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Health and Hygiene Condition of Female Tea Workers: A Study in Three Tea Gardens of Sylhet District

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Authors' contributions

This work was carried out in collaboration between all authors. Author NC designed the study, performed the statistical analysis, Author MAA wrote the protocol and the first draft of the manuscript and managed the analyses of the study. Authors MC, IK and TI managed the literature searches. All authors read and approved the final manuscript.

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ABSTRACT

Tea garden workers are the most deprived section in Bangladesh, especially female tea workers. The present study is an attempt to explore the health and hygiene condition of the female tea laborers, especially laborers of the Malnichara, Lakkatoorah and Tarapur tea estate in Sylhet district. The study was conducted through a personal interview with 80 purposively selected sample respondents. The study reveals that almost all are illiterate. Nearly 70% are living in an extended type of family, and their household's monthly income is between 5000-6000 Taka, whereas their monthly family expenses are almost equal to their earnings. Therefore, it was observed that the female laborers are suffering from various disorders like fever, skin problems, diarrheal diseases, cough, hypertension, gastric problems, etc. Significant percentages (76%) of female laborers do not

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get an opportunity to take foods during working hour. Around 86% revealed that they do not reach proper nutritional facilities due to lack of knowledge and economic insolvency. The study showed that health services of tea estates are not satisfactory. Highest 65% disclosed that they are using water from river, canal, lake for cooking proposes. A noteworthy portion (78%) of female tea workers does not wash their hands before eating or after toilet. Majority of the respondents use ordinary shared latrine, and these are not sanitary as well as they throw their garbage's in open places, which contaminated the estates environment. Finally, areas and context-specific data are essential to raise awareness among the tea gardeners about female workers rights and also for future policies and effective surveillance initiatives.

Keywords: *Health and hygiene; female workers; tea garden; Sylhet and Bangladesh.*

1. INTRODUCTION

Bangladesh is one of the largest tea contributors among south Asian countries in world's tea market as well as a good consumer of tea. The tea industry is one of the largest labor oriented industry in Bangladesh. Tea industry occupies an essential role in the economy of this country. A significant portion of the population of the state is directly and indirectly dependent on this industry, with a diversified origin, caste and culture. In Bangladesh, there are 358,550 workers are now working in around 164 tea gardens [1]. According to Khan et al. [2] on an average, Bangladesh produces 63 million kilograms tea annually, this is 0.81 % to GDP and about 1.0% to export earnings [3]. Among tea workers more than seventy-five per cent are women and plucking leaves is their principle duty [4]. The very future of tea gardens greatly depends on tea laborers who spend most of their life in the tea garden. But they have been living in misery from the very beginning of the establishment of tea gardens in Bangladesh. It is very real scenario that women workers of tea garden do not get actual evaluation in terms of financial and social aspect for their hard work all day long as well as deprived of a minimum level of facilities, low nutritional status, and citizenship rights as well [5]. There is a lot of evidence that the tea workers in Bangladesh especially women live an inferior standard of life compared to that of the major tea producing countries in the world [6]. In the early period, the recruited laborers were given inhuman treatment. In the eyes of the European planters, the laborers were a 'beast in a menagerie' [7]. The tea garden workers are considered to be among the poorest and most deprived section of organized labor [8]. Livelihood status of the tea estates workers have not been changed over time. The tea garden workers of Bangladesh lead a poor life due to their low level of income (less than US\$1 for a day's work from sunrise to sunset), which is much lower than that of the Indian tea garden



workers. As a result, the workers cannot reach to sufficient food and nutrition. They suffer diseases such as malnutrition, diarrhoea, dermatitis and pregnancy problems. Deb (2000) revealed in his 'Cross-sectional Study in Dhaka City' that the prevalence of undernourishment and malnourishment is high among female tea laborers [9]. Hazarika et al. highlighted the prevalence of hypertension among the tea garden workers in India [10]. Historically, the opening up of tea and other plantations worldwide has been built on migrant unskilled labor and women workers constitute the majority of workers of tea garden in India and Bangladesh. An important note is that, while Bangladesh has made commendable progress in all aspects of millennium development goals from 1992 to 2015, gross disparity still exists in tea garden areas.

Now-a-days, health and hygiene condition of tea workers is an alarming problem in Bangladesh. It is a general perception that, tea worker especially women's have lack of health and hygiene related education and awareness. The women, children and adolescent girls are the most vulnerable groups in terms of health and hygienic condition in tea garden. Their awareness on health and healthy lifestyle was superficial, knowledge on common illnesses and their prevention pattern and treatment-seeking behavior not conducive to the maintenance of health [11]. They are habituated in using open place or waterside for defecation [12]. Even children faeces are generally disposed to nearby water bodies or throwing in the jungle [1]. Open defecation causing various excreta related diseases. Women are not habituated with washing hand after defecation, which raises the risk of happening diseases [13]. Now-a-days, estate authority provides latrine and bathroom facilities to the laborers of the plantations, but these are not adequate. Due to lack of maintenance, they got damaged and are mostly out of use. That is why, tea workers have to use

their own built latrine. But, these are not hygienically adequate and create various diseases. Women are most susceptible group in that case [14]. High rate of illiteracy, ignorance, social exclusion, economic hardship, etc... bound them to maintain traditional life without minimum opportunities. Due to traditional attitude, shortage of tube well and absence of proper facility they use different sources of water for various uses. Even both human and animals use the common water body and in most of the cases they are habituated in throwing their household waste in these water sources [1,15] [13]. Although in recent years, use of tube well is increasing but still now they have to depend on natural sources like canal, deep hole, pond etc. which are not always safe and hygienic [16]. Unhealthy working environment and occupational health hazards remain unchanged and limited facilities bound them to cope with situation without any question [4,12]. Medical or treatment facilities in the tea estate are very scanty. Many studies show that, women tea workers do not get proper health services during the time of pregnancy. Most of the male laborers are also not much aware about their wife's health. Even nearly all of them have work full time in tea estate as well as in their house. This also directly creates negative impact on their children's health. Sylhet is the land of tea garden in Bangladesh. In different tea estates of Sylhet city, most of the female tea laborers work in the age between 15 to 45 years, when they are also responsible for their reproductive role. Due to lack of proper medical facilities and awareness about using contraceptive, they often face serious maternal diseases which directly make a negative impact on their lives. The poor and unprivileged people usually have very little knowledge about health and hygiene issues. Moreover lack of safe drinking water could also threaten their health. Improper sanitation facilities could also be threatened their health situation. Multiple factors are influential in determining one's personal health and hygiene behavior including culture, economic condition, opportunity, etc. Even their working environment and living arrangement influence them negatively [4]. It is also important to note that, there is hardly any development program initiated either by the government or non-government organizations in order to improve the living standard of the tea gardeners. The present paper is an attempt to explore the female tea-garden workers health and hygienic conditions as well as their miserable life style.

1.1 Objectives of the Study

The specific objectives of this study are as follows:

-  To explore the socioeconomic conditions.
-  To identify the pattern of health & hygienic conditions.

2. METHODOLOGY OF THE STUDY

Methodology is a system of methods used in a particular area of study or activity. The reliability of a research depends on the proper methodology used in the study. It is very important for any research and has to be chosen carefully to fulfill the purpose of the study. Based on the objectives of present study and considering the associated limitations with respect of time, money and other facilities, three tea-gardens (i.e. Malnichara Tea-Garden, Lakkatoorah Tea-Garden and Tarapur Tea-Garden) located in Sylhet city were selected as study areas of this research. Through using snowball sampling technique, total of 80 respondents were drawn from these three tea gardens. The 80 respondents were drawn through following sequence:

Tea garden	Female tea workers
Tarapur Tea-Garden	25
Malnichora Tea-Garden	30
Lackatoorah Tea-Garden	25

Data was collected from both primary and secondary sources. For the present study, survey and observation techniques were used. Survey method is a research method that collects data from respondents through a series of questions either in the form of a questionnaire or an interview [17]. Keeping in view of the major objectives of the study, a draft interview schedule was prepared. The draft schedule was tested and finalized after necessary corrections, modifications and adjustments. Primary data were collected from sample respondents (female tea workers) through personal interview using structured questionnaire. Data were collected only from those, who were willing to participate. Hence, all possible efforts have been made by the researcher in order to ensure that collected data were reasonably accurate and reliable. Besides, some secondary sources like necessary information, records and documents provided by the garden authority, newspaper, published reports or articles etc... were also used. Data

were collected from 1st January to 30th March, 2017. To analyze and interpret the data, descriptive statistics was used. Moreover, data was analyzed using MS Word and MS Excel. Then data were also presented in tabular and graphical forms with significant interpretations.

3. RESULTS AND DISCUSSION

3.1 Socio-economic Profile of the Female Tea Garden Workers

Socio-economic characteristics are very useful to determine the behavior of any community. Decision making of any individuals would be influenced by their characteristics. That is why, socio-economic background of the selected sample respondents are discussed in Table 1. In the present study the age of the respondents were classified into into three groups, where 45% of the respondents fall in age group of 46 years or older. Moreover, 90% of the respondents were Hindu. Further, out of 80 respondents, 45% were illiterate but most of them were capable to sign their names and only 15% of the respondents completed their primary education. Afterward, 80% of the respondents were permanent workers of the tea estates. The permanent laborers enjoyed more facilities than the temporary labourers. In case of health facility, the permanent laborers had full access to all health care services provided by the estates authority, where the temporary workers had limited or "Zero" access. It was also noticed that, 70% of the respondents live in extended type family and 30% of the respondents live in nuclear type family. In addition, 47.5% of the respondents revealed that, their husband are the head of their family. Only 8% disclosed that they are the head of their family. Among 80 respondents, 65% tea worker's revealed that their monthly household income is 5000 to 6000 Tk. Following that, 85% respondents said their monthly family expense is below 5000 Taka, this fact demonstrates their poor standard of living. Due to this, they have to confront with lot of troubles. It was also found that, 30% of the female workers had (0-10) years job experience whereas highest 60% revealed that their tenure is above 30 years. Out of 80 respondents, 40% get salary on a daily basis and 5% were conducting on monthly basis followed by 55% workers on weekly basis. Temporary laborer earned on a daily or monthly basis. It was also found in survey that, 80% received overtime fees. On the other hand, 20% said they did not get additional fee for their overtime work. But, it

is also observed that, the highest 70% usually get maternity leave and bonus on a regular basis.

3.2 Pattern of Health and Hygienic Conditions Female Tea Workers

3.2.1 Pattern of health conditions female tea workers

Health is a state of complete physical, mental, social well-being of an individual. Health and hygienic conditions of female workers is the prime objective of this study. Health and hygiene facilities include medical facility, health service, nutritional facility, vaccination arrangement, childbirth arrangement and water and sanitation facility, and other facilities discussed and presented in this section. Table 2 shows that 68% of the respondents were dependent on allopathic treatment; only 14% of the respondents were dependent on homeopathic treatment. On the other hand, only 18% of the respondents prefer traditional treatment process. Approximately 52% revealed that, the birth of child took place at home while 48% of the respondents told that it happened at a hospital. Furthermore, during birth of child 42% took help from midwife provided by garden authority and 48% of respondents took help from doctors. Female tea workers are more likely affected by a variety of diseases in comparison with their male counterparts. Early marriage raises many risks factors especially birth of baby. According to Table 2, 62% of the female tea workers revealed that they got married before the 18 years. It is quite evident that, the safe maternity and child birth was not satisfactory there. Study found that 44%, 28% and 22% of the female tea laborers were affected by skin diseases, diarrheal diseases and fever, respectively. It can be postulated that the occurrence of infectious diseases is driven by seasonal environmental changes. Research findings show that, 66% of female workers suffered from various diseases during rainy season and only 14% were experienced in winter season. Vaccination facility is frequently vital for child and pregnant women to free them from some severe infections. Precisely 70% of female tea workers assumed that vaccination facilities were offered by tea estates, whereas the rest 30% workers denied it. It was found from the survey that there was no health insurance facility for female tea laborers in the tea estates. Literally, 76% of female tea workers disclosed that they do not get opportunity of taking foods during working hours, even as 24% revealed, they do not find it a

problem. A principal fact regarding health issue is the availability of nutritional facility. It is a matter of regret that 86% of female laborers were not concerned about it. Many reasons are associated with this problem. 37% had no proper understanding regarding it and 20% blame their financial crisis. Furthermore, 42% female laborers revealed that they usually get health advices from estate's hospital, whereas 17% said that get their medicine as well.

Table 1. Socio-economic profile of the female tea garden workers

Item		Frequency	Percentage (%)
Age	25-35	24	30.00
	36-45	36	45.00
	46 and above	20	25.00
	Total	80	100
Religion	Muslim	08	10.00
	Hindu	72	90.00
	Total	80	100
Education	Only sign	32	45.00
	Illiterate	36	40.00
	Up to class five	12	15.00
	Total	80	100
Nature of job	Permanent	64	80.00
	Temporary	16	20.00
	Total	80	100
Family type	Nuclear	24	30.00
	Extended	56	70.00
	Total	80	100
Family Head	Father	24	30.00
	Mother	8	10.00
	Husband	38	47.50
	Brother	2	2.50
	Respondent herself	8	10.00
	Total	80	100
Household Income (Taka/Month)	5000-6000	52	65.00
	7000-8000	28	35.00
	Total	80	100
Household Expense (Taka/Month)	3000-5000	68	85.00
	6000-8000	12	15.00
	Total	80	100
Service of occupation (Year)	0-10	24	30.00
	10-20	04	5.00
	20-30	04	5.00
	30 and above	48	60.00
	Total	80	100
Payment system	Daily basis	32	40.00
	Monthly salary	04	5.00
	Weekly salary	44	55.00
	Total	80	100
Over time payment	Yes	64	80.00
	No	16	20.00
	Total	80	100
Maternity leave and bonus	Yes	56	70.00
	No	24	30.00
	Total	100	100

Table 2. Pattern of health conditions female tea workers

Item		Percentage
Type of treatment	Homoeopathy	14.00
	Allopathic	68.00
	Ayurvedic	18.00
	Total	100
Birth place of respondent's children	Home	62.00
	Hospital	38.00
	Total	100
Assistance during birth of child	Doctor	48.00
	Midwife	42.00
	Others	10.00
	Total	100
Prevalence of early age marriage	Yes	62.00
	No	38.00
	Total	100
Common Diseases	Skin disease	44.00
	Diarrheal	28.00
	Fever	22.00
	Others	6.00
	Total	100
Diseases happening season	Summer	20.00
	Rainy	66.00
	Winter	14.00
	Total	100
Vaccination facility	Present	70.00
	Absent	30.00
	Total	100
Food taking opportunity during working hour	Yes	24.00
	No	76.00
	Total	100
Nutritional facility	Present	14.00
	Absent	86.00
	Total	100
Reason behind lack of nutritional facility	Economic crisis	20.00
	Lack of knowledge	37.00
	Lack of awareness	18.00
	Limited access to market	14.00
	Others	11.00
	Total	100
Services of garden hospital	Health advice	42.00
	Medicine	17.00
	Emergency service	32.00
	Others	9.00
	Total	100
NGO's working for respondents	Yes	16.00
	No	10.00
	Unknown	74.00
	Total	100

NGO are also providing health services to estate's laborers. But unfortunately 74% of the respondents were suspicious about NGO's activity in their locality regarding health. Only 16% stated that they get health service from some NGO's working in the tea estate.

3.2.2 Hygiene condition of female tea workers

Hygiene practices are employed as preventative measures to reduce the incidence and spreading of disease. The present study has taken into

consideration of the hygiene condition of female tea workers. Table 3 shows that 44% of the female workers had own source of water, whereas 56% of the respondents did not. Alongside this, 20% said that they use tube-well water for cooking purpose, while 68% of the respondents revealed that they use other sources of water like, river, canal, pond, lake, etc... for cooking proposes. Moreover, 80% of the female tea laborers did not use soap while they go for bath.

More importantly, 78% of the females do not use soap or other means for washing hands before handling foods or after toilet, only 22% said they did. Table 3 shows that 48% of the female tea

workers just use water, 25% use sand and only 20% use soap for washing hand. It is a matter of regret that 57% of the female laborers have no suitable latrine in their dwelling, while 43% have possession of it. Also, 74% of total respondents told that they use shared latrine with their neighbors and only 26% were the owner of latrines. In addition, out of 80 respondents, 92% of female tea workers use cloths for menstruation, while only 8% are using napkin. The present study also shows that 62% of the female laborers revealed that they usually throw their household waste in open places, whereas only 38% said they dispose garbage in the right place.

Table 3. Hygiene condition of female tea workers

Item		Percentage (%)
Own water source	Yes	39.00
	Tube-Well	18.00
	Kua	8.00
	Others	74.00
	No	68.00
	Total	100
Water use for cooking	Tube-Well	20.00
	Kua	12.00
	Others	68.00
	Total	100
Soap used for bath	Yes	20.00
	No	78.00
	Total	100
Wash hand before taking food & after toilet	Yes	22.00
	No	78.00
	Total	100
Way of washing hand	Ash	7.00
	Soup	20.00
	Sand	25.00
	Just water	48.00
	Total	100
Toilet facilities	Present	43.00
	Absent	57.00
	Total	100
Latrine ownership nature	Yourself (Respondents)	26.00
	Shared	74.00
	Total	100
Materials used for menstruation	Cloth	92.00
	Napkin	8.00
	Total	100
Garbage disposal	Right Place	38.00
	Open Place	62.00
	Total	100

4. CONCLUSION AND RECOMMENDATION

Bangladesh is the 12th largest producer of tea in the world, which occupies a significant portion of GDP of this country. Tea workers and their contributions are not negligible. Tea workers especially women have much more contributions in tea production of Bangladesh. Unfortunately, they are the most deprived sector in tea industry as well as in the Bangladeshi society. The present research explored the deteriorated situation of female tea laborers to some extent. From the present study, it is obvious that their socioeconomic condition is reasonably vulnerable. Most of them are deprived of their rights and duties. Health and hygiene are one of the most significant factors for improving the living standard of female tea laborers. The present study showed that most of the female laborers suffer from fever, skin and diarrheal diseases. A significant portion does not get proper vaccination facilities. Proper nutritional facilities are also absent in tea estate areas. Although, most of them get health advice from estate's hospital only a few of them get medicine from the hospital. Some NGOs are working here to provide health services, but unfortunately, most of the female tea workers have no idea regarding NGOs health services. The worst matter is that majority of the female workers use river, canal and lake water for cooking purposes, a fact that certainly helps to spread various diseases. Most of them only use water to wash their hands before eating or after toilet. The majority uses shared latrines. For menstruation, most workers of tea garden are using cloths only. The highest portion of female workers in tea garden revealed that they throw their garbage in open places which continuously pollute garden environment. The aforementioned facts clearly state that health and hygiene conditions of female tea workers are susceptible.

According to the findings of the study, the recommendations that may be put forward in this regard are as follows:

1. The minimum wage of the tea workers should be raised up to that of the industrial workers. In this circumstance, the role of the "Cha Sramik Union" can be of a catalyst.
2. Tea garden authority should provide medicine or establish pharmacy within the tea garden or adjacent areas.
3. Tea garden hospital authority should take initiatives to provide adequate knowledge

regarding harmful consequences of early marriage, should disseminate information about nutrition and hygiene required for good health.

4. Emergency health services should be developed for female tea workers.
5. Micro-health insurance for disadvantages female poor older people, and especially the extremely poor, may be one of the better options towards ensuring the adequate health care.
6. Estate authority should establish hygienic toilet facility in every dwelling and disseminate knowledge's regarding hygiene issues to female tea workers.
7. The amount of maternity allowance and beneficiaries should be increased at satisfactory level.
8. Various NGOs engaged in tea garden development activities need to take steps for wider literacy and health care programme in order to accelerate improvement in annual income.
9. An earnest and immediate policy by the government is required to improve the health condition of the laborers.

CONSENT

As per international standard or university standard written participants' consent has been collected and preserved by the authors.

COMPETING INTERESTS

Authors have declared that no competing interests exist.

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