



Health consequences of cigarette smoking among young adults in urban Sudanese communities

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Abstract

Smoking is a greater public health issue for both individuals and society, increasing the burden on personal health and potentially contributing to early mortality. This study aims to investigate the health consequences of cigarette smoking and how it affects young adults' health. A descriptive quantitative study was conducted at Alfajr College for Science and Technology in Khartoum, Urban Sudan. It included both genders between the ages of 16 and 35, both smokers and nonsmokers, who voluntarily participated. The sample size was drawn from 611 medical students across five educational levels. The data were collected using a standardized self-administered questionnaire, which included four sections: personal data and questions about participant complaints. Data were analyzed using computer software. The study enrolled 243 participants, with 66.70% male and 33.30% female; 63.0% were in the 18-20 age range, while 37% of those in the other group were between 27 and 35 years, with most likely being in the third year (24.70%). The prevalence of active smoking is 18.10%, and passive smoking is 47.30%, while 72.0% of smokers had smoked for less than ten years and less than ten cigarettes per day. Most smoking participants (95.5%) did not seek medical evaluation or undergo chest X-rays to assess their health. Smoking participants reported 43.20% respiratory problems, 29.5% dental problems, 18.20% yellow discoloration of teeth and nails, 15.90% recurring infections, 13.60% eye problems, and other issues accounted for 20.50%. Other manifestations included coughing (50%), anorexia (40.70%), weight loss (40.90%), dyspnea (29.5%), headaches (18.20%), fatigue (25.0%), and other symptoms (2.30%). The occurrence of psychological problems was 43.20% nervousness, 29.5% anxiety, and 13.6% depression. The study concluded that cigarette smoking is prevalent among young adults in urban Sudan and is associated with several health problems, including respiratory, mental, nutritional, and cardiovascular diseases, affecting university students. Prevention and cessation efforts are crucial to mitigating harm.

Keywords: Cigarette smoking, Health consequences, Sudan urban communities, Young adults.

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1. Introduction

Cigarette smoking is the one of the major causes of death and disability globally [1] and is the greatest preventable cause of premature mortality In the United States [2]. Smokers often die ten years earlier than non-smokers, accounting for roughly one in five fatalities annually [3]. Millions of individuals worldwide suffer from morbidity and mortality because of smoking, which has been found to be a risk factor for several non-communicable diseases [4, 5].

According to estimates from the World Health Organization (WHO), tobacco use results in around 8 million deaths per year [1] and by 2025, there will be 1.5 to 1.9 billion smokers globally [4]. Approximately 20% of all cancers and 30% of all cancer deaths in the US are caused by smoking, which also has a significant economic impact worldwide, particularly in developing nations [1]. A person's quality of life can be negatively impacted by numerous health issues associated with smoking. A person's ability to breathe may be hampered by a smoking-related ailment [3].

Due to the rise in cigarette and water pipe smoking, which both have a substantial impact on public health and are thought to be contributing factors to chronic diseases like cancer and coronary artery disease, tobacco use presents the biggest risks and issues affecting public health in Africa [6].

Around the world, there are regional variations in the prevalence of smoking among adolescents and young adults. In the USA, 16% of young adults (18–24 years old) and 12.5% of teenagers smoke cigarettes at least once a month [1]. In some Arab countries, the percentage of young people who smoke cigarettes is 7% in Oman, 18% in Kuwait, 23% in Iraq, 25% in Saudi Arabia and Jordan, 31% in the Syrian Arab Republic, 43% in Yemen, and 53% in Lebanon. Additionally, the Middle East is said to have the highest rate of cigarette smoking in the world, with rates ranging from 40% to 60%, with certain Arab nations reporting rates as high as 77% for men and 35% for women [7].

In sub-Saharan Africa, cigarette smoking is on the rise, particularly among men, which raises numerous risks to the general public's health. About 8% of individuals in Sudan smoke cigarettes, while 20% of people use tobacco products of some kind. Adults aged 18 and older smoked cigarettes at a rate of 12%, with most instances occurring in cities as opposed to rural areas [6].

It is well known that smoking is a major risk factor for several illnesses. The harmful effects of smoking on one's health are well documented. Lung cancer, coronary heart disease, stroke, and chronic obstructive pulmonary disease (COPD) are all chemically linked to smoking. In several Arab nations, tobacco usage has been connected to several women in recent years [7].

Mental health issues such attention-deficit/hyperactivity disorder, depression, and anxiety [8]. Smoking cigarettes has numerous negative effects on the body, including the development of cancer and chronic illnesses [9]. Numerous additional serious medical disorders, such as rheumatoid arthritis, inflammation, and compromised immunological function, are also associated with smoking. According to a cross-sectional population survey, even young smokers between the ages of 26 and 41 report having a lower health-related quality of life than their counterparts who do not smoke [2]. Tobacco use may start or stop throughout the crucial developmental period of young adulthood [10].

Approximately 80% of established adult smokers are thought to have begun smoking before turning 18. Tobacco use was reported by 8.2% and 23.9% of middle school and high school students, respectively, according to data from the Centers for Disease Control and Prevention in the United States [5]. Young smokers are more likely to continue smoking later in life, and they develop an addiction when they begin smoking sometimes at first and then consistently [10]. In 2016, 15.6% of Sudanese people smoked or used smokeless tobacco, according to the National STEP Wise Survey. Smokers made up 0.7% of women, 17.1% of males, and 9.6% of the population [11]. Because of their youth, easy access to tobacco products, tight ties with smoking peers, and the impact of smoking on parents and friends, undergraduate students are more likely to smoke [8].

Medical students should be health role models, inform their classmates about the negative health impacts of smoking, and represent the highest rung of the pyramid in terms of their influence on other people's attitudes and views. University students typically start smoking because they follow or are influenced by other smokers. The environment in which students grow up has a significant impact on the development of bad habits like smoking [12].

Young adults who are aware of the negative health effects of smoking are less likely to die from a smoking-related disease and are also deterred from stopping [13]. The purpose of this study is to determine the health issues associated with cigarette smoking among young adults living in metropolitan areas, as well as the effects it has on their mental and physical health and the significance of quitting.

2. Material and Methods

2.1. Study Design

The study design is cross-sectional and descriptive.

2.2. Study Area

This study was commenced in the Alfajr College for Science and Technology, in Khartoum, Urban of Sudan, 2022.

2.3. Study Population

Six hundred and eleven medical students from the first through the fifth educational levels of the bachelor's degree comprised the study's population.

2.4. Inclusion Criteria

Male and female medical students between the ages of 16 and 35 who volunteered to participate in the study were included, as were those who did not smoke.

2.5. Sample Size

243 people made up the study's sample size, which was determined using the accepted formula.

 $n = N/1+N(D^2)$ [14].

2.6. Data Collection

Information was obtained from the people using a standardized questionnaire. The pretested, self-administered questionnaire was divided into four sections: The first section contained personal data such age, gender, socioeconomic status, and level of education. The second segment included questions about how smoking affected individuals' physical and mental wellbeing.

2.7. Data Analysis Methods

Following pre-coding and pre-testing, the Medical Statistical Package for Social Science (SPSS) was used to analyze the data. Participants' backgrounds, smoking status, and the effects of smoking on their physical and mental health were all the subject of descriptive analysis [15]. The findings were displayed as frequency and percentage tables and graphs were done for background information of the participants, smoking status and impact of smoking on participants physical and psychological status and the results were presented in form of frequency and percentage tables and graphs.

| Background information | | Frequency | Percentage |
|----------------------------|----------------|-----------|------------|
| Gandar | Mala | 162 | 66 7 |
| Gender | Famala | 102 | 00.7 |
| | remaie | 81 | 33.3 |
| | Total | 243 | 100.0 |
| Age/year | 18-26Year | 153 | 63.0 |
| | 27-35Year | 90 | 37.0 |
| | Total | 243 | 100.0 |
| Level of education/class | First year | 43 | 17.7 |
| | Second year | 49 | 20.2 |
| | Third year | 60 | 24.7 |
| | Fourth year | 46 | 18.9 |
| | Fifth year | 45 | 18.5 |
| | Total | 243 | 100.0 |
| Active smoking | Yes | 44 | 18.1 |
| | No | 199 | 81.9 |
| | Total | 243 | 100.0 |
| Exposed to passive smoking | Yes | 115 | 47.3 |
| | No | 128 | 52.7 |
| | Total | 243 | 100.0 |
| Duration of smoking | <10 Years | 32 | 72.7 |
| | >10 Years | 12 | 27.3 |
| | Total | 44 | 100.0 |
| Cigarette smoke per day. | <10 Cigarettes | 30 | 68.18 |
| | >10 Cigarettes | 14 | 31.82 |
| | Total | 44 | 100.0 |

 Table 1.

 Characteristics of studied participan

2.8. Ethical Approval

After participants were informed of the study's objectives, methodology, and confidentiality measures, ethical approval from Alfajr Medical College's Medical Committee was obtained. Also, before collecting the data, each participant is asked to sign a written consent form to document his/her agreement. Complete confidentiality was maintained for information and the data gathered from the participants [16].

3. Results

The study's male-to-female ratio was 2:1, with 66.70% of the participants being male and 33.30% being female, according to the findings. Of them, sixty-three percent were between the ages of 18 and 20. Thirty-seven percent of those in the other group were between the ages of 27 and 35. Participants were most likely to be in their third year (24.70%), followed by those in their second year (20.20%), fourth year (18.90%), fifth year (18.50%), and first year (17.70%). The prevalence of smoking among study participants is 18.10%, while the prevalence of non-smoking is 81.90%. Of the participants, 47.30% were exposed to passive smoking, while 52.70% were not. Seventy-two percent of smokers had smoked for less than ten years and fewer than ten cigarettes.



Chest X-ray was performed by smokers to assess respiratory condition and health problems. (n=44).

The results showed that whereas most smoking participants (95.5%) had neither, just 4.5% had X-rays taken to assess their health.



Figure 2.

Physical health problems the smokers' participants were experiencing. (n=44).

While 25.0% of smoking students did not report any problems, roughly 43.2% reported respiratory problems, 29.5% reported dental issues, 18.2% reported yellow discoloration of their teeth and nails, 15.9% reported recurring infections, 13.6% reported eye issues, and 20.5% reported other problems, according to the statistics.



Clinical symptoms the smokers were suffering. (n=44).

Coughing (50%) and anorexia (40.7%) were the most prevalent clinical and health symptoms among smokers, according to the findings, followed by weight loss (40.9%) and dyspnea (29.5%). Headaches were reported at 18.2%, lethargy and fatigue at 25.0%, and other symptoms accounted for 2.3%. Of those who smoked, 27.3% did not report any symptoms.



Figure 4.

Psychological symptoms among smokers. (n=44).

The results of the study illustrated the psychological problems that smokers endure. Approximately 52.3% had no symptoms, 43.2% were nervous, 29.5% were anxious, and 13.6% were depressed, while only 2.3% reported other psychological symptoms.

4. Discussion

Health is directly impacted by smoking, and research indicates that smoking increases the risk of developing several illnesses, most notably lung and cardiovascular cancer [12]. About 243 medical students from the Medical Collage were participated in this study, 33.30% of them were female and 66.70% were male. Sixty percent of the participants in this study were in the 18–20 age range. Only a small portion of the participants were from the first year of school; the majority were from the third year. Based on the respondents' responses on their smoking status, was estimated that 18.10 percent of study participants were active smokers. This result was more than that of research conducted in Jazan, Saudi Arabia, which indicated that 12.4% of participants was smoked [17]. Considerably less than that discovered by a study conducted among medical students in Bangladesh, which revealed a student outcome of 67.0%. of pupils was 12.4% [18] and another survey that indicated 35.0% of Jordanian university students smoked [19]. However, compared to earlier research that revealed the prevalence of passive smoking was 39.9% of all medical students, this study found that about 47.30% of medical students were exposed to passive smoking which was higher than that study [17].

As documented by the similar study in t Sudan Faculty of Medicine which compared smoking and non-smoking participants, discovered that smokers performed worse academically, the prevalence of smoking among students may contribute to deficiencies in their academic performance [17]. Additionally, the study discovered that almost 70% of smokers who took part smoked fewer than ten cigarettes a day and had been smokers for less than ten years. This suggests

that the individuals may have begun smoking before enrolling in college. These findings concurred with those of related earlier research carried out in South Africa in 2023, found that 76.8% of people smoked five to ten cigarettes a day [5] and less, according to a 2018 study that found that 22.5% of individuals smoked more than 20 cigarettes per day, while more than half smoked fewer than 10 cigarettes [19]

According to the literature, smoking is acknowledged by the public and medical professionals as a significant behavioral risk factor that contributes to a significant portion of the global health burden [20]. Additionally, its effects on the cardiovascular and respiratory systems are well known and its impact on the central nervous system is still conflicting though [4].

Moreover, the effects of smoking on participants' physical health, because above ninety percent of smoked participants do not investigate themselves or did chest X-rays to evaluate their health. Most of them suffered from many conditions such respiratory issues, dental issues, yellow discoloration of the teeth and nails, recurrent infections, eye issues, and other issues. Participants who smoked also reported a wide range of others clinical symptoms, like headaches, anorexia, weight loss, shortness of breath, exhaustion and lethargy, and coughing. Additionally, those who smoked had psychological symptoms such as anxiety, depression, anxiousness, as well as other psychological symptoms. Nevertheless, it was discovered that over seventy percent of smoked participants had social relationships. I believe that it will become critical to raise medical students' understanding regarding the dangers and harm of cigarette smoke but it's more serious to support them in quitting. There is ample evidence of the advantages of quitting smoking which enhances quality of life and lowers health risks [21].

According to research finding, smoking awareness alone has no effect on smoking rates, but it is an essential part of anti-smoking initiatives. However, it can cause initiation to be delayed. Since young people do not have a lot of extra money to spend, high prices can discourage kids from smoking. Research indicates that young people may be three to four times more price sensitive than adults. Price or tax hikes had the most consistent beneficial equitable impact on youth, according to a meta-analysis of smoking prevention measures [10]. Quitting smoking, especially at younger ages, can reduce smoking-related disability [3] and can prevent many of the harmful consequences of smoking [10].

5. Conclusion

In urban Sudan, cigarette smoking among young adults is significantly impactful, particularly among university students, and is linked to a variety of health hazards, such as cardiovascular, mental, and respiratory disorders. According to these results, young adults and college students are particularly susceptible to the negative effects of cigarette smoking in their early years. To prevent these consequences and repercussions, prevention and cessation efforts, which include educational programs and effective warning signs, are essential.

6. Recommendations

The study suggested strengthening current tobacco control regulations and emphasizing information, education, and communication in preventive programs at universities and pre-universities. Given that effective interventions can be applied to a variety of demographics and cultural contexts, the findings may impact the development of global tobacco control efforts. When formulating policy, we must consider the significance of cigarette smoking for public health and promptly and thoroughly report on the prevalence of cigarette smoking among young adults.

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