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OCCUPATIONAL HEALTH PROBLEMS OF WOMEN MIGRANT CONSTRUCTION SITE WORKERS IN CHENNAI, SOUTHERN INDIA: A MIXED METHOD STUDY

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Abstract

Introduction: Migrant construction site women workers encounter several issues like inadequate pay, health problems, sexual abuse and denial of their fundamental rights like long duration of working hours without adequate rest, rights of migrant worker's children to get education, quarters to stay with proper sanitation. About 214 million people that is 3 per cent of the world's population are living outside their country of birth. Men, women, children, adolescents and families are crossing international borders to improve their living conditions and sometimes to ensure their survival. This study on women migrant workers will help to identify the problems, economic, occupational, health status of the women migrant workers in the field of study.

Objective: To identify the occupational health issues and exploration experienced by women migrant workers at the construction site in Chennai, South India.

Materials & methods: A mixed-methods study was carried out from April to May 2024 involving 100 migrant women construction workers in Chennai, utilizing purposive sampling. The study included women over the age of 18 who had migrated from other districts of Tamil Nadu and had been employed for more than six months. Exclusions were made for non-migrants, individuals over 60 years of age, unwilling participants, and those on psychiatric medication. Data collection comprised a semi-structured questionnaire for quantitative data and in-depth interviews (IDIs) with 10 participants to gather qualitative insights. The IDIs were conducted in Tamil, recorded with the participants' consent, and were further supported by field notes. Quantitative data were entered into MS Excel 2021, while qualitative data were analyzed through thematic analysis.

Results: The research indicated that the predominant occupational health concerns faced by migrant women in the construction sector included back pain (44%), shoulder pain (26%), leg pain (21%), and skin ailments (9%). Participants also noted their exposure to heat stress, dust, noise, vibrations, and occurrences of physical harassment, in addition to experiencing low wages and job-related stress. Although the incidence of workplace accidents was relatively low (20%), considerable deficiencies in safety infrastructure were observed, with 80% of respondents indicating the lack of fencing or barriers to deter unauthorized access. While 70% of the participants expressed contentment with the current

health and safety protocols, a significant issue was the absence of toilet facilities for the disposal of sanitary pads, as reported by 90% of the participants.
Conclusion: To improve the well-being of migrant women construction workers, regular medical camps should be organized to address their health needs proactively. Social workers can play a key role in raising awareness about the rights of these women, empowering them to advocate for safer and fairer working conditions. Additionally, NGOs should actively engage in implementing welfare initiatives and safeguarding the rights of migrant women workers through support services, legal aid, and advocacy efforts.
Keywords: Migrant women workers, Construction site health issues, Occupational hazards, Workplace safety.

INTRODUCTION

Migration is a worldwide phenomenon impacting millions of individuals across the globe. The International Organization for Migration (IOM) reports that around 214 million people, which constitutes approximately 3% of the global population, currently reside outside their country of origin [1]. Migration typically occurs in pursuit of enhanced economic prospects, better living conditions, or as a necessary means of survival amid poverty, conflict, or environmental adversities [2]. Within this extensive context, women migrant workers are particularly vulnerable, especially in informal sectors such as construction.

Women migrants employed at construction sites in urban settings encounter numerous challenges that extend beyond the difficulties associated with physical labor. These women often relocate from rural areas to cities like Chennai in search of job opportunities to support their families. Nevertheless, they frequently face exploitative working conditions, which include insufficient wages, prolonged working hours without adequate breaks, limited access to healthcare services, and exposure to dangerous environments. Furthermore, they experience gender-based discrimination and are at risk of sexual abuse and harassment [3]. Their fundamental rights, such as access to safe housing with appropriate sanitation and the right to education for their children, are often overlooked [4].

The construction industry is recognized as one of the least regulated sectors, characterized by inadequate enforcement of occupational health and safety regulations. Women employed in these environments frequently lack coverage under labor laws or social protection programs, rendering them particularly susceptible to workplace hazards and economic exploitation. Additionally, their health concerns, encompassing both physical and mental aspects, are predominantly overlooked due to a combination of unawareness, limited access to healthcare services, and societal stigma [5].

This research intends to investigate and document the occupational, economic, and health-related challenges encountered by migrant women workers in the construction sector in Chennai, Southern India. It aims to shed light on their lived experiences and draw attention to their unaddressed needs. By gaining insight into their difficulties, this study can guide policy initiatives and welfare strategies designed to safeguard and empower migrant women workers, ultimately fostering a more just and secure work environment for this disadvantaged group.

Objective

To identify the occupational health issues and exploration experienced by women migrant workers at the construction site in Chennai, South India.

MATERIALS AND METHODS

- **Study Setting:** The study was conducted at selected construction sites in Chennai, a metropolitan city in Southern India, where a significant number of migrant women workers from various districts of Tamil Nadu are employed.
- **Study Period:** The study was carried out over a two-month period, from April 2024 to May 2024.
- **Study Design:** A mixed-method study design was adopted, combining both quantitative and qualitative approaches to comprehensively understand the occupational health problems and socio-economic challenges of migrant women workers.
- **Study Population:** The study population comprised female migrant construction workers employed at construction sites in Chennai.
- **Inclusion Criteria**
    - Female workers aged above 18 years.

- Migrant workers who had relocated to Chennai from other districts of Tamil Nadu.
- Those who had been working in construction for more than 6 months.
- Willing to participate and provide informed consent.

- **Exclusion Criteria**:
  - Non-migrant workers (permanent residents of Chennai).
  - Women aged above 60 years.
  - Those unwilling to participate.
  - Workers under psychiatric medication.
- **Sample Size and Sampling Method**

A total of 100 women were selected using purposive sampling technique for the quantitative component. Additionally, 10 participants were selected for in-depth interviews (IDIs) in the qualitative phase, based on diversity in age, work experience, and responses from the initial survey.

- **Study Instruments:** A semi-structured questionnaire was used for collecting quantitative data on sociodemographic characteristics, occupational conditions, and health problems. An in-depth interview guide was developed for qualitative exploration to understand lived experiences and perceptions regarding workplace issues.
- **Data Collection Procedure:** Quantitative data were collected through face-to-face interviews using the semi-structured questionnaire by trained investigators, after obtaining written consent and permission for audio recording. For qualitative data, IDIs were conducted in Tamil (local language) by a moderator and a note-taker, under the supervision of the Principal Investigator (PI). Interviews were audio-recorded with consent, and field notes were taken to capture non-verbal cues and contextual information.
- **Data Analysis**: Quantitative data were entered and cleaned in Microsoft Excel 2021, and descriptive statistics were used to summarize sociodemographic variables and occupational health issues. Qualitative data from IDIs were transcribed verbatim, translated into English where necessary, and analyzed using thematic analysis. This involved coding of transcripts, identifying emerging patterns, and developing themes to capture the core issues expressed by the participants.
- **Ethical consideration:** Approval from the Institutional ethics committee was obtained. Privacy and confidentiality of data was maintained.

RESULTS

Table 1: Sociodemographic characteristic of the study participants (n-100)

Characteristics	Categories	Frequency (Percentage) N (%)
Age (years)	>18 to 40	79(79%)
	41 to 60	21(21%)
Education	Illiterate	87(87%)
	Primary education	10(10%)
	Secondary education	3(3%)
	Graduate	Nil
Marital Status	Married	63(63%)
	Widow/Separated/ unmarried	37(37%)

The socio-demographic characteristics of the study participants indicated that a significant majority (79%) fell within the age range of 41 to 60 years, while the remaining 21% were aged between 18 and 40 years. In terms of educational attainment, a notable percentage (87%) of the participants were illiterate, followed by 10% who had achieved primary education and 3% who had completed secondary education, with none having attained a university degree. Regarding marital status, the majority of participants (63%) were married, while 37% were either widowed,

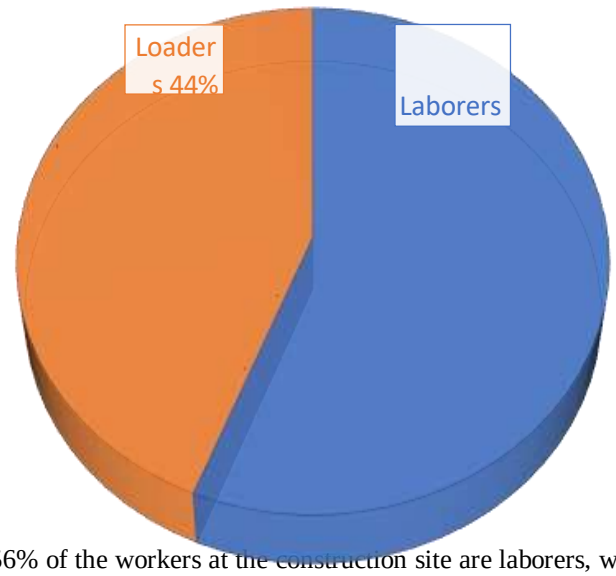
separated, or unmarried. This information underscores a predominantly older, illiterate, and married demographic among the respondents.

Table 2: Duration of work & wages of women migrant construction site workers (n=100)

Characteristics	Categories	Frequency (Percentage) N (%)
No. of working days per month	15-20 20-25 25-30	54(54%) 29(29%) 17(17%)
Duration of working hours per day	8-10 hours >10 hours	59(59%) 41(41%)
Wages per day	Rs.250-300 Rs.300-400	81(81%) 19(19%)
Monthly Income	Less than Rs.8000 More than Rs.8000	71(71%) 29(29%)
Gender bias wages	Paid less than male worker Paid same as male worker	57(57%) 43(43%)

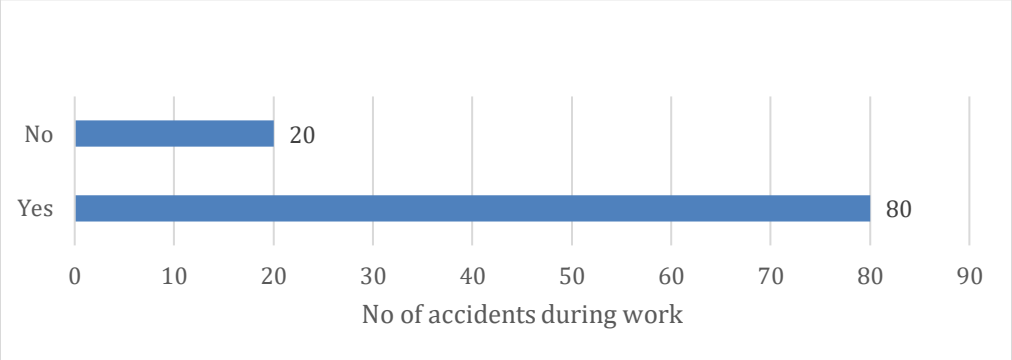
The occupational profile of the participants reveals that over half (54%) worked between 25 to 30 days each month, while 29% worked for 20 to 25 days, and 17% for 15 to 20 days. In terms of daily working hours, a significant majority (59%) worked for 8 to 10 hours per day, whereas 41% indicated that they worked more than 10 hours. The majority of participants (81%) earned a daily wage ranging from Rs. 250 to 300, with only 19% earning between Rs. 300 and 400 per day. Regarding monthly income, 71% of the workers earned less than Rs. 8000, while 29% earned more than this amount. Importantly, gender-based wage discrimination was apparent, as 57% of female workers reported receiving lower pay than their male counterparts, while 43% received equal wages.

Fig 1: Type of construction site workers



The pie chart illustrates that 56% of the workers at the construction site are laborers, whereas 44% are loaders. This suggests that laborers constitute the majority of the workforce. Both positions are crucial, as laborers undertake fundamental construction activities while loaders are responsible for the transportation of materials.

Fig 2: Incidence of Work-Related Accidents Among Construction Workers



The bar chart illustrates that 80% of construction workers indicated they had encountered accidents while on the job, whereas only 20% reported otherwise. This underscores the significant occurrence of workplace hazards in construction environments. There is an urgent need for safety protocols and preventive measures.

Table 3: Categories, Subcategories, and Codes from the Thematic Analysis of Women Migrant Construction Workers' Narratives in Southern India

Categories	Subcategories	Codes
Migration Drivers	Push Factors for Migration	Economic hardship (poverty, poor housing, drought, food insecurity)
		Family migration legacy (multigenerational construction work)
Occupational Issues	Occupational Exploitation	Long working hours (7 AM to 8 PM, physically demanding work)
		Wage inequality (lower pay vs male counterparts, contractor control)
		Irregular wage calculation (no tracking of workdays or wage dues)
Living Conditions	Inadequate Living Standards	Poor housing (mud houses, temporary shelters, overcrowding)
		Lack of electricity (hot, humid without fan/light)
		Unsafe sanitation (no toilets, open defecation)
Health & Wellbeing	Neglected Health Needs	Occupational health issues (physical strain, headaches, limb pain)
		Maternal burden (return to work soon after childbirth, no maternity support)
		Lack of healthcare access (no fixed doctor, not registered with welfare schemes like TN-BOCW)
Social Protection	Systemic Marginalization	Exclusion from benefits (lack of awareness and help for government scheme registration)
Education & Aspirations	Hope Amid Hardship	Child education motivation (desire to educate children despite financial constraints)

Table presents the categories, subcategories, codes, and illustrative quotes derived from the thematic analysis of narratives from women migrant construction workers in Southern India. The stories of women migrant construction workers in Southern India highlighted interconnected difficulties related to the factors driving migration, workplace challenges, living situations, health and wellness, and social security. The primary motivations for migration included poverty, food scarcity, indebtedness, and family traditions in construction work, as articulated by one

participant: "We came here because there is no work in our village, and we cannot feed our children, "while another remarked, "My mother worked in construction, so we also do the same it is what our family knows." The challenges faced in their occupations encompassed extended working hours "We start at 7 am and work till sunset; there is no time to rest" as well as wage inequalities and inconsistent payments: "Men get more pay than us even if we do the same work," and "Sometimes we have to wait for weeks to get our wages." Their living conditions were unstable, characterized by insufficient housing "Our hut leaks when it rains, and at night it is too cold" lack of electricity "We have no lights; at night we use a candle" and unsafe sanitation. "The toilet is far away and not safe for women." Concerns regarding health and wellbeing were focused on physical exertion. "My back and knees pain every day from carrying loads", maternal duties "I work at the site and then cook and take care of my children at night" and limited access to healthcare "Even when we are sick, we do not go to the hospital because it is too far and costly." Finally, systemic exclusion from social protection. "We have no card or papers for any benefits", was juxtaposed with their hopes to provide education for their children despite financial difficulties: "We work so our children can study and not do this work like us."

DISCUSSION

The socio-demographic characteristics of the study participants indicate a largely older workforce, with 79% of migrant women construction workers falling within the age range of 41 to 60 years. This observation stands in contrast to research conducted in other regions of India, where younger demographics (21–40 years) make up the majority of the informal construction labor sector [6]. The prevalence of older individuals in this study may signify a prolonged reliance on construction employment, stemming from generational poverty and a scarcity of alternative job prospects for women residing in rural or peri-urban areas. An alarming 87% of the participants were identified as illiterate, which severely restricts their capacity to pursue improved job prospects or comprehend rights-related information, including wages, contracts, and social security programs. This figure surpasses those reported in comparable studies conducted in Tamil Nadu and Karnataka, where literacy rates among female construction workers ranged from 60% to 75% [7,8]. The diminished literacy levels observed in this group reflect a compounded marginalization and underscore the necessity for adult education and skill development initiatives specifically designed for this demographic.

In terms of marital status, 63% of the women were married, while the remainder were either widowed, separated, or single. Married women, particularly those with children, frequently migrate with their spouses or families and encounter a dual burden of paid employment and unpaid domestic duties [9]. The intergenerational involvement in construction work, as evidenced in this study, corresponds with findings from Bhan et al. (2018), which noted that children of construction workers were similarly drawn into informal employment due to financial constraints and limited access to education [10].

Work patterns indicate a significant amount of labor, with over half of the participants engaged in work for 25–30 days each month and more than 59% working 8–10 hours on a daily basis. Such demanding schedules not only jeopardize physical health but also diminish the time available for rest and caregiving. These results align with a study conducted by Menon and Rodgers (2018) in Delhi, which found that migrant women in the construction industry frequently work 10–12 hours a day under harsh weather conditions without sufficient rest periods [11].

Wage inequalities are pronounced. While 81% of workers received a meager daily wage of Rs. 250–300, 19% earned slightly more, yet none were compensated according to formal minimum wage standards. This situation reflects findings from the International Labour Organization (ILO), which pointed out that gender-based wage discrimination is prevalent in the Indian construction sector, with women consistently earning 20–30% less than their male counterparts for equivalent work [12]. In the current study, 57% of women explicitly reported experiencing wage discrimination, underscoring the pressing need for transparent wage monitoring systems.

Occupational hazards present another significant issue. Approximately 80% of the workers in this study reported having encountered at least one workplace accident, yet no formal safety training or protective equipment was made available. These findings resonate with reports from Joseph et al. (2020), who discovered that nearly 70% of female workers in unorganized sectors in South India lacked access to occupational safety measures [13]. Unsafe working conditions and the lack of safety gear infringe upon fundamental labor rights and necessitate rigorous enforcement of the Building and Other Construction Workers (BOCW) Act, 1996.

Consistently reported were poor living conditions, which included inadequate housing, lack of electricity, and insufficient sanitation. Most women resided in temporary shelters or overcrowded rooms located near construction

sites, frequently without access to toilets or a clean water supply. Open defecation was prevalent. These circumstances have a profound impact on women's dignity, safety, and health. This scenario is akin to the findings of Deshingkar and Akter (2009), who documented the inadequate living conditions of female migrants in various Indian cities [14].

Access to healthcare remains severely restricted. The majority of these women were not registered with welfare boards such as the Tamil Nadu Building and Other Construction Workers Welfare Board (TN-BOCW), which provides health, maternity, and accident benefits. This observation is consistent with the findings of Sengupta and Jha (2016), who noted that most informal sector workers are excluded from state welfare programs due to bureaucratic obstacles and a lack of awareness [15]. In spite of these difficulties, a hopeful aspiration emerged among women: they desired to educate their children and break the cycle of generational poverty. Similar sentiments have been recorded by Sinha et al. (2019), where migrant mothers in Mumbai expressed that they endured poor working conditions primarily to secure better futures for their children [16].

This study highlights the various dimensions of marginalization faced by migrant women in the construction sector, which range from economic instability and workplace exploitation to neglect in health care and systemic exclusion from welfare programs. There is an immediate necessity for reforms at the policy level that encompass: Implementing gender-equitable minimum wage standards, registering all informal laborers with welfare boards, offering on-site childcare facilities and maternity benefits and Guaranteeing educational access for children of migrants

The findings of this study are consistent with existing research while also providing localized perspectives on the experiences of older, illiterate female migrant workers in Chennai. This demographic remains predominantly overlooked in urban development discussions, despite their crucial contributions to the construction of cities.

CONCLUSION

This research emphasizes the various layers of vulnerability faced by migrant women working in construction in Chennai. Most of these women are older, lack literacy skills, and are involved in physically strenuous jobs under exploitative circumstances characterized by long working hours, meager wages, and frequent risks to their health and safety. Their difficulties are exacerbated by poor living conditions, limited access to healthcare, and their exclusion from social protection systems. Nevertheless, their determination to secure a better future for their children remains unwavering. There is an urgent requirement for inclusive policy measures to safeguard their rights, safety, and overall well-being. Enhancing welfare board registrations, enforcing equal pay for women, improving living conditions on-site, and offering educational and health support can greatly enhance their socio-economic status and dignity.

Recommendations

- Ensure Registration with Welfare Boards: It is essential that all migrant women workers are registered without exception under the Tamil Nadu Building and Other Construction Workers Welfare Board (TN-BOCW) to avail themselves of health, maternity, and social security benefits.
- Implement Gender-Equal Wage Policies: There must be rigorous monitoring and enforcement of equal pay for equal work to mitigate gender-based wage disparities at construction sites.
- Provide On-Site Facilities: It is imperative that construction sites are required to offer safe housing, sanitation, electricity, and crèche facilities for women workers and their children.

Strengths

- Emphasis on a Neglected Demographic: This research sheds light on the frequently ignored difficulties faced by migrant women working in construction in South India.
- Comprehensive Socio-Demographic Evaluation: It delivers an in-depth socio-demographic analysis, providing valuable information regarding age, education, income, and employment profiles.
- Incorporation of Visual Data Illustrations: The use of pie and bar charts improves comprehension of job roles and the frequency of accidents.
- Findings Relevant to Policy: The research underscores practical insights that can guide both local and national policies aimed at enhancing worker welfare and social protection.

Limitations

- Limited Generalizability: The results pertain specifically to Chennai and may not accurately represent the circumstances of migrant women workers in other parts of India.

- Self-Reported Data: Dependence on self-reported data may lead to recall bias or underreporting, especially in sensitive topics such as wage discrimination and health concerns.

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