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Original Research Article

A cross-sectional study to analysis perception of threat COVID 19 among doctors, nursing staff and medical technicians working at tertiary care canter during COVID-19 pandemic

Manish Chaturvedi^{1,*}, Vijay Chouhan^{1,*}, Parmar Narayan¹, Rahul Sharma¹¹Madhya Pradesh Medical Science University, Jabalpur, Madhya Pradesh, India

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ABSTRACT

Background: Front line healthcare workers are the primary section in contact with patients and are an important source of exposure to the infected cases in the healthcare settings, thus expected to be at a high risk of infections. Lack of knowledge for a new disease' infection, or pandemic among health care personnel may result in form of delayed treatment and rapid spirit of infection.

Aims and Objective: The study amid to find out the perfection of health care providers about COVID-19 the objectives of our study are to identify the perceived levels of stress and anxiety in the confined population to determine the experiences and psychosocial problems health care providers and to provide health education messages while taking part in the study.

Materials and Methods: This is a cross-sectional study conducted on 100 frontline health care workers that include 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. The survey instrument constituted a Semi-structured pre-tested 27-close ended questionnaire. The 27-item questionnaire was divided into two sections (1) baseline sociodemographic information (20 items) (2) perceptions of the threat of COVID-19 (7 items 5 statements/5-point Likert scales).

Results: In this study total of 118 health care providers/workers (HCWs) participated, 100 of whom completed the study questionnaire including 16 females and 84 men. The age of participants ranges from 20-to 50 years. After analysis of a total of seven-factor for perception to covid, we found that health care workers experienced different levels of psychological stress and anxiety.

Summary: Government higher authority and policymakers should keep point in their mind that pandemics/outbreaks lead to stress, anxiety and depression among health care workers hence policymakers will need to develop a well-integrated administrative and psychological response to the occupational along with psychological challenges that are caused by future pandemic/outbreaks of this nature, to maintain better patient wellbeing.

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1. Introduction

During the evolutionary history of human beings has been marked by the impact of many fearsome epidemics of infectious disease. At the initial phase of this

century, communities over the world experienced the same frightening general population health issues. On a global scale, with the increasing number of patients with the severe acute respiratory syndrome (SARS), it was an unusual corona virus-based pneumonia that spread rapidly. Due to the high infection potential and death rate due to disease, the disaster of the SARS epidemic led to panic and anxiety in

* Corresponding authors.

E-mail address: vcnat22research@gmail.com (V. Chouhan).

the affected countries.^{1,2} Continuously increasing numbers of COVID-19 positive and suspected patients, continuously increased workload, the limited availability and poor quality of PPE kit, and death news in the media get around rapidly. The lack of definitive treatment in terms of medication and vaccination along with the lack of support may increase the mental health burdens of health care providers. Frontline health care workers' battle against the COVID-19 led to psychological morbidity for many of them.³ Subjectively perception concerning the degree of danger to which an individual is exposed can vary with objectively similar levels of disaster exposure. These perceptions are more strongly associated with an individual's psychological morbidity than a more objective measure of danger.⁴ COVID-19 human to human transmission through droplet, feco-oral and direct contact. COVID-19 has an incubation period ranging from 7 to 14 days.

Adequate knowledge of disease can influence the perceptions of health care providers because of their experience. The level of knowledge and perception of health care providers for COVID-19 remain doubtful. In this point of view, the COVID-19 pandemic gives a unique chance to investigate the level of knowledge and perceptions of health care providers/workers during this pandemic.

2. Materials and Methods

2.1. Institutional ethics committee (IEC) approval

We start the study after taking approval from IEC(GMC RATLAM/2020IEC/review/13).

2.2. Study design

Cross-sectional study

2.3. Study population

We have a total of 100 frontline health care workers in the study.

2.4. Study site

Doctors, nurses, and clinical technicians in all departments who work in Covid dedicated health care center at government medical college Ratlam.

2.5. Inclusion criteria

Those who give consent for the study.

2.6. Exclusion criteria

Those who have not done COVID-19 duty at the covid care center.

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. A semi-structured pre-tested questionnaire will be used for data collection.

2.7. Measures

The survey instrument constituted a Semi-structured pre-tested 27-close ended questionnaire. The 27-item questionnaire was divided into two sections (1) baseline sociodemographic information 20 items) (2) perceptions of the threat of COVID-19⁵ (7 items 5 statements/5-points Likert scales. Data were collected through anonymous online questionnaires which were distributed to all HWs via WhatsApp and email. Only one response per person to the questionnaire was permitted.

3. Observation and Results

3.1. 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 p05.

3.2. 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-to 50- years. We use a total of seven-factor for perception to COVID-19 viz Do you feel that you have a history of Exposure to COVID- 19, Have you ever thought of Resigning because of COVID-19 outbreak, Worried about myself or my family member being infected by COVID-19, Do you feel that family member and friend have avoided contact with you because of your work, are you satisfied with your full coverage of all departments with protective measures for Nosocomial infection, Are you satisfied with your work shift, and Have you worried about life-threatening once infected by COVID-19.

4. Discussion and Conclusion

In this study, the covid health care worker age groups 36-40 years are more confident in caring covid patients where age groups 41-50 are not confident (P-value is .000). A health care worker in the age group of 20-25 years and 36-40 years strongly agree for the history of Exposure of COVID 19 (total 31) where the maximum number (total 20) from age group 31-35 agrees for exposure to COVID 19 (P-value is .000) There is a total of 74 health workers confident in self-protection measures maximum in the age group 31-35 & 35-40 years but a total of 4 workers are

Table 1:

| Perception to COVID-19 | Variable, Age groups | Don't know | No | Yes | Total | Perception to COVID-19 | Variable Age groups | Agree | Disagree | Strongly agree | Total |
|--------------------------------------------------------------------------------|----------------------|------------|----|-----|-------|------------------------------------------------------------------------------------|---------------------|-------|----------|----------------|-------|
| Confident in caring covid 19 patients (P value is .000) | 20-25 | 2 | 2 | 12 | 16 | Do you feel that you have a history of Exposure to Covid 19. (P value is .000) | 20-25 | 4 | 2 | 10 | 16 |
| | 26-30 | 2 | 4 | 13 | 19 | | 26-30 | 9 | 4 | 6 | 19 |
| | 31-35 | 10 | 3 | 13 | 26 | | 31-35 | 20 | 3 | 3 | 26 |
| | 36-40 | 2 | 6 | 16 | 24 | | 36-40 | 8 | 6 | 10 | 24 |
| | 41-45 | 10 | 0 | 1 | 11 | | 41-45 | 4 | 5 | 2 | 11 |
| | 46-50 | 2 | 0 | 2 | 4 | | 46-50 | 0 | 4 | 0 | 4 |
| | Total | 28 | 15 | 57 | 100 | | Total | 45 | 24 | 31 | 100 |
| Perception to COVID-19 Confident in self-protection measures (P value is .000) | 20-25 | 0 | 0 | 16 | 16 | have you ever thought of Resigning because of COVID 19 outbreak? (P value is .001) | 20-25 | 2 | 2 | 8 | 16 |
| | 26-30 | 6 | 2 | 11 | 19 | | 26-30 | 4 | 6 | 0 | 9 |
| | 31-35 | 6 | 0 | 20 | 26 | | 31-35 | 5 | 14 | 2 | 26 |
| | 36-40 | 2 | 2 | 20 | 24 | | 36-40 | 4 | 6 | 2 | 24 |
| | 41-45 | 8 | 0 | 3 | 11 | | 41-45 | 2 | 3 | 0 | 11 |
| | 46-50 | 0 | 0 | 4 | 4 | | 46-50 | 0 | 2 | 0 | 4 |
| | Total | 22 | 4 | 74 | 100 | | Total | 17 | 33 | 12 | 38 |

Table 2:

| Perception to COVID-19 | S. No. | Age groups | Agree | Disagree | Strongly agree | Strongly disagree | Total | Perception to COVID-19 | S. No. | Age groups | Agree | Disagree | Strongly agree | Strongly disagree | Total |
|----------------------------------------------------------------------------------------------------------------|--------|------------|-------|----------|----------------|-------------------|-------|---------------------------------------------------------------------------------------------------------------------------------|--------|------------|-------|----------|----------------|-------------------|-------|
| Do you feel that family member and friend have avoided contact with you because of your work.(P value is .006) | 1 | 20-25 | 4 | 6 | 4 | 2 | 16 | Are you satisfied with the full coverage of all departments with protective measure for Nosocomial infection? (P value is .001) | 1 | 20-25 | 2 | 8 | 6 | 0 | 16 |
| | 2 | 26-30 | 10 | 4 | 0 | 5 | 19 | | 2 | 26-30 | 5 | 12 | 2 | 0 | 19 |
| | 3 | 31-35 | 14 | 9 | 3 | 0 | 26 | | 3 | 31-35 | 17 | 7 | 1 | 1 | 26 |
| | 4 | 36-40 | 8 | 8 | 4 | 4 | 24 | | 4 | 36-40 | 14 | 8 | 0 | 2 | 24 |
| | 5 | 41-45 | 6 | 5 | 0 | 0 | 11 | | 5 | 41-45 | 3 | 8 | 0 | 0 | 11 |
| | 6 | 46-50 | 0 | 4 | 0 | 0 | 4 | | 6 | 46-50 | 2 | 2 | 0 | 0 | 4 |
| | 7 | Total | 42 | 36 | 11 | 11 | 100 | | 7 | Total | 43 | 45 | 9 | 3 | 100 |
| Are you satisfied with your work shift. (P value is .006) | 1 | 20-25 | 6 | 4 | 4 | 2 | 16 | Have you worried about life threatening once infected by Covid-19.(P value is .000) | 1 | 20-25 | 6 | 4 | 4 | 2 | 16 |
| | 2 | 26-30 | 8 | 10 | 1 | 0 | 19 | | 2 | 26-30 | 7 | 12 | 0 | 0 | 19 |
| | 3 | 31-35 | 15 | 4 | 0 | 7 | 26 | | 3 | 31-35 | 20 | 4 | 2 | 0 | 26 |
| | 4 | 36-40 | 12 | 4 | 0 | 8 | 24 | | 4 | 36-40 | 16 | 2 | 2 | 4 | 24 |
| | 5 | 41-45 | 5 | 4 | 1 | 1 | 11 | | 5 | 41-45 | 0 | 4 | 7 | 0 | 11 |
| | 6 | 46-50 | 2 | 0 | 0 | 2 | 4 | | 6 | 46-50 | 2 | 2 | 0 | 0 | 4 |
| | 7 | Total | 48 | 26 | 6 | 20 | 100 | | 7 | Total | 51 | 28 | 15 | 6 | 100 |

Table 3:

| Sex | S. No. | Sex | Don't know | No | Yes | Total | Sex | S. No. | Sex | Agree | Disagree | Strongly agree | Strongly Disagree | Total |
|--------------------------------------------------------------------------------------------------------------|--------|--------|------------|----|-----|-------|----------------------------------------------------------------------------------------|--------|--------|-------|----------|----------------|-------------------|-------|
| Confident in self-protection measures. (P value is .000) | 1 | Female | 0 | 4 | 12 | 16 | Worried about myself or my family member being infected by Covid 19. (P value is .022) | 1 | Female | 8 | 0 | 4 | 4 | 16 |
| | 2 | Male | 22 | 0 | 62 | 84 | | 2 | Male | 35 | 6 | 39 | 4 | 84 |
| | 3 | Total | 22 | 4 | 74 | 100 | | 3 | Total | 43 | 6 | 43 | 8 | 100 |
| Do you feel that family member and friend have avoided contact with you because of your work. (P value .020) | 1 | Female | 7 | 4 | 0 | 5 | Total | 1 | Female | 7 | 4 | 0 | 5 | 16 |
| | 2 | Male | 35 | 32 | 11 | 6 | | 2 | Male | 35 | 32 | 11 | 6 | 84 |
| | 3 | Total | 42 | 36 | 11 | 11 | | 3 | Total | 42 | 36 | 11 | 11 | 100 |

Table 4:

| Marital Status | S.No. | Marital status | Agree | Disagree | Strongly agree | Strongly disagree | Total | Marital Status | S. No. | Marital status | Agree | Disagree | Strongly agree | Strongly disagree | Total |
|--------------------------------------------------------------------------------------------------------------------|-------|----------------|-------|----------|----------------|-------------------|-------|----------------------------------------------------------------------------------------------------------------|--------|----------------|-------|----------|----------------|-------------------|-------|
| Worried about myself or my family member being infected by Covid 19 related with marital status. (P value is .000) | 1 | Married | 39 | 2 | 43 | 2 | 86 | Do you feel that family member and friend have avoided contact with you because of your work.(P value is .000) | 1 | Married | 40 | 30 | 11 | 5 | 86 |
| | 2 | Unmarried | 4 | 4 | 0 | 6 | 14 | | 2 | Unmarried | 2 | 6 | 0 | 6 | 14 |
| | 3 | Total | 43 | 6 | 43 | 8 | 100 | | 3 | Total | 42 | 36 | 11 | 11 | 100 |
| Are you satisfied with your work shift. (P value is .003) | 1 | Married | 36 | 26 | 4 | 20 | 86 | Total | 1 | Married | 36 | 26 | 4 | 20 | 86 |
| | 2 | Unmarried | 12 | 0 | 2 | 0 | 14 | | 2 | Unmarried | 12 | 0 | 2 | 0 | 14 |
| | 3 | Total | 48 | 26 | 6 | 20 | 100 | | 3 | Total | 48 | 26 | 6 | 20 | 100 |

Table 5:

| No of children | S. No. | Children | Don't know | No | Yes | Total | No of children | S.No. | Children | Don't know | No | Yes | Total |
|------------------------------------------------------------------------------------------|--------|----------|------------|----|-----|-------|----------------------------------------------------------|-------|----------|------------|----|-----|-------|
| Confident in caring covid 19 patient correlation with having children. (P value is .000) | 1 | 1 | 23 | 5 | 25 | 53 | | 1 | 1 | 11 | 0 | 42 | 53 |
| | 2 | 2 | 5 | 8 | 11 | 24 | Confident in self-protection measures. (P value is .002) | 2 | 2 | 11 | 2 | 11 | 24 |
| | 3 | NA | 0 | 0 | 14 | 14 | | 3 | NA | 0 | 2 | 12 | 14 |
| | 4 | None | 0 | 2 | 7 | 9 | | 4 | None | 0 | 0 | 9 | 9 |
| | 5 | Total | 28 | 15 | 57 | 100 | | 5 | Total | 22 | 4 | 74 | 100 |

Table 6:

| No of children | S. No. | ChildrenAgree | Disagree | Strongly agree | Strongly disagree | Total | No of children | S. No. | ChildrenAgree | Disagree | Strongly agree | Strongly disagree | Total |
|----------------------------------------------------------------------------------------|--------|---------------|----------|----------------|-------------------|-------|-----------------------------------------------------------------------------------------------------------------|--------|---------------|----------|----------------|-------------------|-------|
| Worried about myself or my family member being infected by COVID 19. (P value is .000) | 1 | 19 | 2 | 30 | 2 | 53 | Do you feel that family member and friend have avoided contact with you because of your work. (P value is .000) | 1 | 1 | 24 | 9 | 2 | 53 |
| | 2 | 15 | 0 | 9 | 0 | 24 | | 2 | 16 | 8 | 0 | 0 | 24 |
| | 3 | 4 | 4 | 0 | 6 | 14 | | 3 | NA | 2 | 0 | 6 | 14 |
| | 4 | None | 0 | 4 | 0 | 9 | | 4 | None | 0 | 2 | 3 | 9 |
| | 5 | Total | 43 | 6 | 43 | 100 | | 5 | Total | 42 | 11 | 11 | 100 |

Table 7:

| No of children | S. No. | Children Agree | Disagree | Strongly agree | Strongly disagree | Total | No of children | S. No. | Children Agree | Disagree | Strongly agree | Strongly disagree | Total |
|--------------------------------------------------------------------------------------------------------------------------------|--------|----------------|----------|----------------|-------------------|-------|----------------|---------|----------------|----------|----------------|-------------------|-------|
| Are you satisfied with the full coverage of all departments with protective measure for Nosocomial infection (P value is .006) | 1 | 23 | 26 | 3 | 1 | 53 | Are you | 1 | 23 | 14 | 3 | 13 | 53 |
| | 2 | 9 | 13 | 2 | 0 | 24 | satisfied with | 2 | 11 | 10 | 0 | 3 | 24 |
| | 3 | NA | 4 | 4 | 0 | 14 | your work | NA | 12 | 0 | 2 | 0 | 14 |
| | 4 | None | 2 | 0 | 2 | 9 | shift. P value | None | 2 | 2 | 1 | 4 | 9 |
| | 5 | Total | 43 | 45 | 9 | 3 | 100 | is .010 | Total | 48 | 26 | 6 | 20 |

Table 8:

| No of children | S. No | Children | Agree | Disagree | Strongly agree | Strongly disagree | Total |
|---------------------------------------------------------------------------------------|-------|----------|-------|----------|----------------|-------------------|-------|
| Have you worried about life threatening once infected by Covid -19. (P value is .000) | 1 | 1 | 31 | 11 | 9 | 2 | 53 |
| | 2 | 2 | 11 | 7 | 6 | 0 | 24 |
| | 3 | NA | 2 | 8 | 0 | 4 | 14 |
| | 4 | None | 7 | 2 | 0 | 0 | 9 |
| | 5 | Total | 51 | 28 | 15 | 6 | 100 |

not confident in the age group 26-30 and 36-40 (P-value is .000) Psychological stress may have been greater and more sustained among workers who work at the covid dedicated health care center.⁶ Zhou Zhu, M.D., Ph.D., and others reveal that 68 percent of frontline health care workers showed a severe level of job-related stress and 57 percent were found to have experienced psychological stress during SARS outbreaks in 2003,⁷ we found there is total of 38 (max. in the age group 36-40 years) out of 100 workers thought of Resigning because of COVID 19 outbreak (P-value is .001) YaMei Bai and others 60 staff members feel stigmatized and avoided by neighbors because of their hospital work and 52 staff members didn't go home after work during a pandemic for fear of infecting their family members in this study 43 workers strongly agree max. in the age group 36-40 years and total 43 agree for worried self or family member being infected by COVID 19 (p-value -.000) there is total 45 worked disagreed with satisfied the full coverage of all department with a protective measure with for nosocomial infection (p-value-.001). Here total of 51 out of 100 workers (max. in the age group 31-35 years) agrees with about life-threatening once infected by covid-19 (p-value -.000).

In the context of gender factors and concomitant chronic non-communicable disease, many studies have been suggested that females and people with a concomitant chronic communicable disease have a higher risk of depression and psychotically stress.^{8,9} Meanwhile, in our study, 12 females and 62 males (total 74) were confident in self-protection measures only 4 females are not confident in self-protection measures (p-value -.000). There are 08; females and 35 males (total 43) who agreed and 04 females, 39 males (total 43) strongly agree that they; worried self or my family member being infected by COVID-19.

Married health workers (total 86) 39 agreed and 43 strongly agreed that they are worried about themselves or family members being infected by covid (p-value-.000). There is total of 42 workers (40 married, 2 unmarried) out of 100 who experienced that family members and friend have avoided contact with them because of their work (p-value-.000). There is total of 48 workers (36 married and 2 unmarried) out of 100 who are satisfied with their work shift. No single unmarried worker disagreed or strongly disagreed with their shift (p-value-.003). There is total 51 workers (49 married and 12 unmarried) who worried about life-threatening once infected by COVID 19.

With a number of children here total of 53 workers out of who have children are confident in self-protection measures, where 11 workers don't know about this (p-value-.002). There are 19 workers who agreed and 30 workers who have one child strongly agreed self or family members being infected by COVID 19 (p-value-.000). There are 24 workers who have 1 child and 16 workers who have two children agreed that family members and friends have avoided contact with them because of your work (P-value-

.000). There are 23 workers who have one child and 11 workers who have two children agreed satisfaction with their work shift (P-value is .010). 31 workers have one child and 11 workers who have two children agreed that they worried about life-threatening once infected by COVID-19 (P-values .000).

5. Summary

Government organizations and policymakers kept point in their mind that pandemics/outbreaks lead to stress, anxiety, and depression amount frontline health care workers hence policymaker will need to develop an integrated administrative and psychological response to the occupational and psychological challenges that are caused by future pandemic/outbreaks of this nature.

6. Source of Funding

None.

7. Conflict of Interest

None.

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Author biography

Manish Chaturvedi, Associate Professor

Vijay Chouhan, Assistant Professor  <https://orcid.org/0000-0002-8161-9758>

Parmar Narayan, Associate Professor

Rahul Sharma, Assistant Professor

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