

Original Research Article

Prevalence of depression among healthcare workers of primary healthcare centre in northern Kerala

Sweda K. Divakaran^{1*}, Lagdir Lalasaheb Gaikwad², S. J. Haralkar¹, Gajanan Jatti³

¹Department of Community Medicine, Dr. Vaishampayan Memorial Government Medical College, Solapur, Maharashtra, India

²Department of Community Medicine, Government Medical College, Dharashiv, Maharashtra, India

³Department of Community Medicine, Government Medical College, Dr. Vaishampayan Memorial Government Medical College, Solapur, Maharashtra, India

Received: 19 January 2026

Revised: 19 March 2026

Accepted: 20 March 2026

*Correspondence:

Dr. Sweda K. Divakaran,
E-mail: swedakd@gmail.com

Copyright: © the author(s), publisher and licensee Medip Academy. This is an open-access article distributed under the terms of the Creative Commons Attribution Non-Commercial License, which permits unrestricted non-commercial use, distribution, and reproduction in any medium, provided the original work is properly cited.

ABSTRACT

Background: Depression is projected to be leading psychiatric disease in India by 2030. Depression among health care workers (HCWs) can potentially be disastrous to health care system. Objective was to estimate the prevalence and to study demographic factors associated with depression among healthcare workers.

Methods: A descriptive cross-sectional study was done in primary health care centres at Tirurangadi taluk, Malappuram District, Kerala and the study period was 1 month (15th July 2023 to 15th August 2023). Sample size selection was done by simple random sampling, purpose method. Hospital anxiety depression scale was used to assess depression among health care workers.

Results: The overall magnitude of depression was found to be 44% and which was statistically not significant with demographic factors such as gender, age and occupation.

Conclusions: In present study shows among 150 participants, 66 were found to be depressed and there is no association with demographic factors such as gender, age and designation. Depression was seen slightly higher among nurses than Asha workers and doctors.

Keywords: Depression, Health care workers, Hospital anxiety depression scale, Socio-demographic variables

INTRODUCTION

Depression is projected to be leading psychiatric disease in India by 2030¹. The long and irregular hours of continuous and heavy volumes of work have the potential to trigger depression among health care workers (HCWs). The World Health Organization estimates a projected shortfall of 18 million health care workers by 2030, mostly in low- and lower middle income countries.¹ Mental health conditions contribute to poor health outcomes, premature death, human rights violations, and global and national economic loss.¹ Kerala was among the first in the country to establish a Mental Health Policy

in 2003, which was revised in 2013.² The Kerala state report of the National Mental Health Survey, 2015-2016 reported an overall prevalence of any mental disorders of 11.36%.³ These attributes can potentially be disastrous to health care system.

Depression is one of the most common mental health disorders and is characterized by persistent sadness, lack of interest or pleasure in activities, fatigue, reduced concentration, sleep disturbances, and impaired daily functioning. It contributes significantly to disability, reduced quality of life, and economic burden globally. Healthcare workers are particularly vulnerable to mental

health problems due to the demanding nature of their profession, which often involves long working hours, high patient loads, emotional strain, and responsibility for patient outcomes.⁷

Healthcare workers play a crucial role in maintaining and improving the health of communities. However, the work environment in healthcare settings often exposes them to various occupational stressors such as heavy workload, inadequate infrastructure, time pressure, emotional exhaustion, and administrative responsibilities. These factors can lead to psychological distress, burnout, anxiety, and depression among healthcare professionals. Burnout, characterized by emotional exhaustion, depersonalization, and reduced personal accomplishment, is increasingly recognized as a significant threat to healthcare workers' well-being and to the quality of care provided to patients.^{7,8}

In India, mental health disorders represent a considerable public health concern. The National Mental Health Survey of India (2015-2016) reported a substantial burden of mental disorders in the population and highlighted the need for strengthening mental health services and support systems.^{3,4} Despite the growing recognition of mental health issues in the general population, the mental health of healthcare workers often receives less attention, even though they constitute a critical component of the healthcare system.^{9,10}

Primary health care workers form the backbone of the health system, especially in developing countries like India.¹¹ According to Park's Textbook of Preventive and Social Medicine, primary health care centres serve as the first point of contact between the community and the healthcare system and are responsible for delivering essential preventive, promotive, curative, and rehabilitative services.¹² Healthcare workers at this level are involved in implementing national health programmes, maternal and child health services, disease surveillance, immunization activities, and health education. These responsibilities can expose them to significant levels of occupational stress.

Several studies have documented high levels of stress and burnout among healthcare workers. A study conducted among health professionals in a tertiary medical college in northern Kerala reported a considerable prevalence of burnout, indicating the psychological burden experienced by healthcare providers.² Similarly, a community-based cross-sectional study among primary healthcare workers in Kolar reported significant levels of stress, anxiety, and work-related burnout, emphasizing the mental health challenges faced by frontline healthcare workers.⁵ Another study conducted among healthcare workers in Nelamangala also reported high levels of professional stress associated with workload and job responsibilities.⁶

Frontline health workers such as accredited social health activists (ASHAs) and other primary healthcare staff

often face numerous challenges while carrying out their responsibilities in the community. A qualitative assessment conducted in Wardha identified several factors influencing the performance of ASHA workers, including workload, role expectations, lack of support, and work-related stress.⁹ These challenges can adversely affect their mental health and overall well-being.

Furthermore, evidence from systematic reviews indicates that burnout among frontline primary healthcare providers is prevalent in low- and middle-income countries and is influenced by multiple factors such as workload, insufficient resources, poor working conditions, and lack of organizational support.⁸ Such occupational stressors may contribute to mental health problems, including depression, among healthcare workers.

Given the critical role played by healthcare workers in delivering essential health services, their mental well-being is of utmost importance. Depression among healthcare workers can negatively affect their quality of life, job performance, patient care, and the overall functioning of the healthcare system. Despite the significant responsibilities and challenges faced by healthcare workers at the primary healthcare level, there is limited research focusing on depression among this group, particularly in regions such as northern Kerala.

Therefore, the present study aimed to assess the prevalence of depression among healthcare workers working in primary health care centres in northern Kerala. Understanding the magnitude of depression among these healthcare providers will help identify the need for appropriate interventions and policies to improve their mental health and enhance the effectiveness of the healthcare delivery system.

Aims and objectives

To estimate the prevalence of depression among healthcare workers. To determine the association between demographic factors and depression among healthcare workers.

METHODS

Study design and study period

A descriptive cross-sectional study was done in primary care centres at Malappuram District, Kerala and the study period was 1 month (15th July 2023 to 15th August 2023).

Study participants and sample size

All health care workers from 6 primary care centres, Malappuram district, Kerala were the study participants. Sample size selection was done by simple random sampling, purpose method. A total of 150 participants

were included in this study comprised of doctors, nurses and Asha workers.

Study tool and technique

Approval from institutional ethical committee was sought.

Data was collected using a questionnaire comprising of demographic factors and level of depression using hospital anxiety depression scale, assessed using Chi-square test. Data entered in MS excel sheet and analysis were carried out in SPSS 6.

Inclusion criteria

All health care workers willing to participate in the study.

Exclusion criteria

Those healthcare workers absent during data collection

Statistical analysis

The data analysis was carried out by using Microsoft excel. Chi square test was applied to test the significance. P value <0.05 was considered statistically significant.

RESULTS

Table 1 shows the demographic characteristics of study participants, a total of 150 participants.

Table 1: Demographic characteristics of study participants (n=150).

Variables	Number	Percentage
Age (years)		
18-30	21	14
31-40	63	42
41-50	38	25.33
51-56	28	18.67
Gender		
Male	45	30
Female	105	70
Occupation		
Doctors	25	16.67
Nurses	75	50
Asha workers	50	33.33

According to age distribution, the majority of participants belonged to the 31-40 years age group (42%), followed by 41-50 years (25.33%), 51-56 years (18.67%), and 18-30 years (14%). Regarding gender, most of the participants were female (70%), while 45 (30%) were males.

Based on occupation, nurses constituted the largest proportion of the study population (50%), followed by ASHA workers (33.33%) and doctors (16.67%).

Thus, the study population mainly consisted of female healthcare workers, with the majority belonging to the 31-40 years age group, and nurses forming the largest occupational category among the participants.

Table 2: Demographic factors of study participants and depression (n=150).

Particulars	Normal (%)	Depression (%)	Total (%)	Chi square statistics
Age (years)				
18-30	9 (42.85)	12 (57.14)	21 (14)	$\chi^2=5.72$ df=3 p>0.05
31-40	31 (49.20)	32 (50.79)	63 (42)	
41-50	25 (65.78)	13 (34.21)	38 (25.33)	
51-56	19 (67.85)	9 (32.14)	28 (18.66)	
Total	84 (56)	66 (44)	150 (100)	
Gender				
Male	21 (46.66)	24 (53.33)	45 (30)	$\chi^2=2.27$ df=1 p>0.05
Female	63 (60)	42 (40)	105 (70)	
Total	84 (56)	66 (44)	150 (100)	

*p<0.05 statistically significant.

Table 2 shows the demographic factors of study participants and depression.

The distribution of depression according to age group showed that among participants aged 18-30 years, 12 (57.14%) had depression and 9 (42.85%) were normal. In the 31-40 years age group, 32 (50.79%) had depression while 31 (49.20%) were normal. Among those aged 41-

50 years, 13 (34.21%) had depression and 25 (65.78%) were normal. In the 51-56 years age group, 9 (32.14%) had depression while 19 (67.85%) were normal.

The highest proportion of depression was observed in the 31-40 years age group (32 participants) followed by the 18-30 years age group (12 participants). The association between age and depression was not statistically

significant. Among male health care workers, 24 (53.33%) had depression and 21 (46.66%) were normal. Among female health care workers, 42 (40%) had depression and 63 (60%) were normal.

Although the proportion of depression was higher among males compared to females, the association between gender and depression was not statistically significant.

Overall, 44% of the study participants were found to have depression, but no statistically significant association was observed between depression and socio-demographic variables such as age and gender.

Table 3 shows the association between designation of health care workers and level of depression among the study participants (n=150).

Table 3: Association of health care workers and level of depression among HCWs (n=150).

Designation	Normal (%)	Depression (%)		Chi square statistics
		Borderline	Abnormal	
Doctors	15 (60)	7 (28)	3 (12)	$\chi^2=0.21$ df=4 p>0.05
Nurses	41 (54.66)	26 (34.66)	8 (10.66)	
Asha workers	28 (56)	13 (26)	9 (18)	
Total	84 (56)	46 (30.66)	20 (13.33)	

Among doctors, 15 (60%) were found to be normal, 7 (28%) had borderline depression, and 3 (12%) had abnormal depression. Among nurses, 41 (54.66%) were normal, 26 (34.66%) had borderline depression, and 8 (10.66%) had abnormal depression. Among ASHA workers, 28 (56%) were normal, 13 (26%) had borderline depression, and 9 (18%) had abnormal depression.

Overall, out of 150 participants, 84 (56%) were normal, 46 (30.66%) had borderline depression, and 20 (13.33%) had abnormal depression.

Although a higher proportion of borderline depression was observed among nurses (34.66%) and abnormal depression among ASHA workers (18%), the association between designation of health care workers and level of depression was not statistically significant.

nurses, 54.66% were normal, 34.66% had borderline depression, and 10.66% had abnormal depression. Among ASHA workers, 56% were normal, 26% had borderline depression, and 18% had abnormal depression.

The figure indicates that the majority of health care workers in all occupational groups were normal. However, borderline depression was more common among nurses (34.66%), while abnormal depression was relatively higher among ASHA workers (18%) compared to doctors and nurses.

DISCUSSION

The present study was a cross sectional study carried out for a period of 1 months which covered around 6 primary health care centres. Around 150 study participants were included in the study. A total of 150 participants were included in this study comprised of 45 (30%) males and 105 (70%) females participants. According to the age group, 14% participants in the age group between 18-30 years, 42% between 31-40 years, 25.33% between 41-50 years, 18.66% between 51-56 years. In present study among 150 participants, 66 were found to be depressed and the study is not associated with demographic factors such as gender, age and occupation. Overall 44% found to be depressed among them 30.66% are in borderline 13.33% are found to be abnormal. It was found that the prevalence of depression was seen mostly among nurses which accounted almost 45.33% followed by Asha workers 44% and doctors 40%.

The present study was a cross sectional study carried out for a period of 1 months which covered around 6 primary health care centres. Around 150 study participants were included in the study. A total of 150 participants were included in this study comprised of 45 (30%) males and 105 (70%) female participants. According to the age group, 14% participants in the age group between 18-

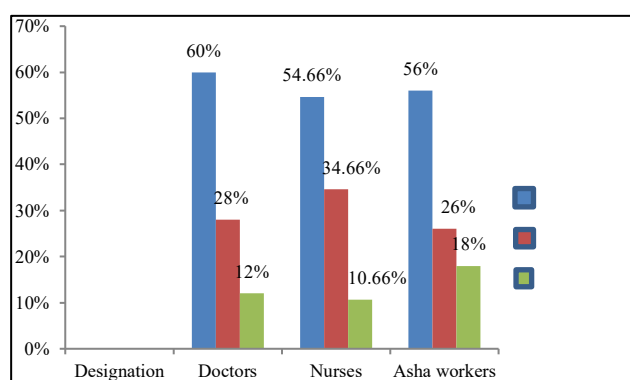


Figure 1: Occupation wise distribution of depression among HCWs.

Figure 1 shows the occupation-wise distribution of depression among health care workers.

Among doctors, 60% were normal, 28% had borderline depression, and 12% had abnormal depression. Among

30years, 42% between 31-40 years, 25.33% between 41-50 years, 18.66% between 51-56 years. In present study among 150 participants, 66 were found to be depressed and the study is not associated with demographic factors such as gender, age and occupation. Overall 44% found to be depressed among them 30.66% are in borderline 13.33% are found to be abnormal. It was found that the prevalence of depression was seen mostly among nurses which accounted almost 45.33% followed by Asha workers 44% and doctors 40%.

Dyrbye et al highlighted that burnout and psychological distress among healthcare professionals represent an important but underrecognized threat to safe and high-quality patient care.⁷

The findings of the present study are consistent with the National Mental Health Survey of India (2015-2016), which reported a significant burden of mental health disorders in the Indian population and emphasized the need for improved mental health services and support systems.^{3,4} Healthcare workers are not immune to these mental health challenges and may even experience higher levels of psychological distress due to occupational stressors.

With respect to age distribution, the present study showed that depression was relatively higher among the 31-40 years age group, followed by the 18-30 years age group, although the association between age and depression was not statistically significant. Similar findings have been reported in other studies where younger and middle-aged healthcare workers experienced higher levels of psychological distress due to increased workload, professional responsibilities, and work-life imbalance. Studies conducted among healthcare workers in Nelamangala also reported high levels of professional stress associated with job demands and working conditions.⁶

In the present study, male healthcare workers had slightly higher depression levels compared to females, although the association between gender and depression was not statistically significant. These findings are comparable with the study conducted by Sagar et al, which reported significant occupational stress among healthcare workers but did not demonstrate a strong gender association.⁶ Occupational stress among healthcare workers can affect both genders depending on work conditions and organizational support.

The present study also assessed the association between designation and level of depression among healthcare workers. It was observed that borderline depression was more common among nurses (34.66%), whereas abnormal depression was relatively higher among ASHA workers (18%). However, the association between designation and level of depression was not statistically significant.

These findings are supported by the study conducted by Pulagam and Satyanarayana, which reported significant levels of stress, anxiety, and work-related burnout among primary healthcare workers, highlighting the psychological burden experienced by frontline healthcare providers.⁵ Similarly, Dugani et al, in their systematic review, reported that burnout is highly prevalent among frontline primary health care providers in low- and middle-income countries, mainly due to high workload, limited resources, and inadequate organizational support.⁸

ASHA workers often work under challenging conditions with multiple responsibilities such as maternal and child health services, health education, disease surveillance, and implementation of national health programs. A qualitative assessment conducted by Guha et al reported several factors affecting the performance of ASHA workers, including heavy workload, role expectations, and limited institutional support.⁹ These factors may contribute to psychological distress and increased risk of depression among community health workers.

Similarly, job satisfaction and motivation are important determinants of mental health among healthcare workers. Peters et al reported that working conditions, remuneration, and career opportunities significantly influence job satisfaction and motivation among healthcare workers in both public and private sectors.¹⁰ Poor job satisfaction may lead to increased stress and psychological problems.

In addition, occupational stress has been shown to negatively affect work performance and mental well-being among healthcare professionals. Nabirye et al demonstrated that high levels of occupational stress among nurses were associated with reduced job satisfaction and decreased job performance.¹¹ These findings highlight the importance of addressing workplace stress to improve both employee well-being and healthcare service delivery.

Healthcare workers form the backbone of the primary health care system, which serves as the first level of contact between the community and the health system. Primary health care centres play a crucial role in delivering preventive, promotive, and curative services at the community level.¹² Ensuring the mental well-being of healthcare workers is therefore essential for strengthening the healthcare system and improving public health outcomes.

Overall, the findings of the present study highlight the substantial burden of depression among healthcare workers at the primary health care level. Although no statistically significant association was observed between depression and socio-demographic variables such as age, gender, or designation, the presence of depression among a considerable proportion of healthcare workers indicates the need for mental health support, stress management interventions, and supportive workplace policies.

Early identification of psychological distress, regular mental health screening, counselling services, and improving working conditions may help reduce depression and improve the well-being of healthcare workers. Strengthening mental health support systems within the healthcare workforce is essential to ensure effective healthcare delivery and better health outcomes for the community.

The strengths of present study were it used validated questionnaire and data was collected using a questionnaire comprising of demographic factors and level of depression using hospital anxiety depression scale.

The limitations in this study were, this study include only the demographic factors and no other socio economic factors and small sample size. This study missed light on physical violence on healthcare workers.

CONCLUSION

In present study showed among 150 participants, 66 were found to be depressed and there was no association with demographic factors such as gender, age and designation. Depression was seen slightly higher among nurses than asha workers and doctors. Hence behavioural therapy sessions and stress management programs are to be conducted frequently to focus on nurses, ASHA and doctors to screen as well as to relieve from the mental issues.

Recommendations

Reduce workload and improve staffing. Individuals should be evaluated and counselled about psychological interventions of stress management. The health system should also make sure that the workers receive appreciation, recognition and rewards for their work which keeps them motivated at work.

Funding: No funding sources

Conflict of interest: None declared

Ethical approval: The study was approved by the Institutional Ethics Committee

REFERENCES

1. WHO. Special initiative for mental health (2019–2023). Available from: [https://www.who.int/publications/i/item/special-initiative-for-mental-health-\(2019-2023\)w](https://www.who.int/publications/i/item/special-initiative-for-mental-health-(2019-2023)w) Delhi. Accessed on 5 December 2025.
2. Binub K. Burnout among health professionals in a tertiary medical college of northern Kerala, India. *Int J Community Med Public Health*. 2019;6:229-33.
3. National Mental Health Survey of India, 2015-2016: Mental Health System. Available from: <https://indianmhs.nimhans.ac.in/phase1/Docs/Report1.pdf>. Accessed on 5 December 2025.
4. Government of India (2016), National Mental Health Survey of India, 2015-16, Prevalence, Pattern and outcomes, supported by Ministry of Health and Family Welfare. <https://indianmhs.nimhans.ac.in/phase1/Docs/Report2.pdf>. Accessed on 5 December 2025.
5. Pulagam P, Satyanarayana PT. Stress, anxiety, work-related burnout among primary health care worker: a community based cross sectional study in Kolar. *J Fam Med Prim Care*. 2021;10:1845-51.
6. Sagar S, Ravish KS, Ranganath TS, Ahmed MT, Shanmugapriya D. Professional stress levels among healthcare workers of Nelamangala: a cross sectional study. *Int J Community Med Public Health*. 2017;4:4685-91.
7. Dyrbye LN, Shanafelt TD, Sinsky CA, Cipriano PF, Bhatt J, Ommaya A, et al. Burnout among health care professionals: A call to explore and address this underrecognized threat to safe, high-quality care. *NAM perspectives*. National Academy of Medicine. 2017.
8. Dugani S, Afari H, Hirschhorn LR, Ratcliffe H, Veillard J, Martin G, et al. Prevalence and factors associated with burnout among frontline primary health care providers in low-and middle-income countries: a systematic review. *Gates Open Res*. 2018;2:4.
9. Guha I, Raut AV, Maliye CH, Mehendale AM, Garg BS. Qualitative assessment of accredited social health activists (ASHA) regarding their roles and responsibilities and factors influencing their performance in selected villages of Wardha. *Int J Adv Med Health Res*. 2018;5:21.
10. Peters DH, Chakraborty S, Mahapatra P, Steinhardt L. Job satisfaction and motivation of health workers in public and private sectors: cross-sectional analysis from two Indian states. *Hum Res Health*. 2010;8:27.
11. Nabirye RC, Brown KC, Pryor ER, Maples EH. Occupational stress, job satisfaction and job performance among hospital nurses in Kampala, Uganda. *J Nurs Manage*. 2011;19(6):760-8.
12. Park K. Demography and family planning. In: Park's Textbook of Preventive and Social Medicine. *Health Care of the community*. Chapter 10. 27th ed. Jabalpur: Banarsidas Bhanot; 2023.

Cite this article as: Divakaran SK, Gaikwad LL, Haralkar SJ, Jatti G. Prevalence of depression among healthcare workers of primary healthcare centre in northern Kerala. *Int J Community Med Public Health* 2026;13:1916-21.