

The impact of COVID-19 pandemic on physical and mental health among a sample of patients attending primary health centers in Erbil City

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Abstract

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Background: Any pandemic is not only considered as a medical phenomenon; it has an impact on one's life and its society. The impact of COVID-19 pandemic on physical and mental health is a common issue and up to the researcher's knowledge, no previous study has been carried out among patients attending primary health care centers in Erbil City.

Objective: To assess physical and mental health problems associated with Covid-19 pandemic among a Kurdish sample of patients.

Patients and Methods: A cross sectional study using a convenience sample was conducted on 300 patients attending six primary health care centers in Erbil city. The study started from 1st of April 2021 to 31st of March 2022. The data were collected using a questionnaire after reviewing relevant literature.

Results: The mean age (\pm S.D) of participants was 42.16 (\pm 14.64) years, more than half (52.7%) of them were female, 65% of them were married. The majority (72.7%) of them were not smokers and 32.7% of them had chronic disease. More than half (61.7%) of participants stated that their physical activities were reduced and 38.3% of them gained weight. More than half (55.3%) of participants were infected with the Covid-19 while the rest (44.7%) were PCR negative with the disease. Thirty nine percent of participants suffered from sleep disturbance. There was significant statistical association between COVID-19 infection and gender, and marital status. There was non-significant statistical association between COVID-19 infection and sleep disturbance.

Conclusion: Covid-19 pandemic had a significant impact on the participants' wellbeing physically and mentally. Impact on physical health included decreased physical activities and weight gain and impact on mental health included psychological symptoms such as sleep disturbance, irritability, worry, feeling depressed, and insecurity about self and future.

Keywords: Covid-19, Physical health, Mental health, Pandemic

Introduction

The novel coronavirus disease 2019 (Covid-19) first started in Wuhan province in China and had rapidly spread throughout the globe[1]. Soon, on 30th January 2020, the

World Health Organization (WHO) declared the Covid-19 outbreak as a 'Public Health Emergency of International Concern (PHEIC)' [2] and on 11th March 2020 declared it as a pandemic [3].

After the viral infection, various sorts of impairment occur in the body organs, especially the brain. Additionally, neuroinflammation may be caused by the infection and this could trigger an ongoing musculoskeletal complications, psychological distress, and cognitive impairment [4]. The Covid-19 clinical characteristics range from asymptomatic condition to severe acute respiratory distress syndrome and multi-organ dysfunction [5]. An extensive body of literature exists regarding the clinical features and presentations of Covid-19 infection. The most common features of the acute stage of Covid-19 infection are high body temperature, shortness of breath or dyspnea, dry cough and musculoskeletal symptoms such as myalgia, joint pain and tiredness...etc [4].

The Covid-19 pandemic and its related public health emergency had an impact on patients and health services [6]. As the Covid-19 infection had already had a direct effect on the physical health as aforementioned, it had an impact on mental health globally [7]. Previous studies have shown the impact of Covid-19 psychologically ranging from moderate to severe anxiety and depression [8]. A study investigated the impact of Covid-19 outbreak on physical and mental health in seven Asian middle-income countries and it was found that headache, sore throat, and cough were the most prevalent symptoms reported by participants [9].

Any pandemic is not only considered as a medical phenomenon; it has an impact on one's life and its society. For instance, it causes stress, anxiety, and disruption [10, 11].

Thus, understanding the COVID-19 clinical features, its transmission patterns and management is quite important, though, understanding the impact of the COVID-19 pandemic on mental health of diverse population is as important as them [10]. Psychological first aid provision is considered as an important component of care for the victims of health emergencies [7].

The population's psychological reaction throughout any pandemic of an infectious disease plays a crucial part in determining both the disease spread and the emotional distress incidence. The psychological reactions contain emotional distress, maladaptive behaviours, and defensive responses. Individuals who are susceptible to psychological issues are particularly vulnerable [12]. Other groups of people might be more vulnerable to the psychosocial consequences of pandemics than others. For example, individuals who contract the infection, or individuals who are considered high risk such as being elderly, and having immune-compromised disease [11]. Psychological factors also plays a significant role in complying with public health policies, for instance, vaccination [12].

Several long-standing physical and mental health complications have been documented in previous studies worldwide. The impact of COVID-19 pandemic on physical and mental health is a common issue and up to the researcher's knowledge, no previous study

has been carried out among patients attending primary health care centers in Erbil City. Therefore, the aim of the current study was to assess physical and mental health problems associated with Covid-19 pandemic among a Kurdish sample of patients. In addition, the specific objective of the current study was to identify protective and risk factors associated with mental health outcomes.

Patients and Methods

Study design

A cross sectional study was carried out in the present study.

Study setting

The data were collected from six primary health care centers (PHCCs) in Erbil city/Iraq. The included PHCCs were Brayati, Shady, Shahidan, Mala Afandi, Nazdar Bamarni, and Ankawa PHCC.

Sampling methods and sample size

A convenience sample of 300 patients aged 18 years old or more who attended the aforementioned PHCCs were included in the study.

Inclusion criteria

All patients aged 18 years old and more.

Exclusion criteria:

Patients age less than 18 years.

Study duration

The study period was from 1st of April 2021 to 31st of March 2022.

This included conducting a pilot study, data collection, data analysis, and writing up.

Data collection tool

The data were collected through using a questionnaire, it was designed and constructed after reviewing relevant literature by the researcher. The questionnaire included the following parts:

Part one: Questions related to socio-demographic data of participants like age, gender, marital status, residence area, educational level, occupation, and family income.

Part two: Questions related to the general health status of the participants such as the presence of any chronic illness, and previous infection with COVID-19.

Part three: Questions related to participants' physical and psychological problems associated with the COVID-19 infection such as weight gain, decreased physical activity.

Part four: Questions related to participant's psychological symptoms associated with the COVID-19 pandemic such as feeling worried, sleep disturbance, frequently visited doctors, feel depressed, worried about the financial loss, used sleep medication and anti-depressant drugs.

Prior to data collection, a pilot study was conducted on 20 cases to evaluate the feasibility of the questionnaire.

Participant recruitment

The potential participants were asked to take part in the study. If they agreed to participate, and after obtaining verbal and written consent from them, direct interviews were conducted for the purpose of obtaining data. The researcher filled in the questionnaire as the participants responded to the questions asked by the researcher.

Statistical Analysis

The data were analyzed using Statistical Package for Social Science (SPSS) (Version 23). Descriptive and inferential statistics were applied. Frequency and percentages were used as well as Chi-square. P value ≤ 0.05 was considered as a statistically significant level.

Results

Out of 300 participants the minimum age was 19 years and the maximum 79 years, the mean age \pm S.D was 42.16 ± 14.64 years.

Table 1 indicates that more than half (52.7%) of participants were female. (65%) of these female were married and only (2.3%) of respondents were divorced. The vast majority (92.3%) were urban residents, (47%) of them were in medium socio-economic status. The majority (72.7%) of them were not smokers, (32.7%) of them had chronic disease. Most (38.3%) of the respondents gained weight,

also (61.7%) of them announced that their physical activities reduced (48%) of participants declared that COVID resulted in their financial loss, and finally the majority (81.7%) of them did not visit doctors. More than half (55.3%) of participants infected COVID-19 while the rest (44.7%) did not infect the disease, the majority (87.3%) of them were not smoking during the COVID, three quarters (75%) of respondents had contact with COVID cases, (41.7%) of them took care of suspected COVID case, most (71.7%) of them did not do COVID test.

Table (1): Background variables of participants

Variables	Categories	Frequency	Percent
Gender	Male	142	47.3
	Female	158	52.7
Marital status	Single	63	21
	Married	195	65
	Divorced	7	2.3
	Widow	35	11.7
Residence	Rural	23	7.7
	Urban	277	92.3
Socio-economic status	Low	132	44
	Medium	141	47
	High	27	9
Smoking	Yes	82	27.3
	No	218	72.7
Chronic disease	Yes	98	32.7
	No	202	67.3
Weight gain	Yes	115	38.3
	No	185	61.7
Decreased physical activities	Yes	185	61.7
	No	115	38.3
Financial loss	Yes	144	48
	No	156	52
Visiting doctors	Yes	55	18.3
	No	245	81.7
COVID-19 infection	Yes	166	55.3
	No	134	44.7
Smoking with COVID	Yes	38	12.7
	No	262	87.3
Contact with COVID cases	Yes	225	75
	No	75	25

Care of suspected COVID case	Yes	125	41.7
	No	175	58.3
Doing COVID test	Yes	85	28.3
	No	215	71.7
Total		300	100

Results in Table (2) reveal that, (39%) of the participants suffered from sleep disturbance, while the majority (86%) of subjects were not taking their sleep medications. The majority (82.3%) of participants were not checking their temperature, and (32.3%) of them felt depressed with (3.3%) of them had used anti-

depressants drugs. Most (60.3%) of participants were worried more than usual and (59%) of them felt irritable during the pandemic. Most (69%) of participants were worried about the future of themselves and their families.

Table (2): General variables related to COVID-19

Variables	Categories	Frequency	Percent
Sleep disturbance	Yes	117	39
	No	183	61
Taking sleep medications	Yes	42	14
	No	258	86
Temperature checking	Yes	53	17.7
	No	247	82.3
Feeling depressed	Yes	97	32.3
	No	203	67.7
Anti-depressants	Yes	10	3.3
	No	290	96.7
Worried more than usual	Yes	181	60.3
	No	119	39.7
Irritability	Yes	177	59
	No	123	41
Worry about future of self and family	Yes	207	69
	No	93	31
Total		300	100

Outcomes in Table (3) show that, there was significant statistical association between COVID-19 infection and gender, COVID-19 did not spread among (40.3%) of male participants while (47%) of female respondents infected by COVID-19. Chi square test was significant and p-value was (0.028). There was a significant statistical association between marital status and COVID-19 infection, most (65.7%) of married respondents got COVID-19 while

(22.9%) of single ones infected by the disease. Chi square test was significant and p-value was (0.048). There was non-significant association between residence and COVID-19 infection, the vast majority (94.6%) of urban residential infected by COVID-19 and (5.4%) of rural residential had COVID-19 infection and p-value was (0.104). There was a non-significant association between socio-economic status and COVID-19 infection, (42.2%) of low

socio-economic status did not infect by COVID-19 and (44.8%) of medium levels had the disease, and p-value was (0.764). There was a significant statistical association between smoking and COVID-19 infection, (33.1%) of smokers got the disease while most (66.9%) of non-smokers infected by COVID-19. Chi square test was significant and p-value was (0.012). There was non-significant statistical association between smoking with COVID and COVID-19 infection, the majority (84.9%) of

participants who were not smoking during COVID had the disease and (15.1%) of smokers during COVID infected by COVID, and p-value was (0.165). There was non-significant statistical association between COVID-19 infection and sleep disturbance, (34.9%) of participants who suffered from sleep disturbance infected by COVID-19 thus, most (65.1%) of patients who suffered from sleep disturbance had the disease and p-value was (0.109).

Table (3): Association between general characteristics of participants and COVID-19 infection

Variable	Categories	COVID-19 infection		P-value
		Yes No. (%)	No No. (%)	
Gender	Male	88(53%)	54(40.3%)	0.028
	Female	78(47%)	80(59.7%)	
Marital status	Single	38(22.9%)	25(18.7%)	0.048
	Married	109(65.7%)	86(64.2%)	
	Divorced	6(3.6%)	1(0.7%)	
	Widow	13(7.8%)	22(16.4%)	
Residence	Rural	9(5.4%)	14(10.4%)	0.104
	Urban	157(94.6%)	120(89.6%)	
Socio-economic status	Low	70(42.2%)	62(46.3%)	0.764
	Medium	81(48.8%)	60(44.8%)	
	High	15(9%)	12(9%)	
Smoking	Yes	55(33.1%)	27(20.1%)	0.012
	No	111(66.9%)	107(79.9%)	
Smoking with COVID	Yes	25(15.1%)	13(9.7%)	0.165
	No	141(84.9%)	121(90.3%)	
Sleep disturbance	Yes	58(34.9%)	59(44%)	0.109
	No	108(65.1%)	75(56%)	
Temperature checking	Yes	28(16.9%)	25(18.7%)	0.686
	No	138(83.1%)	109(81.3%)	
Total		166 (100%)	134 (100%)	

Results in Table (4) show that, there was a significant statistical association between decreased physical activities and COVID-19 infection, most (71.1%) of respondents with decreased physical activities caught COVID-19 while (28.9%) of normal cases had COVID-19. There was a significant

statistical association between contact with COVID-19 cases and COVID-19 infection, the vast majority (94%) of participants who had contact with COVID cases infected by the disease while only (6%) of those who did not get in touch with COVID cases had the disease. There was a significant

statistical association between care of suspected COVID cases and COVID-19 infection, (56.6%) of those took care of suspected cases infected and (43.4%) of those who did not take care of suspected cases infected by the disease. There was a significant statistical association between chronic disease and COVID-19 infection, more than half (53%) of patients with chronic disease got COVID-19 also (47%) of normal cases infected by COVID-19. There was a significant statistical association between weight gain and COVID-19 infection, (59%) of infected COVID-19 cases, gained weight while (41%) of them stayed normal without gaining weight. There was a significant statistical association between worried

more than usual and COVID-19 infection, most (77.7%) of worrier respondents infected by the disease while (22.3%) of normal participants caught the disease. There was a significant statistical association between more irritable since the pandemic and COVID-19 infection, (77.1%) of irritate people since the pandemic infected by COVID-19 and (22.9%) of normal cases had the disease. There was a significant statistical association between worried about future of self and family and COVID-19 infection, the majority of worrier about themselves and families caught the disease while (13.9%) of normal ones infected the disease. For all the cases, chi square test was significant and p-value was (<0.001).

Table (4): Association between disease status of participants and COVID-19 infection

Variable	Categories	COVID-19 infection		P-value
		Yes No. (%)	No No. (%)	
decreased physical activities	Yes	118(71.1%)	67(50%)	< 0.001
	No	48(28.9%)	67(50%)	
contact with COVID cases	Yes	156(94%)	69(51.5%)	< 0.001
	No	10(6%)	65(48.5%)	
care of suspected COVID case	Yes	94(56.6%)	31(23.1%)	< 0.001
	No	72(43.4%)	103(76.9%)	
chronic diseases	Yes	88(53%)	10(7.5%)	< 0.001
	No	78(47%)	124(92.5%)	
weight gain	Yes	98(59%)	17(12.7%)	< 0.001
	No	68(41%)	117(87.3%)	
worried more than usual	Yes	129(77.7%)	52(38.8%)	< 0.001
	No	37(22.3%)	82(61.2%)	
more irritable since the pandemic	Yes	128(77.1%)	49(36.6%)	< 0.001
	No	38(22.9%)	85(63.4%)	
worried about future of self and family	Yes	143(86.1%)	64(47.8%)	< 0.001
	No	23(13.9%)	70(52.2%)	
Total		166 (100%)	134 (100%)	

Findings of Table (5) determine that there was a non-significant statistical association

between visiting doctors and COVID-19 infection (18.1%) of participants who visited

doctors infected by COVID-19, (81.9%) of those who did not visit doctors infected by it. And p-value was (0.897). There was a non-significant statistical association between feeling depressed and COVID-19 infection, (33.1%) of depressed participants got COVID-19 and most (66.9%) of normal one infected by COVID-19. And p-value was (0.742). There was a non-significant statistical association between financial loss and COVID-19 infection, (47%) of participants with financial loss infected by the disease, more than half (53%) of those with normal financial conditions affected by

the disease. And p-value was (0.696). There was a non-significant statistical association between taking sleep medications COVID-19 infection, (13.9%) of medicine takers got the disease, the majority (86.1%) of normal cases infected by COVID-19. And p-value was (0.936). There was a non-significant statistical association between anti-depressants and COVID-19, only (4.2%) of anti-depressants takers had COVID-19 and the vast majority (95.8%) of normal participants infected by the disease. And p-value was (0.343).

Table (5): Association between COVID-19 infection and the suspected risk factors

Variable	Categories	COVID-19 infection		P-value
		Yes No. (%)	No No. (%)	
visiting doctors	Yes	30(18.1%)	25(18.7%)	0.897
	No	136(81.9%)	109(81.3%)	
feeling depressed	Yes	55(33.1%)	42(31.3%)	0.742
	No	111(66.9%)	92(68.7%)	
financial loss	Yes	78(47%)	66(49.3%)	0.696
	No	88(53%)	68(50.7%)	
taking sleep medications	Yes	23(13.9%)	19(14.2%)	0.936
	No	143(86.1%)	115(85.8%)	
anti-depressants	Yes	7(4.2%)	3(2.2%)	0.343
	No	159(95.8%)	131(97.8%)	
Total		166 (100%)	134 (100%)	

Discussion

The Covid-19 pandemic caused a state of wide-ranging distress, and with its emergence, a body of literature focused on the physical health with relation to the pandemic. Soon after, several studies focused on the mental health linked to the pandemic [13-17]. The present study highlighted the impacts of Covid-19 pandemic on both physical and mental health among a sample of Kurdish patients. It was revealed that the Covid-19 pandemic had a significant impact

on the participants as the majority of them (71.1%) reduced their physical activity and suffered from financial loss. In addition, a substantial number of participants (59%) stated that they gained weight. However, the majority of the participants (81.9%) did not seek care from healthcare providers (i.e., visiting doctors).

Previous studies have already studied the impact of the pandemic on health of general population [9, 12]. This study is of particular importance as it studied the impact of Covid-

19 pandemic on the physical and mental wellbeing of patients seeking healthcare for different health issues in PHCCs as they might be more prone to severe impacts. The present findings highlighted that sleep disturbance (34.9%) and feeling depressed (33.1%) were prevalent among a considerable number of participants. Likewise, in a different context, a study conducted in the Kurdistan Region of Iraq (KRI) reported that about 63% of respondents stated that the Covid-19 outbreak had mild to extreme impact on their sleeping [18]. In addition, the majority of participants in the current study were irritable (77.1%) and worried more than usual (77.7%). Similarly, several studies exist concerning the impact of the pandemic on mental health and their findings were that due to the pandemic the incidence of stress, irritability, anxiety, and depression has increased [16, 19-21].

Furthermore, a study conducted on 1210 participants in several cities in China in the beginning of the pandemic, found that around 54% of the participants rated the impact of the Covid-19 outbreak psychologically as moderate or severe. A considerable number of participants stated moderate to severe anxiety and depression symptoms.⁸ Likewise, 16.3% of respondents in another study graded the psychological impact of the Covid-19 as moderate to severe [22]. About 24% of respondents in a study conducted in Saudi Arabia reported moderate to severe psychological impact of the Covid-19 outbreak [23].

Moreover, worry about future of self and family was found among the majority of participants (86.1%). This might in turn

negatively affect the mental health of the participants.¹⁵ Likewise, Brooks *et al.*,^[24] reported that mental health can be negatively affected by fear of unknown and ambiguity about the future.

Studies have documented that individuals contracting the Covid-19 virus might be more susceptible to great psychological tension and disturbance [25]. Surprisingly, our analysis showed no significant association between Covid-19 infection and psychological symptoms such as feeling depressed (66.9%). In addition, our analysis did not reveal any significant association between Covid-19 infection and financial losses (53%). On contrary, there is evidence in the literature that unemployment and financial losses can nurture emotional and psychological issues [26]. However, our analysis indicated that alike other studies¹⁴ there is a significant statistical association between Covid-19 infection and other psychological symptoms such as worried more than usual (77.7%), more irritable since the pandemic (77.1%), and worried about future of self and family (86.1%).

Decreased physical activities and weight gain were significantly associated with Covid-19 infection in our analysis. In a study conducted in Kurdistan Region in Iraq (KRI), it was found that 87% of participants stated that Covid-19 had an undesirable impact on their daily living routines [18]. Maugeri *et al* [27] concluded that sustaining consistent exercise routine is important in maintaining physical and mental health throughout curfew period imposed during health emergencies.

Our analysis indicated that being male was significantly associated with Covid-19 infection. In another study conducted in Iraq,

it was found that although the number of male cases was more higher compared to females, no significant association was documented [28]. Agrawal *et al* [29] reported that existing data indicate that male gender have a higher susceptibility for Covid-19 infection compared to their female counterparts.

The current analysis indicated that there was a statistically significant association between chronic diseases and Covid-19 infection. It was documented that patients with comorbidities such as diabetes, hypertension, and cardiovascular diseases are at high risk of Covid-19 infection and higher mortality rate [29].

Conclusions

Covid-19 pandemic had a significant impact on the participants' wellbeing physically and mentally. Impact on physical health included decreased physical activities and weight gain and impact on mental health included psychological symptoms such as sleep disturbance, irritability, worry, feeling depressed, and insecurity about self and future.

Recommendations

Physical activity, particularly the aerobic, strength, flexibility, and balancing activities, is highly advised during COVID-19 confinement. Walking around or standing still can keep you moving, even in tight areas or when using phone. If you have symptoms or trouble breathing, avoid activity, rest at home, get medical help.

Lean on your friends and family, get adequate sleep, eat well, exercise, and take part in fun activities to promote your health, but be careful and follow all safety and health precautions.

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Ethical clearance: The Ethics Committee of the College of Medicine at Hawler Medical University approved the study. All patients were informed about the study prior giving consent to participate in which verbal consent were obtained from them. The participants were assured that their information will be kept confidential and will not be used for other purposes.

Conflict of interest: Nil

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تأثير وباء كوفيد-١٩ على الصحة البدنية والعقلية بين عينة من المرضى الذين يحضرون مراكز الرعاية الصحية الأولية في مدينة أربيل

زبيدة حسن احمد^١، كاروان حويز سليمان^٢

الملخص

خلفية الدراسة: لا يعتبر أي وباء ظاهرة طبية فحسب؛ بل له تأثير على حياة الفرد ومجتمعه. يعد تأثير وباء كوفيد-١٩ على الصحة البدنية والعقلية قضية شائعة وعلى حد علم الباحث، لم يتم إجراء أي دراسة سابقة بين المرضى الذين يحضرون مراكز الرعاية الصحية الأولية في مدينة أربيل.

اهداف الدراسة: لتقييم مشاكل الصحة البدنية والعقلية المرتبطة بوباء كوفيد-١٩ بين عينة كردية من المرضى.

المرضى والطرائق: أجريت دراسة مقطعية باستخدام عينة مقنعة على ٣٠٠ مريض يحضرون ستة مراكز للرعاية الصحية الأولية في مدينة أربيل. بدأت الدراسة من ١ أبريل ٢٠٢١ إلى ٣١ مارس ٢٠٢٢. تم جمع البيانات من خلال استخدام استبيان بعد مراجعة الأدبيات ذات الصلة.

النتائج: كان متوسط العمر ($S.D \pm$) للمشاركين ٤٢,١٦ ($\pm ١٤,٦٤$) سنة، وكان أكثر من نصفهم (٥٢,٧٪) من الإناث، و ٦٥٪ منهم متزوجون. الغالبية (٧٢,٧٪) منهم ليسوا مدخنين و ٣٢,٧٪ منهم يعانون من أمراض مزمنة. ذكر أكثر من نصف المشاركين (٦١,٧٪) أن أنشطتهم البدنية قد انخفضت وأن ٣٨,٣٪ منهم زاد وزنهم. أصيب أكثر من نصف المشاركين (٥٥,٣٪) بفيروس كورونا (كوفيد-١٩) بينما لم يصاب الباقي (٤٤,٧٪) بالمرض. عانى ٣٩ في المائة من المشاركين من اضطراب النوم. كان هناك ارتباط إحصائي كبير بين عدوى كوفيد-١٩ والجنس، والحالة الاجتماعية. كان هناك ارتباط إحصائي غير مهم بين عدوى كوفيد-١٩ واضطرابات النوم.

الاستنتاجات: كان لوباء كوفيد-١٩ تأثير كبير على رفاهية المشاركين جسدياً وعقلياً. شمل التأثير على الصحة البدنية انخفاض الأنشطة البدنية وزيادة الوزن والتأثير على الصحة العقلية مثل الأعراض النفسية مثل اضطراب النوم والتهدج والقلق والشعور بالافتقار وانعدام الأمن بشأن الذات والمستقبل.

الكلمات المفتاحية: كوفيد-١٩؛ الصحة البدنية؛ الصحة العقلية؛ الوباء

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