

RESEARCH PAPER**THE PREVALENCE AND PATTERNS OF ALCOHOL CONSUMPTION AMONG FEMALE ESTATE LABOURERS IN THE MEDICAL OFFICER OF HEALTH AREA, KOTHMALE, SRI LANKA**H.W.S.R. Rambukwella¹ and D.S. Dissanayake²¹ Postgraduate Institute of Medicine, University of Colombo, Sri Lanka.² Department of Community Medicine, Faculty of Medicine, University of Peradeniya, Sri Lanka.

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E-mail :roshanrambukwella1@gmail.com  <https://orcid.org/0000-0001-7560-6865>**Abstract**

Background: Alcohol consumption among females is not commonly seen in the Sri Lankan socio-cultural background. Although accurate estimates are not available for the Sri Lankan estate sector, alcohol consumption among females is reported to be high.

Objectives: The objective of this study was to determine the prevalence and patterns of alcohol consumption among female estate labourers in the Medical officer of Health (MOH) area, in Kothmale.

Methodology: A community based cross sectional study was carried out in a sample of 368 adult (>18 years) female estate labourers in 2014. The sample was collected using multi stage probability proportionate random sampling technique from 15 sub divisions in five estates in the Kothmale MOH area, using pay sheets as the sampling frame. An interviewer administered questionnaire was used to gather information from participants.

Results: The response rate was 95.1%. The prevalence of alcohol consumption among estate sector females (ever drinkers) was 31.25% (95% CI, 26.51% – 35.99%). The prevalence of current drinkers, former drinkers and quitters were 16.8% (95% CI, 13.0% – 20.6%), 8.4 % (95% CI, 5.6% – 11.2%) and 6.0 % (3.6% – 8.4%) respectively. The most commonly consumed alcoholic beverage was arrack (74.8%) followed by beer (43.5%) and toddy (28.7%). The most preferred place of drinking was in the home (57.4%, n=66). The husband was the most common companion when drinking (53%, n=61). Most of the ever drinkers used to drink after work (80%, n=92). The main reason given was to relieve work stress (84.3%, n=97). Alcohol consumption was significantly associated with increased age ($p<0.0001$) and low level of education ($p<0.0001$). Consumption of more than one type of alcoholic beverage was significantly associated with increased age ($p=0.014$) and high family income ($p=0.004$).

Conclusions: The prevalence of alcohol consumption among female estate labourers in MOH area Kothmale is 31.25% and it is higher than for the rest of the country. Patterns of drinking and their unique characteristics need to be considered when implementing preventive measures in this population.

Key words: Alcohol, estate, female, prevalence, patterns



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Introduction

Socio-cultural background, economic wealth and increase in literacy levels in females in Sri Lanka may have contributed to the observed low levels of alcohol consumption among females compared to other regions.¹ However, in certain communities in Sri Lanka, the consumption of alcohol among females has been reported to be above the prevalence of national figures.²⁻⁴ In Sri Lanka, the female in the family often plays a major role in the upbringing of the children. Therefore, the mothers' behavior is likely to adversely affect the health and social welfare of the family. Widespread alcohol misuse increases the risks of broken family relationships and the neglect of children. According to the Department of Excise, the consumption of alcohol has been on the rise in Sri Lanka since 2009, in spite of many ongoing preventive programmes.⁵ This emphasizes the need of strengthening ongoing preventive programmes and introducing new strategies, especially, targeting communities at risk. The estate sector is an identified high risk community, and there is both direct and indirect evidence to say that alcohol consumption in this sector is on the rise.³⁻⁵ Therefore, there needs to be vigilance about the magnitude and patterns of the alcohol consumption in this population. Reports from the estate sector in the Nuwaraeliya district in the past decade constantly showed low life expectancy at birth for females, and higher maternal and infant mortality, reflecting lower health status. The use of alcohol by females in this area may contribute towards the observed poor health indicators. Furthermore, the Indian Tamil population has the lowest rates of literacy in the country.⁶ Only 66.9% of this population is literate, compared to 88.4% among the Sinhalese and 86.9% among Sri Lankan Tamils. A high prevalence of alcohol consumption among males and females in the plantation sector was

described in 2014 by Katulanda et al.³ According to this study, current alcohol use among the males and females in the plantation sector was 65.6% (95% CI, 53.3%-77.9%) and 2.5% (95% CI, 0.1%-6.7%) respectively. A community based cross sectional study carried out among adult female tea pluckers residing in the Nuwaraeliya district in 2009 found that 23.9% (n=222) of adult female tea pluckers were current alcohol users.⁴ Furthermore, the prevalence of alcohol consumption (ever drinkers) among female tea pluckers was 34.7%.⁴

Patterns of alcohol consumption provide details on health and social impacts of alcohol consumption in a population. Patterns differ with time and the communities involved, and are strongly associated with the alcohol-attributable burden of disease in a country.⁷ In addition to chronic non communicable diseases in which alcohol is a major risk factor, alcohol related injuries and road traffic injuries under the influence of alcohol are also on rise in Sri Lanka.⁸ Alcohol use is strongly linked with suicide attempts in Sri Lanka and the estate sector has a high incidence of deliberate self-harm.² According to the country profile of Sri Lanka in the Global status report on alcohol and health by the World Health Organization (WHO), 2014, the most commonly used type of alcohol in Sri Lanka is alcohol in the form of spirits.¹ According to Dias⁹, in the Sri Lankan rural and poor urban areas, the predominant type of alcohol consumed is illicitly produced 'kassipu', which is cheaper. According to the study conducted by Weerakoon et al⁴ in the plantation sector, the most commonly consumed alcohol beverage was toddy (64%), followed by arrack (31%) and beer (5%).

This study describes the patterns of alcohol consumption in estate sector. The objectives of the current study were to determine the prevalence and patterns of

alcohol consumption among female estate labourers in the Medical officer of Health area, Kothmale.

Methods

This was a descriptive cross sectional study conducted in tea estates in the Medical Officer of Health area, Kothmale, in the Nuwaraeliya district. Adult female estate sector workers permanently residing in the area, who were working as estate labourers, were included in the study. Women with diagnosed chronic illness and psychiatric illness were excluded from the study. The sample size was calculated using a standard formula which estimates a population proportion with an estimated precision.¹⁰ With an expected proportion of 0.347 (34.7%) alcohol consumption in the study population, and accounting for 10% non response, a minimum sample size of 387 was calculated.^{4,10}

A sample of 387 female estate labourers were selected using multi stage random sampling technique. Pay sheet of each sub division of estates which included female estate labourers was taken as the sampling frame. An interviewer administered pre-coded, pre-tested questionnaire was used to gather information from participants. The questionnaire was a combination of borrowed questions from similar questionnaires and questions designed by the principle investigator, based on the review of similar local and foreign research questionnaires and the findings from discussions with key informants. The questionnaire was administered by trained research assistants, under the supervision of the principal investigator. Data collection was performed in a confidential environment. To ensure the quality of data, multiple steps were taken at the design and implementation stages of the study. To minimize the selection bias, a random sampling method was adopted with the latest available sampling frames,

with strict adherence to inclusion and exclusion criteria. The reasons for drinking were explored via a question in the form of a number of fixed alternatives, with an added opportunity to account for missed choices. The fixed alternatives were selected from previous published literature.^{3,4}

To reduce absenteeism, the plantation sector management was informed of the study prior to the day of data collection. Data was analyzed using the Statistical Package for Social Sciences 22.0 (SPSS-22.0). Ethical approval for the study was granted by the ethics review committee of the Postgraduate Institute of Medicine, University of Colombo.

Results

The study included 368 female estate labourers with a response rate of 95.1%. Table 1 describes the socio demographic profile of the study population (Table 1).

Based on consumption of alcohol ever in their life, study participants were categorized into two main categories namely, “ever drinkers”, who had consumed alcohol at least once in their life and “never drinkers”, who had never consumed alcohol in their life. Based on the pattern of alcohol consumption, ever drinkers were assigned to three categories, namely current drinkers, i.e., those who had consumed alcohol during the previous month, former drinkers, those who had not consumed alcohol during the previous month but had consumed within last year, and quitters, who had not consumed alcohol during the last one year.¹¹ Table 2 describes the prevalence of alcohol consumption according to the type of drinkers (Table 2).

The overall prevalence of alcohol consumption among female estate

Table 1: Distribution of socio demographic characteristics of the study population

| Socio-demographic characteristics | Frequency (%) |
|---|----------------------|
| Age | |
| 18-25 years | 36 (9.8) |
| 26-3 years | 98 (26.6) |
| 36-45 years | 113 (30.7) |
| 46-55 years | 90 (24.5) |
| 56-65 years | 31 (8.4) |
| Marital status | |
| Married | 308 (83.7) |
| Unmarried | 40 (10.9) |
| Divorced | 8 (2.2) |
| Widowed | 12 (3.3) |
| Ethnicity* | |
| Sinhala | 19 (5.2) |
| Tamil | 349 (94.8) |
| Religion | |
| Buddhist | 19 (5.2) |
| Hindu | 283 (76.9) |
| Christian | 66 (17.9) |
| Educational status** | |
| No schooling | 105 (28.5) |
| Grade 1-5 | 123 (33.4) |
| Grade 6 to GCE (O/L) | 109 (29.6) |
| Got through (passed) GCE (O/L) | 26 (7.1) |
| GCE (O/L) to GCE (A/L) | 05 (1.4) |
| Monthly income of the family (LKR) | |
| Less than 5000 | 13 (3.5) |
| 5000 to 10000 | 142 (38.6) |
| 10000 to 15000 | 141 (38.3) |
| 15000 to 20000 | 71 (19.3) |
| More than 20000 | 1 (0.3) |

*All were Indian tamils. Subjects in Muslim and Burgher were not found in the study sample

**Subjects in the categories of education status of Passed A/Ls and Tertiary education were not found in the study sample

labourers was 31.25% (n=115) with a 95% confidence interval of 26.51% – 35.99%. The prevalence of never drinkers (abstinence rate) was 68.75% (n=253) with a 95% confidence interval of 64.01% – 73.49%.

Associations between socio-demographic factors and alcohol consumption is given in Table 3. On further analysis,

consumption of more than one type of alcoholic beverage was significantly associated with increased age ($p=0.014$) and high family income ($p=0.004$).

Arrack was the most commonly consumed type of alcohol, with 74.8% (n=86) of ever drinkers consuming it. Consumption of beer among ever drinkers was 43.5% (n=50), followed by 28.7% (n=33) having

Table 2: Prevalence of type of drinkers

| Type of Drinker | Frequency (n) | Prevalence % (95% Confidence Interval) |
|------------------|---------------|--|
| Ever Drinkers | 115 | 31.25 % (26.51% – 35.99%) |
| Current Drinkers | 62 | 16.8 % (13.0% – 20.6%) |
| Former Drinkers | 31 | 8.4 % (5.6% – 11.2%) |
| Quitters | 22 | 6.0 % (3.6% – 8.4%) |
| Never Drinkers | 253 | 68.75 % (64.01% – 73.49%) |

Table 3: Associations between alcohol consumption and socio demographic characteristics

| Sociodemographic factors | Frequency of types of drinkers (%) | | Significance |
|-----------------------------------|------------------------------------|--------------------|--|
| | Ever Drinkers (%) | Never Drinkers (%) | |
| Age | | | |
| 18 to 45 years | 45 (18.2) | 202 (81.8) | χ^2 value = 59.3 df = 1 p <0.0001 |
| 46 to 65 years | 70 (57.8) | 51 (42.2) | |
| Civil status | | | |
| Married | 99 (32.1) | 209 (67.9) | χ^2 value =0.70 df = 1 p =0.402 |
| Other | 16 (26.7) | 44 (73.3) | |
| Religion | | | |
| Hindu | 105 (37.1) | 178 (62.9) | χ^2 value =18.37 df = 1 p <0.0001 |
| Others | 10 (11.8) | 75 (88.2) | |
| Educational status | | | |
| Grade 5 or less | 101 (44.3) | 127 (55.7) | χ^2 value =45.91 df = 1 p <0.0001 |
| Grade 6 to A\Ls | 14 (10.0) | 126 (90.0) | |
| Income of the family (LKR) | | | |
| < 10000 | 53 (34.2) | 102 (65.8) | χ^2 value =0.856 df = 1 p =0.355 |
| > 10001 | 62 (29.1) | 151 (70.9) | |

consumed toddy. Among current drinkers 32.2% (n=20) consumed alcohol two to three times a week. Consuming one or two drinks per day was the most commonly observed pattern among current drinkers. Among ever drinkers, 65.2% (n=75) had consumed one or two drinks per day on a typical day of alcohol consumption. Twenty five percent (n=29) of ever drinkers had consumed alcohol two to three times a week.

Fifty seven percent (n=66) of ever drinkers consumed alcohol at home. Among current drinkers, the mostly commonly preferred location for alcohol consumption was the bar (45.2%, n=45). Among former drinkers and quitters, the home was the most preferred location. The husband was the commonest companion (53%, n=61) among ever drinkers, followed by workmates (20.9% n=24).

A majority of the drinkers consumed alcohol after work (80%, n=92). The most common reported reason for drinking alcohol was drinking to relieve work stress (84.3%, n=97), followed by “drinking habit” of the husband (47.8%, n=55) and the cold climate (45.2%, n=52). All types of drinkers reported relieving work stress as the most common reason for consumption of alcohol, and among current drinkers this was reported by 93.5% (n=58).

Discussion

Nearly one third of estate sector females in MOH Kothmale (31.25%) had consumed alcohol ever in their life. Our findings are consistent with Weerakoon et al., (2009). In our study the prevalence of current drinkers was 16.8% (95% CI, 13.0% – 20.6%). The study published in 2009 by Weerakoon et al.⁴ reported a current drinking prevalence of 23.9% (n=222). They considered current drinkers as those who have consumed alcohol within two weeks in comparison to the definition used in present study, which defined current drinkers as those who had consumed alcohol within one month. The prevalence in this study may have been less if we defined current drinkers as those who had consumed alcohol within the previous two weeks. Therefore it can be surmised that the prevalence of current drinkers has reduced during the last 8 years.

The rate of abstinence in the present study was 68.75% (n=253) (95% CI, 64.01% – 73.49%). A study conducted by Katulanda et al.³ showed a high abstinence rate of 98.1%, (95% CI, 97.3% – 98.9%) in the Sri Lankan female population, indicating a marked difference in life time abstinence in females in the estate sector compared to the overall consumption of alcohol by females in Sri Lanka. Collectively, this suggests the need of strengthening existing preventive programmes, and the

introduction and implementation new preventive measures, with consideration of the unique characteristics in patterns of drinking in this community.

According to the findings, alcohol consumption was more among females with less educational attainment. This has also been highlighted in studies conducted by Werakoon et al. (2009). This draws out the importance of encouraging schooling and continuation of schooling among children in the estate sector. The findings of this study also suggest that health promotion programmes should target females of the age group of 45-65 years, as alcohol consumption is significantly more among that age group compared to females in the age group of 18 – 45 years. However, the observation of less alcohol consumption among women of younger age (18–45 year age group) compared to those aged 46-65 years is an encouraging trend. Although income status was not significantly associated with the alcohol consumption, females from families with a higher income showed an increased frequency of alcohol intake (p=0.004) and consumption of more than one alcohol beverage (p=0.005). This may contribute towards the maintenance of a low economic status within the estate sector laborers.

According to the patterns of alcohol consumption described, arrack was the most commonly consumed type of beverage, followed by beer. Arrack is the most commonly used type of alcohol in Sri Lanka at present.¹ This is in contrast to previous findings of Weerakoon et al. (2009), who reported that the most consumed alcoholic beverage was toddy (64%), followed by arrack (31%). This change may be a result of the increase in availability of spirits, legal constraints in the production of illegal local alcoholic beverages and the improvement of economic status of estate labourers. In our study, the most common drinking

companion was the husband (53%, n=61) followed by work mates (21%, n=24) and friends (6%, n=7). A majority of current drinkers preferred drinking in bars (45.2%, n=45). This was a change in trends compared to the study conducted by Weerakoon et al.⁴ Less involvement of family members and increased interaction with people other than family members, and women seeking alcohol from public places, seen in our study, may be a result of increased availability of public places for drinking⁵ or may have been due to increased occurrences of intra family disputes.⁴

Since women reported that the most common reason for drinking was to deal with work-related stress, introduction of other strategies to reduce work stress in the community should be considered.

The findings of this study are based on findings from the MOH Kothmale, and cannot be generalized to the whole estate sector, which is a limitation. The use of alcohol is still considered a social taboo among women in Sri Lanka and this may have led to under reporting of current drinking among women in this study, although trained interviewers were used to minimize this possibility.

The results of the present study provide valuable information for policy makers and health care providers in the estate sector. It highlights the need for further research on alcohol consumption, focusing on alcohol dependency and the development and implementation of prevention programs by the public health sector, targeting this population. This study also provides useful information for the formulation of necessary policies and strategies for improving the quality of life of estate labourers in Sri Lanka.

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