

# Smoking Status, Factors Associated With Secondary School Students Smoking And Smoking Cessation Intervention In Yongping, Yunnan

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## Background

China has over 300 million smokers which constitute to around one-third of the whole world's smoking. Smoking has led to 5.4 millions of death per year and over 600,000 non-smoker death. Major smoking-related diseases included cardiovascular disease, cancer and respiratory illnesses, attributing to an annual health costs of 41 billion RMB. Global Adult Tobacco Survey in China showed 52.7% smokers started daily smoking before 20 years old. Hazards of smoking initiation increased rapidly from 10 years old and peaked at 19 years old in China. Men smoking before age of 25 had 2 times higher mortality than nonsmokers and was significantly associated with number of cigarettes smoked. More investigation on adolescent smoking was needed to tackle it.

## Objectives

This study focused on adolescents in secondary school's smoking status and various stakeholders' views, including doctors, teachers and students, on smoking cessation interventions, which aimed to tackle tobacco control by suggesting effective smoking cessation interventions.

## Methods

Cross-sectional study was conducted with secondary students from Form 1 to 6 at Yongping Yizhong Secondary School using the Global Youth Tobacco Survey (GYTS), a validated school-based study to monitor tobacco use in youth thus guide and implement tobacco interventions designed by World Health Organization (WHO). Semi-structured interviews were conducted with 4 local clinicians, 4 teachers and 4 secondary students using the McGill Illness Narrative Interview Approach (MINI), a protocol reflecting symptom experience, illness narratives and health-seeking behavior. This study was approved by Health and Family Planning Bureau of People's Republic of China, Yongping People's Hospital and Yongping Yizhong Secondary School, The Li Ka Shing Faculty of Medicine of the University of Hong Kong.

## Results

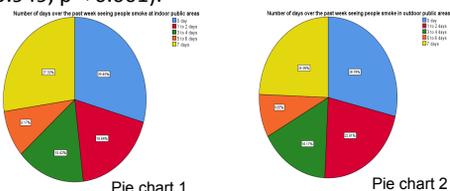
### Quantitative studies

#### Tobacco use

Attempt smoking rate was 26.8%, with male and female constituting 65.9% and 34.1% respectively. 10.1% of students first smoked under age of 12. Older age groups were found to smoke on more days,  $r = 0.114$ ,  $r^2 = 0.013$ ; regression equation ( $F(1, 1950) = 25.479$ ,  $p < 0.001$ ) and more cigarettes per day than younger ones,  $r = 0.088$ ,  $r^2 = 0.008$ ,  $p > 0.001$ ; regression equation ( $F(1, 1893) = 14.792$ ,  $p < 0.001$ ) (refer to figures 1 and 2). Most smokers 24.3% smoked at school, followed by 20.4% and 15.7% of smokers who usually smoked at home and social functions respectively.

#### Impacts of tobacco smoking

A positive correlation was found between the pocket money students had and number of cigarettes they smoked per day,  $r = 0.055$ ,  $r^2 = 0.003$ ,  $p < 0.001$ ; regression equation ( $F(1, 1944) = 5.949$ ,  $p < 0.001$ ).



#### Attitude towards tobacco

A strong evidence of relationship was found between perceived attractiveness of young smokers and proportion of smoking friends (Chi-square = 137.354,  $df = 6$ ,  $p < 0.001$ ) as well as having parent smokers (Chi-square = 25.669,  $df = 10$ ,  $p < 0.01$ ). Students with more smoking friends would accept cigarettes given by friends more easily than those with less smoking friends (Chi-square = 134.285,  $df = 6$ ,  $p < 0.001$ ).

Gender was associated with the extent of how smoking in celebrations and social functions would be comfortable to others (Chi square = 127.401,  $df = 2$ ,  $p < 0.001$ ), the extent they believed they would like smoking (Chi-square = 168.828,  $df = 4$ ,  $p < 0.001$ ), the extent they would accept cigarettes (Chi-square = 194.117,  $df = 3$ ,  $p < 0.001$ ) and attractiveness perceived (Chi-square = 130.039,  $df = 2$ ,  $p < 0.001$ ). In all cases male perceived more positively of smoking than female.

#### Second hand smoking exposure

48.0% of students had people smoking at home 1 day or more during the last week, of which 39.7% had encountered this everyday. 54.3% and 68.5% of students saw people smoking in indoor and outdoor public spaces 1 day or more respectively, with 36.49% and 33.03% of them seeing the respective scenarios 5 or more days (refer to pie charts 1 and 2).

#### Tobacco control

29.7% students could buy cigarettes very close to school. 87.4% who tried to buy cigarettes had never been rejected from buying one due to their age. 13.7% bought individual tobacco sticks. 66.7% students saw people smoking on TV, videos or movies in the past month. 26.3% and 29.8% of students who watched TV or read newspapers had come across tobacco brand names during sports events or other programs on TV or in newspaper respectively.

#### Qualitative studies

All clinicians, teachers and students lacked knowledge on smoking cessation method. Students reported inadequate access to relevant and accurate knowledge about smoking cessation via internet. Teachers and clinicians had low expectation on the effectiveness of their advice on cessation thus held lenient and casual attitude. Attitude about current smoking cessation was investigated and more interventions were suggested to be implemented.

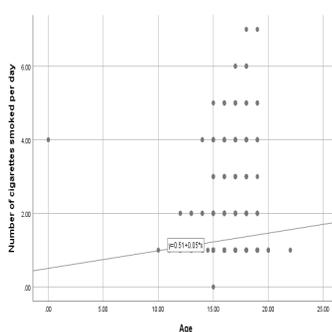


Figure 1

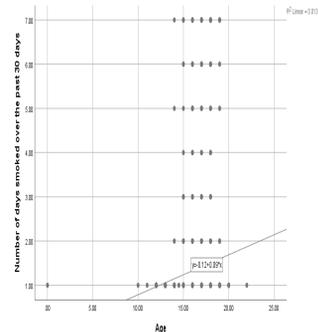


Figure 2

## Results

Smoking was found to be highly prevalent among secondary school students in Yongping, Yunnan. Current health interventions required modifications and more had to be done in families, school, hospital, legislation and government.