach's Alpha. Its value is measured between 0 and 1 and the value above 0.7 indicates good reliability. Table 2 shows that the 7-item GAD has an excellent Cronbach's Alpha value (0.90), while the 12-item PSQI (0.788) and the 20-item CESD (0.877) have good Cronbach's Alpha. Therefore, GAD, PSQI, and CES-D have good internal consistency.

Table 2 Cronbach's alpha for GAD, PSQI, and CESD

Variable	Cronbach's Alpha	Number of Items
Generalized Anxiety Disorder	0.902	7
Sleep Pattern	0.788	12
Center for Epidemiology Scale for Depression	0.877	20

3.3 GAD and social lifestyle due to the COVID-19 pandemic

The results of the GAD test are classified into four categories: not at all (0), several days (1), more than half the days (2), and nearly every day (3) (Table 3). GAD scores are measured as 0 to 4 mild anxiety, 5 to 9 moderate anxiety, 10 to 14 moderately severe anxiety, and 15 to 21 severe anxiety.

The overall GAD score is 10.2 which represents moderately severe anxiety among respondents. Therefore, feeling nervous, and worrying are the most significant GAD issues, followed by being restless, becoming easily annoyed, worrying too much about different things, having trouble relaxing, and feeling afraid.

Table 3 GAD levels among participants

Items	Not at all n(%)	Several days n(%)	More than half the days n(%)	Nearly every day n(%)
GAD1: Over the last month, how often have you been feeling nervous, anxious, or on edge?	13.6	20.1	47.6	18.5

GAD2: Over the last month, how often have you been not being able to stop or control worrying?	30.8	40.4	19.6	9.0
GAD3: Over the last month, how often have you been worrying too much about different things?	12.6	28.1	36.5	22.6
GAD4: Over the last month, how often have you been getting trouble to relax?	16.8	31.5	32.7	18.8
GAD5: Over the last month, how often have you been so restless that it's hard to sit still?	20.8	32.5	38.8	7.7
GAD6: Over the last month, how often have you been becoming easily annoyed or irritable?	19.1	25.6	36.0	19.1
GAD7: Over the last month, how often have you been feeling afraid, as if something awful might happen?	21.9	36.1	32.8	9.0
Total score	10.2			

When the GAD score is associated with gender, men worry less than women (total GAD score for men 8.3 and women 12.1). These results show that women have a higher score (62%), which indicates that they worry more than half of the week and nearly every day, compared to men (33%) (Table 4).

Within the 31 to 60 age group, most of the participants are warring for more than half of the week (35%). Also, for educational qualifications, a higher score is received for those with a bachelor's degree (59.3%). Within this group, most of the participants' GAD score (34%) is nearly every day. For marital status, higher participation is from the married group where 26.1% indicate that they tend to be in the GAD state of negative psychological feelings nearly every day. Moreover, the higher score is with those who live with three or more family members. The findings show that 35% in this group tend to feel psychological issues (GAD state) for several days. For employment status, higher participation of 59.2% is from those with a full-time occupation wherein 35% are in more than half of the week category of GAD average. From an overall observation, people of different demographics tend to feel nervous, anxious, on edge, worrying, having trouble relaxing, restless, annoyed, irritable, and afraid over several days.

Table 4 Chi-Square (crosstab) result between demographic characteristics, GAD, incidence of COVID-19

Demographics		n (%)	Not at all n(%)	Several days n(%)	More than half of the week n(%)	Nearly every day n(%)	Have you had COVID-19, in the last months?		Have you been tested for COVID-19, in the last months?		Have you been contacted by a person positively tested for COVID-19, in the last months?	
							Yes	No	Yes	No	Yes	No
Gender	Woman	50	6	8	25	62	7.5	42.5	18.9	31.1	18.9	31.1
	Man	50	26	13	28	33	6.4	43.6	21.4	28.6	20.4	29.6
Age	18-30	32	21	17	28	34	4.3	27.8	13.6	18.4	13.6	18.4
	31-60	40.3	22	15	35	27	6.4	34	16.2	24.1	15.4	24.9
	60+	27.5	22	35	31	12	3.2	24.3	10.5	17	10.3	17.2
Education	Primary school	2.8	25	36	21	18	25	75	75	25	54	46
	High school	7.5	24	40	23	13	16	84	37	63	41	59

	College (Diploma)	15	24	31	29	17	17	83	47	53	45	55
	Bachelor's degree	59.3	16	25	25	34	1	89	40	60	38	62
	Master's degree	9.6	19	42	25	15	17	83	30	70	38	63
	PhD degree	5.6	34	41	20	5	20	80	34	66	29	71
Marital Status	Single	19.9	18	35	28	20	14	86	45	55	40	6
	Marriage	75.5	14	25	27	35	14	87	39	61	39	61
	Divorced	3.7	30	43	22	5	24	76	54	46	59	41
	Widower	0.7	14	29	43	14	0	100	0	100	0	100
Family Members	None	1.1	45	9	9	36	0	100	64	36	55	45
	One	4.6	20	48	22	11	7	93	39	61	50	50
	Two	5.4	31	31	30	7	20	80	19	81	26	74
	Three or more	88.7	15	35	25	25	14	86	41	59	40	60
Employment Status	Full-time	59.2	25	25	35	15	15	85	42	58	39	61
	Part-time	8.9	17	42	26	16	17	83	44	56	53	47
	Students	10.9	20	35	24	21	14	86	40	60	40	60
	Unemployment	3.3	15	30	21	33	15	85	24	76	33	67
	Retired	17.5	34	33	26	8	9	91	34	66	35	65

The majority of participants were not diagnosed with COVID-19 in the past months (86.1%). However, 59.6% did not get tested for it. Whereas, 39.4% had been contacted with a person positively tested for it. The percentage of participants affected by COVID-19 reported in this questionnaire is similar to the national average. With regards to gender, 21.4% of men tested for COVID-19, which is slightly more as compared to 18.9% of women, while both groups had similar rates of contact with infected individuals. Age-wise, the youngest group (18-30) had the lowest percentage of COVID-19 infections (4.3%) and testing (13.6%). People with primary school education showed the highest percentage of COVID-19 tests (75%), while those with a PhD had the lowest at 34%. Marital status revealed that divorced individuals had the highest rate of infection (24%) and testing (54%), while widowers had no reported cases or testing done. Employment status showed that part-time workers had the highest rates of testing (44%) and contact with infected persons (53%).

3.4 Sleep Quality during the COVID-19 pandemic

This section discusses the findings for sleep patterns in comparison to before and after the pandemic using PSQI. Table 5 shows that the percentage of people falling asleep within 15 minutes dropped from 36.7% to 10%, which can be due to the increase in their phone usage time (60 minutes or more) before bed from 17.3% to 20.2%. In turn, the time to wake up after 10 am increased from 21.6% to 27.6% as well. However, the duration of actual sleep decreased as people sleeping 3-5 hours increased from 10.2% to 35.2%, while those getting 7 or more hours of sleep decreased from 32.7% to 17.3%. Nonetheless, 47.7% of participants went to bed at their usual time and 46.3% maintained their usual sleep time for several days. Thus, the difference in time could be because of the lifestyle changes.

However, the comparison of sleep quality before and during the COVID-19 pandemic shows that participants reporting “very bad” sleep increased from 12.9% to 18.1%, while the participants reporting “very good” sleep decreased from 17.1% to 12.9%. Therefore, their perceived sleep quality was poor. Moreover, poor sleep pattern was correlated to physical issues during their sleeping period and restlessness because of their lifestyle during the COVID-19 pandemic

(Table 5).

Table 5 Sleep patterns before and during the pandemic

Questions	**Before COVID-19**	**During COVID-19**
How long has it taken you to fall asleep each night? (in minutes)	**n (%)**	**n (%)**
Within 15 minutes	36.7	10
Within 20 minutes	17	25
Within 30 minutes	29	24.6
Within 60 minutes	9.1	31.3
More than 60 minutes	8.2	9.1
What time do you usually get up in the morning?		
Before 6 am	17.3	17
6 am	27	21
7 am	19.2	19.2
8 am	8.3	8.7
9 am	6.5	6.6
+ 10 am	21.6	27.6
How many hours of actual sleep did you get at night?		
1-3 hours	2.4	21.5
3-5 hours	10.2	35.2
5-7 hours	54.7	26.3
+ 7 hours	32.7	17.3
How many hours were you in bed using your phone?		
I do not use my phone	15.9	10.5
30 minutes	43.8	28.5
60 minutes	22.9	40.3
More than 1 hour	17.3	20.2
how would you rate your sleep quality overall during the COVID-19 pandemic?		
Very good (n=171)	17.1	12.9
Fairly good (n=385)	38.6	21.3
Fairly bad (n=313)	31.4	47.7
Very bad (n=129)	12.9	18.1
Is it the time you usually go to bed a similar time before the COVID-19 pandemic? n (%)		
Not at all	6.0	
Several days	46.3	
More than half of the week	47.7	

Table 6 illustrates that the most frequent physical issues faced by respondents such as difficulty in getting to sleep (62.1% experience it once or twice a week), waking up in the middle of the night (44.7%), experiencing pain (61.4% once or twice a week).and feeling too cold during sleep (63.6%). A significant majority of respondents (78.5%) did not struggle with breathing issues at night, and most respondents (89.5%) did not use any sleep aids. Additionally, they occasionally had trouble staying awake due to the COVID-19 pandemic (18.2%). Many also face challenges with enthusiasm (42.7% weekly).

Table 6 Physical issues during COVID-19 pandemic

	Not during the past month n(%)	**Less than once a week n(%)**	**Once or twice a week n(%)**	**Three or more times a week n(%)**
A: Cannot get to sleep within 30 minutes.	14.3	12.9	62.1	10.7
B: Wake me up in the middle of the night or early morning	17.3	22.1	44.7	15.9
C: Have you gotten up to use the bathroom	25.5	22.5	36.3	15.7
D: Cannot breathe comfortably at night.	78.5	13.5	6.3	1.7
E: Cough or snore loudly	31.1	12.5	37.2	9.2
F: Feel too cold	63.6	17.2	10.5	8.6
G: Feel too hot	49.7	21.2	16.2	12.8
H: Have bad dreams	29.9	54.5	9.6	6.0
I: Have you pain in general	10.6	17.3	61.4	10.7
J: How often have you taken medicine (prescribed or not) to help you sleep?	89.5	5.5	1.7	3.3
K: How often have you had trouble staying awake while driving, eating meals, or engaging in social activity; because of the COVID-19 pandemic?	74.9	18.2	4.5	2.3
L: How much of a problem has it been for you to keep up the enthusiasm to get things done?	42.7	24.2	14.2	18.8

3.6 Depressive symptoms during the COVID-19 pandemic

Depressive symptoms of the participants during the COVID-19 pandemic over the past two weeks are analyzed using the CES-D scale. These results are classified into four categories, and scores are based on a 4-point Likert scale: Rarely (0), some days (1), occasionally (2), and most days (3). Scores are assigned as follows:

- Scores 0-9 carry no indication that a depressive disorder exists.
- Scores between 10-15 indicate mildly depressed.
- Scores between 16 and 24 are indicative of moderate depression.
- Scores above 24 indicate severe/ major depression and the initiation of therapeutic measures is compulsory.

Table 7 shows that common issues include feeling bothered by usual matters (51% occasionally), lack of appetite (61.5% on some days), and feeling unable to shake off the blues (60.5% on some days). 67.7% of respondents struggled with concentrating on tasks and experienced sadness (49.1%) on some days. However, the majority of respondents (73%) felt hopeful about the future, while a high percentage of 74.9% felt their life had not been a

failure. Feelings of loneliness were reported by 32.8%, while 63.1% felt people were unfriendly on some days. The total prevalence of depressive symptoms among respondents was 25.06 (n=601/988) suggesting moderate to severe depression.

Table 7 Centre for Epidemiology Scale for Depression (CES-D)

Items	Rarely n(%)	Some days n(%)	occasionally n(%)	Most days n(%)
CES-D 1: I was bothered by things that usually do not bother me.	5.0	40.8	51.0	3.0
CES-D 2: I did not feel like eating; my appetite was poor.	5.3	61.5	32.0	1.0
CES-D 3: I felt that I could not shake off the blues even with help from my family or friends.	4.5	60.5	33.5	1.3
CES-D 4: I felt I was just as good as other people.	5.8	65.0	29.0	0.0
CES-D 5: I had trouble keeping my mind on what I was doing.	4.0	67.7	26.0	2.1
CES-D 6: I felt depressed.	15.0	30.0	48.5	6.3
CES-D 7: I felt that everything I did was an effort.	3.5	71.7	24.0	0.6
CES-D 8: I felt hopeful about the future.	73.0	15.5	10.3	1.0
CES-D 9: I thought my life had been a failure.	2.1	74.9	20.8	2.0
CES-D 10: I felt fearful.	4.7	53.0	39.0	3.1
CES-D 11: My sleep was restless.	11.6	37.0	50.5	0.0
CES-D 12: I was happy.	2.0	31.8	65.5	0.5
CES-D 13: I talked less than usual.	3.0	78.8	17.0	1.0
CES-D 14: I felt lonely.	25.0	32.8	31.0	11.0
CES-D 15: People were unfriendly.	14.4	63.1	22.0	0.3
CES-D 16: I enjoyed life.	18.0	25.8	56.0	0.0
CES-D 17: I had crying spells.	5.0	69.2	25.0	0.6
CES-D 18: I felt sad.	20.2	49.1	30.0	0.5
CES-D 19: I felt that people disliked me.	15.0	61.3	23.0	0.5
CES-D 20: I could not get “going”.	12.0	37.3	50.0	0.5
Total score	25.06			

4. Discussion

This study shows the prevalence of anxiety, depression, and poor sleeping quality during the COVID-19 pandemic in Kuwait from 26 September until 26 October 2020. The current findings confirm that levels of anxiety-related symptoms in the Kuwait population increased significantly when participants were infected or related to someone with COVID-19 (GAD 10.2). The total prevalence of depressive symptoms was above the CES-D clinical cut-off scores of 25.06, meaning that 60% of participants were depressed. In Tang et al. (2020), depression and anxiety levels were reported by 26.4% and 70.7% of all Wuhan participants, respectively. Similarly, Chew et al. (2020) reported rates of depression in the general population during previous epidemic outbreaks of SARS 3% and Ebola 73.10%. These epidemics were contained faster but had a higher mortality rate, while the infection rates were lower than in the current COVID-19

pandemic. The SARS lockdown's length and uncertainty contributed to higher levels of depression during the outbreak (Gozansky, Moscona, & Okon-Singer, 2021). Thus, the COVID-19 lockdown also explains the higher rates of anxiety and depressive symptoms in Kuwait. Given these parallel studies, there is a crucial need with the COVID-19 pandemic to identify people with unmet mental health needs early on and address concerns accordingly.

In this study, women were more likely to experience anxiety symptoms and to a greater severity than men. A higher percentage of women reported worrying nearly every day, 62% compared to 33% for men. These findings were similar to previous studies conducted in China, where women were more likely to experience anxiety than men (Gao, Ping, & Liu, 2020; Wang et al., 2020). Liu et al. (2020) showed that these psychological variations might be due to women's higher sensitivity to psychological stress. Women were most likely to stay at home with children, and COVID-19 social restrictions may be auspicious for stress and depression.

Also, the GAD's prevalence was higher in individuals between 31 and 60 than in younger or older adults. Similarly, Pieh et al. (2020) stated that marital dissatisfaction and depression were higher among young and middle-aged adults contrary to older adults during the COVID-19 pandemic. Similarly, Fu et al. (2020) showed that married people were more likely to have anxiety (37%) than single adults (22.7%). Moreover, younger adults hooked to social media are more likely to experience depression and anxiety because of their increased exposure to fake news from social media (Keles, McCrae, & Grealish, 2020). School and university closures in Kuwait have increased students' feelings of loneliness, weariness, and stress (Wu et al., 2020). These negative feelings are usually associated with adverse psychological implications, including anxiety and depression (Husky, Kovess-Masfety, & Swendsen, 2020). Marelli et al. (2020) described how in Italy, peoples' lifestyles were drastically changed due to the movement restrictions. The Italian lockdown affected sleep, as most people reported poor sleep quality during this period, especially among students.

The relationship between education levels and anxiety during COVID-19 in Kuwait reflected that participants with a bachelor's degree had 34% anxiety levels, more than other educational qualifications. Similarly Fu et al. (2020), also showed that Chinese people with a bachelor's degree or more qualifications had higher (29.7%) anxiety levels than those who had attended college or below (29.7 and 23.8%, respectively).

The number of family members in the household influenced anxiety levels as well, where the 35% high response is related to those living with three or more persons. Full-time employment status was also associated with higher anxiety, of which 35% are in the 'more than half of the week' category of the GAD state average.

Many countries, including Kuwait, underwent a full lockdown before easing the restrictions to stop the spread of COVID-19. Key reasons that affected people's lifestyles and changed their mobility patterns were the mandatory social distancing and restraining from family and friends gatherings. These restrictions affected sleep patterns and depression status in the community (Huang & Zhao, 2020; Lakhan, Agrawal, & Sharma, 2020; López-Bueno et al., 2020; Y. Zhang & Ma, 2020).

This study found that the COVID-19 pandemic led to major changes in sleep patterns, including longer times to fall asleep, later wake-up times, poorer sleep quality, and increased phone usage before bed. Whereas, the majority of them did not experience depressive symptoms and lower sleep quality before the pandemic. People usually slept for 5-7 hours before the pandemic, however, sleep duration changed to 3-5 hours (35.2%) after the COVID-19 lockdown because of stress and lifestyle changes. Salari et al. (2020) reported that isolation and quarantine increased the alteration of sleeping patterns caused by a heightened state of anxiety and stress. They also reported the more extended use of the phone in bed. In addition, Şahin et al. (2020) documented that people who were addictively following the media reports on COVID-19 death and infection were more likely to experience psychological distress.

Moreover, physical issues during their sleep were also significantly altered due to the pandemic where most of the participants showed that they had bad dreams, could not sleep within 30 minutes, woke up in the middle of the sleep, frequently used the bathroom, sore loudly, and experienced pain in general. Current data shows participants who were not infected with COVID-19 maintained the same sleep time as infected participants. A survey conducted in the Middle East and North Africa (MENA) region showed similar results to this study that there was a reduction in sleeping hours among COVID-19-infected patients (Abouzid et al., 2021). On the contrary, a study conducted in the Netherlands by van den Ende et al. (2021) revealed

no significant difference between COVID-19-infected and non-infected patients in terms of sleep time and quality. However, they did report sleep disturbances faced by people such as the inability to breathe, and anxiety.
Overall, all findings confirm the psychological effects of COVID-19 as Kuwaiti people spending more time at home, such as physical illness, mental stress, and depression, contribute to health problems and low quality of life. Therefore, immediate action is needed to address the risk factors across the Kuwaiti community.

5. Limitations

This is the first study to measure and compare the prevalence of anxiety, sleep quality, and depression before, and during the COVID-19 pandemic among Kuwait's population. Regardless, this study has limitations because of its cross-sectional nature as the period of the survey was only one month because the long-term COVID-19 pandemic effects cannot be determined. It was also limited by the online web survey, which may have prevented it from reaching a wider audience. Furthermore, a limitation is the low number of participants because many expatriates left Kuwait and non-Kuwaitis were excluded from the study.

6. Conclusion

COVID-19 infection has damaging effects on Kuwaiti people's mental and physical health because they are afraid of getting infected or dying. It was characterized by poor sleep, depressive symptoms, and generalized anxiety, which leaned dramatically toward severe psychological disorders. The impact is greater on women, 30 to 60 years old people, married people, with a higher education level, and full-time employment, and people living with 3 or more persons at home. It is essential to address these issues by developing a mental health strategy to target these sects of society and reduce psychological symptoms in the long term.

Author's statement

I certify that all authors have seen and approved the final version of the manuscript being submitted. They warrant that the article is the author's original work, hasn't received prior publication, and is not under consideration for publication elsewhere. The following declarations are also included in this statement:

Ethic

The study was approved by the Ethics Committee of the Kuwait Ministry of Health.

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Author contributions

Dr. Fatemah Bahman is responsible for designing the questionnaire, the statistical analysis of the results, and writing the manuscript. Dr. Sebastien Taurin reviewed the design of the questionnaire, the integrity of the data, and the manuscript. Dr. Moiz Bakhiet reviewed the final manuscript.

Declarations of Competing Interest

None.

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