## ABSTRACT

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The rubber industry has a great economical importance as it provides about 50,000 employments and it contributes immensely to the national economy of Sri Lanka. The rubber tapping process is highly labour intensive, and the musculoskeletal system is at risk of getting affected. These workers need good physical fitness for maximum productivity.

This analytical cross sectional study was carried out to determine the prevalence of

musculoskeletal disorders and associated factors among rubber tappers. It was carried out in large scale rubber estates in the Kalutara District. The study group consisted of rubber tappers, working in the rubber estates of the plantation sector. The prevalence and risk factors of musculoskeletal disorders were compared with a comparison group which was selected from the same rubber estates.

Two-stage random sampling technique was used to select the study population and 207 rubber tappers participated in the study. In the first stage, four estates were selected randomly from all rubber estates in the Kalutara district. In the second stage, the study population was selected using a sampling frame prepared from the pay list, according to the inclusion and exclusion criteria. Age, sex and ethnicity matched estate residents who

had not involved in rubber tapping or heavy manual work were selected as the control group. It also consisted of 207 subjects.

Two data collection instruments were used; an interviewer administered questionnaire and the Quick Exposure Checklist. Data were analysed using the Statistical Package for Social Sciences (SPSS13.0 version),

The age range of the study population was 20-49 years and 93 percent were Tamils. More than 55 percent of the study population was above 35 years of age. Female dominance of the workforce was observed. They have a low education level with 50 percent of the workers having only primary education while 13 percent of workers had

## never attended school.

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More than 90 percent of workers lived within walking distance of the workplace. The

mean working experience of the study population was 12 years. The average number of

trees tapped was 254 trees per day. Almost all of them received less than Rs.10, 000 monthly income.

According to the results, musculoskeletal disorders (MSDs) were significantly higher among rubber tappers when compared with non-rubber tappers. Almost 61 percent of rubber tappers had some kind of musculoskeletal disorder, compared to 25 percent in the control group. The most commonly prevalent musculoskeletal disorders among rubber tappers are backache (34.8%), knee joint pain (23.7%), shoulder joint pain (16.9%), neck pain (15.0%) and elbow joint pain (12.6%) The most commonly

associated symptom of backache was difficulty in walking. Radiation of pain along the leg and numbress of the skin over the leg were also common associated symptoms with backache.

Subjects in the 35 years and above age group had a significantly high prevalence of backache in both groups. There was a significant association between shoulder pain and the type of tapping. Tappers who used both upper and lower cuts had a higher prevalence of shoulder pain. Prevalence of MSDs was higher (87%) in workers who tap more than 300 trees per day. Those who had working experience of 12 years or more had a high prevalence of MSDs which was statistically significant. Knowledge on the association of work and health was also unsatisfactory among rubber tappers.

Therefore, it was concluded that rubber tappers had a high prevalence of musculoskeletal disorders and there were many risk factors associated with the rubber tapping process. Health education programmes and necessary work place modifications are recommended for prevention of work related musculoskeletal disorders.

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