Original Article

WORK RELATED HEALTH PROBLEMS AND HEALTHCARE SEEKING AMONG TEA GARDEN WORKER

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ABSTRACT

Background: Tea, derived from the Camellia sinensis plant, is a globally consumed beverage with a rich history. Despite its widespread production, smaller gardens produce unique teas highly valued by enthusiasts. The tea industry in Bangladesh, particularly in Sylhet, plays a pivotal role in the economy but is plagued by challenges such as work-related health issues among its predominantly marginalized and tribal labor force. This study aimed to explore the health and lifestyle challenges faced by tea workers in Sylhet.

Methods: A cross-sectional study was conducted in three tea gardens in Sylhet, focusing on socio-demographic characteristics, work-related health problems, and healthcare-seeking behaviors. Data were collected from 255 participants using a semi-structured questionnaire, and statistical analyses, including Chi-Square test, were performed using SPSS version 26.

Results: The socio-economic profile revealed a predominantly female, Hindu, and illiterate workforce with low income. Musculoskeletal disorders (MSDs) were prevalent, affecting 77.6% of participants, with lower back pain being the most common. Common diseases, injuries, and respiratory issues were reported. Allopathic treatment was preferred by 78% of respondents. Significant associations were found between MSDs and age, education, smoking, and drug use. Job-related factors like nature of work and weekly working hours also showed significant associations ($p<0.05$).

Conclusion: The study highlights the multifaceted challenges faced by tea garden workers, emphasizing the need for targeted interventions considering socio-demographic and occupational factors. Insights from this research can inform policies and healthcare strategies to improve the well-being of this vulnerable population. Further research and collaborative efforts are warranted to address the complexities of the tea industry and promote the health and rights of its workforce.

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INTRODUCTION

Tea is the most widely consumed manufactured drink globally, surpassing coffee, soft drinks, and alcohol combined[1]. While large-scale industrial production caters to the global market, there are smaller gardens producing rare and expensive teas prized by enthusiasts[2]. Tea, derived from the Camellia sinensis plant, is a popular aromatic beverage with origins in East Asia. It was initially used as a medicinal drink, and its consumption became recreational during the Chinese Tang dynasty, spreading to Europe in the 16th century[3]. Tea plants require specific climatic conditions, and high-quality plants are cultivated at elevations of up to 1,500 m for enhanced flavor[4]. India leads as the world's largest tea-drinking nation, with per capita consumption of 750 grams per year. Turkey holds the highest per capita consumption globally at 2.5 kilograms[5].

Bangladesh, the 10th largest tea producer globally, has a significant tea industry dating back to British rule[6]. The sector contributes 1% to the national GDP, with over 56,846 hectares of land under tea cultivation[7]. Bangladesh faces challenges in its tea industry, with over 300,000 plantation workers, predominantly women and descendants of tribal laborers. The Bangladesh Tea Board and Tea

Research Institute support production, certification, and export, with efforts to improve quality dating back to 1957[8].

Work-related health issues are prevalent, with a significant number of injuries and diseases occurring in the ago-based tea industry[9]. The tea industry in Bangladesh plays a crucial role in the economy, employing over 350,000 workers in 164 tea gardens[10]. However, these workers face marginalization, lack of basic rights, and health hazards due to unsafe working conditions[11].

Musculoskeletal disorders are common, resulting from poor working postures and repetitive movements[12]. Tea factory workers are exposed to pesticides, leading to health risks, and suffer from respiratory issues due to tea dust exposure[13]. The economic condition and living conditions of tea workers make them vulnerable to communicable diseases[14]. The health of the tea garden population is influenced by cultural traditions, socio-economic factors, and tribal customs[15]. The lack of education among tea workers contributes to high rates of alcohol and tobacco intake, impacting their health negatively[12].

In Bangladesh, Sylhet stands out for the picturesque beauty of its tea gardens, being the foremost region in tea production. With over 150 tea gardens, including three of the world's largest in terms of both area and production, the area supports thousands of laborers whose livelihoods are dependent on these plantations. Originally migrated from various parts of India during the 19th century, these workers have continued to reside in the tea gardens through generations. Unfortunately, their living conditions and overall lifestyle remain distressingly unchanged, characterized by a persistently low standard of living, leading to a hand-to-mouth existence[16]. The lack of knowledge among poor and disadvantaged individuals about health-related issues poses a significant threat, potentially resulting in various diseases. Additionally, the adverse working conditions and living arrangements in the tea gardens negatively impact the workers. Insufficient awareness of occupational health and safety, influenced by factors such as economic conditions, educational levels, availability of medical facilities, hygiene, sanitation, and cultural aspects, contributes to a range of work-related health problems[17].

Due to a notably low literacy rate and inadequate access to modern health facilities, tea garden workers are also unaware of proper healthcare-seeking practices, exacerbating their health-related challenges. Furthermore, garden authorities often deprive them of rightful benefits. Despite playing a crucial role in the tea production industry and significantly impacting the country's economy, these workers remain undervalued, with minimal development programs initiated by the government or non-government organizations to improve their living standards, working environments, and healthcare facilities. This study aims to shed light on the work-related health issues, healthcare-seeking behavior, and the challenging lifestyle of tea workers, urging policymakers to take necessary steps to alleviate their plight[18,19].

METHODS

A cross-sectional study focusing on tea garden workers was conducted in the Malnichara, Tarapur, and Alibahar tea gardens situated in the Sylhet Sadar Upazila of the Sylhet district from January to December 2020. This region, approximately 258.8 km from Dhaka, spans 323.17 sq km, positioned between 24°52' and 25°02' north latitudes and 91°01' and 91°40' east longitudes. It is bordered by Companiganj, Gowainghat, and Jaintiapur Upazilas to the north, Dakshin Surma Upazila to the south, Jaintiapur and Golapganj Upazilas to the east, and Chhatak and Bishwanath Upazilas to the west. The target population consisted of male and female tea garden workers aged 18 years and above. Three gardens—Malnichara, Tarapur, and Alibahar—were randomly selected from the eight in Sylhet Sadar Upazila, and 255 participants were purposively selected based on eligibility criteria from the households.

Data collection involved a semi-structured questionnaire in English, later translated into Bangla and pre-tested, covering socio-demographic characteristics, work-related health problems, and healthcare seeking. Interviews were conducted at respondents' homes, ensuring minimal disruption, with consent and confidentiality assured. Data accuracy was maintained through daily checks. The collected data underwent processing, tabulation, and quality checks, followed by editing, coding, and decoding to eliminate irrelevant and unreliable data. Analysis was performed using SPSS version 26, with descriptive statistics, Chi-Square tests, and Odds Ratios (OR) with a 95% Confidence Interval used to align with the study's objectives. Results were presented in tables and graphs. The study protocol received approval from the Protocol Approval Committee of NIPSOM and ethical clearance from the Institutional Review Board (IRB) of NIPSOM. Informed consent was obtained from all participants, ensuring privacy and confidentiality, and participants had the right to withdraw without any harm as no invasive procedures were applied.

RESULTS

The data reveals the demographic distribution of tea garden workers, with a majority of females (58.2%), predominantly Hindu, and a significant percentage (50.2%) of them having illiterate education. The

majority lived in joint families, with 97.3% having a monthly income of 3000Tk or less. The majority lived on hilltops, and television was their main source of recreation. Smoking was reported by 32.2% of respondents, while 18.4% had an addiction to drugs or narcotics.

The job nature of tea garden workers was 74.9% permanent, with 59.2% engaged in tea leaf plucking, pesticide spraying, and factory work. Working experience ranged from 1 to 45 years, with 45.1% having ≤10 years of experience. Working hours were 98.8% 6 days a week, 93.3% 8 hours daily, and 92.5% 48 hours. Rest and drinking water were available during work hours, and 98% had the option to have food during work hours.

Health conditions among tea garden workers were analysed, with pain and discomfort most prevalent in the lower back (52.2%), followed by the shoulder (51.4%), knee (25.1%), and neck (23.1%). Musculoskeletal disorders (MSDs) affected 77.6% of the 255 participants, with common diseases including diarrhoea (13.3%), dysentery (3.5%), scabies (2.7%), and UTI (2.7%). In the last three months, 38.8% experienced minor injuries, 14.5% experienced moderate to severe injuries, and 45.9% encountered any form of injury or accident.

The majority of tea garden workers prefer allopathic treatment when sick, with 13.7% opting for homeopathy and 8.2% choosing traditional methods. Health facilities are provided by the garden authority, but opinions vary on the availability of healthcare providers and investigation facilities. Maternal leave, vaccination facilities, and emergency measures for workplace injuries are generally available, but there is no provision for snakebite emergencies.

Table 1: Socio-demographic Characteristics of the tea garden workers

Variables		f (%)
Age	18-27	76 (29.8)
	28-37	77 (30.2)
	38-47	42 (16.5)
	48-57	47 (18.4)
	58-67	13 (5.1)
Gender	Male	105 (41.2)
	Female	150 (58.2)
Marital status	Single	34 (13.3)
	Married	180 (70.6)
	Widow/Widower	41 (16.1)
Number of family members	≤ 4	90 (35.3)
	>4	165 (64.7)
Individual monthly income	≤3000	248 (97.3)
	>3000	7 (2.7)
Monthly family income	≤3000	31 (12.2)
	4000-8000	104 (40.8)
	9000-13000	89 (34.9)
	≥14000	31 (12.2)
Nature of house	Pucca	17 (6.7)
	Tin shed	131 (51.4)
	Mud house	107 (42.0)
Main source of recreation	Television	173 (67.8)
	Own culture	46 (18.0)
	Sewing	23 (9.0)
	Food making and supply	13 (5.1)
Smoking habit	Yes	82 (32.2)
	No	173 (67.8)

Table 2: Work related features of the tea garden workers

Features		f (%)
Nature of job	Permanent	191 (74.9)
	Temporary	64 (25.1)
Work experience (years)	≤10	115 (45.1)
	11- 20	57 (22.4)

	21- 30	45 (17.6)
	31- 40	32 (12.5)
	>40	6 (2.4)
Work days per week	5	2 (0.8)
	6	253 (99.2)
Daily working hours	<8	12 (4.7)
	8	238 (93.3)
	>8	5 (2.0)
Scope of taking rest	Yes	255 (100.0)
Scope of drinking water	Yes	255 (100.0)
Scope of taking food	Yes	250 (98.0)
	No	5 (2.0)
Weight to carry during work	≤25	170 (66.7)
	>25	85 (33.3)

Table 3: Work related health problems among tea garden workers

Health problems		f (%)
Pain, discomfort in past 12 months according to 9 body regions	Neck	59 (23.1)
	Shoulder	131 (51.4)
	Elbow	57 (22.4)
	Wrist/Hand	10 (3.9)
	Upper back	43 (16.9)
	Lower back	133 (52.2)
	Hip/Buttock	55 (21.6)
	Knee	64 (25.1)
	Ankle/Foot	55 (21.6)
Musculoskeletal disorders (MSDs) in past 12 months	Yes	198 (77.6)
	No	57 (22.4)
Common diseases in past 12 months	Diarrhea	34 (13.3)
	Dysentery	9 (3.5)
	Scabies	7 (2.7)
	Hepatitis	1 (0.4)
	UTI	7 (2.7)
Minor injury/accidents in last 3 months	Yes	99 (38.8)
	No	156 (61.2)
Minor injury/accidents in last 3 months	Yes	37 (14.5)
	No	218 (85.5)
Shortness of breath in last 3 months	Yes	20 (7.8)
	No	235 (92.2)
Coughing in last 3 months	Yes	66 (25.9)
	No	189 (74.1)
Red eyes in last 3 months	Yes	28 (11.0)
	No	227 (89.0)

Table 4: Association between musculoskeletal disorders and their socio-demographic characteristics

Traits	Response	Musculoskeletal disorders (MSDs)		Total	p value
		Yes	No		
Age of the respondents	18-27 years	36 (47.4%)	40 (52.6%)	76 (100.0%)	0.000
	28-37 years	61 (79.2%)	16 (20.8%)	77 (100.0%)	
	38-47 years	42 (100.0%)	0 (0.0%)	42 (100.0%)	

	48-57 years	46 (97.9%)	1 (2.1%)	47 (100.0%)	
	58-67 years	13 (100.0%)	0 (0.0%)	13 (100.0%)	
Gender	Male	85 (81.0%)	20 (19.0%)	105 (100.0%)	0.289
	Female	113 (75.3%)	37 (24.7%)	150 (100.0%)	
Educational qualification	Illiterate/ signature only	117 (91.4%)	11 (8.6%)	128 (100.0%)	0.000
	Primary	69 (65.7%)	36 (34.3%)	105 (100.0%)	
	Secondary and above	12 (54.5%)	10 (45.5%)	22 (100.0%)	
Total family member	≤4 person	68 (75.6%)	22 (24.4%)	90 (100.0%)	0.554
	>4 person	130 (78.8%)	35 (21.2%)	165 (100.0%)	
Placement of house	Top of hill	131 (74.9%)	44 (25.1%)	175 (100.0%)	0.114
	Plane land	67 (83.8%)	13 (16.3%)	80 (100.0%)	
Smoking habit	Yes	71 (86.6%)	11 (13.4%)	82 (100.0%)	0.018
	No	127 (73.4%)	46 (26.6%)	173 (100.0%)	
Addiction to drugs or narcotics	Yes	42 (89.4%)	5 (10.6%)	47 (100.0%)	0.033
	No	156 (75.0%)	52 (25.0%)	208 (100.0%)	

DISCUSSION

The prevalence of musculoskeletal disorders (MSDs) among tea garden workers in Sylhet, Bangladesh, mirrors concern identified in previous studies, highlighting a significant occupational health issue within this population. The study findings align with research that emphasizes the occupational health challenges faced by tea garden laborers, particularly concerning low back pain. This study underscores the influence of socio-economic factors, such as income and education, on health outcomes, consistent with observations in similar populations. These factors likely contribute to the workers' susceptibility to MSDs and their overall health status.

In examining healthcare-seeking behavior, this study found a predominant preference for allopathic treatments, alongside a notable reliance on traditional methods. This reflects the complex healthcare landscape within the community, where diverse preferences coexist. Such findings are consistent with other research that underscores the importance of accommodating diverse healthcare choices[23-27]. The association between MSDs and job-related variables in this study further emphasizes the need for targeted occupational health interventions. Additionally, while many respondents acknowledged the availability of government health services, discrepancies in healthcare provision suggest the need for a more in-depth examination of these services' accessibility and effectiveness[28-29].

This study's strengths include a comprehensive analysis of the health and healthcare-seeking behaviors of tea garden workers, contributing valuable insights into this under-researched population. However, limitations include potential biases in self-reported data and the lack of a control group, which may limit the generalizability of the findings.

Policy implications from this study are clear: there is a need for targeted occupational health interventions to address the high prevalence of MSDs among tea garden workers. Improving access to and the quality of healthcare services, particularly those provided by the government, is crucial. Additionally, policies should consider the socio-economic barriers that influence health outcomes and healthcare-seeking behavior in this community.

This study aligns with existing research while also highlighting unique aspects of the health and well-being of tea garden workers. The complex nature of

tea production and its associated occupational health challenges necessitates a multifaceted approach to health interventions and policy-making.

CONCLUSION

In conclusion, the findings of this study emphasize the complex interplay between socio-demographic factors, occupational hazards, and healthcare accessibility affecting the health of tea garden workers. The identified associations provide valuable insights for policymakers and healthcare practitioners to develop targeted interventions that address the specific needs of this population.

DECLARATION

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