

Factors Associated with Tobacco Smoking Initiation in Jordan: A Cross-Sectional Study

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Abstract

Objectives: In this study, our goal is to determine the average age of initiation of smoking and to discuss factors associated with smoking initiation and how they differ among different age groups. Such data may provide inspiration for the government to implement strong and comprehensive tobacco control policies. **Methods:** A descriptive cross-sectional study was applied to a random sample of at least 370 participants who were categorized into four age groups ((15 years – 24 years), (25 years – 44 years), (45 years – 64 years), and (65+ years)) from all districts of al-Balqa Jordan using a modified questionnaire made on google forms. **Results:** The study revealed that the majority of respondents were aged 45-64 years (32.1%) or 25-44 years (26.6%), predominantly male (76.6%), married (62.9%), and Jordanian nationals (97.4%). Most respondents were current smokers (95%), with an average smoking initiation age of 17.4 years. Initiation age varied significantly by age group, with the youngest average in 15-24-year-olds (16.2 years) and the oldest in those 65+ (18.9 years). Gender differences showed females started smoking later than males across all age groups. Educational level had minimal impact on initiation age, while students began smoking significantly earlier than employees or unemployed individuals. Younger participants reported higher e-cigarette use and shorter smoking durations compared to older age groups, who smoked more cigarettes and had longer smoking durations. Perceptions of smoking as “cool” decreased with age. **Conclusion:** we can conclude that older age groups tended to start smoking slightly later on average than younger groups. Overall, females began smoking at a significantly later age of 19.6 years than males at 16.8 years.

Keywords: Tobacco- cigarettes- smoking- waterpipe- initiation- e-cigarettes

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Introduction

Tobacco smoking is a leading cause of preventable diseases and deaths worldwide, responsible for significant health burdens, including cancer and cardiovascular diseases. It accounts for 7% of the global disease burden, second only to high blood pressure [1]. Jordan ranks among the highest globally, with a smoking prevalence of 40.45%, affecting 70.2% of men and 10.7% of women [2]. Smoking in Jordan is widespread in various forms, including cigarettes, waterpipes, and electronic cigarettes [3].

While numerous studies have explored the factors influencing smoking initiation, only a few have examined age-specific variations. These factors fall into three broad categories: personal factors (age, gender, education), family environment (parental and sibling smoking, parental education), and socio-economic influences (peer pressure, income, social media) [4-6]. Studies show that individuals who start smoking at a younger age are less likely to quit, and a higher number of cigarettes smoked

per day further reduces the likelihood of quitting [7, 8]. Additionally, lower awareness of tobacco-related risks and fewer household smoking prohibitions increase the chances of habitual smoking, particularly in individuals with smoking parents [9-11].

Gender differences also influence smoking initiation, with males often influenced by peers and females by family members [12]. In some Eastern Mediterranean Region (EMR) countries, cultural and social prohibitions against smoking for women, especially cigarette smoking, play a role in shaping these patterns, although waterpipe smoking is more socially acceptable [13].

Studies have highlighted that a parent's smoking behavior significantly influences smoking initiation among adolescents. Young people with smoking parents are more likely to start smoking, and boys are often more influenced by their father's smoking habits than girls [14]. Other studies suggest peer influence as a stronger factor in some populations, especially when parental smoking behaviors are less prominent [15].

There has been increasing attention on the role of

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social media in smoking initiation. College students and adolescents are particularly susceptible to smoking behaviors shaped by online interactions and discussions on social networks [16]. Moreover, socio-economic status plays a critical role, with lower-income groups having higher rates of smoking initiation [17]. Stress has also been identified as a factor, with individuals often using smoking as a coping mechanism in stressful situations [18].

In light of the diverse factors influencing smoking initiation, this study aims to investigate the age-specific and gender-specific factors associated with tobacco smoking initiation among different age groups in the Al-Balqa region of Jordan.

Materials and Methods

Study design

A cross-sectional study using a survey was conducted in this research to compare the age of smoking initiation between different age groups, and to assess the factors associated with smoking initiation.

Ethical considerations

Participants were asked for consent before filling out the questionnaire, personal identifiers were not collected from the participants' data and was kept safe and secure. The approval of the IRB was taken from the faculty of medicine at Al-Balqa Applied University.

Study site and population

The study was conducted in the governorate of Al-Balqa– Jordan. The population of al-Balqa is 445474 (ministry of interior affairs), distributed over five districts (Liwa') which are Salt Qasabah district, Shunah al-Janubiyah, Ain al-Basha, Dir Alla, Mahes and al-Fuhais (Ministry of Interior Affairs), which represent (24%, 12%, 40%, 16%, 8%) respectively of the total population of Al-Balqa. Our sample is composed of people who are 15 years and older who are current smokers (a person who has smoked 100 cigarettes or similar products in their lifetime and currently smokes at least monthly), who live in this governorate, any person that is under 15 or lives outside Al-Balqa governorate was excluded. Participants were categorized into four age groups: 15 – 24 years, 25 – 44 years, 45 – 64 years, and older than 64 years.

Data collection

This study used an online questionnaire for the younger four age groups, to insure the validity of the questionnaire and to avoid any misunderstanding of the questions we were handing out a hard copy for participants older than 45 years.

The online questionnaire was created using google forms and was posted on multiple social media platforms like Facebook that was posted on many groups to ensure that it reached all segments of al-Balqa society. For the older age group, we handed them the printed copy of the questionnaire at public places like cafes, libraries, and mosques, and data was collected immediately after the participant has completed the questionnaire.

Data and variables

The questionnaire was made using google forms containing two parts, the first part contains five questions about sociodemographic status including age, gender, marital status, the district they live in, and nationality.

The second part of the questionnaire contains the following variables: (1) age of smoking initiation; (2) smoking status and type, asking participants whether they are current smokers (defined as an adult who has smoked 100 cigarettes or similar products in their lifetime and currently smokes at least monthly) or non-smokers, and the substance they smoke (cigarettes, electronic cigarettes, waterpipe); (3) educational level, assessed by asking whether they had primary, secondary, high school, higher education, or no education; (4) parental education level and whether their parents are smokers; (5) employment status, asking whether participants were employed; (6) media exposure, determined by whether they had seen any advertisements about smoking or noticed any anti-smoking information; and (7) the motive for smoking initiation, allowing participants to tick more than one answer, with options including factors like stress, surrounding influence (negative school environment, bad influence, smokers in their family), achieving social status, easy accessibility to smoking products, low cost of smoking products, and enjoyment or fun of smoking. The questionnaire was pilot tested on a group of Al-Balqa residents from various age groups, reviewed by medical health experts, and adjusted accordingly before distribution.

Sample method and size

The Raosoft Sample Size Calculator (www.raosoft.com) was used to calculate the minimum sample size. The sample size calculation was based on the expected number of smokers in Al-Salt city which is above 10,000 smokers.

The estimated minimum sample size for a 95% confidence level and margin error of 5% is 370 smokers.

Statistical analysis

The statistical analysis was analyzed using a statistical package for the social sciences (SPSS) software (<https://www.ibm.com/products/spss-statistics>). The normality of the data was checked. A chi-square test was applied to compare the frequencies. T-test or ANOVA test was applied to compare the continuous data. The results were considered significant when P-value is less than 0.05.

Results

Demographic Characteristics

The demographic analysis of the study sample showed that the highest percentage of respondents were within the age groups of 45-64 years (32.1%) and 25-44 years (26.6%), indicating the majority were within their prime productive working ages. Males dominated the sample greatly with 76.6% compared to females with only 23.4%. Most respondents were married (62.9%), with just 35.8% were single and a small portion were divorced (1.3%). The overwhelming majority were Jordanian nationals, accounting for 97.4% of respondents versus only 2.6% from other nationalities.

When considering place of residence, 30.8% lived in Salt Qasabah district and 22.4% in Ain-Basha district, with the remaining respondents distributed across the other three districts. Education levels showed that 59.5% had attained higher education, 27.6% completed secondary education, and 10.5% had received their primary education only. Respondent's current occupations included 47.1% as employees, 24.7% as students, and 28.2% unemployed. Notably, a very high percentage identified as current smokers (95%), compared to just 5% non-smokers.

Smoking Initiation Age

As shown in Table 1, the data revealed that the average age of smoking initiation for the overall sample was 17.4 years, with a standard deviation of 3.7 years between a minimum of 6 years old and a maximum of 45 years old, indicating a wide range when respondents began smoking.

Breaking it down by age group, those aged 15-24 had the youngest average initiation age of 16.2 years with a standard deviation of 2.8 years starting between 8-24 years, while those aged 25-44 began at 16.7 years on average with a standard deviation of 2.8 years, initiating from ages 12-30.

Participants aged 65+ showed the oldest average initiation of 18.9 years and standard deviation of 3.5 years, starting smoking between 11-30 years. Finally, the 45-64 age group had the second oldest average of 18.2 years but the highest variation with a standard deviation of 4.6 years, starting earliest at 6 years old and latest at 45 years of age.

An ANOVA test revealed a P -value less than .001, indicating a statistically significant difference in average initiation ages across the 4 groups.

Associations between Smoking Initiation Age and Personal Factors

Gender

Table 2 reveals differences in average smoking

initiation ages by gender across age groups. Overall, females began smoking at a significantly later age of 19.6 years than males at 16.8 years. Examining subgroups showed females aged 15-24 initiated at 18.1 years vs 14.8 years for males. In the 25-44 group, females averaged 18.5 years vs 16.2 years for males. The largest gap was in 45-64, where females started at 21.0 years compared to 17.6 years for males. 65+ females participants started smoking at 23.2 years vs 17.8 years for males. Across all age groups, females consistently initiated smoking later than males. Significant p-values ranging from <0.000 to 0.002 illustrate the strong association between later initiation ages and female gender compared to males across all age subgroups.

Educational Level

Regarding educational level; for all ages, smoking debut was quite similar across primary (18 years), secondary (17.1 years), higher education (17.4 years), and other (18.1 years), though the higher p-value of .576 means differences were not statistically significant.

Among 15-24 group, initiation was earliest for those with secondary education (15.1 years), slightly later for higher education (16.7 years) and earliest for the small sample with other education (14.2 years). Among 25-44 age group, initiation was earliest for those with primary education (14.6 years), slightly later for secondary (16.8 years) and for higher education (16.7 years). For 45-64 group, mean ages were 18.4, 17.7, and 18.4 years respectively for primary, secondary and higher education, while the single respondent with other education began latest at 14 years. Statistical significance test could not be conducted for the subgroups due to empty cells. In summary, differences in mean initiation age based on education level were minor and inconsistent across age categories, with no clear associations observed in this data.

Occupation at Smoking Initiation

When considering the participants occupation when

Table 1. Smoking Initiation Age Statistics

Age	Count	Minimum	Maximum	Mean	Std. Deviation	P-value ^a
All age groups	380	6	45	17.4	3.7	-
15-24	92	8	24	16.2	2.8	<.001
25-44	101	12	30	16.7	2.8	
45-64	122	6	45	18.2	4.6	
65+	65	11	30	18.9	3.5	

^a, ANOVA Significance

Table 2. Mean Smoking Initiation Ages by Gender and Age Group

Age	Female		Male		P-value ^a
	Count	Mean _{Years}	Count	Mean _{Years}	
All age groups	89	19.6	291	16.8	<.001
15-24	38	18.1	54	14.8	<.001
25-44	18	18.5	83	16.2	0.001
45-64	20	21	102	17.6	0.002
65+	13	23.2	52	17.8	<.001

^a, ANOVA Significance

Table 3. Mean Smoking Initiation Ages by Occupation at Smoking Initiation and Age Group

Age	Student		An Employee		Unemployed		P-value ^a
	Count	Mean _{Years}	Count	Mean _{Years}	Count	Mean _{Years}	
All age groups	303	16.5	45	21.2	32	20.4	<0.001
15-24	89	16.2	-	-	3	16.3	b
25-44	91	16.4	7	20.7	3	15.3	
45-64	93	16.9	17	24	12	20	
65+	30	16.9	21	19.1	14	22.6	

^a, ANOVA Significance; ^b, Could not be done due to empty cells.

starting smoking (Table 3), the analysis shows that across all age groups the participants were students when they had their first experience with smoking, began earliest at 16.5 years, which is significantly earlier than employees and unemployed who started at 21.2 and 20.4 years respectively, resulting in a high significant P-value of <0.001.

Within the 15–24 age group, the majority of participants were students when they initiated smoking at an average age of 16.2 year. Only 3 individuals were unemployed also

at an average age of 16.3 year. For the 25-44 age group, most participants were students when they first started smoking, beginning at the earliest average age of 16.4 years compared to a small number who were employed, started at an average age of 20.7. In addition, small portion were unemployed when they first began smoking at 15.3 years on average. In the 45-64 year category, students made up the most frequent occupational status at initiation, followed by employees and unemployed individuals. Initiation occurred earliest on average for students at 16.9

Table 4. Participants Smoking Habits across Age Groups

Factor	Category	Age Group				Total	P-value ^a
		15-24	25-44	45-64	65+		
Daily Cigarette Consumption	I did not smoke cigarettes	45.70%	22.80%	20.50%	4.60%	24.50%	<0.001
	Less than 1 cigarette per day	7.60%	1.00%	1.60%	3.10%	3.20%	
	1 cigarette per day	7.60%	3.00%	0.80%	1.50%	3.20%	
	2 to 5 cigarettes per day	16.30%	20.80%	11.50%	9.20%	14.70%	
	6 to 10 cigarettes per day	8.70%	14.90%	8.20%	7.70%	10.00%	
	11 to 20 cigarettes per day	6.50%	23.80%	22.10%	20.00%	18.40%	
Pipe Tobacco Use Frequency	More than 20 cigarettes per day	7.60%	13.90%	35.20%	53.80%	26.10%	<0.001
	0 days	19.60%	41.60%	47.50%	69.20%	42.90%	
	1 or 2 days	19.60%	23.80%	18.00%	13.80%	19.20%	
	3 to 5 days	29.30%	13.90%	9.00%	7.70%	15.00%	
	6 to 9 days	15.20%	11.90%	9.80%	4.60%	10.80%	
	10 to 19 days	9.80%	6.90%	9.80%	1.50%	7.60%	
E-Cigarette Use Frequency	20 to 29 days	1.10%	0.00%	1.60%	3.10%	1.30%	<0.001
	All 30 days	5.40%	2.00%	4.10%	0.00%	3.20%	
	0 days	22.80%	36.60%	70.50%	93.80%	53.90%	
	1 or 2 days	15.20%	17.80%	5.70%	1.50%	10.50%	
	3 to 5 days	22.80%	8.90%	6.60%	1.50%	10.30%	
	6 to 9 days	5.40%	5.00%	3.30%	0.00%	3.70%	
Duration of Smoking	10 to 19 days	8.70%	8.90%	2.50%	0.00%	5.30%	<0.001
	20 to 29 days	6.50%	1.00%	0.00%	0.00%	1.80%	
	All 30 days	18.50%	21.80%	11.50%	3.10%	14.50%	
	Less than 6 months	10.90%	2.00%	0.80%	0.00%	3.40%	
	Between 6 to 12 months	10.90%	1.00%	0.00%	0.00%	2.90%	
	More than a Year	78.30%	97.00%	99.20%	100.00%	93.70%	
Serious Consideration of Tobacco Quitting	I have never used tobacco	7.60%	1.00%	4.10%	0.00%	3.40%	<0.001
	Yes, within the next 30 days	6.50%	8.90%	8.20%	6.20%	7.60%	
	Yes, within the next 6 months	3.30%	16.80%	25.40%	21.50%	17.10%	
	Yes, within longer than 6 months	25.00%	34.70%	32.80%	16.90%	28.70%	
	I am not thinking about quitting	57.60%	38.60%	29.50%	55.40%	43.20%	

^a, Chi-Square Significance

Table 5. Family Influence on Smoking Exposure by Age Group

Factor	Category	Age Group				P-value
		15-24	25-44	45-64	65+	
Home Secondhand Smoke Exposure at Initiation	No	17.39%	19.80%	13.11%	9.23%	0.241
	Yes	82.61%	80.20%	86.89%	90.77%	
Household Tobacco Use	No Co-Habitant Tobacco Use	1.10%	2.00%	2.50%	6.20%	<0.001
	Smoke Cigarettes	12.00%	19.80%	12.30%	9.20%	
	Smoke Cigars/Cigarillos	48.90%	60.40%	73.80%	80.00%	
	Smoke Hookah/Waterpipe	4.30%	7.90%	4.90%	4.60%	
	Other Tobacco Use	30.40%	8.90%	5.70%	4.60%	
Allow Indoor Smoking	Sometimes/Some places	42.40%	39.60%	32.00%	24.60%	<0.001
	Always	22.80%	42.60%	57.40%	61.50%	
	Never	34.80%	17.80%	10.70%	13.80%	
Parent/Guardian Communication on Tobacco Initiation	No	15.20%	6.90%	13.10%	13.80%	0.298
	Yes	84.80%	93.10%	86.90%	86.20%	

^a, Chi-Square Significance

years compared to employees at 24 years and unemployed individuals at 20 years. Finally, the oldest group (65+), the highest number of participants were students when they began smoking. Significant numbers were also employees or unemployed. The average age of smoking initiation was 16.9 years for students, 19.1 years for employees, and 22.6 years for those unemployed.

Smoking Risk Factors Across Age Groups

Smoking habits differ significantly across age groups, as shown in Table 4. Younger participants (15-24) reported not smoking in the past 30 days (45.7%) or buying cigarettes themselves (39.1%). The oldest group (65+) mostly purchased cigarettes independently (73.8%), with few relying on others. Younger groups tended to smoke fewer cigarettes daily, while those 65+ were more likely to smoke over 20 cigarettes per day. E-cigarette use was more frequent among younger participants, while those 65+ rarely used them (over 90% reported 0 days of use). Smoking duration also differed significantly, with younger groups reporting shorter durations and older groups

smoking for over a year. Older individuals were more likely to consider quitting smoking.

Family Influence

Family influence plays a significant role in smoking behaviours (Table 5). The majority of participants across all age groups were exposed to second-hand smoke during smoking initiation, although there were no significant differences. Household tobacco use varied by age, with younger people reporting higher rates of hookah or waterpipe use, while older age groups reported higher household cigarette use. Older participants were also more likely to allow smoking inside their homes all the time (61.5%), while younger individuals were less permissive. Parent or guardian communication about smoking initiation was common across all ages, but no significant differences were found.

Environmental Influences

Secondhand smoke exposure in the workplace and public places increased with age (Table 6). Younger

Table 6. Environmental Influence on Smoking by Age Group

Factor	Category	Age Group				P-value
		15-24	25-44	45-64	65+	
Workplace Secondhand Smoke Exposure at Initiation	No	32.60%	12.90%	12.30%	9.20%	<0.001
	Yes	67.40%	87.10%	87.70%	90.80%	
Public Places Secondhand Smoke Exposure at Initiation	No	16.00%	7.00%	4.00%	0.00%	<0.001
	Yes	84.00%	93.00%	96.00%	100.00%	
Likelihood of Accepting a Cigarette Offer from Best Friend	Definitely not	18.50%	10.90%	41.00%	29.20%	<0.001
	Definitely yes	31.50%	29.70%	27.90%	35.40%	
	Probably not	22.80%	16.80%	13.90%	13.80%	
	Probably yes	27.20%	42.60%	17.20%	21.50%	
Number of Closest Friends Who Smoke Cigarettes	None	6.50%	2.00%	4.10%	0.00%	<0.001
	1-2	45.70%	21.80%	35.20%	38.50%	
	3-4	41.30%	70.30%	54.10%	52.30%	
	Not sure	6.50%	5.90%	6.60%	9.20%	

^a, Chi-Square Significance

Table 7. Perceptions Surrounding Smoking by Age Group

Factor	Category	Age Group				P-value ^a
		15-24	25-44	45-64	65+	
Perceived Coolness or Social Acceptance of Smoking Among Young People	Definitely no	34.80%	23.80%	66.40%	72.30%	<.001
	Definitely yes	16.30%	7.90%	4.10%	3.10%	
	Probably not	18.50%	44.60%	17.20%	18.50%	
	Probably yes	30.40%	23.80%	12.30%	6.20%	
Perception of Social Popularity Among Young Smokers	Definitely no	26.10%	25.70%	62.30%	70.80%	<.001
	Definitely yes	21.70%	13.90%	5.70%	1.50%	
	Probably not	19.60%	33.70%	18.90%	23.10%	
	Probably yes	32.60%	26.70%	13.10%	4.60%	

^a, Chi-Square Significance

participants (15-24) reported lower exposure to secondhand smoke compared to those aged 65 and above, who reported the highest exposure rates. Acceptance of cigarette offers from friends was higher among younger participants (31.5%), while the number of smoker friends decreased with age. Younger participants had more smoking friends compared to older age groups, where some reported having no smoking friends at all.

Perceptions Surrounding Smoking

Perceptions of smoking as “cool” or socially beneficial varied across age groups. Younger individuals (15-24) were more likely to perceive smoking as a marker of coolness (30.4% said “probably yes”), while older groups (45-64 and 65+) overwhelmingly rejected this notion (66.4% and 72.3% said “definitely no”). Similarly, younger participants viewed smoking as more socially popular, while older individuals expressed stronger opposition to this idea. These attitudes reflect a generational shift, with older people showing greater disapproval of smoking’s social allure (Table 7).

Discussion

This study provides a comprehensive analysis of tobacco smoking prevalence and initiation factors across different age groups in Al-Balqa, Jordan. To the best of our knowledge, this is the first study in the Middle East that compares smoking behaviors among adults in this region, providing a unique perspective compared to studies conducted in North America.

Our findings align with international research that identifies smoking initiation at younger ages. A significant difference was observed in the average age of smoking initiation between the age groups, with younger participants beginning earlier than older ones. On average, the initiation age in our study was 17.4 years, with males starting at 16.8 and females at 19.6 years. This gender gap in initiation is consistent with global trends, where female smoking initiation ages have been declining, narrowing the gap between males and females [19]. The declining initiation age, especially among females, may reflect increasing societal acceptance of tobacco use among women, contributing to the more significant changes observed in our study.

In terms of educational level, our findings are consistent

with those of Al Omari et al. [20], suggesting a positive attitude toward smoking among individuals with higher education levels. Although there were slight differences between groups, the results were not statistically significant, underscoring the strong association between education and smoking initiation across age groups. Similarly, when considering occupational status, students had the youngest smoking initiation age (16.9 years), followed by employees (19.1 years) and the unemployed (22.6 years). These results point to a link between entering the workforce and delaying smoking initiation.

Family-associated factors also play a crucial role in smoking initiation. Across all age groups, 80-90% of participants reported exposure to second-hand smoke at the onset of their smoking habits. This significant influence of family smoking behavior on offspring aligns with findings from Stephen E. Gilman et al. [21], highlighting the lasting impact of parental tobacco exposure on smoking initiation.

Regarding media influence, our study found minimal exposure to tobacco advertisements on social media and the internet, with most respondents reporting never encountering such ads. This contrasts with the findings of Woohyun Yoo et al. [22], which focused on college students and may explain the divergence in results. Print media also had a limited impact, as half of the participants never saw print ads, and over a third did not engage with print media. This indicates that traditional print media plays a marginal role in smoking habits today, particularly among younger individuals, diverging from earlier studies like that of Jennifer B. Unger et al. [23].

Perceptions surrounding smoking have shifted across age groups, with a majority of older individuals rejecting the notion that smoking is cool or enhances social status. Among younger individuals, however, a minority (30.4% in the 15-24 age group) still perceive smoking as somewhat associated with coolness. This generational difference highlights a growing disapproval of smoking among older individuals, while younger people may still view it as a social marker.

Environmental influences, such as secondhand smoke exposure in workplaces and public places, also play a significant role in smoking initiation. Older individuals, especially those 65 and above, reported the highest rates of secondhand smoke exposure at work (90.8%) and in public places (100%). These findings suggest that public

and workplace environments are key factors in overall exposure to tobacco smoke.

Social influences are particularly strong among younger adults (15-24), who are more likely to accept cigarette offers from best friends and have a higher number of smoking friends. As individuals age, their social circles evolve, with older individuals having fewer smoking friends. This reinforces the notion that peer influence is a critical factor in smoking initiation during younger years.

Despite these valuable insights, our study has some limitations. The cross-sectional design limits the ability to generalize the findings, and nearly one-third of potential participants did not complete the survey. Additionally, because the data relies on self-reported information, smoking behaviors may be underreported, especially in older age groups. Recall bias may also affect the accuracy of self-reported smoking initiation ages, though we tried to mitigate this by conducting interviews with older participants. Lastly, our study did not explore smoking cessation strategies, leaving an important area for future research.

In conclusion, future studies should monitor shifts in smoking initiation age in Jordan, focusing on whether early starters are more likely to become regular smokers and less likely to quit. To generalize findings nationally, future research should include more public and private universities for a representative sample. Our study highlights the importance of comprehensive national tobacco control programs, especially those aimed at preventing youth smoking, and the need to restrict tobacco marketing. Gender and occupation were found to be key factors in smoking initiation, with societal acceptance of tobacco use, particularly among females, contributing to declining initiation ages.

Author Contribution Statement

Huda Nofal, Rima Qaddoumi, Shahd Samour, Abdullah Al-Hussein, Abd al-Wahab Al-Oweidi, and Zaid Alrahamneh collected the data, analysed the data and wrote the manuscript. Naeem Shalan revised the manuscript. Lastly, Yazan Jarrar supervised this research.

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The ethical issue

The study protocol was approved by the ethical committee in the Faculty of Medicine, Al-Balqa Applied University, Al-Salt, Jordan.

Availability of data

Data are available with the corresponding author upon request.

Conflict of interest

Authors declare that there is no conflict of interest.

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