Trends in Poly-Tobacco Use among Mississippi Secondary School Students

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**Background**
Poly-tobacco use is the combined use of cigarettes and other forms of tobacco (e.g., smokeless tobacco, cigars, pipes; Bombard, Pederson, Koval, & O’Hegarty, 2009). Using multiple forms of tobacco may lead to increased health problems, such as increased nicotine exposure, and nicotine addiction (Bombard, Pederson, Nelson, & Malarcher, 2007). Adolescents who engage in poly-tobacco use, compared to cigarette only users, are at an increased risk for participating in deviant behavior, such as skipping school and driving under the influence (Bombard et al., 2009). There is also an increased risk of using other substances such as illicit drugs and alcohol (Bombard et al., 2009). Young adults, adolescents, and males are the populations indulging in higher rates of poly-tobacco use (Bombard et al., 2009). According to Bombard et al. (2009), half of adolescents that smoke cigarettes currently are also poly-tobacco users.

**Objective**
To determine the percentage of Mississippi middle and high school students who engage in poly-tobacco use and to investigate the trend of tobacco use as youth shift away from cigarette use only.

**Methodology**
A multi-stage sample design was applied with public middle and high schools selected proportional to enrollment size. Classrooms were chosen randomly within selected schools and all students in selected classes were eligible for participation. Data were collected by means of an anonymous and confidential self-administered questionnaire. The questions were group administered in classrooms during a normal class period by teachers following standardized procedures.

**Results**
Overall, the prevalence of any current tobacco use decreased from 2000 to 2011 for both middle school students (25.7% to 10.6%, p < .05) and high school students (37.3% to 26.1%, p < .05). However, poly-tobacco use among tobacco users increased substantially during this time period. Cross tabulation analyses among tobacco users indicated that exclusive cigarette use decreased for middle school students (35.6% to 19.4%, p < .05) and high school students (39.7% to 24.4%, p < .05) from 2000 to 2011. Additionally, exclusive smokeless tobacco use doubled from 12.8% in 2000 to 24.5% in 2011 for middle school tobacco users. Among high school tobacco users, exclusive use of either cigarettes, cigars, or smokeless tobacco decreased from two-thirds using a tobacco product exclusively in 2000, to less than half using exclusive products in 2011. For high school tobacco users, a trend in an increase in poly-tobacco use and a decrease in exclusive tobacco product use was observed.

**Discussion & Further Implications**
Results suggest that adolescents are engaging in poly-tobacco use, indicating a shift from cigarette only use to other tobacco products. Tobacco programs and policies could benefit from changing prevention efforts from cigarettes only to other forms of tobacco use.