

**ORIGINAL ARTICLE****FACTORS AFFECTING SMOKING MENTHOL BRAND CIGARETTE AMONG THE ADULT POPULATION IN SARAWAK, MALAYSIA**

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**ABSTRACT**

*Menthol brand cigarette has been found to be linked with early initiation of smoking and addiction of nicotine. This study was designed to find out the factors associated with smoking menthol brand cigarettes among adult population in Sarawak. This was a cross-sectional study conducted among the adult population in Sarawak. Data were collected from ten villages in Kota Samarahan and Kuching Division by face to face interview using modified Global Adult Tobacco Survey questionnaire. Non-probability purposive sampling method was adopted to select the villages. All the households of the villages were visited, and an adult member was selected randomly from each household irrespective of sex. After missing value imputation, 1000 data sets were analysed using statistical software SPSS 19.0 version. Analysis showed that 28.8% of the respondents were current smokers, and 7.8% were past smokers. Among the smokers, 56.3% were habituated with menthol brand cigarette. Logistic regression analysis revealed that age at initiation of smoking before 15 years of age (OR=11.68, 95% CI: 4.25, 32.10), smoking within five minutes of wake up from sleep (OR=3.20, 95% CI: 1.35, 7.54), nature of job as business (OR=4.81, 95% CI: 2.13, 10.86) and service holders (OR= 3.85, 95% CI: 2.07, 7.16) and family size 5 and above (OR=2.22, 95% CI: 1.25, 3.94) appeared to be important determinants of smoking any menthol brand cigarette ( $p<0.05$ ). Menthol is a prominent design feature to attract and retain younger smokers. It does not necessarily make the transition from experimenting with cigarettes, but to encourage early smokers to become a confirmed smoker. So, anti-tobacco public health programme should focus on age-specific community approach.*

**Keywords:** Cigarettes, Menthol, Smoking, Sarawak

**INTRODUCTION**

Tobacco consumption and product have increased globally since its introduction, especially in developing countries. In Malaysia, the disease burden of respiratory diseases is apparent with 11.02% of the total cases of admission, the second highest principal cause of hospitalization.<sup>1</sup> The National Health and Morbidity Survey 1996 (Second NHMS, 1996) showed that the prevalence of smoking in Sarawak was 22.3%, where 16.5% were in urban, and 26.4% were in rural region. Menthol cigarettes have been found to be more addictive and has led to a higher difficulty of smoking cessation among smokers.<sup>2</sup> Among different ethnicity, menthol cigarettes were equally preferred as compared to non-menthol cigarettes in young people.<sup>3</sup> The impact of menthol cigarette smoking, including nicotine dependence is worrying the public<sup>4-6</sup> and the younger generation<sup>7</sup> globally. Brown & Williamson reported that smokers have the highest rates of lung cancer of any racial/ethnic group,<sup>8</sup> but other study demonstrated that African American smokers are also more likely to die from lung cancer than white smokers.<sup>9</sup> Murray et al.<sup>10</sup> found that male (but not female) menthol smokers had a modestly increased risk of lung cancer with a relative risk of 1.45 (95% CI:1.03-2.02). Kabat and Hebert (1994)<sup>11</sup> in a case control study suggested a small positive association between pharyngeal cancer in menthol smoking males, but not females (OR=1.7; 95% CI: 0.8-3.4). However, the

difference was not statistically significant. Previous studies showed that menthol cigarettes appear to produce a greater boost in nicotine and carbon monoxide levels than nonmenthol cigarettes.<sup>12-14</sup> This possibly explains that menthol could potentiate the uptake of carcinogenic constituents of cigarette smoke.

Young people, are the targets for marketing as they are adventurous and willing to try new things. The menthol cigarette is unique, in which it is the only allowed additive in cigarettes. Marketing schemes to attract young people to smoke menthol cigarettes are high<sup>2,15,16</sup> not only in the United States but also in the Asian countries, such as Singapore (22%), Hong Kong (26%) the Philippines (60%)<sup>17</sup> and even in Malaysia.<sup>18</sup> Menthol cigarettes are associated with increasing trend of smoking initiation among young non-smoking women<sup>15</sup> and young male adults<sup>16</sup> as well. Several factors have been found to be associated with the initiation of menthol cigarette smoking, including those trying to start smoking<sup>19</sup>, female<sup>19,20</sup>, those who smoked less frequently<sup>19</sup> and being of younger age.<sup>4</sup> The significance of this study towards the current knowledge of tobacco was in identifying the local factors associated with choosing the smoking of menthol cigarette and to understand the initiation factors and its patterns. In this context, the main objective of this study was to determine the factors associated with smoking menthol brand cigarettes and smoking initiation among adult population in Sarawak.