

A cross-sectional study to analysis of depression level among frontline health care worker, working at tertiary care canter during COVID-19 at central India

¹Chouhan Vijay, ²Churihar Ritesh, ³Shukla Aanand, ⁴Baghel Anil Singh

¹MBBS, MS, Assistant Professor, Department of Anatomy, Government Medical, Ratlam, Madhya Pradesh, India

²MBBS, MD, Assistant Professor, Department of Pharmacology, Government Medical, Ratlam, Madhya Pradesh, India

³MBBS, Tutor, Department of Pharmacology, Government Medical Ratlam, Madhya Pradesh, India

⁴MBBS, MD, Associate Professor, Department of Community Medicine, Government Medical College, Dungarpur, Rajasthan, India

Corresponding Author:

Dr. Anil Singh Baghel (anilbaghel1980@gmail.com)

Abstract

Background: At the end of 2019 a new viral disease namely covid-19 has occurred which was highly contagious within a few months it spreads to more than 100 countries. A poor understanding of new infections and lack of knowledge leads to compromised patient health benefits as well as psychological stress to front-line health workers. This study aimed to assess the knowledge and level of perception of health care workers about covid-19.

Methods: A cross-sectional web-based survey was carried out among front-line health care workers who work at tertiary health care centers the survey instrument constituted a semi-structured pre-tested questionnaire. The 29-item questionnaire was divided into two sections. Statistical tool chi-square test used to investigate the stress, anxiety, and depression with significance set to $p < .05$.

Results: Out of 100 participants 30 front-line health care workers have minimal depression, 25 mild depression, 14 moderate depression, 13 moderately severe depression, maximum participants belong to age group 26-35 (P-value .001). The participant with a child is a total of 67 out of 100 participants who show a variety of depression, Maximum number of participants is 21 having mild depression P (value is .010). There total of 57 participants who confident caring covid-19 patient, maximum of 22 participants who have mild depression (P-value is .000).

Conclusion: As the entire world faced the covid-19 thread and continued to emerge, most frontline health care workers have a varying degree of depression but according to PHQ-9 no one has severe depression. Definitive or effective treatment of covid-19 including prevention of this by vaccination is mandatory. Education intervention, personal protection equipment and appropriate knowledge are urgently needed to reach frontline health care work beyond the international border and future studies are warranted.

Keywords: Covid-19, pandemic, corona virus, depression, PHQ-9 questionnaire

Introduction

The novel corona virus (covid-19) has spread very rapidly all over the world. Covid-19 pandemic brought

not only risk of mortality from the viral infection but also unbearable psychological pressure to the community as well as front line health care workers [1]. There are many studies on the psychological impact of pandemics on the general population, patients, and front-line health care workers [2, 3]. Health care workers are frequently coming in contact with covid positive and covid suspected cases hence has more chance to get an infection which leads to depression and another psychological impact. WHO shows health care workers are at more risk of infection with severe acute respiratory syndrome and represented more than 20% of those who actually contracted the disease [4]. The psychological disorder most commonly found in the literature; disaster-related experiences is post-traumatic stress disorder (PTSD). Here are a few studies that show after PTSD comorbid depression is common [5, 6]. Few studies [7, 8, 9] McAlonan GM [10] others specifically examined levels of depressive symptoms among health care workers affected by the disaster. Health care workers in honking who gave service to the patient suffering from SARS during the SARS outbreak were found to have a relatively high level of depressive symptoms [10].

Covid-19 pandemic is a new and highly contagious infection. Lack of literature, lack of knowledge and unavailability of definitive treatment covid-19 along with working with uncomfortable PPE kit lead to psychological impact to frontline health care workers. The present study examines the relationship between a specific type of exposure of front-line health care workers, working at tertiary level covid a dedicated health care center and their different levels of depression.

Material and Method

Institutional ethics committee (IEC) approval: We start the study after taking approval from IEC the reference number is GMC RATLAM/2020IEC/review/13.

Objectives: Identify the perceived levels of depression in the confined population.

Study design: Cross-sectional study.

Study site population: Doctors, nurses and clinical technicians in all departments who work in Covid dedicated hospital and covid dedicated health care center at government medical college Ratlam.

Inclusion/Exclusion criteria

Inclusion criteria: Those who give consent for the study.

Exclusion criteria: Those who have not done covid-19 duty at the covid care center.

Data Collection: Semi-structured pre-tested questionnaire will be used for data collection.

After taking approval from the Institutional ethics committee (IEC), the study carried out is a single-center, cross-sectional survey, covering doctors, nurses and clinical technicians in all departments of GMC Ratlam. The study was conducted between 01 October to 30 November 2020. A semi-structured pre-tested questionnaire will be used for data collection.

Measures

The survey instrument constituted 29-close ended questions. The 29-item questionnaire was divided into two sections

- 1) Baseline sociodemographic information (20 items).
- 2) Depression, Adopted from PHQ-9¹¹ (9 items 4 statements/4-point Likert scales).

Data were collected through anonymous online questionnaires which were distributed to all HCWs via WhatsApp and email. Only one response per person to the questionnaire was permitted.

Observation and Results

- **Statistical data:** The obtained data were coded, validated, and analyzed using appropriate software. Descriptive analysis was applied to calculate frequencies and proportions. A chi-square test was used to investigate the level of association among variables, with significance set to $P < .05$.
- **Overview:** A total of 118 frontline health care workers (HCWs) participated, 100 of whom completed the study questionnaire including 16 females and 84 men. The age of participants ranges from 20-50 years. For assessment of depression, we used a nine factor questionnaire named PHQ-9.

Table 1: Table for interpretation of total score of PHQ-9

S. No.	Score	Depression severity
1.	00	No depression
2.	1-4	Minimal depression
3.	5-9	Mild depression
4.	10-14	Moderate depression
5.	15-19	Moderately severe depression
6.	20-27	Severe depression

Table 2: Different age groups with PHQ 9 scale for depression

So. No	Age groups	No depression (0)	Minimal depression (1-4)	Mild depression (5-9)	Moderate depression (10-14)	Moderately severe depression (15-19)	Severe depression (20-27)	Total
1	20-25	4	2	6	2	2	0	16
2	26-30	4	11	0	2	2	0	19
3	31-35	3	8	13	0	2	0	26
4	36-40	4	4	3	8	5	0	24
5	41-45	3	1	3	2	2	0	11
6	46-50	0	4	0	0	0	0	4
Total		18	30	25	14	13	0	100

P-value .001

There is total of 82 workers out of 100 having varying degrees of depression according to PHQ 9 scale max. In the age group 26-35. Table: 3 Number of children with PHQ 9 scale.

So. No.	Children	No depression (0)	Minimal depression (1-4)	Mild depression (5-9)	Moderate depression (10-14)	Moderately severe depression (15-19)	severe depression (20-27)	Total
1	1	11	12	16	8	6	0	53
2	2	3	7	5	2	7	0	24
3	NA	4	6	4	0	0	0	14
4	None	0	5	0	4	0	0	9
5	Total	18	30	25	14	13	0	100

P-value is .010

There are a total of 67 participants out of 100 who shows a varying degree of depression maximum of 21 participants have mild depression.

Table 4: Confident in caring covid 19 patients with PHQ 9 scale

So. No.	Confident in caring covid 19 patients	No depression (0)	Minimal depression (1-4)	Mild depression (5-9)	Moderate depression (10-14)	Moderately severe depression (15-19)	Severe depression (20-27)	Total
1	Don't know	2	6	12	4	4	0	28
2	No	0	2	2	2	9	0	15
3	Yes	16	22	11	8	0	0	57
4	Total	18	30	25	14	13	0	100

P-value is .000

There is a total of 57 participants who are confident caring covid-19 patients, 15 are not confident and 28 don't know about this. There 22 participants who have mild depression (P-value is .000)

Table 5: Confident in self-protection measures with PHQ 9 scale

So. No.	Confident in self-protecting measures	No depression (0)	Minimal depression (1-4)	Mild depression (5-9)	Moderate depression (10-14)	Moderately severe depression (15-19)	Severe depression (20-27)	Total
1	Don't know	2	3	7	4	6	0	22
2	No	0	2	0	0	2	0	4
3	Yes	16	25	18	10	5	0	74
4	Total	18	30	25	14	13	0	100

P-value is .013

There is a total of 74 participants who are confident in self-protection measures and 4 are not confident. Maximum of 25 participants have minimal depression.

Discussion

During the covid-19 pandemic all of us are experiencing thoughts, and emotional situations we have never experienced before. The psychological effect of pandemics is best understood in terms of psychiatric and psychological problems. Frontline health care workers are more prone to get infections hence have a great chance to develop psychological problems. In this study, we deal, particularly with depression. Out of 100 participants, 30 front-line health care workers have minimal depression, 25 mild depression, 14 moderate depression, 13 moderately severe depression. Maximum participant belongs to age group 26-35(P-value .001). HCWs who have children are a total of 67 out of 100 participants who show a variety of depression. A maximum number of participants are 21 having mild depression. P (value is .010). Zhou Zhu and others showed the HCWs had a significantly increased risk of depression once infected with covid-19 and an increased risk of anxiety and depression and stress once their family member infects with covid-19 ^[12].

Xinhua Liu and others showed that HCWs and other individuals who spent time in quarantine because of infectious disease outbreaks may be at elevated risk for depression ^[13]. Despite some degree of depression, we have a total of 57 participants who are confident caring covid-19 patients, 15 are not confident and 28 don't know about this. There is 22 participant who has mild depression (P-value is .000). On another hand in self-protection, there are a total of 74 participants who are confident in the self-protection measure and 4 are not confident. A maximum of 25 participants has minimal depression. One notable thing is that No one has severe depression according to PHQ-9.

Conclusion

The past quarter-century has been the emergence of several new diseases but the covid-19 pandemic is more lethal and dangerous because of its high infection rate, high mortality, and no definitive treatment. Government authority for planning and policymaking is critical to ensure that mental health is integrated into the board framework of covid-19 for frontline health care workers who suffer from psychological problems.

Conflict of interest: None.

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