Psychological Distress Among Women During the Covid-19 Pandemic in India: A Systematic Review

Dr. Shri Krishna Patel[1], Shyam Bahadur[2]
[1]*Principal (I/c), D.A.V. Training College, Kanpur (U.P.)*
[2] *Research Scholar, M.G.C.G.V.V. Chitrakoot, Satna (M.P.)*

Abstract **- Background: Covid-19's unparalleled challenge across the globe at this time has instilled fear, anxiety, and stress in human life. Since its origin, the Covid-19 pandemic has had an ongoing impact on people's mental health from all walks of life.**
Aims: The purpose of this review is to summarise the impact of the Covid-19 pandemic on psychological distress among Indian women.
Methods: This review was conducted to summarise the impact of pandemic Covid-19 on subsequent changes in the levels of insomnia, anxiety, stress, and depression among the Indian female population. Since 2021, a literature search in Google Scholar has been conducted to identify all relevant studies for inclusion in the review.
Results: A total of 27 cross-sectional studies (N = 13865, age group 18-80 years, comprising males and females) were included in the present review. Psychological consequences (insomnia, anxiety, stress, and depression) among the participants were prevalent.
Conclusion: The current review indicates that women's mental health was severely impacted during the Covid-19 pandemic. We need to challenge gender expectations and provide psychological support to women to help them maintain a work-life balance without experiencing psychological distress.

Index Terms **- Mental health, psychological distress, covid-19, pandemic.**

1.INTRODUCTION

The current global Covid-19 pandemic is caused by the coronavirus SARS-CoV-2. Coronaviruses are a large group of viruses that can be found in both animals and humans. An examination of the virus's genetic code reveals that it is capable of infecting humans. Humans infected with this virus typically have symptoms ranging from a regular cold to respiratory issues, nasal congestion, sore throat, dry cough, and loss of smell, as well as lethal infections like SARS (severe acute respiratory syndrome) and MERS (Middle East Respiratory Syndrome). Both of these deadly diseases were discovered for the first time in 2003 and 2007, respectively. (1,2).

The Covid-19 and the virus responsible for it, previously known as the 2019 novel coronavirus, have been officially named by the World Health Organization. COVID-19 is an acronym that stands CO- Corona; VI- Virus; D- Disease, and 19 means viruses found in the year 2019 (3).

The covid-19 outbreak in India is more severe than the previous three pandemics (cholera, plague, and influenza) (4). The coronavirus poses a threat to the entire world. From India's perspective, it is much more significant because our population exceeds that of Europe, America, and other countries combined (5).

The first coronavirus case in India was reported on January 30, 2020; however, the disease has since spread widely, and a second wave is approaching India. According to the World Health Organization's covid-19 situation update report-66, infections are rising in the South Asian region, with India accounting for over 90% of both cases and deaths in the region. India also accounted for 46% of world cases and 25% of world deaths. According to the World Health Organization's covid-19 situation update report-66, infections are rising in the South Asian region, with India accounting for over 90% of both cases and deaths in the region. India also accounted for 46% of world cases and 25% of world deaths. (6).

According to preliminary reports of people infected with Covid -19 in India and deaths from the disease, the case fatality rate is higher in men than in women. (7). In this context, it is argued that pre-existing conditions such as cardiovascular or metabolic diseases, behavioural risk factors such as smoking, alcoholism, drug abuse, or other lifestyle habits, and biological factors (strong immunity) all increase mortality in men. (8). However, there is a higher risk

of mortality among women in India relative to Covid - 19 (9). The study shows that both older adults and women face a high risk of death. Furthermore, women aged 40–49 years have a relatively high risk of mortality (10).

Women make up 70% of the global healthcare workforce and are frequently frontline health workers. (11). Similarly, most ancillary health workers (lab technicians, sanitation workers, and other personnel) are women. (12). In India, women account for 38% of the country's healthcare workforce. All categories of health workers in India had a male-female ratio of 1.6, doctors (Allopathic, Ayurvedic, Homeopathic, and Unani) had a ratio of 5.1, and nurses and midwives had a ratio of 0.2. (13).

The Covid-19 pandemic has not only impacted our social activities and economy but has also highlighted gender inequalities. Fulfilling family commitments has been a tremendous challenge for most Indian women since time immemorial because, in many parts of India, housekeeping and family responsibilities are still considered women's labor (14). According to a LinkedIn survey, the pandemic has had a detrimental impact on the mental well-being of working women in India, with 47 percent of those polled believing the pandemic has caused them to experience more significant stress or anxiety. The scarcity of resources during the pandemic, women's simultaneous responsibilities at home and work, and the struggle to keep pace not only increase aggression against women but also limit their social and economic independence, affecting their mental health (15).

2. MATERIALS AND METHODS

2.1. Search strategy

SKP and SB independently searched the literature using the terms Women and Mental Health during the Covid-19 Pandemic in India: Insomnia, anxiety, stress, depression, and PTSD were searched for in articles published on one electronic database, Google Scholar, starting in January, 2021 and ending on May 20, 2021. First, titles and abstracts were evaluated for research relevance, and all relevant publications were read in full.

2.2. Selection criteria

For the review, a selected filtration strategy was used by investigators for publications published solely in English, full-text availability, and cross-sectional studies/online surveys on women's psychological health or mental health or psychological distress during the covid 19 pandemic in India.

2.3. Selection of studies

We included research papers conducted among India's general population and healthcare workers based on the following inclusion and exclusion criteria.

2.3.1. The following were the inclusion criteria:

(1) During the COVID-19 pandemic, cross-sectional investigations of Indian women's psychological health symptoms (insomnia, anxiety, stress, and depression) were done. (2) employing validated scales, (3) published in peer-reviewed journals since 2021, (4) sample sizes of 20 participants, (5) adult study population aged 18 years and up, (6) Access to the full text.

2.3.2. The following were the exclusion criteria:

(1) Letters to editors, literature reviews, case reports, qualitative investigations, commentaries, meta-analyses, book chapters, and Intervention studies (2) duplication of publications, (3) lack of full-text availability (4) prevalence of unspecified mental disorders (5) Studies including just elderly and children, (6) research with less than 20 participants, and (7) studies including people from outside India.

2.4. Data extraction

SKP and SB extracted data on the following variables independently: References, place of study, population considered and total no. of subjects, Study Design and Data Collection Methods, Assessment tools, the number of female participants and their %, prevalence of symptoms of Insomnia /anxiety/stress/depression and Outcomes were extracted.

3. RESULTS

3.1. Search results

In total, 106 citations on women and mental health during the Covid 19 pandemic in India were obtained from the single electronic database "Google Scholar." After removing duplicates from the screened papers, we shortlisted 60 papers in full text, and 33 were rejected based on the exclusion criteria. In the end, 27 articles were included. The flowchart depicts the search process. (Fig. 1)

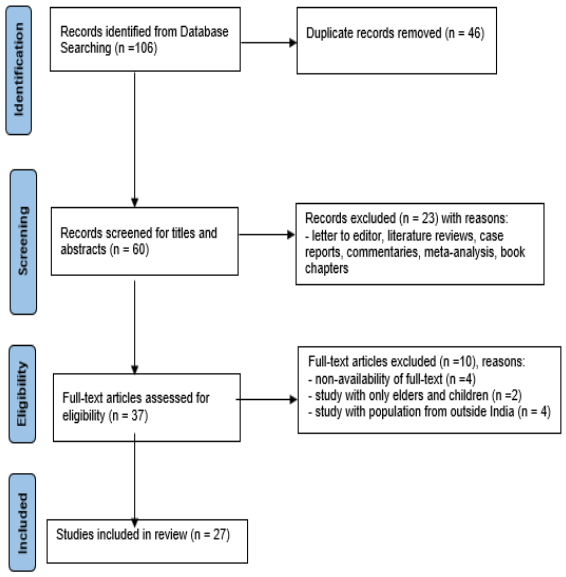

Fig. 1. A Prisma Flowchart diagram

3.2. Study characteristics

A total of 27 cross-sectional studies were conducted among the Indian population, including 12 general public population based [21, 25, 27, 28, 31, 33, 34, 37, 38, 39, 40, 42], 07 health care workers based [16, 17, 18, 22, 24, 26, 41], 06 students based [19, 23, 29, 30, 32, 35], 01 women doctor's studies [20], and 01 general women based [36], With a sample size ranging from 26 to 1176 participants, studies published between January 1, 2021, and May 20, 2021 were included. The current review included a total of 27 articles (N = 13865, age group 18-80 years, males and females) and presented in Table-1.

Six articles were studied about anxiety, stress, and depression [24, 30, 31, 33, 38, 41], six articles were studied about anxiety and depression [17, 22, 25, 26, 28, 35], six articles were studied about stress [20, 23, 34, 36, 37, 39], three articles were studied about anxiety [21, 27, 29], two articles were studied about insomnia or sleep disorders [18, 19], two articles were studied about depression [32, 40], 1 article was studied about insomnia, anxiety, and depression [42] and 1 article was studied about insomnia, anxiety, stress, and depression [16]

3.3. Psychological distress among female health care workers

Healthcare workers have played a critical role in our healthcare system, and nurses, in particular, have made incomparable contributions to our healthcare services, shoulder to shoulder, through this pandemic. The fear for his and her family's safety, combined with a lack of psychological support, had exacerbated their difficulties during the pandemic, as they were under pressure from work. According to a study conducted by (Rajeswari, M. A. [20]), health care workers are in psychological distress during the covid-19 outbreak, with the leading causes of stress being an increase in the number of patients treated for covid-19 in hospitals, a lack of adequate rest after duty, a lack of logistic support, verbal or physical violence by covid 19 infected patients, and over-allocation of work, lack of personal safety facilities, disrespect for personal health issues, inability to pay attention to family, and an increase in typical duty hours. According to the studies in this review, the nursing staff had higher stress, anxiety, and depression (41), and nurses had more moderate to severe somatic symptoms than doctors (22). Female health care workers who worked primarily as specialists and frontline workers had the highest rates of depression and anxiety, and female health care workers also had the highest rates of sleeplessness (24, 17).

3.4. Psychological distress among female general population

Covid-19 has wreaked havoc on the mental health of India's whole population, particularly the female population. Women had considerably greater rates of depression (26, 29, 38, 42), anxiety (21, 25, 27, 31, 38, 42), stress (31, 33, 37, 38, 39, 36), and sleeplessness (42) somatic problems (25) than men. During the Covid-19 lockdown, however, a greater number of male participants than females suffered depression symptoms, according to a study (40).

3.5. Psychological distress among female students

During the Covid 19 outbreak, Indian students faced high levels of anxiety and panic, owing to paradigm shifts in educational activities, difficulties accepting online study, and an extended duration of Covid-19 restrictions. According to studies, students' use of e-learning during the Covid-19 pandemic resulted in various adverse consequences, including a decrease in their health standards. Clinical insomnia of moderate intensity was the most common impact (19), and female students were reported to be more anxious about their educational activities, and more stressed (23). According to the DASS score, female students

had more moderate depressive symptoms than male students (30). Women experienced higher degrees of psychological distress due to a lack of sufficient cohesion and social support (32).

Table 1-A Summary of features of selected studies in this review

Reference (Year)	place of study	population considered and total no. of subjects	Study Design and Data Collection Methods	Assessment tools	Gender female No.(%)	InsomniaNo. (%)	Anxiety No. (%)	Stress No. (%)	Depression No. (%)	Outcome Findings
Sunil R et.al., 2021 (16)	Across, India	Healthcare workers n = 313	cross-sectional study. online survey	ISI, PHQ-4, PSS	202 (64.5%)	100 (31.4)	147 (47)	313 (100)	147 (47)	Psychological impact/ insomnia (severe, moderate, and subthreshold); anxiety and depression (Severe, moderate, and mild) stress (high, moderate, and low)
Jagiasi, B.et.al., 2021 (17)	Across, India	Healthcare workers n = 1004	cross-sectional study. Online multinational survey	GAD-2; GAD-7, CESD, ISI	458 (45.6%)	314 (31.3)	415 (41.4)		481 (48.0)	psychological and emotional well-being. (anxiety, depression, insomnia)
Chatterjee S.S. et.al. 2021 (18)	Across, India	Healthcare workers n = 140	cross-sectional study. survey	PSS – 10, ISI-7, PSQI	79 (56.7%)	69 (49.7)				Psychological impact (perceived stress and insomnia)
Baesmat, A. S., & Lakshmi, V. 2021, (19)	North India	medical undergraduate students n=150	cross-sectional study, online survey	CVS-Q, ISI	70 (46.6%)	105 (70.0)				sleep disorder (insomnia) and computer vision syndrome
Rajeswari, M. A. (2021). (20)	Tirunelveli. Tamil Nadu, India	Women doctors (Psychiatrists, radiologist, paediatrician, gynaecologists and Medicine) n = 120	cross-sectional study, online survey	PSS	120 (100%)			100 (83.3)		degree of stress (mild, moderate and severe)
Sain, S., & Dey, I. (2021) (21)	Across, India	General public n = 980	cross-sectional study, online survey	GAD-7	980 (100%)		203 (20.7)			burden of anxiety disorder
Singh J., et.al. 2021 (22)	New Delhi	Healthcare workers n = 348	cross-sectional study. Online survey	PHQ-SADS	154 (44.3%)		154 (44.3)		188, (54.02)	mental health issues (Depression, anxiety and somatic symptoms)
B. Chhetri et al.2021 (23)	Across India	Students n=411	cross-sectional study. Online survey	PSS	149 (36.3%)			low – 49(201) Mild - 45(184) High – 06(24)		Level of perceived stress (low, mild and severe)
Garg S., et.al. 2021 (24)	Across India	Healthcare workers n = 588	cross-sectional, study. Online survey	DASS-21	336 (57%)		244 (41.15)	182 (30.95)	292 (49.65)	psychological outcomes and exploring the associated factors

Suhail, A.,et.al., 2021 (25)	Across India	General public n=163	cross-sectional study. Online survey	FCV-19S, GAD-7, CESD	88 (88.1%)		57 (35)		45 (28)	COVID-19 related fear and mental health outcomes – somatic symptoms, generalized anxiety disorder (GAD), and depression.
Parthasarathy, R.,et.al., 2021 (26)	Karnataka, India	Healthcare workers n = 3083	cross-sectional study. Online survey	PHQ-4	1646 (53.4 %)		736 (23.9)		616 (20.0)	Mental health issues (anxiety/depression, substance use, suicidality, lifestyle and family functioning)
Bhowmick S., et.al., 2021 (27)	West Bengal, India	General public n=355	cross-sectional study. online survey	GAD	173 (48.7 %)		317 (89.47)			levels of anxiety and well-being status
Rehman, T.,et.al., 2021 (28)	Chandigarh, India	General public n=200	cross-sectional study. Online survey	PHQ-9, GAD-7	166 (83%)		5 (2.5)		7 (3.5)	estimate the prevalence of depression and anxiety
Pavan, G.,et.al., 2021 (29)	Across India	Pharmacy students n=239	cross-sectional study. online survey	GAD-7, FCV-19s	96 (41.3%)		120 (51.5)			assess the anxiety, depression and fear
Geo, J.,et.al., 2021 (30)	Kerala, India	Medical Students n=321	cross-sectional study. online survey	DASS	239 (74.6%)		177 (55.3)	172 (53.5)	174 (54.2)	Medical health problems (anxiety, stress and depression)
Ghosh, P., et.al., (31)	Assam, India	General public n=305	cross-sectional study. physical Interview	DASS-21, IES-R	38 (12.5%)		97 (31.8)	129 (42.3)	182 (59.7)	Psychological consequences (anxiety, stress and depression)
Mangalesh, S.,et.al., 2021 (32)	Across India	Medical students n=1000	cross-sectional study. online survey	GHQ	443 (44.3%)				603 (60.3)	assess the mental health status
Hazarika, M.,et.al., (33)	Across India	General public n=422	cross-sectional study. online survey	DASS-21	255 (60.4%)		135 (32)	149 (35.5)	146 (34.7)	psychological status
Agarwal N. et.al., 2021 (34)	Across India	General Public n=235	cross-sectional study. online survey	PSS-10	123 (52.3%)			223 (95.3)		psychological stress and its determinants
Pandey, U.,et.al., (35)	Varanasi, Uttar Pradesh, India	Medical students n=83	cross-sectional study. online survey	PHQ-9 GAD-7	46 (56.6%)		8 (9.8)		6 (7.3)	psychological effects
Goswami, K.,et.al. 2021 (36)	Arunachal Pradesh, Assam, India	Women of 2 north-eastern states n=100	cross-sectional study. interview and survey	PHQ-9. PSS, UN Women Rapid Gender Women Assessment Survey Questionnaire	100 (100%)			69 (69)		perceived stress and depression

Fenn J,et.al. 2021 (37)	Kerala, India	General public n=1073	cross-sectional, study. online survey	PHQ-4 PSS-4, COPE inventory	633 (59%)			704 (65.7)		perceived stress, sources of stress, and coping strategies
Shoib, S., et.al., 2021 (38)	Kashmir, India	General public n=293	cross-sectional study. Interview	DASS-21	205 (70%)		severe anxiety 276 (94.2),	mild stress 96 (32.8)	Moderate 125(42.7%), severe 95(32.4),	severity of depression, anxiety, and stress
Yendrembam, M., et.al., 2021 (39)	Manipur, India	General public n=390	cross-sectional study. online survey	PSS 10	236 (60.51 %)			Low – 47(24.64) Medium – 311(80.32), High – 32(14.68)		
Undela, K.,et.al., 2021 (40)	Karnataka, India	General public n= 1176	cross-sectional study. online survey	CES-D	584 (49.65 %)				265 (45.06)	psychological impact
Ranjan, L. K., et.al., 2021 (41)	Chhattisgarh, India	Healthcare workers n=373	cross-sectional study. online survey	QOL-BREF, DASS-21	195 (52.3%)		23 (6.3)	22 (5.9)	9 (2.4)	mental health (stress, anxiety, depression, and quality of life)
Yadav, R., et.al., 2021 (42)	Etawah, Uttar Pradesh, India	General public n= 100	cross-sectional study. survey	PHQ-9, GAD-7 and PSQI	27 (27%)	62 (62)	67 (67)		27 (27)	depression, anxiety, and sleep disturbance

Abbreviations: No : number; ISI : Insomnia Severity Index; PHQ-4 : Patient Health Questionnaire; PSS : Perceived Stress Scale; DASS-21 : Depression, Anxiety, and Stress Scale; SSD : Screener for Somatoform Disorder; GAD-2 & GAD-7 : Generalized Anxiety Disorder; CESD : Centre for Epidemiologic Studies Depression; PSS – 10 : Perceived Stress Scale; PSQI : Pittsburgh Sleep Quality Index; CVS-Q : Computer Vision Syndrome Questionnaire; PHQ-SADS : Somatic, Anxiety, And Depressive Symptom Scales; FCV-19S : Fear of COVID-19 Scale; PGAS : Perception And Generalized Anxiety Survey; PHQ-SADS : Somatic, Anxiety, And Depressive Symptom Scales; IES-R : Impact of Event Scale – Revised; GHQ : General Health Questionnaire; UNWRGWASQ : UN Women Rapid Gender Women Assessment Survey Questionnaire; COPE inventory ; QOL- BREF: Quality Of Life; PSQI :Pittsburgh Sleep Quality Index

4. DISCUSSION

The reviewed studies summarised the key findings of cross-sectional surveys on the Indian population. They attempted to highlight the rise in the prevalence of psychological distress (insomnia, anxiety, stress, and depression), particularly among women, during the covid 19 pandemic in India. There were 27 surveys in all, 25 of which were web-based, two of which employed interview techniques to obtain data (31, 38).

According to the World Health Organization's Covid-19 68th Situation Update report, "as of May 19, 2021, 87.99 percent and 15.44 percent of the confirmed cases and 79.77 percent and 8.22 percent of total deaths cases of Covid 19 reported in the Southeast Asia region and the world, respectively, were from India (43)." Previous research suggests that coronavirus disease 2019 (COVID-19) has a greater fatality rate in males than in women worldwide (44, 45, 46), albeit the reasons for this are unknown. However, a single-centre cohort study recently found that reduced testosterone levels in males with COVID-

19 were linked to disease severity, inflammation, and mortality during hospitalisation (47). However, a single-center cohort study recently found that reduced testosterone levels in males with COVID-19 were linked to disease severity, inflammation, and mortality during hospitalization (47). Males are more likely to be infected than females for a variety of reasons, including biological (such as immune responses, hormones, and genes), psychological (like being exposed to high-threat situations), behavioural (like smoking and drinking), and environmental (like hand washing and wearing masks) (44, 48, 46, 49, 50, 51, 52, 53, 54).

Although men die at twice the rate of women, the covid-19 pandemic has had a more significant psychological impact on women than men, whether due to household responsibilities, front-line worker responsibilities, or both (55,56,57). Throughout the Covid-19 pandemic, cases of high levels of depression, anxiety, and stress in women, as well as low levels of resilience, have been consistently reported (58). The burden of tasks and obligations in the home of women is increasing. The struggle of maintaining work-life balance, limited support system, domestic violence, and harassment in the workplace are some of the key likely issues influencing women's mental health in Covid-19 (59,60). The majority of the cross-sectional research in this review revealed that women's mental health during Covid-19 is dismal, whether they are health care workers, homemakers, or students.

Women HCWs had roughly twice the increased odds of developing moderate- or high-level stress (61). Nurses' prevalence of anxiety and depressive symptoms was also higher due to their increased time spent inpatient care. (62, 63, 64, 65, 66).

During Covid 19, traditional gender roles of women in India, such as household work, child-rearing, and primary responsibility for the care of the elderly, increased dramatically, and the direct effect was reflected in their negative mental health consequences. The diverse gender division of household jobs in India is the fundamental reason for the significant increase in domestic responsibilities and management of other home activities on women during the Covid 19 pandemic (67, 68). As a result of the additional burden placed on homemakers, they had less time for themselves, which increased their stress, anxiety, and depression. At the same time, women who were already prone to domestic violence began to feel more in danger due to social isolation and physical limitations, and their mental health suffered as a result of this circumstance (69).

The closure of universities and colleges during the Covid 19 pandemic and the adoption of online learning options with limited resources and prior experience, as well as the uncertainty of the exam and changes in exam pattern, all contributed to their increased stress levels. The student community's social engagement has been limited due to the lockdown's closure of universities and colleges, which has escalated the degree of stress in this section (70, 71, 72).

5. CONCLUSION

The COVID-19 problem and the resulting restraints have impacted every area of society and every individual in some way (73). Complete and partial lockdown, social distancing norms, and restrictions on social programs can help effectively control this pandemic (74, 75). However, governments and society must also be aware that imposed restrictions can harm people's mental health for a long time (76, 77).

Increased stresses such as drastically growing domestic work, caring for family members, all of which require immediate attention, have detrimental psychological implications for susceptible populations such as women. We must question gender expectations to relieve women of the obligation of care, household work, and responsibilities as frontline health care professionals. More efforts are required to assist women at risk of domestic violence by establishing online services and networks to prevent abuse incidents (78).

Limitations

This review included cross-sectional study designs with online surveys as the primary assessment instrument. On the other hand, longitudinal studies are required to understand the effect of time on these mental outcomes to make appropriate assessments. The focus of this review was on studies involving Indian people. In this study, the primary mental health markers were sleeplessness, anxiety, stress, and depression.

Funding

Not applicable.

Conflicts of interest
None.

REFERENCES

[1] World Health Organization. (2020). Origin of SARS-CoV-2, 26 March 2020. Retrieved from https://apps.who.int/iris/handle/10665/332197.Geneva: World Health Organization. License: CC BY-NC-SA 3.0 IGO.

[2] Pitlik, S. D. (2020). COVID-19 compared to other pandemic diseases. Rambam Maimonides Medical Journal, 11(3), e0027 [Review]. https://doi:10.5041/RMMJ.10418. doi:10.5041/RMMJ.10418

[3] World Health Organization. Technical guidance on naming the coronavirus disease (Covid-19). Retrieved from https://www.who.int/emergencies/diseases/novel-coronavirus-2019/technical-guidance/naming-the-coronavirus-disease-(covid-2019)-and-the-virus-that-causes-it

[4] Tumbe, C. (2020). IIMA Working Paper 2020-12-03. "Pandemics and historical mortality in India".

[5] Arnold, D. (2020). Pandemic India: Coronavirus and the uses of history. Journal of Asian Studies, 79(3), 569–577. doi:10.1017/S0021911820002272

[6] World Health Organization. (May 5, 2021). India situation [Report, 66] coronavirus disease (Covid-19). Retrieved from https://cdn.who.int/media/docs/default-source/wrindia/situation-report/india-situation-report-663bd1ad84-237d-4f36-aacd7e9953e65fc4.pdf?sfvrsn=173315f6_4

[7] Dhillon, P., Sampurna Kundu, C. S., Ram, U., Dwivedi, L. K., Yadav, S., & Unisa, S. IIPS analytical series on COVID-19, paper 4. Case–fatality ratio and recovery rate of COVID-19: Scenario of most affected countries and Indian states. Mumbai: International Institute for Population Sciences. (2020).

[8] Mohanty, K. (updated 2020). Why COVID-19 kills more men [Internet]. Retrieved from https://timesofindia.indiatimes.com/india/whycovid-19-kills moreme/articleshow/75060496.cms.

[9] Johns Hopkins University of medicine. New cases of COVID-19 in world countries. Retrieved from https://coronavirus.jhu.edu/data/new-cases

[10] Joe, W., Kumar, A., Rajpal, S., Mishra, U. S., & Subramanian, S. V. (2020). Equal risk, unequal burden? Gender differentials in COVID-19 mortality in India. Journal of Global Health Science, 2(1).;. doi:10.35500/jghs.2020.2.e17

[11] Miyamoto, I. (2020). Covid-19 healthcare workers: 70% are Women. Daniel K. Inouye Asia-Pacific Centre for Security Studies. Retrieved from http://www.jstor.org/stable/resrep24863

[12] Women, U. N. (2020). Retrieved from https://www.unwomen.org/-/media/headquarters/attachments/sections/library/publications/2020/policy-brief-the-impact-ofcovid-19-on-women-en.pdf?la=en&vs=1406. Policy brief. Impact of COVID, 19 on Women.

[13] Anand, S., & Fan, V. (2016). The health workforce in India. Geneva: World Health Organization. Human Resources for Health Observer Series No.16. Available at: http://www.who. int/ hrh/ resources/ 16058health_ workforce_ India_ pdf? ua=1. Accessed on 17 March 2019.

[14] Verma, S., & Mishra, A. (2020). Depression, anxiety, and stress and socio-demographic correlates among general Indian public during COVID-19. International Journal of Social Psychiatry, 66(8), 756–762. doi:10.1177/0020764020934508

[15] Retrieved from https://www.business-standard.com/article/current-affairs/50-of-india-s-working-women-feel-increased-stress-due-to-pandemicsurvey 120091000617_1.htm.

[16] Sunil, R., Bhatt, M. T., Bhumika, T. V., Thomas, N., Puranik, A., Chaudhuri, S., & Shwethapriya, R. (2021). Weathering the storm: Psychological impact of COVID-19 pandemic on clinical and nonclinical healthcare workers in India. Indian Journal of Critical Care Medicine, 25(1), 16–20. doi:10.5005/jp-journals-10071-23702

[17] Jagiasi, B. G., Chanchalani, G., Nasa, P., & Tekwani, S. (2021). Impact of COVID-19 pandemic on the emotional well-being of healthcare workers: A multinational cross-sectional survey. Indian Journal of Critical Care Medicine, 25(5), 500. doi:10.5005/jp-journals-10071-23806

[18] Chatterjee, S. S., Chakrabarty, M., Banerjee, D., Grover, S., Chatterjee, S. S., & Dan, U. (2021). Stress, sleep and psychological impact in healthcare workers during the early phase of

COVID-19 in India: A factor analysis. Frontiers in Psychology, 12, 611314. doi:10.3389/fpsyg .2021.611314

[19] Baesmat, A. S., & Lakshmi, V. (2021). Progress of medical undergraduates to an era of computer vision syndrome and insomnia as an aftermath of increased digitalization during covid-19 pandemic. European Journal of Molecular and Clinical Medicine, 7(11), 8225–8233.

[20] Rajeswari, M. A. (2021). The psychological impact of covid 19 pandemic: A study with reference to women doctors in Tirunelveli District. Turkish Journal of Computer and Mathematics Education (TURCOMAT), 12(10), 6984–6990. doi:10.17762/turcomat.v12i10.5572

[21] Sain, S., & Dey, I. (2021). An observational study to assess anxiety disorder among women during COVID-19 pandemic. Journal of Clinical and Diagnostic Research, 15(3).

[22] Singh, J., Sood, M., Chadda, R. K., Singh, V., & Kattula, D. (2021). Mental health issues and coping among health care workers during COVID19 pandemic: Indian perspective. Asian Journal of Psychiatry, 61, 102685. doi:10. 1016/j.ajp.2021.102685

[23] Chhetri, B., Goyal, L. M., Mittal, M., & Battineni, G. (2021). Estimating the prevalence of stress among Indian students during the COVID-19 pandemic: A cross-sectional study from India. Journal of Taibah University Medical Sciences, 16(2), 260–267. doi:10.1016/j.jtumed.2020.12.0 12

[24] Garg, S., Chauhan, A., Sharma, D., Singh, S., & Bansal, K. (2021). Pandemic and psychological outcomes among health-care practitioners: A cross-sectional study based on current evidence in Indian context amidst COVID-19. International Journal of Academic Medicine, 7(1), 15. doi:10.4103/IJAM.IJAM_138_20

[25] Suhail, A., Dar, K. A., & Iqbal, N. (2021). COVID-19 related fear and mental health in Indian sample: The buffering effect of support system. Current Psychology, 1–12. doi:10.1007/s12144-021-01694-8

[26] Parthasarathy, R., Ts, J., K, T., & Murthy, P. (2021). Mental health issues among health care workers during the COVID-19 pandemic–a study from India. Asian Journal of Psychiatry, 58, 102626. doi:10.1016/j.ajp.2021.102626

[27] Bhowmick, S., Parolia, S., Jana, S., Kundu, D., Choudhury, D., Das, N. and KarPurkaysatha, S. (2021). A study on the anxiety level and stress during Covid19 lockdown among the general population of West Bengal, India-A must know for primary care physicians. Journal of Family Medicine and Primary Care, 10(2), 978–984. doi:10.4103/jfmpc.jfmpc_1385_20

[28] Rehman, T., Singh, T., Sharma, S., Kumar, J., Govindan, D., & Singh, S. M. (2021). Prevalence of depression and anxiety during the COVID-19 pandemic among the residents of an urban slum in North India. Journal of Neurosciences in Rural Practice, 12(1), 153–158. doi:10.1055/s-0040-1721623

[29] Pavan, G., Choudhary, K., Ponnala, V. R., Babu, R., Veeri, R. K., Chattu, V. K. and Ravichandiran, V. (2021). COVID-19 impact on the mental health of Indian pharmacy students: An online survey. International Journal of Pharmaceutical Research, 13(2). doi:10.31 838/ijpr/2021.13.02. 396

[30] Geo, J., Sam, S. P., & Kallivayalil, R. A. (2021). Mental health problems among medical students during COVID-19 lockdown: A cross-sectional study. Kerala Journal of Psychiatry. doi:10.30834/KJP.34.1.2021.262

[31] Ghosh, P., Gogoi, A., Ghosh, A., Verma, P., & Hussain, A. (2021). Psychological consequences of COVID-19 pandemic among persons residing at institutional quarantine centers in India. International Journal of Indian Psychology, 9(1), 891–906. doi:10.25215/0901.095

[32] Mangalesh, S., Dudani, S., & Dave, N. D. (2021). Assessment of mental health in Indian medical students during the coronavirus disease-2019 pandemic. Indian Journal of Social Psychiatry, 37(1), 105. doi:10.4103/ijsp.ijsp_166_20

[33] Hazarika, M., Das, S., Bhandari, S. S., & Sharma, P. (2021). The psychological impact of the COVID-19 pandemic and associated risk factors during the initial stage among the general population in India. Open Journal of Psychiatry and Allied Sciences, 12(1), 31–35. doi:10.5958/2394-2061.2021.00009.4

[34] Agarwal, N., Harikar, M. M., Shukla, R., & Bajpai, A. (2021). Factors determining psychological stress among Indian adolescents and young adults during the COVID-19 outbreak.

Indian Journal of Social Psychiatry, 37(1), 82. doi:10.4103/ijsp.ijsp_246_20

[35] Pandey, U., Corbett, G., Mohan, S., Reagu, S., Kumar, S., Farrell, T., & Lindow, S. (2021). Anxiety, depression and behavioural changes in junior doctors and medical students associated with the coronavirus pandemic: A cross-sectional survey. Journal of Obstetrics and Gynecology of India, 71(1), 33–37. doi:10.1007/s13224-020-01366-w

[36] Goswami, K., & Narah, Y. (2021). The effect of COVID-19 on women in north-east India: An inter-sectionalism perspective. International Journal of Indian Psychology, 9(1), 759–768. doi:10.25215/0901.081

[37] Fenn, J., Chacko, N., Thomas, T., Varghese, V. K., & George, S. (2021). Stress, sources of stress and coping during the Covid-19 lockdown: A population study from India. Indian Journal of Social Psychiatry, 37(1), 57. doi:10.4103/ijsp.ijsp_155_20

[38] Shoib, S., Saleem, S. M., Islam, S. M. S., Arafat, S. Y., & Joseph, S. J. (2021). Severity of depression, anxiety and stress among the people of Kashmir, India during COVID-19: An observation from telepsychiatric services. Global Psychiatry, 4(1), 62–67. doi:10.52095/gp.2021. 8115

[39] Yendrembam, M., Maibam, A. D., Meitei, S. Y., & Konjengbam, H. Association of Perceived Stress Levels Amidst COVID-19 Pandemic with Bio-Social Parameters and Prakriti Body Types among the adult's population of Manipur, India. International Journal of Ayurvedic Medicine, 12(1), 68–72. doi:10.47552/ijam.v12i1.1776

[40] Undela, K., Puvvada, R. K., & Gupta, B. S. (2021). Psychological impact of COVID-19 lockdown among healthy individuals in India: A self-assessed cross-sectional study. International Journal of Pharmaceutical Research, 13(2). doi:10.31838/ijpr/2021.13.02.215

[41] Ranjan, L. K., Gupta, P. R., Gujar, N. M., & Baraik, S. (2021). Psychological distress and quality of life among hospital staff in India during COVID-19 pandemic. Humanities, 8(3), 55–60. doi:10.34293/sijash.v8i3.3526

[42] Yadav, R., Yadav, P., Kumar, S. S., & Kumar, R. (2021). Assessment of depression, anxiety, and sleep disturbance in COVID-19 patients at tertiary Care Centre of North India. Journal of Neurosciences in Rural Practice, 12(2), 316–322. doi:10.1055/s-0040-1722811

[43] World Health Organization. (May 19, 2021). India situation [Report, 68] coronavirus disease (Covid-19). Retrieved from https://cdn.who .int/media/docs/default-source/wrindia/situation-report/india-situation-report-68.pdf?sfvrsn=8d7c2076_4

[44] Baker, P., White, A., & Morgan, R. (2020 June 20). Men's health: COVID-19 pandemic highlights need for overdue policy action. Lancet, 395(10241), 1886–1888. doi:10.1016/S0140-6736(20)31303-9

[45] Sharma, G., Volgman, A. S., & Michos, E. D. (2020). Sex differences in mortality from COVID-19 pandemic: Are men vulnerable and women protected? JACC. Case Reports, 2(9), 1407–1410. doi:10.1016/j.jaccas.2020.04.027

[46] Smith, J., Griffith, D., White, A., Baker, P., Watkins, D., Drummond, M., & Semlow, A. (2020). COVID-19, equity and Men's health. International Journal of Mens Social and Community Health, 3(1), e48–e64. doi:10.22374/ijmsch.v3i1.42

[47] Dhindsa, S., Zhang, N., McPhaul, M. J., Wu, Z., Ghoshal, A. K., Erlich, E. C. and Diwan, A. (2021). Association of circulating sex hormones with inflammation and disease severity in patients with COVID-19. JAMA Network Open, 4(5), e2111398. doi:10.1001/jamanetworkopen. 2021. 11398

[48] Wenham, C., Smith, J., Morgan, R., & Gender and COVID-19 Working Group. (2020). COVID-19: The gendered impacts of the outbreak. Lancet, 395(10227), 846–848. doi:10.1016/S0140-6736 (20)30526-2

[49] Ewig, C. (2020). Gender, masculinity, and COVID-19. The Gender Policy Report. Published April 1, 2020.

[50] Mellström, U. (2020). COVID-19, masculinity and risk/at risk. NORMA, 15(2), 94–96. doi:10.1080/18902138.2020.1762307

[51] Woodyatt, A., & Greene, R. (2020). Men in low-skilled jobs are dying from coronavirus at a higher rate than other workers, UK figures show. Cable News Network. Published. Retrieved from https://www.cnn.com/2020/05/11/uk/covid-19-death-low-skilled-job-intl-scli-gbr/index.html

[52] Garcia, S., Albaghdadi, M. S., Meraj, P. M., Schmidt, C., Garberich, R., Jaffer, F. A. and Henry, T. D. (2020). Reduction in ST-segment elevation cardiac catheterization laboratory activations in the United States during COVID-19 pandemic. Journal of the American College of Cardiology, 75(22), 2871–2872. doi:10.1016 /j.jacc.2020.04.011

[53] Vandello, J. A., Bosson, J. K., & Lawler, J. R. (2019). Precarious manhood and men's health disparities. Men's health equity: A handbook, 23 (1), 6.

[54] Gupta, S. (2020). How fear and anger change our perception of coronavirus risk. Science news: Health and medicine. Published May. Retrieved from https: //www. sciencenews.org/article/ coronavirus-covid-19-how-fear-anger-change-risk-perception, 14.

[55] Afifi, M. (2007). Gender differences in mental health. Singapore Medical Journal, 48(5), 385–391.

[56] Riecher-Rössler, A. (2010). Prospects for the classification of mental disorders in women. European Psychiatry, 25(4), 189–196. doi:10.1016/j.eurpsy.2009.03.002

[57] Riecher-Rössler, A. (2017). Sex and gender differences in mental disorders. Lancet Psychiatry, 4(1), 8–9. doi:10.1016/S2215-0366(16)30348-0

[58] Gopal, A., Sharma, A. J., & Subramanyam, M. A. (2020). Dynamics of psychological responses to COVID-19 in India: A longitudinal study. PLOS ONE, 15(10), e0240650. doi:10.1371/journal. pone.0240650

[59] Gausman, J., & Langer, A. (2020). Sex and gender disparities in the COVID-19 pandemic. Journal of Women's Health, 29(4), 465–466. doi:10.1089/jwh.2020.8472

[60] Viveiros, N., & Bonomi, A. E. (2020). Novel coronavirus (COVID-19): Violence, reproductive rights and related health risks for women, opportunities for practice innovation. Journal of Family Violence [Advance online publication], 1–5. doi:10.1007/s10896-020-00169-x

[61] Wilson, W., Raj, J. P., Rao, S., Ghiya, M., Nedungalaparambil, N. M., Mundra, H., & Mathew, R. (2020). Prevalence and predictors of stress, anxiety, and depression among healthcare workers managing COVID-19 pandemic in India: A nationwide observational study. Indian Journal of Psychological Medicine, 42(4), 353–358. doi:10.1177/0253717620933992

[62] Atif, K., Khan, H. U., Ullah, M. Z., Shah, F. S., & Latif, A. (2016). Prevalence of anxiety and depression among doctors; the unscreened and undiagnosed clientele in Lahore, Pakistan. Pakistan Journal of Medical Sciences, 32(2), 294–298. doi:10.12669/pjms.322.8731

[63] Picco, L., Subramaniam, M., Abdin, E., Vaingankar, J. A., & Chong, S. A. (2017). Gender differences in major depressive disorder: Findings from the Singapore Mental Health Study. Singapore Medical Journal, 58(11), 649–655. doi:10.11622/smedj.2016144

[64] Lai, J., Ma, S., Wang, Y., Cai, Z., Hu, J., Wei, N., and Hu, S. (2020). Factors associated with mental health outcomes among health care workers exposed to coronavirus disease 2019. JAMA Network Open, 3(3), e203976. doi:10.1001/jamanetworkopen.2020.3976

[65] Shechter, A., Diaz, F., Moise, N., Anstey, D. E., Ye, S., Agarwal, S., and Abdalla, M. (2020). Psychological distress, coping behaviors, and preferences for support among New York healthcare workers during the COVID-19 pandemic. General Hospital Psychiatry, 66, 1–8. doi:10.1016/j.genhosppsych.2020.06.007

[66] Pappa, S., Ntella, V., Giannakas, T., Giannakoulis, V. G., Papoutsi, E., & Katsaounou, P. (2020). Prevalence of depression, anxiety, and insomnia among healthcare workers during the COVID-19 pandemic: A systematic review and meta-analysis. Brain, Behavior, and Immunity, 88, 901–907. doi:10.1016/j.bbi.2020.05.026

[67] Sharma, N., Chakrabarti, S., & Grover, S. (2016). Gender differences in caregiving among family-caregivers of people with mental illnesses. World Journal of Psychiatry, 6(1), 7–17. doi:10.5498 /wjp.v6.i1.7

[68] Kowsalya, R., & Manoharan, S. (2017). Health status of the Indian women—A brief report. MOJ Proteomics and Bioinformatics, 5(3), 1–4.

[69] Gopal, A., Sharma, A. J., & Subramanyam, M. A. (2020). Dynamics of psychological responses to COVID-19 in India: A longitudinal study. PLOS ONE, 15(10), e0240650. doi:10.1371/journal. pone.0240650

[70] Sahu, P. (2020). Closure of universities due to coronavirus disease 2019 (COVID-19): Impact on education and mental health of students and academic staff. Cureus, 12(4), e7541. doi:10.7759/cureus.7541

[71] Cao, W., Fang, Z., Hou, G., Han, M., Xu, X., Dong, J., & Zheng, J. (2020). The psychological impact of the COVID-19 epidemic on college students in China. Psychiatry Research, 287, 112934. doi:10.1016/j.psychres.2020.112934

[72] Rehman, U., Shahnawaz, M. G., Khan, N. H., Kharshiing, K. D., Khursheed, M., Gupta, K., . . . Uniyal, R. (2021). Depression, anxiety and stress among Indians in times of Covid-19 lockdown. Community Mental Health Journal, 57(1), 42–48. doi:10.1007/s10597-020-00664-x

[73] Kumari T. and Shukla V. (2020). Covid-19: Towards confronting an unprecedented pandemic. International Journal of Biological Innovations. 2(1):1-10. DOI: https://doi.org /10.46505/IJBI.2020.2101

[74] Ferguson, N., Laydon, D., Nedjati-Gilani, G., Imai, N., Ainslie, K., Baguelin, M. & Ghani, A. C. (2020). Report 9: Impact of non-pharmaceutical interventions (NPIs) to reduce COVID19 mortality and healthcare demand. Imperial College London, 10(77482), 491-497.

[75] Prem, K., Liu, Y., Russell, T. W., Kucharski, A. J., Eggo, R. M., Davies, N., .& Klepac, P. (2020). The effect of control strategies to reduce social mixing on outcomes of the COVID-19 epidemic in Wuhan, China: a modelling study. The Lancet Public Health, 5(5), e261-e270. doi: https:// doi.org/10.1016/S2468-2667(20)30073-6

[76] Kumar M, Dwivedi S. Impact of coronavirus-imposed lockdown on Indian population and their habits. International Journal of Science & Healthcare Research. 2020; 5(2): 88-97.

[77] Miller Greg. Mar 16, 2020. Social Distancing Prevents Infections, but it Can Have Unintended Consequences.https://www.sciencemag.org/news /2020/03/we-are-social-species-how-will-social-distancing-affect-us?)- Posted in: Health Social Sciences Coronavirus

[78] Gibson, B., Schneider, J., Talamonti, D., & Forshaw, M. (2021). The impact of inequality on mental health outcomes during the COVID-19 pandemic: A systematic review. Canadian Psychology/Psychologie Canadienne, 62(1), 101–126. doi:10.1037/cap0000272