

**Introduction:** Tobacco and alcohol were chemical carcinogen, which has genotoxic effects on buccal mucosal cells. Previous studies have demonstrated the micronuclei formation in peripheral blood lymphocytes and exfoliated buccal cells in smoking tobacco, smokeless tobacco and alcohol habituated individuals of normal population (male / female). Transgender are neglected special vulnerable group of people, who consume more amounts of tobacco products and alcohol. The medical literature has emphasized on two genders (male and female), the existence of a third gender (Transgender) is almost negligible in the literature.

**Aim:** The aim of the present study is to evaluate the micronuclei in the exfoliated buccal mucosal cells in transgender population in and around Salem district of Tamilnadu.

**Material and methods:** A total of 120 transgender subjects were enrolled in this study 30 were in the control group and 90 were in the study group (Group A) population. The study group (Group A) was further divided into three sub groups- group A1, group A2, group A3. Group A1 included subjects (30 nos.) exposed to only chewing tobacco, group A2 subjects (30 nos.) habituated to alcohol only and group A3 (30 nos.) subjects who had both the habits. Buccal mucosal exfoliated cells obtained from healthy mucosa of transgender population were evaluated for micronucleus by staining with Papanicolaou and Giemsa stain.

**Statistical analysis:** The results are analyzed statistically using Kruskal-wallis test, t-Test and Mann - Whitney test and a P value of less than 0.001 was considered to be statistically significant.

## ABSTRACT

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**Results:** The mean micronuclei frequency noted in study groups was significantly higher than the control group .More number of micronuclei was observed in those habituated to both the habits than with chewing tobacco habit alone. The least number of micronuclei was observed in those who are habituated to alcohol. The results between the groups were statistically significant. Evaluation of micronuclei in PAP stained smears showed higher number of micronuclei than Giemsa stained smears

**Conclusion:** The results of the present study showed the mean micronuclei frequency observation is similar to previous studies conducted in normal population. There appears to be no scientific publication of micronuclei assessment in transgender population who are habituated to chewing tobacco, alcoholics and both the habits. Hence further studies are required to assess the micronuclei induction in transgender population who are habituated to different forms of tobacco products and alcohol consumption.

**Keywords:** Transgender micronuclei, Eunuch micronuclei, Transgender