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Assessing Health Challenges of Female Health Professionals

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Abstract

Background: Female health professionals are often exposed to various occupational hazards that can adversely affect their health. Understanding the interplay between these environmental factors and health outcomes is crucial for improving workplace conditions in healthcare settings. **Aims & Objectives:** This study aimed to investigate the health challenges and work environment conditions faced by female health professionals in selected hospitals in Salem, Tamil Nadu. The objective was to assess the prevalence of health issues and analyze the influence of workplace factors on their health outcomes. **Methodology:** A cross-sectional design was employed, involving a sample of 300 female health professionals. Data were collected through surveys and medical examinations, capturing demographic characteristics, self-reported health issues, and workplace exposures. Statistical analyses, including chi-square tests, t-tests, and regression analysis, were conducted to evaluate associations between environmental factors and health outcomes. **Results:** Findings revealed that 45% of participants reported respiratory issues, with 38% confirmed through clinical assessments. Skin conditions were reported by 53%, with 48% medically validated. Musculoskeletal disorders affected 39%, while reproductive health concerns were noted by 28%, with 15% confirmed medically. The study identified significant challenges in the work environment, including 62% experiencing chemical exposure in poorly ventilated areas, only 40% consistently using personal protective equipment (PPE), and 58% working in ergonomically inadequate conditions. Statistical analyses indicated that chemical exposure, inadequate PPE usage, and poor ergonomics were significant predictors of health problems. **Conclusion :** The findings underscore the urgent need for targeted interventions to improve workplace safety and health standards for female health professionals. By fostering healthier hospital environments, it is possible to mitigate occupational health risks and enhance the well-being of this vulnerable workforce.

Keywords: Female health professionals; Health outcomes; Work environment; Respiratory issues; chemical exposure; Ergonomics; Personal protective equipment

1 Introduction

Female health professionals represent a significant portion of the healthcare workforce, yet they face unique health challenges stemming from their occupational environments. These challenges can adversely affect their well-being, job performance, and overall quality of life [1]. Understanding these issues is crucial for developing effective interventions and promoting safer work conditions.

Health professionals often work in environments that expose them to a range of hazardous substances, including chemicals, biological agents, and ergonomic risks [2]. For female health professionals, the impact of these exposures can be compounded by physiological and social factors [3].

In India, the health challenges faced by female health professionals are particularly pronounced. Studies indicate that approximately 40% of female nurses experience musculoskeletal disorders, with lower back pain being the most commonly reported issue [4].

Respiratory issues are also prevalent; a survey found that about 30% of female healthcare workers reported chronic respiratory conditions, primarily due to exposure to aerosols and disinfectants (Kumar et al., 2020). Additionally, skin problems, including contact dermatitis, affect 25-35% of female healthcare workers, often linked to frequent handwashing and the use of harsh chemicals [5].

Mental health concerns are significant as well, with studies revealing that up to 50% of female health professionals in India report symptoms of anxiety and depression, often attributed to workplace stress and long working hours [6].

Many health professionals are exposed to disinfectants, anesthetics, and other hazardous chemicals. Inadequate ventilation systems can exacerbate this exposure, leading to chronic respiratory issues and skin irritations [7]. Research indicates that prolonged exposure without proper protective measures can have long-term health consequences [8].

The physical demands of healthcare work, including lifting patients and repetitive motions, often lead to musculoskeletal disorder [9]. Poor ergonomic design in workspaces can result in increased discomfort and injuries among female health professionals, who may have specific ergonomic needs that are not adequately addressed [10].

The availability and proper use of PPE are critical in safeguarding health professionals. Insufficient PPE or inadequate training in its use can lead to increased vulnerability to health risks, particularly in settings where exposure to hazardous materials is prevalent [11].

Given the high prevalence of health issues reported by female health professionals, there is a pressing need for research that specifically focuses on their experiences and challenges in the workplace [12]. Previous studies have often overlooked gender-specific health outcomes and the unique work environment factors affecting female health professionals. This study aims to fill that gap by systematically assessing the prevalence of health issues and identifying the significant workplace factors that contribute to these challenges.

This study is designed to adhere to rigorous scientific standards, employing validated survey instruments and medical assessments to gather comprehensive data. By focusing on female health professionals, the research addresses a significant gap in environmental health science related to occupational exposures and health outcomes. It will provide empirical evidence on the relationship between work environment factors—such as chemical exposure and ergonomic design—and specific health issues prevalent among this demographic. The relevance of this study extends beyond individual health to encompass broader implications for public health policy and workplace regulations. It seeks to inform interventions aimed at improving workplace safety and health outcomes, contributing to the growing field of occupational health research.

This study focuses on female health professionals in India, a group that has received limited attention in existing literature. By investigating the interplay between environmental factors and health outcomes, the research will provide new insights that can guide policy and practice in healthcare settings. Moreover, the findings have the potential to contribute important information to the field by identifying critical areas for intervention—such as ventilation improvements, better PPE availability, and ergonomic redesign. These contributions are vital for enhancing workplace safety, reducing health risks, and ultimately improving the quality of care provided by female health professionals.

The findings from this study will provide valuable insights into the health risks faced by female health professionals and highlight the need for systemic changes in hospital environments [13]. By identifying critical areas for improvement—such as ventilation, PPE provision, and ergonomic design—this research aims to contribute to enhanced health outcomes and workplace safety for female health professionals. The implications extend beyond individual health, impacting workforce efficiency and the overall quality of care delivered within healthcare settings [14].

This study aims to shed light on the significant health challenges faced by female health professionals in India, particularly regarding their work environments. By thoroughly examining the prevalence of health issues such as respiratory problems, skin conditions, and musculoskeletal disorders, along with evaluating the impact of workplace factors like chemical exposure, poor ventilation, and ergonomic shortcomings, this research intends to provide essential insights into the health risks unique to this group.

The results are expected to offer critical information to the fields of occupational and environmental health, pinpointing areas that require intervention. By identifying effective strategies to enhance workplace conditions—such as improving ventilation systems, ensuring adequate personal protective equipment (PPE) availability, and adopting ergonomic design principles—this study aims to significantly improve the health outcomes of female health professionals. Furthermore, this research will address an important gap in existing literature and inform relevant policies and practices, thereby promoting safer and healthier working conditions within the healthcare sector. The implications extend beyond individual well-being, contributing to a more effective healthcare workforce and ultimately enhancing the quality of care provided to patients. Therefore, undertaking this study is crucial for creating a healthier, safer, and more supportive environment for female health professionals in India.

1.1 Aims and Objectives

This research aims to:

1. Assess the health conditions of female health professionals in selected hospitals.
2. Identify the prevalence of specific health issues, including respiratory problems and skin conditions.
3. Evaluate the work environment factors contributing to these health issues.
4. Analyze the relationship between workplace conditions and health outcomes to inform targeted interventions.

2 Methodology

2.1 Study Design

This study employed a cross-sectional design to investigate the health challenges faced by female health professionals working in selected hospitals in Salem, Tamil Nadu. This design enabled the simultaneous examination of health conditions, including reproductive health, and environmental factors, offering detailed insights into the effect of workplace environments on various health outcomes.

2.2 Sampling Techniques

- **Sampling Frame:** The study included female health professionals employed in the selected hospitals, covering roles such as nurses, doctors, technicians, and administrative staff with at least six months of employment. This ensured participants had adequate exposure to the hospital environment, critical for assessing long-term impacts on both general and reproductive health.
- **Sampling Method:** A stratified random sampling method was used, ensuring a diverse and representative sample. Participants were grouped by job roles, department types (surgical, outpatient, inpatient), and hospital types (public vs. private). Random sampling was then applied to each stratum to capture a range of workplace experiences, exposure risks, and their effects on health, particularly reproductive outcomes.
- **Sample Size Calculation:** A sample size of 300 female health professionals was calculated using power analysis, aiming for a 95% confidence level and a 5% margin of error, taking into account the expected prevalence of general health and reproductive health issues in this population.
- **Recruitment Process:**

1. Initial Contact Hospital management was approached to secure approval for conducting the study. Informational sessions were held with staff to explain the study's objectives and procedures.
2. Voluntary Participation Female health professionals meeting the eligibility criteria were invited to participate. Informed consent was obtained from all participants, ensuring they understood the study, including the reproductive health assessments.

- **Inclusion Criteria:**

1. Female health professionals aged 18-60.
2. Employed for at least six months in the selected hospitals.
3. Willing to provide informed consent.

- **Exclusion Criteria:**

1. Individuals with chronic health conditions not related to their occupation.
2. Part-time or temporary employees, as the focus was on stable employment histories.

2.3 Data Collection Methods

2.3.1 *Surveys and Questionnaires*

- **Instruments:** A structured questionnaire, adapted from validated health and workplace safety instruments, was used. It included
- **Demographic Section :** Age, job role, department, years of experience. Health Concerns Section Focused on respiratory, musculoskeletal, dermatological, and reproductive health (menstrual irregularities, pregnancy outcomes, fertility issues). Environmental Exposures Section Inquiries about chemical exposure, ergonomic risks, and use of protective gear.
- **Scoring Pattern:** Responses were recorded on a 5-point Likert scale (1 = Never, 5 = Always) for frequency-based questions (e.g., frequency of PPE use, chemical exposure). For health outcomes, binary (Yes/No) questions were used (e.g., "Have you experienced respiratory issues in the last six months?"), and follow-up questions sought severity ratings (1 = Mild, 3 = Moderate, 5 = Severe).

Administration Surveys were provided in both paper and electronic formats. Trained data collectors were available to assist participants to ensure high response rates and data accuracy.

2.3.2 Medical Examinations

- **Instruments:** Objective clinical assessments were conducted using standardized medical tools, including
- **Spirometer:** For respiratory function tests, measuring forced expiratory volume (FEV) and other lung capacity indicators.
- **Dermatological Tools :** Visual and microscopic tools to assess skin conditions.
- **Musculoskeletal Assessments:** Tools like goniometers and strength tests were used to evaluate joint mobility and muscle strain related to ergonomic risks.
- **Reproductive Health Tools:** Gynecological assessments included ultrasound scans, hormone level tests, and reproductive history questionnaires.
- **Scoring Pattern:**

Respiratory Function: Scores were based on standard FEV percentage thresholds (<80% indicated impaired lung function).

Skin Conditions: Dermatological issues were classified as mild, moderate, or severe, based on lesion size, irritation, and medical grading scales.

Musculoskeletal Disorders: A functional score (ranging from 1 to 5) was assigned based on joint mobility, pain levels, and strength deficits.

Reproductive Health: Hormone level ranges were evaluated against standard reproductive health norms, and issues like menstrual irregularities and fertility problems were scored based on clinical criteria.

2.3.3 Workplace Observations

- **Instruments:** A checklist was developed to assess workplace safety and environmental exposures. Observations focused on
- **Ventilation Quality Measured by CO_2 concentration meters:** Ergonomic Setup Assessed using ergonomic standards, measuring desk height, chair adjustability, and the presence of lifting aids. PPE Availability and Usage Observed in real-time, noting if proper personal protective equipment (PPE) was being used during specific tasks.
- **Scoring Pattern:** A safety compliance score was calculated based on adherence to safety protocols (1 = Non-compliant, 5 = Fully compliant).

2.3.4 Focus Group Discussions

- **Instruments:** A semi-structured guide was developed for focus group discussions, allowing participants to express concerns about general and reproductive health, workplace safety, and suggestions for improvement.
- **Scoring Pattern:** Qualitative data were thematically coded using a pre-defined coding scheme. Each theme (e.g., "reproductive health concerns," "chemical exposure risks") was given a frequency score based on the number of times it appeared across different discussions.

2.4 Data Analysis

2.4.1 Quantitative Data

- **Descriptive Statistics:** Summary statistics were used to describe participant demographics, prevalence of health issues, and scores from medical examinations.
- **Inferential Statistics:** Chi-square tests and t-tests were applied to assess the relationships between workplace conditions (e.g., chemical exposure) and health outcomes (e.g., respiratory issues, reproductive health problems). Regression analysis identified significant predictors, such as chemical exposure and PPE use, of specific health outcomes.
- **Scoring Interpretation:** Scores from the Likert scale responses were aggregated and analyzed to assess exposure frequencies and severity of health issues. For clinical assessments, thresholds from medical guidelines were used to determine normal vs. abnormal health indicators.

2.4.2 Qualitative Data

- **Thematic Analysis:** Data from focus group discussions were coded and analyzed for recurring themes related to workplace health concerns. Frequencies of specific issues (e.g., reproductive health) were tracked, and cross-referenced with quantitative data to identify common patterns.
- **Ethical Considerations:** Informed Consent Informed consent forms were provided for all participants, including details about reproductive health assessments. Confidentiality Data was anonymized, and access to sensitive reproductive health information was restricted to authorized personnel.
- **Ethical Approval:** The research protocol received ethical approval from Vinayaka Missions Annapoorana College of Nursing's institutional ethics committee, ensuring adherence to ethical standards in handling health and reproductive data.

2.5 Reliability and Validity

- **Pilot Testing:** Survey instruments, including reproductive health questions, underwent pilot testing to ensure clarity and relevance.

- **Training:** All data collectors received comprehensive training on the use of clinical instruments, interview techniques, and the scoring process to ensure consistency.
- **Triangulation:** The use of multiple data sources (surveys, medical exams, observations, and focus groups) provided a more robust understanding of health challenges, enhancing validity.

*2.5.1 **Contribution to Environmental Health Science***

The integration of reproductive health assessments alongside general health outcomes provides a novel contribution to understanding how workplace exposures affect both overall well-being and specific reproductive outcomes. This approach offers comprehensive insights, enabling the development of workplace safety interventions that consider the full spectrum of female health.

3 Results and Findings

This analysis evaluates the health and work environment conditions of female health professionals in selected hospitals, based on data from 300 participants. The study presents a detailed overview of demographic characteristics, the prevalence of health issues (including reproductive health concerns), and the influence of work environment factors on both general and reproductive health outcomes.

Table 1. Demographic Variables of Participants

Demographic Variable	Details
Number of Participants	300
Age Range	18-60 years
Average Age	34.2 years
Age Group (25-40 years)	65%
Employment Duration (1-5 years)	72%
Employment Duration (>5 years)	28%

Table 1 details the demographic characteristics of the study participants. The sample consisted of 300 female health professionals aged between 18 and 60 years, with an average age of 34.2 years. A significant portion of the participants (65%) were aged 25 to 40 years, indicating a predominantly young workforce. In terms of employment duration, the majority (72%) had worked in their current role for 1 to 5 years, while 28% had over 5 years of employment. These demographics provide important context for understanding the health risks and work conditions faced by this group.

Table 2 illustrates the health issues experienced by the participants, both self-reported and clinically validated. Respiratory problems were reported by 45% of participants, and 38% of these cases were confirmed through medical examinations. Skin conditions were self-reported by 53%, with 48% receiving medical confirmation. Musculoskeletal disorders were reported by 39% of participants, with 35% confirmed to have issues linked to poor ergonomics. Reproductive health concerns were self-reported by 28%, but only 15% received medical validation, highlighting potential underreporting or difficulties in diagnosis for these issues.

Table 2. Prevalence of Health Issues

Health Issue	Self-Reported (%)	Medically Confirmed (%)
Respiratory Issues	45%	38%
Skin Conditions	53%	48%
Musculoskeletal Disorders	39%	35% (Ergonomic assessments)
Reproductive Health Concerns	28%	15% (Medical assessments)

Table 3. Self-Reported Health Issues and Medical Confirmations

Health Issue	Self-Reported (%)	Medical Examination Findings (%)
Respiratory Issues	45%	38% (Impaired lung function)
Skin Conditions	53%	48% (Dermatological issues)
Musculoskeletal Disorders	39%	35% (Linked to ergonomic factors)
Reproductive Health Concerns	28%	15% (Menstrual irregularities, hormonal imbalances)

Table 3 contrasts self-reported health complaints with medical examination results. Among the participants, 45% reported respiratory symptoms such as chronic coughing and shortness of breath, and 38% were confirmed to have impaired lung function. Skin conditions were reported by over half the participants (53%), with 48% confirmed as dermatological conditions through medical assessments. Musculoskeletal complaints, primarily related to back and joint pain, were reported by 39% of participants, with 35% confirmed as resulting from ergonomic issues. Reproductive health concerns, reported by 28% of participants, had a lower rate of medical confirmation (15%), underscoring the complexity and potential underdiagnosis of such issues in a clinical setting.

Table 4 outlines key aspects of the participants' work environment that may contribute to health issues. A significant proportion (62%) reported frequent exposure to chemicals in areas where proper ventilation was lacking. This poses potential risks for respiratory health. Furthermore, only 40% of participants consistently used personal protective equipment (PPE), with manyciting reasons such as discomfort or limited access as barriers to regular use. Additionally, 58% of workstations were ergonomically inadequate, which correlates with the high prevalence of musculoskeletal disorders reported in

Table 4. Work Environment Conditions

Work Environment Aspect	Findings (%)
Chemical Exposure	62% reported frequent exposure without proper ventilation
PPE Usage	40% consistently used personal protective equipment (PPE)
Ergonomics	58% of workstations were found to be ergonomically substandard

the study. These findings suggest the need for improvements in ventilation, PPE accessibility, and ergonomic support in hospital settings.

Table 5. Inferential Statistics and Regression Analysis

Analysis Type	Findings
	Significant associations ($p < 0.05$)
Chi-square tests and t-tests	- Chemical Exposure and Respiratory Issues $\chi^2(1, N=300) = 15.24$, $p < 0.001$
	- Lack of PPE Usage and Skin Conditions $\chi^2(1, N=300) = 12.47$, $p < 0.01$
	- Poor Ergonomics and Musculoskeletal Disorders $\chi^2(1, N=300) = 10.88$, $p < 0.01$
	- Reproductive Health Concerns and Hormonal Imbalances $\chi^2(1, N=300) = 9.15$, $p < 0.05$
	Significant predictors
Regression Analysis	- Chemical Exposure and Respiratory Problems $\beta = 0.45$, $p < 0.01$
	- Inadequate PPE Usage and Skin Conditions $\beta = 0.42$, $p < 0.01$
	- Poor Ergonomic Practices and Musculoskeletal Disorders $\beta = 0.38$, $p < 0.01$
	- Chemical Exposure and Reproductive Health Issues $\beta = 0.30$, $p < 0.05$
	- R-squared Value $R^2 = 0.62$, indicating that 62% of the variance in health outcomes is explained by these predictors.

Table 5 presents the results of inferential statistical analysis, revealing significant associations between work environment factors and health outcomes. Chi-square tests and t-tests indicated statistically significant relationships ($p < 0.05$) between chemical exposure and respiratory issues, poor PPE usage and skin conditions, and substandard ergonomics with musculoskeletal disorders. Additionally, there was an association between reproductive health concerns and hormonal imbalances.

The regression analysis identified key predictors of health problems. Chemical exposure was strongly associated with respiratory problems ($\beta = 0.45$, $p < 0.01$), while inadequate use of PPE predicted skin conditions ($\beta = 0.42$, $p < 0.01$). Poor ergonomic practices were a significant predictor of musculoskeletal disorders ($\beta = 0.38$, $p < 0.01$). Chemical exposure was also found to be a significant predictor of reproductive health issues ($\beta = 0.30$, $p < 0.05$). These findings indicate that targeted interventions to improve workplace conditions—such as enhancing ventilation, ensuring consistent PPE use, and improving ergonomics—could significantly reduce health risks for female healthcare professionals.

The analysis highlights the critical link between workplace conditions and health outcomes among female health professionals. Key factors such as chemical exposure, inadequate use of protective equipment, and poor ergonomics were found to significantly influence respiratory, skin, musculoskeletal, and reproductive health. The results suggest the need for improved workplace safety measures, including better ventilation, more consistent PPE usage, and ergonomic enhancements to reduce the burden of health issues in hospital settings.

4 Discussion

The demographic data present a cohort of 300 female health professionals, predominantly aged between 25 and 40 years (65%). This distribution highlights a relatively youthful workforce, which is crucial for assessing health challenges, as younger professionals may be less aware of long-term health risks[15]. Most participants (72%) have been employed for 1 to 5 years, suggesting they are still acclimating to their roles and environments, potentially affecting their exposure to workplace hazards[16]. Understanding these demographics is essential for analyzing how workplace factors influence health outcomes in this group.

The prevalence of health issues among participants indicates a significant concern. Self-reported data reveal that 45% experienced respiratory problems, with a medically confirmed rate of 38%. This discrepancy suggests potential underdiagnosis or that participants may attribute symptoms to non-work-related factors[17]. Skin conditions were reported by 53%, with a slightly lower confirmation rate of 48%. Such conditions are often exacerbated by workplace exposure, underscoring the need for effective protective measures[18]. Musculoskeletal disorders were reported by 39%, with 35% linked to ergonomic issues, emphasizing the critical impact of workplace design on physical health[19]. Reproductive health concerns were self-reported by 28%, but only 15% received medical validation, highlighting significant gaps in clinical assessment or awareness regarding these issues[20].

Table 3 highlights the discrepancy between self-reported symptoms and clinical validation. For respiratory issues, the alignment between self-reports and medical findings indicates that while many participants recognize their symptoms, barriers to seeking treatment may exist[21]. The high self-reporting of skin conditions correlates with workplace exposure, yet the confirmation rate points to potential misdiagnoses or underreporting in clinical settings[22]. Musculoskeletal complaints, prevalent among the workforce, further stress the importance of ergonomic interventions[14]. The low confirmation rate for reproductive health concerns suggests these issues are often overlooked in occupational health assessments, warranting further investigation into the impacts of work environments on female reproductive health[23].

The findings indicate that a substantial proportion (62%) of participants are exposed to chemicals without adequate ventilation, posing significant respiratory health risks[24]. This lack of proper ventilation is alarming, especially given the high rates of respiratory issues reported. The low rate of consistent PPE usage (40%) reveals a critical gap in safety practices, often influenced by discomfort or availability[25]. Additionally, the finding that 58% of workstations are ergonomically inadequate reflects systemic issues in workplace design that contribute to musculoskeletal disorders[26]. These insights emphasize the urgent need for systemic changes in hospital environments to mitigate health risks.

The statistical analysis uncovered significant associations between work environment factors and health outcomes. Chi-square tests confirmed that chemical exposure correlates strongly with respiratory issues, while inadequate PPE usage significantly impacts skin conditions[27]. Poor ergonomic practices were closely tied to musculoskeletal disorders, reaffirming the necessity for ergonomic interventions[28]. The regression analysis further identified chemical exposure as a predictor of reproductive health issues, highlighting the need for targeted interventions in hospital settings[21]. These results underscore the importance of improving workplace conditions to reduce health risks among female healthcare professionals.

This analysis clearly demonstrates the interconnectedness of workplace conditions and health outcomes among female health professionals. The findings reveal critical areas for intervention, particularly regarding chemical exposure, PPE usage, and ergonomic practices[29]. Addressing these issues through enhanced workplace safety measures, improved ventilation, and ergonomic improvements could significantly alleviate health challenges faced by this vulnerable population. These insights contribute to the understanding of occupational health risks and inform strategies for creating safer and healthier work environments in healthcare settings.

5 Conclusion

This study highlights the significant influence of workplace conditions on the health of female health professionals. The results indicate a worrying prevalence of respiratory issues, skin conditions, musculoskeletal disorders, and reproductive health concerns, underscoring the complex health challenges faced by this group. Key factors such as exposure to chemicals, inconsistent use of personal protective equipment (PPE), and inadequate ergonomic practices emerged as critical contributors to health outcomes. The observed discrepancies between self-reported symptoms and medical confirmations point to a potential gap in both diagnosis and awareness, particularly regarding reproductive health issues. This suggests a need for enhanced clinical assessments and targeted health education aimed at the unique needs of female healthcare workers. Addressing these health challenges requires focused interventions. Improving workplace safety through better ventilation, ensuring the accessibility and comfort of PPE, and enhancing ergonomic standards are essential steps that can significantly reduce health risks. Moreover, promoting a workplace culture that prioritizes health and safety can empower female health professionals to advocate for their own well-being. It can be concluded that this study provides valuable insights into the health dynamics of female healthcare professionals, calling for systemic changes that can foster safer, healthier work environments. Such improvements not only benefit individual health but also enhance the overall quality of care in healthcare settings. Future research should continue to investigate the long-term effects of workplace conditions on health and develop strategies for ongoing enhancement of occupational health standards.

5.1 Recommendations

- Improve ventilation systems in hospital settings to reduce chemical exposure and enhance air quality.
- Establish training programs to ensure female health professionals consistently use personal protective equipment (PPE).
- Regularly assess ergonomics of workstations and make necessary adjustments to prevent musculoskeletal issues.
- Create health monitoring initiatives that include routine screenings for respiratory and reproductive health conditions.
- Cultivate a workplace culture that emphasizes health and safety, encouraging open dialogue about potential hazards.
- Involve female health professionals in shaping health and safety policies to effectively address their concerns.

5.2 Limitations

- The study's cross-sectional design restricts the ability to determine causal relationships between workplace conditions and health outcomes.
- The reliance on self-reported data may lead to biases or inaccuracies in assessing the prevalence of health issues.
- The sample was confined to specific hospitals in Salem, Tamil Nadu, which may limit the applicability of the findings to other areas or healthcare environments.
- The absence of longitudinal data restricts insights into how health outcomes may change over time.

- Some health issues, particularly reproductive health concerns, had low medical confirmation rates, indicating potential shortcomings in clinical assessments.

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