Psychiatric morbidity among patients with corona virus (COVID 19) in Basra city

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ABSTRACT

Introduction: COVID-19 presents a serious threat to mental health around the globe by elevating rates of anxiety, depression, posttraumatic stress disorder (PTSD) and negative societal behaviours.so many physical and mental consequences are expected to develop during and post Covid 19 pandemic including include: extreme fear and uncertainty; lowered perceived health; negative societal behaviours driven by fear and distorted perceptions of risk, including distress reactions (insomnia, anger, extreme fear of illness even in those not exposed) and health risk behaviours (increased use of alcohol and tobacco, social isolation); as well as mental health disorders (PTSD, anxiety disorders, depression).For the purpose of knowing and diagnosing these disorders and for the purpose of treating them side by side with medical remedial procedures this research tries to shed some light on the mental consequences of Covid 19 patients.

Aim:To collect, analyse and interpret psychiatric symptoms that may be accompanying COVID 19.

Method: The study is a case-control study carried out at Al- Basra Teaching Hospital in Al-Basra City.The study was conducted randomly in 100 patients who attend the COVID 19 outpatients clinics as well as who admitted into the infectious wards and 100 controls from general population, of the same age and at the same time period.Both groups (patient and control) were interviewed and their consent was taken before the interview. And they were surveyed for the presence of psychiatric disorders by using a modified Arabic version of General Health Questionnaire GHQ, then The application of Diagnostic and Statistical Manual of mental disorders Edition (28) five (DSM 5) for diagnosis the most common probable psychological disorder associated with cases of COVID 19 which include: GAD, Panic disorder, phobia, obsessive compulsives disorder, Psychosis, Depression, Substance addiction**.** Data were entered into a personal computer using the statistical package for social science (SPSS) version 20 for Statistical analysis.

Results:GAD and depression were observed in higher percentages in cases (32%, 49 % respectively) than in control (16%, 32% respectively).Phobia, panic disorders, OCD, psychosis and drug addiction were not reported in neither cases nor control groups.This observed difference was statistically significant (P values <0.05). However, the overall affection although was observed in a higher percentage in cases, it did not carry significant statistical inference (P value > 0.05).

Conclusion: Covid 19 has caused a great burden on health not only on physical aspect but also on mental and psychological aspects. Our study revealed a psychological impact of Covid 19 represented by depression, anxiety disorders, and affective instability. GAD and depression were observed in higher percentages in cases than in control. Officer and students were most to be affected .younger age group was found to be the most prevalent of psychological impact.

KEY WORDS: covid 19, depression, GAD, psychiatric co-morbidity, GHQ.

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Introduction:

COVID-19 presents a serious threat to mental health around the globe by elevating rates of anxiety, depression, posttraumatic stress disorder (PTSD) and negative societal behaviours[1]. Deep emotional traumas in societies overwhelmed by large-scale human disasters, like, global pandemic diseases, natural disasters, man-made tragedies,

war conflicts, social crises, etc., can cause massive stress related disorders[2]. Around 16% of the global population is affected by mental health disorders [3] with lifetime prevalence estimates in the range of 12.0-47.4% [4]. There are diverse barriers to mental health treatment [5], and the consequences of untreated or inadequately treated societal stress-related disorders are more present, affecting individuals and their families, as well as society in general, in the form of lost work productivity, unemployment, homelessness, marital and parenting problems, domestic violence, drug and alcohol abuse, suicides and others [6].Covid 19 pandemic possesses a great impact on many levels , socially, economically and therefore mentally [7].

A WHO technical guidance note, stated that "the main psychological impact to date is elevated rates of stress or anxiety", with a warning that "as new measures and impacts are introduced – especially quarantine and its effects on many people's usual activities, routines or livelihoods – levels of loneliness, depression, harmful alcohol and drug use, and self-harm or suicidal behaviour are also expected to rise" [8]

By that so many physical and mental consequences are expected to develop during and post Covid 19 pandemic including include: extreme fear and uncertainty; lowered perceived health; negative societal behaviours driven by fear and distorted perceptions of risk, including distress reactions (insomnia, anger, extreme fear of illness even in those not exposed) and health risk behaviours (increased use of alcohol and tobacco, social isolation); as well as mental health disorders (PTSD, anxiety disorders, depression)[9]

Studies showed that longer durations of quarantine were associated with poorer mental health specifically, post-traumatic stress symptoms avoidance behaviours, and anger [10], along with sense of restriction , Confinement, loss of usual routine, and reduced social and physical contact with others were frequently shown to cause boredom, frustration, and a sense of isolation from the rest of the world [11].

Stigmatisation is also recognized consequence of infected subjects and those who has been quarantined may report different treatment from others as well as social rejection [12].

A range of scientific researches addressing the impact of post virus pandemics on mental health, as well as recently published articles specifically on the topic of mental health and COVID-19 outbreak, indicate that urgent steps need to be done and acknowledged to minimize mental health damage to the world population by coronavirus pandemic [13].

The lives of people were drastically affected with lock-down and fear related to the disease's potential effects and transmission [14]. The fear due to the contraction of COVID -19 is on the rise because of the death percentage and international spread[15]

Concerns has been risen up that patient with chronic mental illnesses such as schizophrenia and bipolar disorder are at higher risk of acquiring infection with Covid 19 [16] especially when comorbid medical conditions and lifestyle risk factors are involved.[17].

Schizophrenia patients appear to have greaterdifficulty following adequate hygiene practices than the general population. [18] Oral hygiene deficits have been particularly well documented [19] and could certainly increase vulnerabilityto respiratory diseases [20]. Impaired judgement and poor self-care are the most disease properties which could hinder the safety of those patient [21].

Due to public health and outlined economic reasons, it is well recognized that COVID-19 presents a serious threat for mental health around the globe[22] , but the effect gets most pronounced in developing countries where mental health care is much less provided and the psychiatrists number per population is diminished and less than expected in comparison with the developed countries , even in the U.S. nearly 40% of population lives where there is a shortage of mental health professionals and 60% of counties are without a psychiatrist [23]

Thereby the lack of psychiatrists, other mental health professionals and mental health care in general during times of pandemics and global human disasters shed an excess burden and increase the possibilities of mental diseases [24] , along with exaggeration of the previously existed symptoms and disorders [25].

Corona virus (COVID 19) is considered a new pandemic and is a dangerous virus as well as causing organic symptoms affecting the respiratory system and other body organs that may cause death [26].

The fact that the method of transmission through community convergence require a special pattern of accurate preventive measures such as wearing masks, sterilization and washing hands, which affect the normal life style and normal human behaviour, resulting in various and multiple psychiatric disorders such as depression, anxiety, obsession and psychosis especially among patients with this virus [27].

For the purpose of knowing and diagnosing these disorders and for the purpose of treating them side by side with medical remedial procedures this research tries to shed some light on the mental consequences of Covid 19 patients, putting in mind that their negligence will negatively affects the patient's life.

Aim and objective:

A. To collect, analyse and interpret psychiatric symptoms that may be accompanying COVID 19.

B. To give a possible psychiatric disorder accompanying COVID 19

Methodology:

Study population:

The study was a case-control study carried out at Al- Basra Teaching Hospital in Al-Basra City, this hospital is recently decided to be a specialized hospital for management and follow up of patients infected with COVID 19, during the period extends from1st of April and to the end of June 2020.
The study was conducted randomly in 100 patients who attend the COVID 19 outpatients clinics as well as who admitted into the infectious wards and 100 controls from general population, of the same age and at the same time period.

The inclusion criteria:

- All COVID 19 cases that had been diagnosed and admitted to the infectious ward or attended outpatients clinic were included in this study.
- Age group between 12 and above were included.

The Exclusion criteria:

- 1.Patients who have psychiatric disorder secondary to other organic disorder or substance abuse.
- 2.Patients from other southern cities.

Method:

Formal consent of Iraqi s Ministry of Health was obtained, besides consent from Al-Basra Health Directorate and Al-Basra Teaching Hospital was obtained
Both groups (patient and control) were interviewed and their consent was taken before the interview.
And they were surveyed for the presence of psychiatric disorders by using:

.1 1.A modified Arabic version of General Health Questionnaire (G. H. Q) was used. This (G. H. Q.) was developed for detection of probable case of psychiatric morbidity among community and primary care sample. Since its introduction it was subjected to validity study used in prevalence estimation applied in variety of cultures and languages.

A self-rating General Health Questionnaire was submitted to all patients, the four General Health Question response categories were :

- Code 1 –not all score zero ○
- Code 2 – not more than usual score zero ○
- Code 3 – rather more than usual score one ○
- Code 4 –much more than usual score one ○

So the range was from zero to 30.
The best case\ non-case threshold on the (G. H. Q.) was found to be 4\5 and patients scored >5 are referred to as General health question probable case .The researcher used the modified General health questionnaire(30 version) translated by a group of psychiatrists to Arabic version followed after socio –demographic data Questionnaire,

2. The application of Diagnostic and Statistical Manual of mental disorders Edition[28] five (DSM 5) for diagnosis the most common probable psychological disorder associated with cases of COVID 19 which include:
GAD, Panic disorder, phobia, obsessive compulsives disorder, Psychosis, Depression, Substance addiction**.**

Statistical analysis:-

Data were entered into a personal computer using the statistical package for social science (SPSS) version 20.
The whole data arranged and tabulated with numbers and percentages. Association between variables measured by using Chi-Square Test (whenever applicable), and *P*- value were evaluated by a highly qualified Community medicine Specialist as a Statistician.
P-value of equal or less than 0.05 was considered significant. [29]

Results

One hundred cases and an equivalent number of controls were involved in this study. Cases are composed of 47 males and 53 females while control group had 54 males and 46 females.

Table 1: Basic characteristics of the study population

		Cases (N)	Controls (N)	P value*
Sex	**Male**	47	54	0.957
	Female	53	46	
Age	**12-30 years**	23	27	0.753
	31-50 years	69	64	
	50 -70 years	8	9	
Occupation	**Officer**	49	50	0.987
	Student	19	17	
	Unemployed	30	32	

	Retired	2	2	
Education	**Illiterate**	7	12	0.482
	Primary	25	29	
	Secondary	52	43	
	University	16	16	
Residence	**Urban**	47	47	1.000
	Rural	53	53	
Marital status	**Single**	23	27	0.753
	Married	69	64	
	Separated / widowed	8	9	

*Chi squared test

Comment:

Since the total number of cases and control is 100 for each of them, no percentage calculation has been made because the numbers equal to the percentages. All of the basic characteristics are homogenously distributed between the cases and control with no significant statistical difference is observed for any of the studied variables (P values >0.05).

Table 2: Distribution of psychological disorders in cases and controls

		Cases (N)	**Controls (N)**	**P value***
GAD	**Negative**	68	84	0.008
	Positive	32	16	
Depression	**Negative**	51	68	0.014
	Positive	49	32	
Others	**Negative**	75	84	0.115
	Positive	25	16	

*Chi squared test

Comment:

Phobia, panic disorders, OCD, psychosis and drug addiction were not reported in neither cases nor control groups. GAD and depression were observed in higher percentages in cases than in control. This observed difference was statistically significant (P values <0.05). However, the overall affection although was observed in a higher percentage in cases, it did not carry significant statistical inference (P value > 0.05).

GHQ Status

Regarding depression, There were 53 subjects (53%) of the cases of Covid 19 who scored >5, and were considered as a probable cases, and there were 35(35%) of the control group who scored >5 and were considered as a probable cases. See table 3

Table 3: the validation assessment between GHQ and the Specific questionnaire regarding depression.

Depression in cases			Depression in control		
GHQ	Sp.Questionnaire		GHQ	Sp.Questionnaire	
Probable cases	cases	Non cases	Probable cases	cases	Non cases
	44 True +ve	9 false +ve		28 True +ve	7 False +ve
Non probable	5 False -ve	42 True -ve	Non probable	4 False -ve	61 True -ve
Total	49	51	total	32	68

While the status regarding GAD showed 29 candidate (29%) of the cases of Covid 19 who scored >5, and were considered as a probable cases, and there were 18 (18%) of the control group who scored >5 and were considered as a probable cases. See table 4

Table 4: the validation assessment between GHQ and the Specific questionnaire regarding GHQ.

Depression in cases			Depression in control		
GHQ	Sp.Questionnaire		GHQ	Sp.Questionnaire	
Probable cases	cases	Non cases	Probable cases	Cases	Non cases
	26 True +ve	3 false +ve		14 True +ve	4 False +ve
Non probable	6 False -ve	65 True -ve	Non probable	2 False -ve	80 True -ve
Total	32	68	total	16	84

In order to validate the GHQ and the specific questionnaire, and represent the statistical correspondence of the specific questionnaire to the GHQ, we used the value of the sensitivity and specificity of the two instruments regarding depression and GAD.

1. Depression in cases

$$\text{Sensitivity of the test} = \frac{\text{No. of the true positive}}{\text{No. of the true positive + false negative}} * 100$$

$$= \frac{44}{44+5} * 100 = 89.79\%$$

$$\text{Specificity of the test} = \frac{\text{No. of the true negative}}{\text{No. of the true negative + false positive}} * 100$$

$$= \frac{42}{42+9} * 100 = 82.35\%$$

2. GAD in cases

$$\text{Sensitivity of the test} = \frac{\text{No. of the true positive}}{\text{No. of the true positive + false negative}} * 100$$

$$= \frac{26}{26+6} * 100 = 81.25\%$$

$$\text{Specificity of the test} = \frac{\text{No. of the true negative}}{\text{No. of the true negative + false positive}} * 100$$

$$= \frac{65}{65+3} * 100 = 95.588\%$$

So there is a high percentage of both of these values lead to validate the GHQ and the specific questionnaire for psychiatric morbidity, and represent the statically correspondence between them.

Table 5: History and severity of psychological disorders in cases and controls

		Cases (N)	Controls (N)	P value*
History	**Negative**	87	90	0.506
	Positive	13	10	
Severity	**Negative**	66	77	0.085
	Positive	34	23	

*Chi squared test

Comment: Neither history of psychological disorder nor severity showed significant statistical difference between the two groups (P values >0.05).

Table 6-A: Basic characteristics in relation to GAD in cases

		GAD		P value*
		Negative (n %)	Positive (n %)	
Sex	**Male**	29 (42.6%)	18 (56.2%)	0.204
	Female	39 (57.4%)	14 (43.8%)	
Age	**12-30 years**	27 (39.7%)	24 (49.0%)	0.622
	31-50 years	24 (35.3%)	10 (31.2%)	
	50 -70 years	17 (25.0%)	11 (34.4%)	
Occupation	**Officer**	35 (51.5%)	14 (43.8%)	0.853
	Student	12 (17.6%)	7 (21.9%)	
	Unemployed	20 (29.4%)	10 (31.3%)	
	Retired	1 (1.5%)	1 (3.1%)	
Education	**Illiterate**	4 (5.9%)	3 (9.4%)	0.100
	Primary	17 (25.0%)	8 (25.0%)	
	Secondary	32 (47.1%)	20 (62.5%)	
	University	15 (22.1%)	1 (3.1%)	
Residence	**Urban**	31 (45.6%)	16 (50.0%)	0.680
	Rural	37 (54.4%)	16 (50.0%)	
Marital status	**Single**	19 (27.9%)	4 (12.5%)	0.158
	Married	45 (66.2%)	24 (75.5)	

	Separated / widowed	4 (5.9%)	4 (12.5%)	

*Chi squared test

Comment:

Those who were GAD positive did not show significant statistical difference from those who were GAD negative in terms of all basic characteristics (P values > 0.05)

Table 6-B: Basic characteristics in relation to Depression in cases

		Depression		P value*
		Negative (n %)	**Positive (n %)**	
Sex	**Male**	23 (45.1%)	24 (49.0%)	0.697
	Female	28 (54.9%)	25 (51.0%)	
Age	**12-30 years**	19 (37.3%)	19 (38.8%)	0.451
	31-50 years	20 (39.2%)	14 (28.6%)	
	50 -70 years	12 (23.5%)	16 (32.7%)	
Occupation	**Officer**	24 (47.1%)	25 (51.0%)	0.330
	Student	7 (13.7%)	12.9(24.5%)	
	Unemployed	19 (37.3%)	11 (22.4%)	
	Retired	1 (2.0%)	1 (2.0%)	
Education	**Illiterate**	4 (7.8%)	3 (6.1%)	0.942
	Primary	12 (23.5%)	13 (26.5%)	
	Secondary	26 (51.0%)	26 (53.1%)	
	University	9 (7.6%)	7 (14.3%)	
Residence	**Urban**	27 (52.9%)	20 (40.8%	0.225
	Rural	24 (47.1%)	29 (59.2%)	
Marital status	**Single**	13 (25.5%)	10 (20.4%)	0.289
	Married	36 (70.6%)	33 (67.3%)	
	Separated / widowed	2 (3.9%)	6 (12.2%)	

*Chi squared test

Comment:

Similar to the distribution of GAD, the distribution of depression did not have significant statistical difference (P values > 0.05)

Discussion:

The correspondent study showed the psychological impact of covid-19 pandemic on infected population and non-infected population in Basra city.

The study found that the psychological impact of covid-19 mainly represented by depression (49%) in cases and (32%) in control , Generalised anxiety disorder (32 %) in cases and (16%) in control and others by (25%) and (16%) cases and control respectively , which as shown represent an increase of impact in the cases group in comparison to control group , which can be attributed to the effect of the virus and its physical insult on one hand and to the psychological impact of the quarantine , worrying about their health and fear of death , the increasing anticipation of the disease complications and its effect worldwide .

For illustration of an ongoing impact of COVID-19 on mental health, in a poll of 5,000 Chinese citizens, a study found 21.5% psychological burden, which resembles percentages of PTSD (28.9%) and depression (31.2%) which is less than the percentage of our study[30]. Another study among more than 1200 subjects from almost 200 cities in China during months of January and February of 2020 noted that more than half (~54%) of respondents rated the psychological impact of the COVID-19 as moderate or severe; nearly one-third (~29%) reported moderate to severe anxiety symptoms; less than one 1/5th (~17%) reported moderate to severe depressive symptoms; and more than 75% of respondents experienced worry about their family members contracting COVID-19 [31].

A study done in India which covered 63 cities with 653 respondents Overall, among the 653 respondents 33.2% had significant (mild / moderate /severe) psychological impact regarding COVID-19 mainly anxiety and insomnia [32]

Our study showed that there was a correlation between having history of psychological disorders and increase psychological impact of covid 19 in both cases and control group by percentage of (13%) and (10%) respectively, but without significant statistical association. This was on contrary to the screening of American Mental Health Organization which revealed significant increase in anxiety and depression screening, the per day number of anxiety screenings completed in May was 370% higher than in January, before

coronavirus stress began, the per day number of depression screens was 394% higher in May than in January [33].this difference from our study might be explained due to the lack of previous constant surveys on mental health along with the much less presentation of mental health disorder , so by that it makes it hard to compare pre and peri Covid 19 mental health impact.

From demographic variables point of view, the study found greater prevalence of depression in females than males in cases of Covid 19 by (51%) and (49%) respectively but of no statistical significance, which is inconsistent with the results of Indian study [3], and another study in China [34] which found statistical significance regarding increase prevalence of depression and anxiety in females.

While our study found that anxiety is higher in males than females in cases of Covid 19 with percentage of (56.2%) and (43.8%) respectively but also without statistical significance , and that is opposite to the finding of a study done in China that found anxiety and depression higher in females than males with a strong statistical correlation[32, 34]

Younger age group (12-30 years old) were associated with higher percentage of depression (38.8%) and anxiety (49%) in cases group but of no statistical significance, which is the opposite of the result in studies in India, America and China [32, 33, and 34]. This can be explains by the fact that this age group represent the officers and students whom they suffer, in addition to the psychological effect of quarantine, the effect of fear and stress about their academic and occupational future which has been jeopardized by the financial effect of the pandemic and the lockdown, also this age group has the most access to social media applications and online information about Covid 19 which is inaccurate and anxiety provoking in some cases.

Regarding the most occupation affected psychologically in cases of Covid 19 , officers are the most prevalent with depression (51%) , and Generalized anxiety disorder (43.8%) followed by students (24.5%) percentage of depression which although present but showed no statistical correlation with it , while in other study in china[35]which revealed statistical significance of Students experiencing a psychological impact of the outbreak and higher levels of stress, anxiety, and depression , followed by workers which might be explained due to their concerns about their academic future and financial concerns in view of the global effect of Covid 19 on finances and the rising unemployment which is consistent with a study in China and America showing the financial effect of the pandemic [36], but due to the lack of variability in our study , this could be the limitation which contributed to the insignificancy.

Cases of Covid 19 with secondary school degree achievement are higher prevalent with depression (53.1%) and anxiety (62.5%) and married is also higher prevalent (75.5% GAD) and (67.3%) , that could be seen due to the fact the majority of our sample is from these categories , but also without statistical significance.

CONCLUSION:

Covid 19 has caused a great burden on health not only on physical aspect but also on mental and psychological aspects. Our study revealed a psychological impact of Covid 19 represented by depression, anxiety disorders, and affective instability. GAD and depression were observed in higher percentages in cases than in control , this observed difference was statistically significant .Officer and students were most to be affected .younger age group was found to be the most prevalent of psychological impact. Although there is a correlation between previous psychiatric history and the increase of psychological impact of Covid 19 but this correlation is not statistically significant.

Recommendations:

- Further similar study should be done in the future to detect the delayed psychological impact of the pandemic especially PTSD.
- Regular surveys and screening for new emerging the psychiatric disorders, as it is expected to be increased during times of global health threat and concerns.
- Implementation of a fully studied methods and protocols to initiate a preventive psychological 1st aids to Covid 19 infected cases and their families and contacts.
- Treatment of Covid 19 cases with psychiatric disorders.
- Increase the overall awareness about the pandemic psychological effect on population in general.

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