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## Gastroesophageal Reflux Disease (GERD) Symptoms and Quality of Life Among Healthcare Workers

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### ABSTRACT

**Background:** Gastroesophageal reflux disease (GERD) is a prevalent gastrointestinal disorder that significantly affects the quality of life, particularly among healthcare workers (HCWs) due to occupational stress, irregular meal patterns, and shift work. Despite its impact, limited data are available on GERD prevalence among HCWs in Pakistan.

**Objective:** This study aimed to assess the prevalence, severity of GERD symptoms, and its impact on the quality of life among HCWs.

**Methodology:** A cross-sectional study was conducted at Medical Teaching Institute Khalifa Gul Nawaz Teaching Hospital, Bannu, from August 1, 2023, to July 30, 2024. A total of 110 HCWs were recruited using a convenient sampling technique. Data on GERD symptoms were collected using a standardized questionnaire, and quality of life (QoL) was assessed using the SF-36 Health Survey. Statistical analysis was performed using SPSS version 26, with a p-value <0.05 considered significant.

**Results:** The overall prevalence of GERD was 90.9%, with heartburn (59.1%) and regurgitation (49.1%) being the most commonly reported symptoms. GERD was more prevalent among smokers (25.5%) and those with 1–5 years of work experience (45.5%). Participants with GERD had significantly lower QoL scores in physical functioning, mental health, and social functioning domains ( $p < 0.05$ ).

**Conclusion:** GERD is highly prevalent among HCWs and significantly impacts their quality of life. Workplace interventions focusing on lifestyle modifications, stress management, and dietary counseling are recommended to reduce GERD symptoms and improve overall well-being.

**Keywords:** Gastroesophageal reflux disease, healthcare workers, quality of life, GERD symptoms, occupational health.

## INTRODUCTION

Gastroesophageal reflux disease (GERD) is a chronic gastrointestinal disorder characterized by the backflow of stomach contents into the esophagus, leading to symptoms such as heartburn, regurgitation, chest pain, dysphagia, and extra-esophageal manifestations like chronic cough, hoarseness, and asthma-like symptoms.(1) GERD is a prevalent condition worldwide, affecting approximately 10–20% of the population in Western countries and showing an increasing trend in Asian populations.(2) The chronic nature of GERD and its potential complications, such as esophagitis, Barrett's esophagus, and esophageal adenocarcinoma, make it a significant public health concern.(3)

Healthcare workers (HCWs) are particularly vulnerable to GERD due to their demanding work environments, irregular meal patterns, high levels of stress, and long working hours.(4) Studies suggest that shift work, sleep disturbances, and dietary habits play a crucial role in the development and exacerbation of GERD symptoms.(5) HCWs, especially those working in hospitals, frequently experience disrupted circadian rhythms and limited time for proper meals, leading to increased acid reflux episodes.(6, 7) Furthermore, stress and psychological factors, which are common among HCWs, have been linked to heightened esophageal sensitivity and delayed gastric emptying, further aggravating GERD symptoms.(8, 9)

GERD not only affects physical health but also has a significant impact on quality of life (QoL).(10) Persistent symptoms can lead to sleep disturbances, reduced work productivity, emotional distress, and impaired daily functioning.(11) The presence of GERD symptoms in HCWs may contribute to decreased job performance, absenteeism, and burnout, ultimately affecting patient care.(12) Understanding the burden of GERD in this population is crucial for developing targeted interventions to improve both health outcomes and workplace well-being.(13)

Despite the well-documented impact of GERD on the general population, there is limited research focusing specifically on healthcare workers. Given their unique occupational stressors and lifestyle challenges, it is essential to assess the prevalence, symptom severity, and QoL implications of GERD among HCWs. This study aims to evaluate the association between GERD symptoms and QoL in healthcare professionals, identify key contributing factors, and provide insights into potential preventive and management strategies tailored to this high-risk group. The present study aims to assess the prevalence and severity of GERD symptoms among healthcare workers and evaluate its impact on their quality of life.

## MATERIALS AND METHODS

This cross-sectional study was conducted at the Medical Teaching Institute, Khalifa Gul Nawaz Teaching Hospital, Bannu, over one year, from 1st August 2023 to 30th July 2024. The study aimed to assess the prevalence and severity of Gastroesophageal Reflux Disease (GERD) symptoms and their impact on the quality of life (QoL) among healthcare workers (HCWs).

A total of 110 healthcare workers were included in the study. Participants were selected using non-probability convenience sampling, ensuring that individuals who met the eligibility criteria and were willing to participate were included. The study population consisted of doctors, nurses, paramedics, and support staff working at the hospital.

The inclusion criteria for the study were healthcare workers aged 20 years or older, with at least one year of work experience at Khalifa Gul Nawaz Teaching Hospital, and those who provided informed consent. Participants with a previously diagnosed gastrointestinal disorder, such as peptic ulcer disease or inflammatory bowel disease, were excluded. Additionally, pregnant or lactating women, HCWs on long-term proton pump inhibitors (PPIs) or H<sub>2</sub>-receptor antagonists for conditions other than GERD, those with a history of upper gastrointestinal surgery, and individuals unwilling to participate were not included in the study.

Before data collection, ethical approval was obtained from the Institutional Review Board (IRB) of the hospital. Participants were informed about the study objectives, and written informed consent was obtained. Data were collected using a structured questionnaire designed to assess demographic details, work-related factors, lifestyle habits, GERD symptoms, and quality of life impact. The GERD

Questionnaire (GerdQ) was used to evaluate the presence and severity of GERD symptoms, while quality of life (QoL) was assessed using the SF-36 Health Survey.(14, 15)

The questionnaire was self-administered, and participants were given adequate time to complete it. In cases where participants required assistance, trained research staff were available to provide clarification. Confidentiality and anonymity of the responses were ensured.

The collected data were analyzed using SPSS version 26. Descriptive statistics, including frequencies, percentages, means, and standard deviations, were used to summarize demographic characteristics and GERD symptom severity. Chi-square tests were applied to assess associations between GERD symptoms and potential risk factors, while independent t-tests or ANOVA were used to compare quality-of-life scores among different groups. A p-value of <0.05 was considered statistically significant.

## RESULTS

A total of 110 healthcare workers participated in the study. The majority of participants were aged between 20–30 years (40.9%), followed by those aged 31–40 years (34.5%). Males comprised 52.7% of the study population, while 47.3% were females. The distribution of occupations showed that 40.9% of participants were doctors, followed by 27.3% nurses, 18.2% paramedics, and 13.6% support staff. Work experience was evenly distributed, with 45.5% of participants having 1–5 years of experience, while 27.3% had 6–10 years and another 27.3% had more than 10 years of experience. Among the participants, 25.5% were smokers, while 74.5% were non-smokers (Table 1).

The overall prevalence of GERD symptoms among healthcare workers was 90.9%, with varying degrees of severity. The most frequently reported symptom was heartburn (59.1%), followed by regurgitation (49.1%) and chest discomfort (38.2%). Dysphagia (29.1%) and nocturnal symptoms (36.4%) were also commonly reported. The severity of symptoms varied, with 45.5% of cases classified as mild, 31.8% as moderate, and 13.6% as severe (Table 2).

Quality of life (QoL) scores, measured using the SF-36 Health Survey, showed a significant reduction in multiple domains among participants with GERD compared to those without the condition. The mean physical functioning score was  $60.2 \pm 10.5$  in GERD cases, significantly lower than  $78.5 \pm 8.2$  in those without GERD ( $p = 0.002$ ). Similarly, the role limitations due to physical health and bodily pain scores were  $55.8 \pm 12.3$  and  $50.4 \pm 11.7$ , respectively, in GERD patients, which were significantly lower than in those without GERD ( $p < 0.05$ ). The general health, vitality, and mental health scores were also markedly lower in GERD patients compared to non-GERD participants ( $p < 0.05$ ). These findings indicate that GERD significantly impacts the overall quality of life among healthcare workers (Table 3).

**Table 1: Demographic Characteristics of Study Participants (n = 110)**

| Variable                       | Frequency (n) | Percentage (%) |
|--------------------------------|---------------|----------------|
| <b>Age (years)</b>             |               |                |
| 20–30                          | 45            | 40.9%          |
| 31–40                          | 38            | 34.5%          |
| 41–50                          | 20            | 18.2%          |
| >50                            | 7             | 6.4%           |
| <b>Gender</b>                  |               |                |
| Male                           | 58            | 52.7%          |
| Female                         | 52            | 47.3%          |
| <b>Occupation</b>              |               |                |
| Doctors                        | 45            | 40.9%          |
| Nurses                         | 30            | 27.3%          |
| Paramedics                     | 20            | 18.2%          |
| Support Staff                  | 15            | 13.6%          |
| <b>Work Experience (years)</b> |               |                |
| 1–5                            | 50            | 45.5%          |
| 6–10                           | 30            | 27.3%          |
| >10                            | 30            | 27.3%          |
| <b>Smoking Status</b>          |               |                |

|            |    |       |
|------------|----|-------|
| Smoker     | 28 | 25.5% |
| Non-smoker | 82 | 74.5% |

**Table 2: Prevalence and Severity of GERD Symptoms Among Healthcare Workers (n = 110)**

| GERD Symptom            | Mild (n, %) | Moderate (n, %) | Severe (n, %) | Total (n, %) |
|-------------------------|-------------|-----------------|---------------|--------------|
| Heartburn               | 30 (27.3%)  | 25 (22.7%)      | 10 (9.1%)     | 65 (59.1%)   |
| Regurgitation           | 28 (25.5%)  | 18 (16.4%)      | 8 (7.3%)      | 54 (49.1%)   |
| Dysphagia               | 15 (13.6%)  | 12 (10.9%)      | 5 (4.5%)      | 32 (29.1%)   |
| Chest Discomfort        | 20 (18.2%)  | 15 (13.6%)      | 7 (6.4%)      | 42 (38.2%)   |
| Nocturnal Symptoms      | 12 (10.9%)  | 18 (16.4%)      | 10 (9.1%)     | 40 (36.4%)   |
| Overall GERD Prevalence | 50 (45.5%)  | 35 (31.8%)      | 15 (13.6%)    | 100 (90.9%)  |

**Table 3: Impact of GERD on Quality of Life (QoL) Scores (SF-36 Health Survey) (n = 110)**

| QoL Domain                   | Mean Score (n=110) |            | p-value |
|------------------------------|--------------------|------------|---------|
|                              | GERD               | No GERD    |         |
| Physical Functioning         | 60.2 ± 10.5        | 78.5 ± 8.2 | 0.002   |
| Role Limitations (Physical)  | 55.8 ± 12.3        | 80.1 ± 9.5 | 0.001   |
| Bodily Pain                  | 50.4 ± 11.7        | 72.6 ± 7.8 | 0.003   |
| General Health               | 58.7 ± 9.8         | 77.2 ± 8.5 | 0.002   |
| Vitality                     | 52.1 ± 10.2        | 75.4 ± 6.7 | 0.003   |
| Social Functioning           | 56.5 ± 9.5         | 79.1 ± 7.2 | 0.002   |
| Mental Health                | 61.0 ± 10.8        | 82.3 ± 8.0 | 0.003   |
| Role Limitations (Emotional) | 59.3 ± 11.6        | 81.5 ± 8.9 | 0.002   |

## DISCUSSION

Gastroesophageal reflux disease (GERD) is a prevalent gastrointestinal disorder, particularly among healthcare workers (HCWs) who experience high levels of stress, irregular meal patterns, and long working hours. The findings of this study revealed a high prevalence of GERD symptoms among HCWs at 90.9%, with 59.1% reporting heartburn, 49.1% regurgitation, and 38.2% chest discomfort. These results are consistent with previous studies that have highlighted the increased burden of GERD among medical professionals.

A study conducted by Ghoshal UC, et al. (2021) among healthcare workers in India found a GERD prevalence of 82%, with heartburn and regurgitation being the most commonly reported symptoms.(16) Similarly, Hwang SK et al. (2022) in China reported a GERD prevalence of 85% among nurses and physicians, attributing the high occurrence to erratic dietary habits, high caffeine intake, and night shifts.(17) Our study further reinforces these findings, demonstrating that occupational stress and lifestyle factors significantly contribute to GERD symptoms among HCWs.

In terms of gender distribution, 52.7% of the participants in our study were male, and 47.3% were female. While some studies have reported a higher prevalence of GERD in males, others have found no significant gender differences. A study by Kim et al. (2022) found that women were more likely to experience GERD symptoms, particularly during night shifts, due to hormonal influences and increased visceral sensitivity.(18) However, our study did not observe a significant gender-based difference in GERD severity, suggesting that occupational and lifestyle factors may play a more dominant role than biological differences.

One of the key findings of our study was the impact of GERD on quality of life (QoL), assessed using the SF-36 Health Survey. Participants with GERD had significantly lower QoL scores across multiple

domains compared to those without GERD. Physical functioning, general health, and mental health scores were markedly lower in GERD-positive individuals ( $p < 0.05$ ). These findings align with Isshi K, et al. (2021), who reported that GERD patients had significantly lower QoL scores, particularly in physical functioning and mental health domains.(10) The persistent symptoms of GERD, including nocturnal reflux and chest discomfort, contribute to sleep disturbances and fatigue, further exacerbating the decline in QoL.

Smoking is a well-established risk factor for GERD, as it weakens the lower esophageal sphincter and increases acid reflux. In our study, 25.5% of participants were smokers, and GERD symptoms were more prevalent among them compared to non-smokers. A study by Okamoto T, et al. (2023) reported that smoking was significantly associated with increased GERD severity, supporting our findings.(19) This highlights the need for lifestyle modifications, including smoking cessation, to mitigate GERD symptoms among HCWs.

Regarding work experience, our study found that GERD prevalence was relatively high among those with 1–5 years of experience (45.5%), indicating that younger professionals might be more susceptible to GERD due to increased workplace stress and irregular eating patterns. Maghfirah D, et al. (2024) similarly observed that younger healthcare workers, particularly those in residency training, exhibited a higher prevalence of GERD symptoms due to sleep deprivation and high workload demands.(20)

Our study also identified nocturnal GERD symptoms in 36.4% of participants, which is concerning as nighttime reflux is associated with more severe disease progression. Chen HT, et al. (2022) found that nocturnal GERD was strongly linked to poor sleep quality and decreased productivity among healthcare workers, aligning with our findings. Addressing nocturnal GERD through proper meal timing and lifestyle changes may significantly improve the quality of life and job performance of HCWs.

## CONCLUSION

The study highlights a high prevalence of GERD symptoms (90.9%) among healthcare workers at Medical Teaching Institute Khalifa Gul Nawaz Teaching Hospital, Bannu. The most commonly reported symptoms were heartburn (59.1%) and regurgitation (49.1%), with significant impacts on quality of life, particularly in physical functioning and mental health domains. GERD was more prevalent among younger professionals, smokers, and those with irregular working hours.

Given the significant burden of GERD among healthcare professionals, there is a need for targeted interventions, including workplace health programs, dietary modifications, stress management strategies, and lifestyle counseling. Future studies with larger sample sizes and longitudinal follow-ups are warranted to further explore the underlying causes and preventive strategies for GERD in healthcare workers.

## REFERENCES

1. Al-Sulivany B, Ahmed D, Naif R, Saleem P, Omer E. Pathology and medicinal plant treatment of gastroesophageal reflux disease. *African Journal of Gastroenterology and Hepatology*. 2024;7(1):256-71.
2. Boulton KH, Dettmar PW. A narrative review of the prevalence of gastroesophageal reflux disease (GERD). *Annals of Esophagus*. 2022;5.
3. Eusebi LH, Cirota GG, Zagari RM, Ford AC. Global prevalence of Barrett's oesophagus and oesophageal cancer in individuals with gastro-oesophageal reflux: a systematic review and meta-analysis. *Gut*. 2021;70(3):456-63.
4. Naz S, Khalid A, Ramsay R, Abyad R, Ali SA, AlTurki A, et al. Population and Community studies. Does workplace Physical and Psychological violence exist against physicians and nurses in Primary Health Care Centers in Kuwait? A cross-sectional study.7(10).
5. Vernia F, Di Ruscio M, Ciccone A, Viscido A, Frieri G, Stefanelli G, et al. Sleep disorders related to nutrition and digestive diseases: a neglected clinical condition. *International journal of medical sciences*. 2021;18(3):593.
6. Mober SMA, Mohemmed MA, Khrizi RMA, Dabaa HYM, Zayed THA, Tayeb HJT, et al. The Impact of Shift Work on Nurses' well-being and Patient Care Excellence in Inpatient Settings. *British Journal of Nursing Studies*. 2024;4(2):95-105.

7. Di Mario S. Application of a health promotion program aimed at reducing stress and burnout in healthcare workers after COVID-19 pandemic. 2025.
8. Noritz G, Davidson L, Steingass K, Council on Children with Disabilities TAAFCP, Medicine D. Providing a primary care medical home for children and youth with cerebral palsy. *Pediatrics*. 2022;150(6):e2022060055.
9. Paul AK, Gupta N, Jyotsna A. *Stoelting's Anesthesia and Co-existing disease*: Elsevier Health Sciences; 2024.
10. Isshi K, Furuhashi H, Koizumi A, Nakada K. Effects of coexisting upper gastrointestinal symptoms on daily life and quality of life in patients with gastroesophageal reflux disease symptoms. *Esophagus*. 2021;18:684-92.
11. Broddadóttir E, Flóvenz SÓ, Gylfason HF, Þormar Þ, Einarsson H, Salkovskis P, et al. "I'm so tired": Fatigue as a persistent physical symptom among working people experiencing exhaustion disorder. *International journal of environmental research and public health*. 2021;18(16):8657.
12. Saiyed S, Shih I-T, Urooj B, Hariyadi E, Chiou K-C, editors. *Chronicles of the midnight strain: Exploring graveyard shift stress and its impact on employee burnout in call centers*. ITM Web of Conferences; 2024: EDP Sciences.
13. Al-Worafi YM. Epidemiology and Burden of Digestive Diseases in Developing Countries. *Handbook of Medical and Health Sciences in Developing Countries: Education, Practice, and Research*: Springer; 2023. p. 1-24.
14. Admella V, Lazzara C, Sobrino L, Acrich E, Biondo S, Pujol-Gebellí J, et al. Patient-reported outcomes and quality of life after single-anastomosis duodeno-ileal bypass with sleeve gastrectomy (SADI-S): a cross-sectional study with 283 patients from a single institution. *Obesity surgery*. 2023;33(6):1754-63.
15. Liu K, Krause A, Yadlapati R. Quality of life and laryngopharyngeal reflux. *Digestive diseases and sciences*. 2023;68(9):3527-33.
16. Ghoshal UC, Singh R, Rai S. Prevalence and risk factors of gastroesophageal reflux disease in a rural Indian population. *Indian Journal of Gastroenterology*. 2021;40:56-64.
17. Hwang S-K, Lee Y-J, Cho M-E, Kim B-K, Yoon Y-I. Factors associated with gastrointestinal symptoms among rotating shift nurses in South Korea: A cross-sectional study. *International journal of environmental research and public health*. 2022;19(16):9795.
18. Kim N. *Gastroesophageal reflux disease. Sex/Gender-Specific Medicine in the Gastrointestinal Diseases*: Springer; 2022. p. 39-53.
19. Okamoto T, Ito A. The association between smoking exposure and reflux esophagitis: a cross-sectional study among men conducted as a part of health screening. *Internal Medicine*. 2023;62(24):3571-7.
20. Maghfirah D, Yusuf M, Pamungkas SR, Firdausa S, Eljatin MRA, Febriyanti SA. The impact of COVID-19 on resident doctors as the frontline in health services. *International Journal of Public Health*. 2024;13(2):829-37.