



## SELF-REPORTED PSYCHOLOGICAL IMPACT OF COVID 19 ON THE HEALTH CARE WORKERS OF MCH HOSPITAL OF AL AHSA, SAUDI ARABIA

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### ABSTRACT

**Background:** The present study was to assess the mental health status of the health care workers working in the Maternity and Child Hospital of Al Ahsa district of Saudi Arabia during the COVID-19 pandemic.

**Material and Methods:** It was a cross sectional survey. All the health care workers of MCH hospital were the study population. Well validated questionnaires were distributed online to the study population to fill them and submit them online. Data on depression was collected by using Zung Self-Rating 20 items depression Scale. Data entry, analytic and descriptive analysis was done by using the SPSS version 21 program. P value of 0.05 was considered as statistically significant. A valid consent was taken from each participant before starting the study.

**Results:** Out of 450 medical staffs, 409 participants responded making a response rate of 90%. The mean age of the participants was 34 years  $\pm$ 8(SD). Almost 87 percent of the participants were female. More than sixty four percent of the participants were nurse while twenty two percent, almost four percent and ten percent were doctors, pharmacists and technician respectively. More than thirty one percent of the participants were mildly depressed while six percent were moderately depressed and only 1.9% was severely depressed. The prevalence of depression was significantly more among doctors than the nurses, pharmacists and technician (48.88% vs. 37% vs. 30.76 and vs. 20% respectively  $p=0.05$ ). The prevalence of depression was significantly more among the medical staff whose family member was affected by Covid-19 (59% Vs. 35.24,  $P=0.0001$ ). The participants who had Covid-19 infection were significantly more depressed (55.26% vs. 37.03%,  $p=0.023$ ). At the same time depression was significantly more among the medical staffs who were in contact with COVID-19 patients (40.86% Vs. 34.11%  $p=0.001$ )

**Conclusion:** Our study has highlighted the prevalence of self-reported depression among the medical staffs working in a Maternity and Child hospital of Saudi Arabia which was significantly high during COVID-19 outbreak.

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### INTRODUCTION

The pandemic of COVID-19 is posing a serious public health problem throughout the world. The rapid spread of this disease has not only caused human casualty but also had a very adverse effect on the socio economic status including the mental health of the population. Originating from Wuhan city of China in the month of December 2019, COVID-19 has affected more than two hundred countries in the span of six months. At present this pandemic has affected more than 10 million people throughout the world with more than four hundred thousand death.<sup>[1]</sup> A highly infectious condition, COVID-19 caused by Novel corona virus (SARS-Cov-2) results in serious acute respiratory syndrome in susceptible person which is the cause of death.

The COVID-19 is infecting the health care staffs alike and many health workers have already died due to this infection. According to Reuters which quoted international council of nurse (ICN), over 90000 health workers were already infected by COVID-19 by the first week of May 2020. (Reuters, World News, 6<sup>th</sup> May 2020).<sup>[2]</sup> On the other hand they are facing enormous pressure including a high risk of infection, isolation, patients with negative emotions, and overwork. They are thus at greater risk of developing unfavorable physical and mental health outcomes. Recent studies in various places of the world during pandemic of COVID-19 have found adverse effect on the mental health of the front line health care workers. In a recently concluded study done on the Chinese frontline health care workers for COVID-19, the researchers have found that half of health workers (50.4%) had symptoms of depression, while 44.6% had anxiety symptoms, 34% had symptoms of insomnia, and 71.5% showed signs of distress.<sup>[3]</sup> In a similar

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study in china, the 18.1% of the front line health workers were found to be suffering from anxiety problem while tested on self-rating depression scale.<sup>[4]</sup>

A systematic review and Meta-analysis which assessed 12 studies has shown prevalence of depression among health care workers during COVID- 19 Pandemic to be 22.8%. Female health care workers and nurses exhibited higher rates of affective symptoms compared to male and medical staff respectively.<sup>[5]</sup> In a Singapore study the researchers have found adverse mental health outcomes such as anxiety (14.5%), depression (8.9%), stress (6.6%) and clinical concern of PTSD (7.7%) among the health care workers while working during this COVID-19 era. The prevalence of anxiety was higher among nonmedical health care workers than medical personnel (20.7% versus 10.8%; adjusted prevalence ratio, 1.85 [95% CI, 1.15 to 2.99];  $P = 0.011$ ).<sup>[6]</sup>

Like other countries Saudi Arabia is also facing a serious challenge created by COVID-19 pandemic. More than one hundred thousand people are already affected till date and almost one thousand deaths have already occurred due to this disease. Frontline health workers are struggling to deal with this situation and many of them got infected and few of them died as well.<sup>[1]</sup> There is lack of studies in Saudi Arabia on the psychological impact of COVID-19 on the health care workers working in hospitals, However one study done on in recent past on dentists from thirty countries which included Saudi Arabia has shown that 87% of participants were afraid of getting infected with COVID-19 from either a patient or a co-worker. 92% were afraid of carrying the infection from dental practice to their families, and 77% were afraid of getting quarantined if they got infected.<sup>[7]</sup> However in this study also different level of anxiety was not measured. Our study will measure the level of anxiety among the health care staffs working in MCH hospital, Al Ahsa amid COVID-19 pandemic. To our best of knowledge no such study has been done in Saudi Arabia till yet. This will be the first study in this regard.

## MATERIAL AND METHODS

It will be a cross sectional quantitative research which was done between June 2020 till July 2020. All the health care workers including paramedics working in MCH hospital were the study population. However the health workers who were already taking anti depressive medicine before the start of COVID-19 pandemic were excluded from this study. Well validated questionnaires were distributed online through Google form to the study population to fill them and return them back to the study invigilator. The questionnaires consisted of two parts. In the first part the demographic information such as age, sex, occupation, education level, their contact with COVID-19 patients, Family history of COVID-19 infection, and their work place. Data on depression was collected by using Zung Self-Rating Depression Scale. There were twenty items in the Zung self rating questionnaires. Each item was scored on a Likert scale ranging from 1 to 4. A total score was derived by summing the individual item scores, and ranges from 20 to 80. A range of 25-49 was considered as Normal Range while 50-59 as mildly Depressed, 60-69 Moderately Depressed and 70 and above Severely Depressed. Data entry, analytic and descriptive analysis was done by using the SPSS version 21 program. Each variable coded for analysis purposes in the questionnaire. Inference analysis was done by using chi-square. P value of 0.05 was considered as

statistically significant. Demographic data were reported as percentage. A valid consent will be taken from each participant before starting the study.

## RESULT

A total of 450 medical staffs who were contacted to fill the questionnaires through Google link 409 participants responded making a response rate of 90%. The mean age of the participants was 34 years  $\pm 8$ (SD). Almost 87 percent of the participants were female. More than fifty two percent were graduate while thirty nine percent were post graduate. Only nine percent were secondary educated. Most of them (80.9%) were married while seventeen percent were unmarried and 1.5% divorced and about one percent of them were widow. More than sixty eight percent (68.4%) were in the frontline and were in contact with Covid-19 infected patient. Only fifteen percent of the participants acknowledged that their family members were infected by Covid-19 and nine percent of the participants were infected by Covid-19.

More than sixty four percent (64.5%,  $N=264$ ) of the participants were nurse while twenty two percent (22%,  $N=90$ ), almost four percent  $\pm$  (3.9%,  $N=16$ ) and ten percent (9.5%,  $N=39$ ) were doctors, pharmacists and technician respectively. The details of the demographic information are shown in table 1.

Twenty one percent ( $N=87$ ) and eleven percent ( $N=45$ ) of the participants asserted that they feel more nervous and anxious most of the time and good part of the time respectively. Similarly Nineteen percent ( $N=78$ ) and more than nine percent ( $N=38$ ) of the participants stated that they had trouble sleeping at night most of the time and good part of the time respectively. More than nine percent ( $N=38$ ) and almost eight percent ( $N=31$ ) of the participants stated that they had crying spells or feel like that most of the time and good part of the time. Almost thirty nine percent ( $N=158$ ) and twenty two percent ( $N=91$ ) of the participants stated that some part of the time and a little part of the time respectively, they felt morning the best. Appetite loss was found among 35.45% of the participants who narrated that they ate as much as they used to during little part of the time while almost similar number of participants ( $N=145$ ) had it during some part of the time. Thirty percent of the participants ( $N=112$ ) asserted that they enjoy sex a little part of the time while twenty nine percent ( $N=55$ ) enjoyed sex some part of the time. Only thirteen percent ( $N=55$ ) and nine percent ( $N=38$ ) of the participants were noticing most of the time and good part of the time respectively that they were losing weight. Majority (82.64%) of participants stated that they had either little or some part of the time trouble with constipation. Similarly more than eighty one percent ( $N=332$ ) of the participants said that they had either a little part of the time or some part of the time feel their hearts beat faster. Twenty percent ( $N=82$ ) and eleven percent ( $N=45$ ) of the participants said that they get tired easily for no reason for most of the time and good part of the time respectively. Similarly twenty one percent ( $N=88$ ) and eleven percent ( $N=45$ ) of the participants asserted that their mind were as clear as it used to be most of the time and good part of the time respectively. On the question whether they feel restless and cannot keep still, sixteen percent ( $N=69$ ) of the participants stated that they had it most of the time while more than nine percent ( $N=39$ ) had it for good part of the time respectively. However more than 62% of the participants found it easy to make decision most of the time or good part of

the time .The details of the responses of the all the questionnaires are shown in table 2.

The mean of total score of was  $47.32 \pm 8.27$  (Range 28-62). More than thirty one percent (N=31.3%) of the participants were mildly depressed while six percent (N=5.4%) were moderately depressed and only 1.9% (N=7) were severely depressed. The prevalence of mild (N=114 Vs N=19  $p=0.479$ ), moderate (N=18 Vs. N=6,  $p=0.479$ ) and severe depression was more among female than male counterparts. However it was not statistically significant. The prevalence of depression was significantly more among doctors than the nurses, pharmacists and technician (48.88% vs. 37% vs. 30.76 and vs. 20% respectively  $p=0.05$ ). The prevalence of depression was significantly more among the medical staff whose family member was affected by Covid-19 (59% Vs. 35.24 ,  $P=0.0001$ ). Likewise the participants who had Covid-19 infection were significantly more depressed than those who did not have Covid-19 infection (55.26% vs. 37.03% ,  $p=0.023$ ). At the same time depression was significantly more among the medical staffs who were in contact with COVID-19 patients than those who were not in contact (40.86% Vs.34.11%  $p=0.001$ ). The detail of the prevalence of depression in this study is shown in table 3.

**Table 1** Showing the demographic characteristics of the participants

Variables	No	%
Age Mean age 34 years $\pm 8$ (SD).		
Gender		
Male	60	14.6
Female	349	86.3
Education		
Secondary	36	8.8
Graduate	213	52.1
Post graduate	160	39.1
Marital Status		
Unmarried	68	16.6
Married	331	80.9
Divorcee	7	1.0.7
Widow	3	
Occupation		
Nurse	264	64.5
Doctors	90	22.0
Para Med Technician	39	9.6
Pharmacist	16	3.9
Working with Covid-19 Patient		
Yes	279	68.2
No	130	31.8
Family member affected by Covid-19		
Yes	60	14.6
no	349	85.4
History of Covid-19 infection		
Yes	39	9.5
No	370	91.5

**Table 2** showing zung self rating response score of the participants

Variable	Most of the time	Good part of the time	Some part of the time	A little part of the time
I feel more nervous and anxious	87	45	165	105
Morning is when I feel the best.	85	75	158	91
I have crying spells or feel like it.	38	31	151	189
I have trouble sleeping at night	78	38	145	150
I eat as much as I used to.	67	54	143	145
I still enjoy sex.	112	55	119	123
I notice that I am losing weight	55	38	103	213
I have trouble with constipation	44	27	105	233
My heart beats faster than usual.	43	34	111	221
I get tired for no reason	82	45	119	163
My mind is as clear as it used to be.	88	45	136	140

I find it easy to do the things I used to	86	58	138	129
I am restless and can't keep still.	66	38	131	174
I feel hopeful about the future	141	72	110	86
I am more irritable than usual	69	39	146	155
I find it easy to make decisions	98	158	72	81
I feel that I am useful and needed.	142	101	106	60
My life is pretty full.	40	25	118	226
I feel that others would be better off if I were dead.	66	65	131	147
I still enjoy the things I used to do.	38	34	124	213

**Table 3** Showing details of the prevalence of depression among the participants

Variable	No.(%)	P value
Depression	$47.32 \pm 8.27$ (Range 28-62)	
Mean score		
<b>Prevalence:</b>		
No depression	250(81.8)	
Mild Depression	133(32.5)	
Moderate depression	25(6.1)	
Severe Depression	1(0.2)	
<b>Gender</b>		
<b>Male</b>		
No depression	34(56.66)	
Mild Depression	19(31.67)	
Moderate depression	7 (11.67)	
Severe Depression	0	P=0.134
<b>Female</b>	(	
No depression	216 (61.89)	
Mild Depression	114(32.66)	
Moderate depression	18 (5.16)	
Severe Depression	1 (0.29)	
<b>Occupation</b>		
<b>Doctors</b>		
Not depressed	46 (51.11)	
Depressed	44 (58.89)	
<b>Nurses</b>		
Not depressed	165(62.5)	P=0.002
Depressed	99(37.5)	
<b>Technician</b>		
Not depressed	27 (69.23)	
Depressed	12 (30.77)	
<b>Pharmacists</b>		
Not depressed	12 ((80.00)	
Depressed	3 (20.00)	
Participants with family history of Covid-19 infection	24(40.68)	
<b>YES</b>	35(59.32)	0.0001
Not depressed		
Depressed		
<b>No</b>	228 (64.96)	
Not depressed	123(35.04)	
Depressed		
Participants who were in contact with the COVID-19 infected patients	165 ((59.14)	0.001
<b>Yes</b>	114 (40.86)	
Not depressed		
Depressed		
<b>No</b>	85(65.89)	
Not depressed	44(34.11)	
depressed		
Participants who had the history of Covid-19 infection	17 (44.74)	
<b>Yes</b>	21 (55.26)	0.023
Not depressed		
Depressed		
<b>No</b>	233(62.97)	
Not depressed	137 (37.03)	
Depressed		

## DISCUSSION

The present study was first of its kind of study in Saudi Arabia done during the peak of the Covid19 pandemic in which the

psychological impact of the COVID-19 on the medical staffs working in Maternity and child hospital in the frontline was measured. More than thirty eight percent of the medical staffs were found to be suffering from various degree of depression in this study. The similar finding was reported in a Chinese study where 37.10% of the medical staffs of a large hospital were found to be anxious or panic. In our study 32.5% of the participants were suffering from mild depression while more than six percent were suffering from moderate and only one participant was suffering from severe depression. However in the china study 13.47% of the participants reported moderate and high level of depression.<sup>[8]</sup>A markedly high level of anxiety and depression (57.10%) was found among the hospital staffs of China mainland during the peak of COVID-19 pandemic. More than thirteen percent (13.47%) of the participants in this study were suffering from severe depression.<sup>[9]</sup>In Wuhan study the researchers have found a 50.4% prevalence of depression among the front line health care workers in a hospital.<sup>[10]</sup>The systematic review and meta-analysis which assessed 10 studies has found a prevalence rate of 22.8% depression among the frontline health care workers.<sup>[5]</sup>A literature review has detected a high level of depression among the health care staffs in Greece as well.<sup>[11]</sup>A Singapore study has found a lower level of depression (8.9%) among the health care workers working in the front for COVID-19 management.<sup>[12]</sup>An adverse psychological impact on the treating physicians has also been reported from Spain.<sup>[13]</sup>The prevalence of depression was significantly more among female in Wuhan study. The same result was found in the systemic review and meta-analysis.<sup>[5]</sup>However in our study the difference was not statistically significant. As far as occupational difference is concerned the prevalence of depression among doctors were significantly more than nurses in our study (48.88% vs. 37%, $p=0.05$ ). But the meta analysis of 20 similar studies has shown that nurses exhibited higher depression rate than doctors and other medical staffs.<sup>[5]</sup> Those medical staffs who were in contact with the COVID-19 patients, whose family were affected by COVID-19 infection showed significantly higher prevalence of depression in our study. In two of the Chinese studies (Guiyang and Fujian) the researchers have found that respondents who had exposure experience reported higher rates of anxiety accompanied by depression than respondents who had no exposure experience in Guiyang study.<sup>[14]</sup>(incidence rates of 31.6% and 12.6%, respectively;  $P = 0.042$ ) while in Fujian study<sup>[8]</sup>they were 1.4 times more likely to feel fear, twice more likely to suffer anxiety and depression.

It is worth noting that educational level, gender, marriage of the medical staffs did not affect the depression in our study

Our study has highlighted the prevalence of self-reported depression among the medical staffs working in a Maternity and Child hospital of Saudi Arabia which was significantly high during COVID-19 outbreak, and in particular, workers who had COVID-19 exposure experience showed higher rate of depression. This necessitates mental health care services for the front line health care staffs. They should be given more attention on urgent basis during the COVID-19 pandemic.

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