



Youth in Trouble: Tobacco use among School Students in Palestine

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Keywords:	Abstract
Youth; tobacco use; high school; risk behavior; Palestine	<u>Introduction</u> Tobacco use is the most preventable cause of death worldwide. Despite the high prevalence of tobacco use and of smoking-related diseases in Palestine, little is known about the smoking behavior of this age group. Therefore, this study aimed to determine the prevalence of cigarette smoking among adolescents attending school students in Palestine.
	<u>Methods</u> The Arabic version of the international Global School-Based Health Survey was self-administered to a stratified random sample of 363 male and 357 female students in grade 7 through 11 at four public schools in Tarqumia, Palestine. STATA version 11 was used to describe the data and to compare the association between genders.
	<u>Results</u> The results are based on the questionnaire responses of 720 study participants. Approximately one-third or 32.22% of the sample (47.38% of males and 16.81% of females) had smoked cigarettes on one or more days in the 30 days prior to survey. Cigarette smoking was higher among smokers (32.2%) than water pipes (25.6%). The majority of smokers (77.84%) started smoking at 13 years old or younger, 20.97% of smokers reported that they ever tried to stop smoking in the past 12 months, and the majority (79.03%) had no intention to stop smoking.
	<u>Conclusions</u> The results of this study may provide baseline data to develop a school-based anti-smoking health education program for public schools and encourage policy makers to ban smoking in schools by strengthening policies against smoking.

1. Introduction

Despite anti-smoking efforts worldwide, smoking and tobacco consumption continue to escalate in developing countries [1]. As in numerous countries worldwide, the prevalence of smoking is increasing in Palestine, consequently resulting in predictions of an increasing number of Palestinian who will die or be disabled as a result of tobacco-related diseases.

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Despite the harmful effects of tobacco use and the population's awareness of these health consequences; children and adolescents become new cigarette smokers daily [2]. If current trends are not mitigated, smoking is projected to kill one in six people worldwide [3]. Tobacco use contributes to the reduction in life expectancy and loss of productivity as well as increases medical costs [4]. Smoking has also been associated with a variety of other poor health outcomes including cancer, heart disease, respiratory disorders, and other non-communicable diseases. Moreover, WHO has identified smoking as the second leading cause of death worldwide, and killed more than Tuberculosis, HIV/AIDS [5].

The actual extent of smoking in Palestine remains unknown, and little is known about the smoking behavior of school students, particularly in southern rural areas. A study on the prevalence of smoking among refugee and non-refugee UNRWA school students aged 13 to 15 years old in the West Bank and Gaza Strip, Palestine revealed that the total prevalence of smoking among students was 20.45%, with 16.5% for refugee and 24.4% for non-refugee students [6]. Another study among grade school students aged 12 to 17 living in the Ramallah governorate at the center of the West Bank and the Jenin governorate north of the West Bank showed that the prevalence of smoking among the sample was 15.0% for males and 2% for females [7]. A recent cross-sectional study among college students aged 20 years old and above reported that smoking prevalence was 52.7% for males and 16.4% for females [8]. The rates of smoking have steadily declined over the last few decades in developed countries such as the United States, mostly because of policies that increased taxes imposed on the sale of cigarettes and the implementation of smoke-free environments at work and in public places. However, in

developing countries, tobacco consumption is rising by 3.4% annually [3].

However, without knowing where we are, we would not know where to go, and how best to get there. Given that data on smoking among different age groups is limited, baseline data are needed to quantify the smoking prevalence rate in Palestine in terms of its effect on various segments of the population. Equipped with this knowledge and as part of an assessment process of a subgroup to which anti-smoking programs were directed, health educators and health professionals could then better direct health promotion programs for successful outreach. Without understanding these fundamental issues, the target group would not fully benefit from the program.

The prevalence of smoking in among Palestinian youth is noted to be increasing over time, especially among students, with a rate of 20.0% in 2009, 25.0% in 2010 and 34.7% in 2012. However, previous studies in Palestine focused on urban areas in the north and middle regions, such that little is known about the risk behavior of rural young adults in the south region of Palestine. Thus, effective health promotional activities and anti-smoking strategies targeting rural areas cannot be addressed until risk behavior is identified. This study thus aims to determine the prevalence of smoking among school students aged 13 to 17 years old in a southern rural area called Tarqumia, Palestine.

2. Methods

The exploratory cross-sectional study design was employed and implemented for three months from February of the academic year 2011 in four public schools at Tarqumia, Palestine to estimate the prevalence of smoking among students. The population under study included all students enrolled in eight public schools in Tarqumia, in Palestine. The stratified sampling method (proportional allocation) was used to draw the required

sample. The sample size was determined by using a single-proportion formula. Given the total student population of 1862, the needed sample size was 640. The investigator enlarged the sample size to 740 to allow for loss of subjects. Consent was obtained, and student privacy was protected by allowing for anonymous and voluntary participation. Once surveys were submitted and commingled, individual surveys could no longer be identified. Moreover, no identifiers were collected to ensure anonymity of respondents.

2.1. Questionnaire

Anonymous self-administered questionnaire was randomly distributed to all proportionately sampled students from whole classes. All students in the study sample were given a modified Arabic version of the Global-Based School Health Survey (GSHS) developed by the WHO in 2001; the questionnaire is already available in Arabic language. Cronbach alpha was used to measure the internal consistency of the questionnaire, which was 0.82.

This questionnaire included 87 items covering demographic information, tobacco use, substance use behaviors, diet and weight concerns, as well as additional items relating to other health areas. The focus of this paper is on smoking behavior; therefore, analysis was conducted only on those variables relevant to these issues. This consisted of questions about the prevalence of smoking; age of smoking initiation; youth are asked the number of days during the 30 days preceding the survey that they smoked cigarettes. Those reporting that they smoked cigarettes on one or more days were considered current smokers. Similarly, youth were asked the number of days they used any other form of tobacco during the 30 days preceding the survey.

Similarly, youth were asked about use of smoked tobacco products other than tobacco (e.g. Argela or water pipe) during the previous 30 days. The focus of this paper is on racial disparities in smoking attitudes and behaviors; therefore, analysis was conducted only on those variables relevant to these issues.

2.2. Statistical analysis

Data of the questionnaire was entered and analyzed using STATA software version 11 to analyze the data. Descriptive statistics were used to show the demographic profile of the study sample. The mean and confidence interval were calculated to determine the prevalence of smoking among the study sample. Chi-squared and/or Fisher's exact tests were used to identify associations between dichotomous variables, and considered a two-tailed probability value of <0.05 to be statistically significant.

3. Results

The results are based on the questionnaire responses of 720 study participants. Table 1 summarizes the overall demographic characteristics of the 720 students. Females and males were evenly distributed. The population age ranged from 13 to 17 years, with the majority being between 16 and 17 years (43.4%). The mean age was 15.4 (standard deviation 1.3) years, with males and females being of almost equal ages.

Approximately 26.8% of all participants reported that they first tried cigarettes at age 10 years or older, with 33.1% for males and 20.45% for females. The Pearson chi-square revealed that males were more likely than females to report that they first tried cigarettes at 10 years or older ($X^2 = 80.44$, $p \leq 0.001$) (See Table 2).

Table 1. Demographic characteristics of the participants (n = 720)

Characteristics	Number of respondents	(n%)
Age-group (years)		
≤13	122	16.9
14-15	299	41.5
≥16	299	41.5
Gender		
Male	363	50.4
Female	357	49.6
Grades		
7 th grade	121	16.8
8 th grade	148	20.6
9 th grade	155	21.5
10 th grade	148	20.6
11 th grade	148	20.6

Almost three-quarters of males (77.84%) and more than half of the females (56.63%) in this study started smoking at or below 13 years old, with 10.27% of the males and 28.98% of females having started smoking between 14

and 15 years, and 11.89% of males and 14.46% of females having started smoking at or above 16 years old. In addition, 61.62% of males and 87.96% of females started smoking when they were 10 years old or older.

Table 2. Prevalence of cigarette smoking initiation among smokers based on age and gender (Number of smokers = 268, 185 boy, 83 girl)

Age interval	Gender		Pearson Chi-Square	P-value
	Male% (C.I.)	Female% (C.I.)		
≤ 13 yrs.	77.84 (71.16, 83.60)	56.63 (45.29, 67.47)	80.44 (6)	<0.001
14-15 yrs.	10.27 (6.30, 15.57)	28.92 (19.48, 39.91)		
≥ 16 yrs.	11.89 (7.60, 17.45)	14.46 (7.70, 23.89)		
≥ 10 yrs.	61.62 (54.20, 68.66)	87.96 (78.96, 94.07)		

Overall, 32.2% (28.8, 35.8) of the students were smokers, with significant differences in prevalence rates by gender, 47.4% among males and 16.8% among females ($X^2 = 117.93$; $P < 0.001$). The overall prevalence rate of sheesha smokers among students was 25.6%. The Fisher exact indicated that males were significantly more likely than females to smoke sheesha ($p < 0.001$), with males at 41.3% and females at 9.5%. Cigarette smoking ranked first for both groups of students, followed by the sheesha (traditional Arabic smoking water pipe).

Almost half or 55.3% of the students had parents and/or guardians who were smokers.

However, family smoking was statistically significant relative to gender ($X^2 = 42.88$; $P < 0.001$) (see Table 3). In addition, 75.3% of male and female students reported that people smoked in their presence on one or more days during the past seven days, with 71.07% for males and 79.55% for females. The Pearson chi-square revealed that females were more likely than males to report that people smoked in their presence ($X^2 = 21.542$, $p \leq 0.001$).

Finally, among students who smoked cigarettes during the past 12 months, 21.0% tried to stop smoking cigarettes, with 26.7% for males and 15.1% for females. The Pearson chi-square revealed that males were more

likely than females to report that they tried to stop smoking cigarettes ($X^2 = 21.542$, $p \leq 0.001$).

Table 2. Prevalence of tobacco use among the participants by gender (n = 720, male = 363, female = 357)

Items	Sex		Total%(CI)	Pearson Chi-Square	P-value
	Male% (CI)	Female% (CI)			
First tried cigarettes on 10 years or older	33.06 (28.24, 38.16)	20.45 (16.38, 25.01)	26.81 (23.60, 30.20)	80.442 (6)	<0.001
Smoked cigarettes on one or more days during the past 30 days	47.38 (42.15, 52.66)	16.81 (13.08, 21.10)	32.22 (28.82, 35.77)	117.931 (6)	<0.001
Used any other form of tobacco, argela or pipe, on one or more days during the past 30 days	41.32 (36.21, 46.58)	9.52 (6.69, 13.05)	25.56 (22.41, 28.91)	Fisher exact	<0.001
Among students who smoked cigarettes during the past 12 months, those who tried to stop smoking cigarettes	26.72 (22.24, 31.59)	15.13 (11.57, 19.27)	20.97 (18.05, 24.13)	64.400 (3)	<0.001
People smoked in their presence on one or more days during the past seven days	71.07 (66.11, 75.69)	79.55 (74.99, 83.62)	75.28 (71.96, 78.39)	21.542 (4)	<0.001
Have a parent or guardian who uses any form of tobacco	52.34 (47.06, 57.58)	58.26 (52.96, 63.43)	55.28 (51.56, 58.95)	42.882 (4)	<0.001

CI = confidence interval

4. Discussion

Smoking habits among students

The results are based on the questionnaire responses of 720 study participants. As shown in Table 1, half (50.4%) of the sample was male. The population age ranged from 13 to 17 years.

The response rate (97.3%) reflects a high degree of readiness by the students to participate in the study. The age and gender distribution of the participants was also comparable with the public school population, which has an almost evenly distributed population between females and males.

The vast majority of smokers in this study started smoking after the age of 10 years. This finding is consistent with studies in other Arab countries that found that the most common age that children started smoking was between 10 and 19 years old [6, 9, 10]. A study by Mowery [11], revealed that approximately one-third of all smokers began smoking before the age of 14 (as cited by [12]). In addition, McGee and Stanton reported that most adult smokers tried their first cigarette by age 18 years old, and most early smokers began smoking between 11 and 12 years of age [13]. Our results showed a

high self-reported rate of smoking among school students at 32.2% of the overall study sample (47.4% among males and 16.8% among females). These results are higher than the Palestinian Central Bureau of Statistics (PCBS) results of the prevalence of smokers in the general Palestinian population at 19.8% (37.0% among males and 2.2% among females) [14]. However, these results are lower than the results of a previous study among college students by Musmar [15], which revealed that the prevalence of smoking in Al-Najah University was 34.7%. Compared with students in Arab countries, Palestinian students had a higher rate of smoking compared with Jordanian (28.6%) [16]. The researcher posits that a possible reason for the high tobacco use among adolescents in Palestine is that smoking is part of the culture. Smoking is an accepted behavior in the community and is part of the prevalent attitude that no one is going to tell them what they should or should not do.

Reasons for adolescent tobacco use have been the subject of numerous studies. The primary reasons for teens having tried smoking is the need for stimulation, peer pressure, parental tobacco use, low self-esteem, low school achievement, low socioeconomic status, curiosity, loneliness, and the need for relaxation and recreation, which have all been mentioned as potential contributing factors [17]. Other reasons for initiating smoking or experimenting with smoking at a young age include to look more mature, independent, and tough, as well as to be accepted by a peer group, to have fun, to cope with personal problems or boredom, or to be rebellious [16, 18, 19]. Researchers also noted that maturity, self-confidence, independence, and a high personality profile were goals for young smokers; meanwhile, they found reasons for not smoking, including religion, sensory issues such as bad taste or smell, negative health consequences, impaired physical

performance, negative physiological response, and issues related to family [16].

Almost half (55.3%) of the students had parents and/or guardians who were smokers, whereas 44% had no smokers in their families. The researcher posits that being exposed to a social circle where someone lives with someone who smokes; sees a parent or guardian smoke, and reports having a friend who smokes, combined with fewer restrictions on smoking in the home, may affect the initiation and progression of cigarette smoking. According to previous studies, the most common reason that youth start to smoke is the smoking behavior of their family members and close friends. Researchers showed that for both males and females, daily smoking is significantly associated with smoking among mothers, sisters, brothers, or best friends [18, 20]. The places where teenagers generally smoke are at home, at school, or at a friend's house [19, 21, and 22]. Almost half the smokers aged 10 to 19 in Canada have at least one parent who smokes, and current smokers tend to have more close friends who also smoke [23].

Another explanation for the high prevalence of smoking among the study sample is that tobacco use is more prevalent because it is more readily available, more affordable, and is the drug of choice used by peers [24]. Smoking in the current study was higher among males than females, which is similar to previous studies [6, 15, 16, and 25]. The reported low prevalence of smoking by females compared with males may be attributed to underreporting because female smoking is refused and culturally unacceptable in Arab countries. Therefore, female smokers need to smoke in secret. However, the prevalence of smokers among females in the current study (15.4%) was similar to that reported in Palestine at 16.5% [15], but higher than that reported by the WHO [26], which indicated that the prevalence of smoking was

48% among males and 7% among females in developing countries. The female smoking rate in the current study was also higher compared with that reported in Malaysia at 7.4% [27]. However, a factor that apparently affects the initiation of smoking is the desire to lose weight in teenage girls. According to Kleges, white females were the most likely to believe that smoking could help control weight, with 39% of white females and 12% of white males reporting the use of smoking to control their appetite and weight [28]. In a review of earlier literature from 1983 to 1989, Camp also found that a large number of female smokers reported smoking for weight control reasons [19].

We also found that 48.5% of the study sample reported living with parents or guardians who smoke. The researcher posits that parental and/or sibling smoking provides an excuse and encouragement for other family members to smoke. Family and peer smoking have been reported to be strong predictors of tobacco use in Kuwait [29], Lebanon [30], Syria [31], and Jordan [16]. The smoking behavior of male adolescents in Arab societies was reported to be mostly influenced by peer and sibling smoking. In Syria, approximately 50% of male smokers were introduced to tobacco smoking by a friend, and they smoke because their friends do so [32]. By contrast, the smoking behavior of female adolescents has been reported to be mostly influenced by family smoking, with 37.7% of female smokers saying they were introduced to smoking by a family member [32].

Intention to stop smoking among respondents

Approximately one-fifth of smokers in this study expressed a desire to stop smoking by reporting that they tried to stop smoking in the past 12 months. This finding is consistent with the results of previous regional studies in Arab countries, which reported a high

percentage of intention among smokers to stop smoking [33, 34]. Intention to quit smoking may be related to the respondents' fear of the harmful effects of smoking on their health or to the increased price of tobacco products.

5. Conclusion

The study results indicated that approximately half of the participants have a family member and/or a friend who is a smoker. Family and peer smoking have been reported by other previous studies in the Arabs countries as the most important factor influencing smoking among males and females [16, 30, and 31]. The researcher posits that when a young person starts to use tobacco, the action is a signal, an alarm that he or she may be involved in other risky behavior. Smoking is one of the important few early warning signs we have in public health. Therefore, school-based smoking education intervention should start as soon as possible to prevent smoking.

Recommendations

The results of this study adds to the limited data base on risk taking behaviors in school students, and could be used as a basis for developing appropriate health education, health promotion and tobacco control programs for schools population in Palestine. Further examination of the family and peer roles in the initiation of smoking behavior is recommended before designing tobacco education intervention program, and it is recommended to include the family in any tobacco cessation intervention program.

Intervention programs are needed as soon as possible to encourage and motivate students to quit smoking. To protect population from the harmful exposure to secondhand smoke, the school administrations should enforce the legislation related to smoke-free schools, and at the community level, the government

should legislate and implement smoke-free society.

Limitation

In this study it is not possible to identify the reasons of initiating tobacco use among the study's sample due to the nature of the data collection instrument.

The study is limited to rural young adults in the four public schools in rural area of Tarqumia, Palestine. Results cannot be generalized to young adults in whole public schools in Palestine.

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