ORIGINAL ARTICLE

# Religious Personality and Smoking among Form Two Students in Rural Schools in Malacca, Malaysia

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**ABSTRACTS**

**Introduction**: There is an increasing trend in smoking among rural adolescents compared to urban adolescents in Malaysia. This study was to determine the relationship between religious personality and smoking among form two students from the rural schools in Malacca. **Methods**: This was an unmatched case-control study conducted from May 2010 to August 2010 among form two school children from rural area in Malacca. There were 484 cases, and 444 controls selected using randomized cluster sampling. The dependent variable was smoking, and the independent factors were religious personality. Validated and reliability-tested questionnaires were used for data collection. **Results**: The mean age (year) at which smoking was first tried among the cases was 11.39 + 2.107. There were eleven out of twenty three significant differences between religious personality statements in the cases and control group. Those were: reciting the Quran/Holy book/Scriptures even when busy, making efforts to deepen the understanding of the religion, trying to understand the teachings of the religion in the Holy book/Quran, inviting others to perform solat/prayer/religious service, making sure all the family members are following the teachings according to the religion, referring to the learned people when feeling uncertain about the rulings/teachings of the religion, performing work duties enthusiastically because of the religion/God, making efforts to remember death and afterlife often, making efforts to internalize the ethical conduct of the religion in daily life, setting aside money every year for religious purposes and looking for opportunities to give charity. **Conclusion**: Religious personality is an important factor which may influence adolescents volved in smoking.

**KEYWORDS**: Smoking, adolescent, case control, religion, personality

## INTRODUCTION

Morbidity and Mortality Weekly Report of Centres for Disease Control and Prevention 2006 has defined smoking as ever tried cigarette smoking even only one or two puffs in their lifetime. Most of the adult smoker started their tobacco used since adolescent in the United States of America and about 80% of the adult smokers begin smoking at the age of less than 18 years-old.[1] In Malaysia, the prevalence of smoking in adult is 27.0% where as in adolescent is 14.7%. Furthermore, there was an increasing trend of smoking for the adolescent age group which was 17.9% (95%CI 16.7-19.1) in 1996 to 18.4% (95%CI 16.2-20.6) in 2006. Of all the states in Peninsular Malaysia, Malacca was being reported as having the highest prevalence of smoking among the adolescence, which was 19.6% (CI 10.0-29.2). On the other hand there was a significant different on the prevalence of smoking among the urban (12.3%) and rural (18.4%) adolescents ($p<0.05$) in Malaysia. The mean initiation age of smoking in Malaysia was 13.5 years-old.[2]

Smoking has short and long-term implications. Indeed, this smoking behavior has been linked with the negative behavior such as drug use and school truancy, and the long-term implications were cardiovascular diseases, unplanned pregnancy, Diabetes Mellitus, mental and physical disability, which finally may reduce the productivity of a country.[3]

Religion has been defined as the system of social interactions consisting of those beliefs and activities that order human life by relating human beings to spiritual beings and/or powers. Beliefs, rituals, and individual experiences are everywhere a component of religious system.[4] Thus, religion is meant to facilitate positive behaviors and life outcomes and guide its adherents away from the social ills and self-destructive behaviors. According to Syed Farid Al Attas, "Students have to be brought up with the idea that religion is a way of life. It is meant to facilitate their lives, it is meant to bring peace and harmony into their lives. Religion is not a set of rules and regulation that they are forced to follow".[5]

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Religiosityis elements of religion of a man on the intra and interpersonal worlds. Religious behavior to human beings is really significant in their daily living.[6] Many theories have explained how religiosity can protect human from negative behavior. Among the mostcommon theory is the social control and social support theory. This theory, in summary, stated that religiosity in young people internalizes control against deviant behavior.[7] Socio ecological theory revealed that the development of human behavior is influenced by an individual, family, schooling and environmental factors whereby the religion is part of the individual factor.[8]

Smoking was one of the ten risky behaviors studied by Sinha in 2007. In this study conducted on 2004 adolescents aged 11 to 18 years old showed religiosity variables had a significant association with reduce risk behaviors after controlling the variables of family background and self-esteem.[9] Another study also found that the more religious a teen perceived him or herself, the less the likelihood of smoking. Even in the heterosexual young adult group, it was revealed that each unit increase in religiosity reduces the odds of cigarette smoking by 13%.[10] However, the importance of religions may be reflected differently because people who claimed that religion is important in life may not behave as such.

With the increasing trend of smoking among the adolescent, preventive measures should be taken in order to prevent them from becoming an established smoker in their adulthood. In Malaysia, even though many studies on smoking have been conducted, the focus on religiosity and negative behavior particularly smoking is very sparse. Since religiosity plays an important role in the development of human behavior, there is a need to study the relationship between commitment to the religious entity and smoking. Furthermore, knowing that all the religions refrain from practicing any negative behavior, understanding and practice of such religions need to be examined.

**MATERIALS AND METHODS**

Malaysia, with a population of 28.895 million, is divided into Peninsular Malaysia and East Malaysia. Peninsular Malaysia is further divided into 12 states with total area of 330,803 kilometer square. Malacca is one of the states in Peninsular Malaysia with an area of 1,664 kilometer square and the population of 771.5 thousands. There are three districts in Malacca, which are Alor Gajah, Jasin and Central Malacca.[11]

Malaysia has three levels of educational systems, which are primary, secondary and tertiary levels. The secondary level is divided into lower secondary for students aged 13 to 15 years old and upper secondary level consists of 16 to 17 years old. All the secondary schools in Malaysia are divided into urban school, suburban school and rural school. They are either government or private school but for this study, only government schools were included. There were 73 secondary schools in Malacca but only 59 schools are using the standard curriculum. Out of 59 schools, 34 of them are rural schools, which comprised of 13,385 students.

This study was an unmatched case-control study which was conducted in Malacca, Malaysia from May 2010 till August 2010. The study populations consisted all the 14-year-old students in the rural area of Malacca. The sample size was calculated using Schlesselman (1982) whereby the alpha was taken at the level of 0.05 (Z1-α/2) with 80% power (Z1-β).12 The minimum sample size calculated were 770 with 385 for cases and 385 for control. However, about 20% of no response rate was considered and gave rise to 924 respondents. All the 34 rural schools were listed regardless of the district. Cluster sampling was used and about 11 schools were selected using simple random sampling.

After selection of the school, all students were given a screening questionnaire in order to group them as smokers (case) or non-smokers (control). A simple random sampling was used to select the subjects from the two groups. Finally, the total respondents in this study were 928 with 484 of them are cases and 444 as controls.

The inclusion criteria for the cases group were form two (14 years old) school children who were smoking, study in standard government education schools, with multiracial students, and non-boarding type of schools. The inclusion criteria for the control group were similar with the cases group except for the smoking status. Unisex school was excluded in this study.

Smoking in this study was defined as ever tried cigarette smoking even for only one or two puffs in their lifetime.[13] In adolescent, their self reporting of smoking at least over a 3-month recall period are reliable even during the early onset period when smoking is sporadic and infrequent.[14] Meanwhile, the religious personality was the independent factor which has 23 statements measured using Likert scale from 1 to 5. The Likert scale 1 is defined as frequent and 5 as never. Reverse scoring was conducted for the negative statements of religiosity personality. Questions on religious personality were adapted from Krauss et al.(2007). The questionnaire was sent to four expert panels: a clinical psychologist, medical anthropologist, public health specialist with experience in tobacco control programme of the country and health promotion specialist. The Cronbach Alpha on the religious personality questions was 0.94. Religious personality score was further divided into committed and non-committed according to the median score. Respondents who commit to their religion are defined as those with median score of less than 54.

Smoking among secondary school in Malaysia is strictly

prohibited; therefore, anonymity of each respondent was important. The process of data collection did not involve the teacher or any of the school representatives. Approval was obtained from the Ministry of Education Malaysia and the ethical approval was obtained from National University of Malaysia Medical Research Ethical Committee, Cheras, Kuala Lumpur, Malaysia.

Predictive Analysis Software Statistics version 18 was used to analyze the data. Bivariate analysis Mann Whittney U and Crude Odds Ratio were performed to determine the relationship between the dependent and independent variables. The odds ratio of smoking and the predictors were considered significant if the 95% confidence interval does not include one. All tests were significant at $p<0.05$.

## RESULTS

There were 484 cases and 444 controls participated in the study. The mean age (years) at which smoking was first tried among the cases was 11.39 + 2.107.

### Sociodemographic characteristics

This study showed that 88.2% of the smoking group was male. The majority of the subjects were Malay, which comprised of 91.7% of the case and 73.4% of the control group. Islam was the predominant religion, at 92.1% among the cases and 74.1% among the controls. Respondents from both of the groups were staying in a complete family which means staying with parents and siblings or grandparents. In this study, majority of both the case and control subjects came from parents with low level of education (Table 1).

Table 1. Sociodemographic and family characteristics of respondents

| Sosiodemographic Characteristics | Category | |
|---|---|---|
| | Case; N (%) | Control; N (%) |
| Gender | | |
| Male | 427 (88.2) | 170 (38.3) |
| Female | 57 (11.8) | 274 (61.7) |
| Ethnicity | | |
| Malays | 444 (91.7) | 326 (73.4) |
| Others | 40 (8.3) | 118 (26.6) |
| Religion | | |
| Muslims | 446 (92.1) | 329 (74.1) |
| Others | 38 (7.9) | 115 (25.9) |
| Marital status | | |
| Married | 408 (86.4) | 380 (86.8) |
| Divorce/Separate | 64 (13.6) | 58 (13.2) |
| Type of family | | |
| Incomplete family | 84 (17.4) | 73 (16.4) |
| Complete family | 400 (82.6) | 371 (83.6) |
| Father's level of education | | |
| Low | 463 (95.7) | 425 (95.7) |
| High | 21 (4.3) | 19 (4.3) |
| Mother's level of education | | |
| Low | 471 (97.3) | 436 (98.2) |
| High | 13 (2.7) | 8 (1.8) |

### Religious personality among cases and control

There were 23 statements to measure religious personality. The median of each statement in cases and controls were as in Table 2.

A Mann Whitney U test was conducted to evaluate the difference between religious personality among cases and controls. There were 11 statements that showed significant difference between the cases and controls ($p<0.05$), as shown in Table 2.

### Associations between religious personality among cases and controls

From the study, both case and control subjects showed lower religious commitment, which was at 38.0% and 49.1% respectively.

Cases whom were committed to the religion were protected from being smokers compared to the non-committed cases (OR=0.636, 95%CI 0.490-0.826) (Table 3).

Table 2. Differences between religious personality statements with cases and controls

| Statements | Case Median (IQR) | Control Median (IQR) | Z-value | p-value |
|---|---|---|---|---|
| I refer to Al Quran/my Holy book/ Scriptures to obtain tranquility (peace). | 3.0 (2.0-4.0) | 3.0 (2.0-3.0) | -1.557 | 0.119 |
| I make sure that I understand the demands/obligations/teachings of my religion. | 2.0 (1.0-3.0) | 2.0 (1.0-3.0) | -1.606 | 0.108 |
| I find time to recite the Quran/Holy book/Scriptures even if I am busy. | 3.0 (2.0-4.0) | 3.0 (2.0-4.0) | -2.006 | 0.045 |
| I make effort to deepen my understanding of law/rules/teaching/ percepts of my religion. | 2.0 (1.0-3.0) | 2.0 (1.0-3.0) | -3.869 | P<0.01 |
| I practice solat/religious prayers as taught in my religion. | 2.0 (1.0-3.0) | 2.0 (1.0-3.0) | -1.542 | 0.123 |
| I try to understand the teachings of my religion in the Holy book/Quran. | 2.0 (1.0-3.0) | 2.0 (1.0-3.0) | -4.611 | P<0.01 |
| I invite others to perform solat/ prayer/religious service | 3.0 (2.0-3.0) | 3.0 (1.0-3.0) | -3.871 | P<0.01 |
| I use the lessons from the Quran/ Holy book/Scriptures in my conversations. | 3.0 (2.0-4.0) | 3.0 (3.0-4.0) | -1.494 | 0.135 |
| I will seek for God's help first then to others when faced with difficulty. | 2.0 (1.0-3.0) | 2.0 (1.0-3.0) | -0.106 | 0.916 |
| I make an ongoing effort to increase the frequency of my good deeds. | 2.0 (2.0-3.0) | 2.0 (1.0-3.0) | -1.409 | 0.159 |
| I make sure all my family members are following the teachings of my religion. | 2.0 (1.0-3.0) | 2.0 (1.0-3.0) | -4.783 | P<0.01 |
| I refer to the people who know when I feel uncertain about the rulings/ teachings of my religion. | 2.0 (1.0-3.0) | 2.0 (1.0-3.0) | -3.579 | P<0.01 |
| I perform my work duties enthusiastically because of my religion/God. | 2.0 (1.0-3.0) | 2.0 (1.0-3.0) | -2.271 | 0.023 |
| I like to take advantages of opportunities to understand my religion with my family. | 2.0 (1.0-3.0) | 2.0 (1.0-3.0) | -1.530 | 0.126 |
| I make effort to obey rules/advice of my religion (God) in my daily life. | 2.0 (1.0-3.0) | 2.0 (1.0-3.0) | -1.740 | 0.082 |
| I am involved in religious work. | 3.0 (2.0-3.0) | 3.0 (2.0-3.0) | -1.483 | 0.138 |
| I make effort to remember death and afterlife often. | 2.0 (1.0-3.0) | 2.0 (1.0-3.0) | -5.116 | P<0.01 |
| I avoid something if I am unsure about its religious implication. | 3.0 (2.0-3.0) | 2.0 (1.0-3.0) | -0.779 | 0.436 |
| I frequently share my religious values with my friends. | 3.0 (2.0-3.0) | 3.0 (2.0-3.0) | -0.155 | 0.877 |
| I make effort to internalize the ethical conduct of my religion in my daily life. | 2.0 (1.0-3.0) | 2.0 (1.0-3.0) | -2.684 | 0.007 |
| I love my brothers and sisters in my religion as I love myself. | 1.0 (1.0-2.0) | 1.0 (1.0-2.0) | -1.759 | 0.79 |
| I set aside money every year for religious purposes. | 3.0 (2.0-4.0) | 3.0 (2.0-4.0) | -5.069 | P<0.01 |
| I look for opportunities to give charity. | 3.0 (2.0-3.0) | 3.0 (1.0-3.0) | -3.285 | 0.001 |

**Associations between religious personality among cases and controls**

From the study, both case and control subjects showed lower religious commitment, which was at 38.0% and 49.1% respectively. Cases whom were committed to the religion were protected from being smokers compared to the non-committed cases (OR=0.636, 95%CI 0.490-0.826) (Table 3).

Table 3. Odds Ratio and 95% confidence interval (CI) for smoking in the religious personality comparison between cases and control subjects

| Variable | Category | | p-value | OR (95% confidence interval) |
|---|---|---|---|---|
| | Case (%) | Control (%) | | |
| Committed | 184 (38.0) | 218 (49.1) | p<0.001 | 0.636 (0.490-0.826) |
| Not Committed | 300 (62.0) | 226 (50.9) | | |

**DISCUSSION**

The result of this study implied that commitment towards religion, regardless of the type of the religion, play an important role for the adolescents from being a smoker. Although there were some studies on religiosity that showed a significant protective factor towards cigarette smoking, there was lack of studies particularly among adolescents in Malaysia.

There was a cross-sectional study which was conducted in Kelantan, Malaysia among upper secondary male students that found religion, parents' influence, health protection, and financial reasons as factors preventing the non-smokers from smoking.[15] Another study on how religious activity is associated with risk behaviors, concurrently and developmentally among 9th grade urban African American adolescents also revealed that higher levels of religious activity in the predicted smaller increases in marijuana use among males and cigarette use among females.[16]

Our findings is also supported by a study done by Nonnemaker et al. (2006), which showed that the initiation of regular smoking among the previously non-smoking adolescents was being protected by religious activities. Initiation of experimental smoking was also found reduced when the young person frequently attended religious services or a religious youth group.[17]

A study done by Mary (2002) revealed that not only attending the religious activity played an important role but the frequency of attending also affected the smoking habit. The study showed that 17 percent of young adults who attended church at least weekly smoke, compared to 23 percent of those who attended at least once a month, and 34 percent of those who attended less than once a month or never. Whereas among smokers, those who frequently attended the church smoke fewer cigarettes per day than those who attended less frequently.[18] Another study done by Rostosky et al.(2007) also supported that religiosity is able to protect from substance use. Their findings showed that adolescent religiosity protected them against binge drinking, marijuana use and cigarette smoking.[11]

Since this study was a case control study, there was possibility of misclassification of cases since diagnoses of smoking was only done using screening by questionnaire, which can be subjected to measurement bias. In addition, over or underreporting also may occur. However, all the respondents were informed in term of confidentiality of the data from the school management and their parents. As this study only involved the school going adolescents, recruitments of the drop outs may give better results in understanding the relationship of the religiosity and smoking among rural adolescents. Other limitation is a recall bias; since the respondents were young adolescents in a rural area, recall bias may occur although study done by Eppel et al. (2006) showed that there was no problem on recall bias.[14]

**CONCLUSION**

Religiosity is one of the important factors among the rural adolescents that protect them from smoking. Measures which focus on religiosity need to be planned in order to prevent more adolescent engaged in smoking in the future.

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