RESEARCH ARTICLE

Editorial Process: Submission:01/06/2018 Acceptance:04/05/2018

A School-Based Study of the Influence of Students' Relationship with Teachers on Their Cigarette Smoking Behaviour in Jamaican

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Abstract

Background: Cigarette is one of the most widely used addictive substances and a leading cause of death. Prevalence of cigarette smoking has been reported to be high in the Caribbean, including Jamaica. The aim of this study was to determine whether students' relationship with teachers influences their cigarette smoking behaviour in Jamaica. **Methods:** This was a statistical analysis of data based on a nationally representative sample of 3,365 secondary school students drawn from 8th to 12th grade across 38 secondary schools in Jamaica in 2013. Descriptive and inferential statistics were performed using SPSS. **Results:** There were significant differences in the past year and past month cigarette smoking respectively among students who had very good, good, average, bad and very bad relationship with their teachers ($X^2 = 11.67$, $p = 0.02$; $X^2 = 9.61$, $p = 0.04$) respectively. Students with very good relationship with teachers, were significantly less likely to report smoking cigarette in the past month (AOR= 0.09, 95% CI= 0.01- 0.88). Students who were 2 - 10 years, had very good relationship with teacher and father, and whose parents knew friends very well, were 0.96, 0.69, 0.70 and 0.94 times as likely to report smoking cigarette in the past year. However, these associations were not significant after controlling for other factors. **Conclusion:** Students' relationship with their teachers has a strong influence on cigarette smoking. Students with very good relationship with teachers were significantly less likely to report smoking cigarette in the past month.

Keywords: Cigarette smoking- relationship with teachers- secondary school students- Jamaica

Asian Pac J Cancer Prev, **19**, Alcohol and Tobacco Use in the Caribbean Suppl, 7-12

Introduction

Tobacco epidemic is one of the greatest public health threats the world has ever faced. It is also the most widely used addictive substance worldwide and one of the leading causes of death (World Health Organization [WHO], 2000 and 2017).

Tobacco use is usually started and established during the adolescence period (U.S. Department of Health and Human Services, 1994 and 2000). Among young people, the health consequences of smoking are reinforced by the fact that most of the young people who smoke regularly continue to smoke throughout adulthood. It is estimated that, on daily basis, more than 3,800 younger people under the age of 18 initiate cigarette smoking. Annually, almost 500,000 people in America die prematurely due to smoking or exposure to secondhand smoke (Centres for Disease Control and Prevention [CDC], 2017). Young people who smoke were also found to more likely to consume alcohol, more likely to use marijuana and more likely to use other drugs (U.S. Department of Health and Human Services, 1994 and 2000; Oshi et al., 2017). The global prevalence of smoking was far higher among men than women, 41.1% versus 8.9% in 2005 (WHO, 2010a).

Several factors have been reported to influence students' cigarette use. Relationship with teachers has been documented as one of the important factors influencing cigarette use among young people (WHO, 2000; McNeely and Falci, 2004). Students view their teachers as role models and as such teachers have ability to discourage students from drug abuse (Government of Bermuda, 2017). Since students spend much of their time in school, those with good relationship with their teachers are less likely to use drugs (McNeely and Falci, 2004). On the other hand, students with poor relationship with teachers were less likely to recognize dangers of substance use

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(McNeely and Falci, 2004). Teachers are also likely to correct misconceptions that students may hold regarding substance use (Centre of Research Excellence in Mental Health and Substance Use, no date).

Young people are more likely to use tobacco if they see that tobacco use is acceptable or normal among their peers (U.S. Department of Health and Human Services, 1994). Also, having or living with parents/guardians who smoke may encourage young people to start smoking or use cigarettes. Other factors include lack of support or involvement of parents, and low levels of academic achievement (U.S. Department of Health and Human Services, 2000). Gender is another factor in exploring the prevalence and predictors of tobacco use. About 200 million of the world's one billion smokers are women. Girls and boys start using tobacco for different reasons, and tobacco use harms women and men differently. For instance, girls and women are more likely to fear weight gain than boys, and to initiate and continue smoking for weight control, girls tend to gain more weight after quitting smoking than men. Women and girls tend to smoke as a "buffer" against negative feelings, while men smoke more from habit or to enhance positive sensations (CDC, 2017, WHO, 2010b).

In Jamaica, lifetime prevalence of cigarette use was 24.61%, slightly below the average prevalence

Little research has been done so far on the influence of students' relationship with teachers on their cigarette smoking behaviour in Jamaica. Atkinson et al., (2015) conducted a study on current trends in adolescent substance use. Their study explored a wide range of substances used by adolescents but did not examine the role of this important factor on cigarette smoking. Muula et al., (2008) researched cigarette smoking among in-school adolescents in Jamaica, using data from the Global Youth Tobacco Surveys of 2000 and 2006. However, they did not investigate the association between students' relationship with their teachers and their (students') smoking status. This current study seeks to contribute to filling this gap in evidence. It is hoped that the findings of this study will help guide programme planning for cigarette smoking prevention and control among students in Jamaica and other Caribbean nations with similar social and cultural contexts.

Materials and Methods

The study design was a descriptive, cross-sectional, questionnaire survey of 3,365 students drawn from 38 public and private secondary schools in Jamaica in 2013 (National Schools Survey 2013). The survey was conducted by the National Council on Drug Abuse under the sponsorship of the Organization of American States/ Inter-American Drug Abuse Control Commission (OAS/ CICAD). Grades eight, 10, 11 and 12 students completed the questionnaires, which were self-administered. Comprehensive details of the survey design were previously published by Atkinson et al., (2015).

The key independent variable was students' relationship with teachers at school. It was assessed with the question: "How would you describe the relationship you generally have with your teachers at school?" The response options were: 1= very good, 2= good, 3= average, 4= bad, 5= very bad. The dependent variable were past year and past month cigarette smoking, which was assessed with two questions: (a) Past year: Have you smoked cigarettes over the past 12 months? Response options were: 1= Yes, 2= No. (b) Past month: Have you smoked cigarettes over the past 30 days? Response options were: 1= Yes, 2= No.

Data analysis

Descriptive statistics were computed for socio-demographic characteristics, relationship with teachers, relationship with father and mother, whether parents knew the friends of the students well, and whether students had conversations with parents about dangers of drug abuse. Bivariate analysis, using Pearson's Chi Square

Table 1. Sociodemographic Characteristics of Secondary School Students in Jamaica, 2013 (N= 3,365)

Variables	Frequency (n)	Percentage (%)
Age		
2- 10 years	229	6.8
15- 18 years	625	18.6
Gender		
Male	1,426	42.4
Female	1,915	56.9
Relationship with Teacher		
Very good	987	29.3
Good	1,303	38.7
Average	853	25.3
Bad	76	2.3
Very bad	56	1.7
Relationship with Father		
Very good	1,181	35.1
Good	1,254	37.3
Bad	378	11.2
Very bad	291	8.6
Not applicable	153	4.5
Relationship with Mother		
Very good	2,063	61.3
Good	935	27.8
Bad	156	4.6
Very bad	86	2.6
Not applicable	31	0.9
Parent knows friends		
Very well	1,449	43.1
More or less	560	16.6
Slightly	782	24.3
Not at all	432	13.4
Conversation on drug		
Yes	1,522	45.2
No	1,813	53.9

n, number; %, Percentage; Note, Some data may be missing, and percentages may not add up to 100 due to rounding.

test, was done to determine inter-group differences on dependent variables. The level of significance was set at P= 0.05. Binary logistic regression modelling was done to assess for factors associated with past year and past month cigarette smoking.

Ethical Approval

The NSS was approved by the Ministry of Health, Jamaica, and the Ethics Committee of the Faculty of Medical Sciences of the University of the West Indies, Mona Campus. Processes of the ethical measures used in the NSS were previously detailed by Atkinson et al., (2015).

Results

The total number of students was 3,365. Majority of students were females, 1,915 (56.9%). Over 1,500 (45.2%) of students had a conversation with parents regarding dangers of drugs. Nine hundred and eighty-seven (29.3%) of students had a very good relationship with their teachers, 1,181 (35.1%) had very good relationship with father. Majority 1,449 (43.1%) of students reported that their parents knew their friends very well (Table 1).

Table 2 displays the association between students' relationship with teachers, other characteristics, and cigarette use. Students did not differ significantly in their past year and past month cigarette smoking, by age group (X^2= 0.72, p= 0.18; X^2= 3.50, p= 0.60). There were significant differences in past year and past month cigarette smoking respectively among students who opined that they had very good, good, average, bad and very bad relationship with their teachers ($X^2 = 11.67$, $p = 0.02$; $X^2 = 9.61$, $p = 0.04$). The association

Table 2. Association between Relationship with Teachers, other Characteristics, and Cigarette Use among Secondary School Students in Jamaica, 2013

Variable	Past year n (%)	X^2 (P- value)	Past month n (%)	X^2 (P- value)
Age				
2-10 years	81 (36.0)	0.72 (0.18)	44 (48.4)	3.50(0.06)
11-18 years	225 (37.0)		99 (37.2)	
Gender				
Male	145 (34.9)	0.55 (0.45)	72 (36.5)	0.15 (0.69)
Female	169 (32.6)		76 (34.7)	
Relationship with teachers				
Very good	54 (26.0)	11.67 (0.02)	28 (31.5)	9.61 (0.04)
Good	117 (32.1)		56 (35.0)	
Average	114 (38.9)		46 (34.6)	
Bad	14 (45.2)		7 (53.8)	
Very bad	9 (39.1)		7 (77.8)	
Relationship with Father				
Very good	72 (36.6)	5.40 (0.24)	35 (34.0)	1.74 (0.78)
Good	120 (32.4)		59 (36.9)	
Bad	54 (38.6)		19 (31.7)	
Very bad	33 (29.5)		18 (40.0)	
Not applicable	25 (43.1)		9 (28.1)	
Relationship with Mother				
Very good	148 (30.6)	10.48 (0.03)	74 (35.1)	2.32 (0.67)
Good	110 (35.4)		43 (32.1)	
Bad	26 (37.7)		14 (45.2)	
Very bad	19 (54.3)		8 (42.1)	
Not applicable	2 (20.0)		2 (33.3)	
Parent know friends				
Very well	106 (30.9)	2.65 (0.44)	57 (37.0)	1.55 (0.66)
More or less	54 (33.8)		27 (40.3)	
Slightly	88 (35.5)		36 (32.1)	
Not at all	57 (37.7)		27 (39.1)	
Conversation on drug				
Yes	140 (34.3)	0.11 (0.73)	71 (38.8)	1.39 (0.23)
No	174 (33.3)		76 (33.2)	

n, number; %, Percentage; X^2, Pearson's Chi square; Note, Data may be missing and some percentages may not add up to 100 due to rounding.

Table 3. Multivariate Logistic Regression Analysis of Students' Relationship with Teachers, and other Factors, and Cigarette Use among Secondary School Students in Jamaica, 2013

	Past year		Past month	
Variable	COR (95%CI)	AOR (95%CI)	COR (95%CI)	AOR (95%CI)
Age				
2-10 years	0.95 (0.69-1.31)	0.96 (0.68-1.36)	1.57 (0.97-2.55)	1.59 (0.93-2.72)
11-18 years	1	1	1	1
Gender				
Male	1.10 (0.84-1.45)	1.10 (0.80- 1.51)	1.08 (0.72-1.62)	0.75 (0.46- 1.25)
Female	1	1	1	1
Relationship with teachers				
Very good	0.54 (0.22-1.33)	0.69 (0.25-1.92)	0.13 (0.02-0.67)	0.09 (0.01- 0.88)
Good	0.73 (0.31-1.75)	0.98 (0.36-2.64)	0.15 (0.08-0.76)	0.12 (0.01- 1.13)
Average	0.99 (0.41-2.46)	1.14 (0.42-3.06)	0.15 (0.03-0.75)	0.13 (0.01-1.18)
Bad	1.28 (0.42-3.83)	1.85 (0.53-6.45)	0.33 (0.04-2.25)	0.21 (0.01-2.52)
Very bad	1	1	1	1
Relationship with fathers				
Very good	0.60 (0.33-1.09)	0.70 (0.35-1.39)	1.31 (0.55-3.14)	1.24 (0.42- 3.65)
Good	0.63 (0.36-1.11)	0.67 (0.35-1.290)	1.49 (0.64-3.44)	1.26 (0.45- 3.54)
Bad	0.82 (0.44- 1.54)	0.80 (0.39-1.69)	1.18 (0.46-3.04)	0.94 (0.30- 2.87)
Very bad	0.55 (0.28- 1.06)	0.50 (0.24-1.07)	1.70 (0.64-4.51)	1.72 (0.53- 5.55)
Not applicable	1	1	1	1
Relationship with mothers				
Very good	1.76 (0.37- 8.39)	3.33 (0.37- 29.40)	1.08 (0.19-6.03)	1.13 (0.08- 15.84)
Good	2.18 (0.45- 10.48)	3.80 (0.43-33.60)	0.94 (0.16-5.36)	0.83 (0.05- 11.71)
Bad	2.4 (0.47-12.27)	4.94 (0.53-45.81)	1.64 (0.26-10.35)	1.38 (0.09- 20.02)
Very bad	4.75 (6.88-25.64	7.59 (0.76-75.25)	1.45 (0.21-4.48)	1.23 (0.07-21.17)
Not applicable	1	1	1	1
Parent knows friends				
Very well	0.73 (0.49-1.10)	0.94 (0.58-1.52)	1.09 (0.61-1.96)	0.99 (0.47- 2.07)
More or less	0.84 (0.52-1.33)	0.98 (0.58-1.65)	0.95 (0.47- 1.89)	1.12 (0.50- 2.51)
Slightly	0.90 (0.59-1.35)	0.98 (0.60-1.58)	1.35 (0.72-2.53)	0.82 (0.38- 1.77)
Not at all	1	1	1	1
Conversation on drug				
Yes	1.04 (0.79- 1.37)	1.15 (0.85-1.59)	1.27 (0.85-1.91)	1.20 (0.73- 1.97)
No	1	1	1	1

COR, Crude Odds ratio; AOR, Adjusted Odds ratio; 95% CI, 95% Confidence Interval

was also significant between past year cigarette smoking and relationship with mother (X^2 = 10.48, p = 0.03). There were however, no significant association between past year cigarette smoking and parents' knowledge of friends of students (X^2 = 2.65, p= 0.44). Having a conversation with parents regarding drugs was not significantly associated with past year and past month cigarette smoking respectively (X^2 = 0.11, p = 0.73, X^2 = 1.39, p = 0.23 respectively) (Table 2).

Table 3 displays the multivariate logistic regression analysis of factors associated with cigarette use among Jamaican students.

Male students had 1.10 times the odds of past year cigarette smoking compared to females (COR= 1.10, 95% CI= 0.84-1.45). Almost similar result was obtained after controlling for other factors (AOR= 1.10, 95% CI= 0.80-1.51). Students who opined that they had a very good relationship with their teachers were less likely to report smoking cigarette in the past year in both unadjusted and adjusted model compared to those who had a very bad relationship with teachers (COR= 0.54, 95% CI= 0.22-1.33; AOR= 0.69, 95% CI= 0.25-1.92). Students who reported that their parents knew their friends very well were less likely to report smoking cigarette in the past year both in the unadjusted and adjusted models compared to students who opined that their parents did not know their friends at all (COR= 0.73, 95% CI= 0.49- 1.10; AOR= 0.94, 95% CI= 0.58-1.52). The association was however, not statistically significant.

Male students who had a very good relationship with teachers, and whose parents knew friends very well were

0.75, 0.09 and 0.99 times as likely to report smoking cigarette in the past month. On the other hand, students who were 2-10 years, had very good relationship with their fathers, and with mothers, and had a conversation with parents regarding drugs use were 1.59, 1.24, 1.13 and 1.20 times as likely to report smoking cigarette in the past month (Table 3).

Discussion

In this study, quite a high proportion of the students reported past year and past month cigarette smoking. This is likely due to the students imbibing the habit of smoking from seeing others smoke in their wider social environment (e.g. communities, etc.) because other studies have reported high prevalence of cigarette smoking in the country (OAS/CICAD, 2010). Thus, through the process of social learning (Bandura, 1971), they take up cigarette smoking as habits. Bandura, in his 1971 theory, postulated that individuals can learn new ways of behaving by simply observing others. This might apply to acquiring cigarette smoking behaviour by adolescents and youth. According to the US Department of Health, young people are more likely to use tobacco if they see that tobacco use is socially acceptable (US Department of Health and Human Services, 1994; WHO, 2017; CDC, 2017).

This study also found that a high proportion of students had a conversation with parents regarding dangers of drugs, suggesting that parents have been involved in the lives of the adolescents. In the bivariate analysis, student having a conversation with parent regarding drugs was not significantly associated with past year and past month cigarette smoking. The finding of this study, on the other hand, differs from the findings of the US Department of Health, which opined that young people who lack support or involvement of parents were more likely to report ever smoking cigarette (U.S. Department of Health and Human Services, 2000).

In this study, there were significant differences in past year and past month cigarette smoking respectively among students who opined that they had very good, good, average, bad and very bad relationship with their teachers in the bivariate analysis. Similarly, in the multivariate logistic regression analysis, students who were 2-10 years, had very good relationship with teachers, and with father, and whose parents knew their friends very well, were less likely to report smoking cigarettes in the past year. Although these associations were not significant. The findings of this study support the findings of other researchers who opined that students view their teachers as role models and as such teachers have ability to discourage students from substance use (McNeely and Falci, 2004; Government of Bermuda, 2017). Furthermore, the findings of this current study support available evidence which suggests that because students spend much of their time in school, those with good relationship with their teachers are less likely to use drugs including cigarette smoking (WHO, 2000; McNeely and Falci, 2004). On the other hand, students with poor relationship with teachers and school were less likely to recognize dangers of substance use on their academic pursuits (McNeely and Falci, 2004).

Students who were males, had very good relationship with mother, and who reported "Yes" to having conversation with parents regarding drug use were more likely to report smoking cigarette in the past year, but these relationships were not significant. It is not clear why this was so. However, in the Jamaican society, as in many patriarchal societies, mothers tend to less frequently apply disciplinary measures as opposed to what obtains with Afro-American women (Kircaali-Iftar, 2005; Adkison-Johnson, 2015). Secondly, mothers are known to be very nurturing and as such even though they may have a good relationship with their children, the children may not consider the mother's threat as serious enough to stop them from smoking cigarette. Indeed, having a good relationship with mother (or even father) who is a smoker may be associated with increased risks of adolescents smoking. Researchers elsewhere have reported that when parents smoke, their children have increased risk of smoking (Dereje et al, 2015; Wang et al, 2016; Cuissi de Andrade et al., 2017).

Male students who opined that they had a very good relationship with teacher and whose parents knew their friends very well were less likely to report smoking cigarette in the past month. The association was only significant for relationship with teacher. This finding seems to concur with other research findings which reveal that teachers are likely to correct misconceptions that students may hold regarding drug use (Centre of Research Excellence in Mental Health and Substance Use, no dated). This may explain why students' very good relationship with their teachers may help in protecting students against cigarette smoking.

In conclusion, having a very good relationship with teachers was a strong protective factor against past month cigarette smoking among students in Jamaica. Accordingly, programme planners and implementers of interventions on cigarette smoking prevention and control should incorporate strategies that will strengthen cordial relationships between students and their teachers.

Acknowledgments

The authors wish to thank the National Council on Drug Abuse (NCDA) and the CICAD Observatory on Drugs. Authors also wish to thank Sir Arthur Lewis Institute of Social and Economic Studies (SALISES) of The University of the West Indies, Mona, for providing the dataset.

Conflict of Interest

The authors declare they have no conflict of interest.

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