Contextualizing prohibitors to quitting tobacco use among university students in Qatar: A qualitative study

Lama Al-Jindi[1], Naeema Al-Sulaiman[1], Ghadir Fakhri Al-Jayyousi[1]

AFFILIATION
1 Department of Public Health, College of Health Sciences, QU Health Sector, Qatar University, Doha, Qatar

CORRESPONDENCE TO
Ghadir Fakhri Al-Jayyousi. Department of Public Health, College of Health Sciences, QU Health Sector, Qatar University, 2713, Doha, Qatar
E-mail: g.aljayyousi@qu.edu.qa ORCID iD: https://orcid.org/0000-0001-5995-1693

KEYWORDS
tobacco quitting, cessation, barriers, perceived willingness, masculine culture, university students

Received: 19 August 2024, **Revised:** 8 February 2025, **Accepted:** 20 May 2025

Popul. Med. 2025;7(May):13 https://doi.org/10.18332/popmed/207392

ABSTRACT

INTRODUCTION Quitting tobacco contributes significantly to the reduction in the risk of developing multiple diseases and therefore increases life expectancy. This qualitative study aimed to investigate the barriers prohibiting university students in Qatar from quitting tobacco use.

METHODS The study was conducted in the largest national university in Qatar, which joined the fifth cohort of the Tobacco-Free Generation Campus Initiative, a program of the American Cancer Society's Tobacco Control Center that provided funding to support the implementation of 100% smoke- and tobacco-free policies on university campuses. Following an inductive approach, a sample of 20 students was recruited through posted flyers, social media announcements, and snowball sampling. Semi-structured interviews were carried out with either current or former tobacco user students. Interviews were transcribed verbatim and thematic analysis was employed.

RESULTS Major prohibitors to quitting tobacco use were: perceived willingness and readiness to quit tobacco use, misconceptions about tobacco-related health risks, relying on tobacco use to cope with stress and negative emotions, being discouraged by friends to quit tobacco use, family tobacco use, and the masculine culture that praises male smoking behavior.

CONCLUSIONS Our study findings point out the different ecologies shaping barriers to quitting tobacco use among young adults in Qatar. A deeper comprehension of these barriers can pave the way for effective culturally tailored interventions and tobacco-free campus policies.

INTRODUCTION

The prevalence of tobacco use remains alarmingly high across the globe, with statistics indicating 942 million male and 175 million female smokers aged ≥15 years[1]. The tobacco use epidemic stands as a paramount global public health issue, as highlighted by the World Health Organization (WHO), which reports an annual death toll exceeding 8 million, with a staggering 50% mortality rate among its users[2]. In the Middle East, tobacco use rates remain noteworthy, with Egypt having the highest male smoking prevalence in the region at 44.5%[1]. Within the Gulf Region, Saudi Arabia holds the highest male smoking prevalence at 24.9%[1], while Qatar reports an overall tobacco use prevalence of 25.2%, with 21.5% attributed to smoked tobacco[3]. Among Qatar's tobacco users, cigarette smoking accounts for 42.8%, followed by waterpipe smoking at 20.9%, pipe smoking at 3.2%, and electronic cigarette usage at 2%[3].

Studies reveal high tobacco smoking prevalence among university students across various Middle Eastern countries, including Egypt, Kuwait, and Saudi Arabia, where prevalence rates range between 42.3% and 46.7%[4]. A study conducted among Qatar University students has shown that the prevalence of tobacco use among the study participants is around 25.6%, and that waterpipe, traditional cigarettes, and electronic cigarettes were the most common types used, respectively[5,6].

Quitting tobacco contributes significantly to the reduction in the risk of developing multiple diseases and therefore increases life expectancy[7]. Encouragingly, global trends show an increasing number of former smokers compared to current smokers since 2002[8], with a majority

of adult smokers expressing a desire to quit[9]. However, understanding the obstacles to quitting tobacco is essential for developing effective tobacco control interventions. And since the benefits are greater for those who quit earlier[9], it is crucial to explore the barriers faced by young adults in quitting tobacco.

A systematic review reported stress management, lack of support, and the high acceptability of smoking within communities among the barriers to quitting tobacco across different vulnerable populations[10]. Other barriers that were found unique to certain vulnerable groups included cultural values that promote sharing, kinship and reciprocity, and the maintenance of cultural identity[10]. A study conducted in Bahrain has shown that the main barriers to quitting tobacco smoking among young adults were the enjoyment of smoking, the loss of a way to handle stress, and nicotine cravings[11]. Another study was conducted on a group of young smokers from the public and university students in Saudi Arabia reported that the most common reasons to continue smoking were tension and anxiety, boredom, and to increase pleasure and concentration, and boost self-confidence[12].

Setting the context

In 2019, the largest national university in Qatar joined the fifth cohort of the Tobacco-Free Generation Campus Initiative, a program of the American Cancer Society's Tobacco Control Center that provided funding to support the implementation of 100% smoke- and tobacco-free policies on university campuses[13]. Following that, quantitative research was conducted on campus to assess the prevalence of tobacco use and its determinants among students[5,6], in addition to examine their knowledge and attitudes towards the existing smoking policy and the implementation of a 100% smoke- and tobacco-free policy on campus[13,14]. A recent qualitative study, built on a systematic review from the Middle East about the factors associated with tobacco cessation programs' effectiveness[15], has investigated the barriers preventing a sample of these tobacco user students from seeking the help of clinical cessation services. The study pointed out an important cultural barrier preventing them from seeking the services, which is the masculine culture that prohibited men to seek cessation help and social stigma around Arab women's tobacco use[16]. Building on that, we recognized the need to dig deeply about the barriers to quit tobacco use among this population and the different contexts and ecologies shaping these barriers. Exploring these multifaceted barriers is vital for planning effective and evidence-based tobacco control interventions that are targeted and culturally sensitive, and informing services and policies on campus.

Theoretical perspectives

Two theories were applied to construct the interview guide and inform the analysis plan in the study. The Health Belief Model (HBM) was applied to capture individual factors that may prohibit tobacco users from quitting, including their perceptions of the health risks of tobacco use, and their willingness to quit[17]. The main premises of the socio-ecological model (SEM) were applied to understand how other contexts prohibit the participants in our study from quitting[18]. SEM demonstrated how these prohibitors are shaped by factors embedded at different levels, including the individual, behavior and lifestyle, and sociocultural factors.

Study aim

The aim of this qualitative study is to explore the individual, behavior and lifestyle, and sociocultural factors that prohibit university students in Qatar from quitting tobacco use.

METHODS

This study employed a qualitative design and was conducted at Qatar University in 2022, exploring university students' perspectives on tobacco use and quitting attempts. Adopting an inductive approach, the study aimed to capture rich, in-depth insights free from pre-existing assumptions, using a naturalistic perspective suited to complex social phenomena[19].

Within the timeframe of January to February 2022, this qualitative investigation was carried out among university students in Qatar, forming a segment of a broader qualitative research endeavor focused on unravelling the factors influencing tobacco use, tobacco quitting, and the pursuit of clinical cessation help among university students[16]. Qualitative studies serve as valuable tools for furnishing detailed portrayals of intricate phenomena, capturing singular occurrences, and amplifying the voices of marginalized perspectives[19]. Moreover, an inductive methodology was adopted, wherein the researcher refrained from preconceived notions and remained receptive to comprehending novel phenomena and addressing the research inquiry[19].

Participants

Participants meeting the following criteria were recruited: 1) actively enrolled in university; 2) current or past users of tobacco; and 3) aged ≥18 years. As defined by the Centers for Disease Control and Prevention (CDC), a current smoker is an adult who has smoked 100 cigarettes in his/her lifetime and currently smokes, while a former smoker is an adult who has smoked at least 100 cigarettes in his/her lifetime but has ceased smoking at the time of the interview[20].Through these criteria, we aimed to explore the barriers and challenges to quitting tobacco from the viewpoints of both current and former users.

The decision to include past tobacco users in this study, despite the potential for recall bias[21], is justified by the need to understand the full spectrum of tobacco use behaviors and the complexities surrounding cessation experiences. Research shows that former smokers can provide valuable

insights into their quitting processes, which can inform current cessation strategies[22].

Flyers were distributed on both male and female campuses at the university, and announcements were posted on various social media platforms to invite students to participate during the spring semester of 2022. The materials explained the study's objectives and inclusion criteria, providing contact information for interested individuals or those with questions. Additionally, we employed a snowball sampling method to reach participants who might be harder to engage due to the sensitive nature and societal stigma surrounding our topic[23].

Potential participants were screened for eligibility, and verbal consent was obtained before scheduling interviews based on their language preference (Arabic or English) and interview format preference (face-to-face on campus or online via Microsoft Teams).

Data collection

This research received approval from the Institutional Review Board of Qatar University (IRB 1644-EA/21). Data collection involved semi-structured interviews with probing inquiries employed to delve deeply into participants' perspectives, attitudes, beliefs, and spontaneous viewpoints regarding the barriers to quitting tobacco use.

An interview guide (see Supplementary file), informed by a review of literature on tobacco use and cessation barriers and the main premises of the HBM and SEM, was constructed in English, translated into Arabic by the primary author, and back-translated by the corresponding author to ensure clarity. The guide was iteratively refined, incorporating additional probing questions to enhance the depth of understanding during interviews.

The HBM, originally developed by Rosenstock[24], emphasizes that individual health behavior decisions are influenced by their perceptions of susceptibility, severity, benefits, barriers, cues to action, and self-efficacy. For this study, the HBM guided the questions related to participants' perceived risks of tobacco use (e.g. 'Do you think tobacco affects you negatively? If yes, how?'), perceived benefits and barriers to cessation (e.g. 'What is stopping you from quitting tobacco use?' and 'What methods/services do you believe will help you quit?'), and self-efficacy in quitting (e.g. 'Do you think you are able to quit tobacco use?'). This theoretical lens allowed the research to identify misconceptions about tobacco-related health risks and the psychological barriers to cessation.

On the other hand, the SEM considers health behaviors within the broader context of interpersonal, organizational, community, and societal influences[25]. Incorporating the SEM, the interview guide included questions addressing the role of social networks and cultural factors, such as family and friends' tobacco use (e.g. 'Do you have family members/friends who use tobacco? Did any of them try quitting?'), peer pressure (e.g. 'What caused you to relapse?'), and cultural norms (e.g. 'How do you believe the culture is influencing your decision to quit?'). The SEM framework also informed the exploration of environmental and institutional factors, including the potential impact of a tobacco-free campus policy (e.g. 'Do you support the enforcement of a 'No Smoking' policy on QU campus?').

Participants were queried about their tobacco usage patterns, types of tobacco products used, initiation age, current frequency and settings of use, past cessation attempts, methods utilized for quitting or attempting to quit, and reasons for relapse. Additionally, participants were asked about their perceptions regarding the health implications of tobacco use, current desires to quit, and the influence of family, peers, and culture on smoking and cessation behaviors.

Interviews, conducted by members of the research team, ranged from 40 to 75 minutes and were digitally recorded for subsequent verbatim transcription. No incentives were offered to participants, who were informed of the option for further interviews to clarify raised issues. Data collection continued until saturation was achieved[26]. To safeguard participant confidentiality, numerical identifiers were assigned to each participant. Data were securely stored on password-protected devices accessible only to the research team.

Transcription was done in participants' original languages, with Arabic quotes translated into English and included as illustrative examples to support identified themes. Transcripts were formatted into Microsoft Word tables following the suggestion of LaPelle[27], comprising participant numbers, theme/code numbers, interviewer questions/participant responses, and sequence numbers. Each question or utterance from either party was recorded in a separate row, facilitating data coding, table merging across participants, and diverse data sorting approaches[27].

Data analysis

Thematic analysis was employed to discern patterns and extract significant insights from participant responses[19]. The coding phase initiated the analysis process, involving an examination of interview content to assess response relevance[28]. Initially, open coding was utilized to pinpoint codes, major themes, and subthemes in the initial transcript, forming the basis for constructing a codebook. During this phase, statements addressing research inquiries were highlighted, labelled with colors and numbers, and each code was assigned a unique identifier (e.g. code no. 2.00). Iterative adjustments and refinements were made to codes until the final refined set was established.

Subsequently, axial coding, the second level, aimed at delineating relationships between codes to establish categories[29]. Following the completion of coding for all transcripts, consensus was reached on the definitive list of themes and subthemes, which were synthesized into a

comprehensive depiction of the phenomenon. Data analysis of transcribed interviews was conducted in their original languages to ensure accuracy of interpretation.

To bolster coding credibility, the initial two authors independently coded the first interview, subsequently reconciling any discrepancies through discussion. The interview guide was adapted, incorporating probing questions to elicit richer data, while the codebook facilitated coding of subsequent transcripts. Emerging themes and subthemes were seamlessly integrated into the evolving codebook.

Code definitions were aligned with the study's objectives, with regular meetings among researchers to refine codes and themes, adhering to the recommendation of Miles and Huberman[30] for intercoder reliability of 80% agreement. In total, seven codes were established, with only one instance of disagreement regarding code wording. Inter-rater reliability (IRR) was calculated using the formula: (Number of agreed codes/Total number of codes) × 100%, yielding an IRR of 85.7%[30].

RESULTS

The study comprised 20 actively enrolled students at QU, including 16 men and 4 women, who were current or former tobacco users. Their ages ranged from 20 to 31 years, representing diverse nationalities such as Qatari, Syrian, Palestinian, Egyptian, Moroccan, Jordanian, and Pakistani. Cigarettes (95%) and waterpipes (95%) were the most commonly used tobacco products among participants. However, e-cigarettes, pipe, and nicotine pouches were also used. Eighteen were current tobacco users with varying frequencies, while two had successfully quit with abstinence periods of 6 weeks and 6 months, respectively. Nineteen of the 20 participants had attempted to quit tobacco use at least once (see Table 1 for participants' characteristics).

The variations in tobacco use frequency as well as tobacco products used among the participants may be attributed to several factors. One potential justification is that participants were at different stages of the quitting process as can be explained by the Transtheoretical Model (Stages of Change). For example, according to Etter[31], individuals in the 'pre-contemplation' stage, characterized by a lack of motivation to quit, tend to exhibit higher levels of tobacco consumption. Moreover, participants who reported only waterpipe use in our study, either have waterpipe as the product they are trying to quit, or they have switched to waterpipe during their journey to quit cigarettes smoking. It is documented in the literature that people in their quitting journey might change from smoking cigarettes to using waterpipe or other products (e.g. electronic cigarettes) as they perceived them as less harmful to their health[32].

Various themes identified during the analysis explored the obstacles hindering participants from quitting tobacco use. Employing the fundamental principles of the Health Belief Model (HBM) and Socio-Ecological Model (SEM) aided in consolidating our thematic findings, with barriers predominantly situated within individual and sociocultural contexts. (see Table 2 for frequency and quotes of themes).

Prohibitors to quitting tobacco use

The primary impediments recognized in quitting tobacco use encompassed: 1) perceived willingness and readiness to quit tobacco use; 2) misconceptions regarding tobacco-related health risks; 3) relying on tobacco use for stress relief and negative emotions; 4) being discouraged by friends to quit tobacco use; 5) family tobacco use; and 6) masculine culture that praises male smoking behavior (see Table 2 for frequency and quotes of themes).

Perceived willingness and readiness to quit tobacco use

Half of the participants emphasized the significance of willingness as a pivotal determinant for successful tobacco cessation. Specifically, eight participants expressed that without this willingness, all quitting endeavors would be futile. They underscored that irrespective of the quitting methods employed, success hinges fundamentally on one's initial willingness and desire to quit. These individuals accentuated the primacy of personal motivation in tobacco cessation, surpassing external influences. Therefore, besides the absence of willingness posing a substantial barrier, the perception of its importance constitutes a barrier.

The majority of participants (n=15) conveyed their current lack of readiness to discontinue tobacco usage, despite seven of those expressing a desire to quit. They elucidated that, despite their intention, they presently lack the mental preparedness required for cessation. Participants articulated that relinquishing smoking entails a challenging decision demanding time, resilience, and a compelling motivator. Some noted their youthfulness as a reason for postponing cessation to continue enjoying social activities, while others cited their hectic lifestyles as a hindrance to prioritizing health concerns and quitting efforts. Additionally, two participants envisaged quitting in the future, particularly upon having children, to avoid harming them.

Misconceptions regarding tobacco-related health risks

While most participants acknowledged the detrimental impact of smoking on their health, a minority (n=4) expressed a lack of perceived significant health effects from smoking at present. Among them, two attributed their belief to the infrequency of their tobacco use, noting the absence of evident adverse effects or physical illness. One participant opined that the impact of smoking is less severe on youth compared to older individuals, thus feeling less urgency to quit at present.

Another participant held the belief that engaging in regular physical activity mitigates the significant health effects of smoking. They expressed confidence that physical exercise serves to detoxify their body and cleanse their lungs

Table 1. Characteristics of participants in a qualitative study conducted at Qatar University, 2022 (N=20)

Participant identifier	Age (years)	Gender	Nationality	Initiation age (years)	Current smoking status	Tobacco products ever used	Current frequency
1	21	Female	Palestinian/ Egyptian	16	Currently smoking	Cigarettes, pipe, waterpipe	Pipe: once/twice a day
2	22	Female	Syrian	16	Currently smoking	Waterpipe, cigarettes	Waterpipe: once every 1–2 weeks
3	27	Female	Syrian	23	Currently smoking	Cigarettes, waterpipe	1–2 cigarettes per week
4	21	Male	Egyptian	15	Currently smoking	Pipe, waterpipe, cigarettes	Pipe: once per hour, everyday Waterpipe: 2–3 times per month
5	23	Male	Egyptian	19	6 weeks abstinence	Waterpipe, e-cigarettes	N/A
6	24	Male	Palestinian	17	Currently smoking	Cigarettes, waterpipe, e-cigarettes	11 cigarettes per day
7	22	Male	Moroccan	Teenage (specific age not recalled)	Currently smoking	Cigarettes, waterpipe	Cigarettes: 6–7 per day Waterpipe: occasionally
8	24	Male	Jordanian	18	Currently smoking	Cigarettes, waterpipe, pipe	1–2 cigarettes per day
9	22	Male	Egyptian	9	Currently smoking	Cigarettes, pipe, waterpipe	Pipe: daily Cigarettes: 1 pack per 2–3 days Waterpipe: once every 1–2 weeks
10	31	Male	Pakistani	16–17	Currently smoking	Cigarettes, pipe, waterpipe, e-cigarettes	E-cigarettes: daily
11	22	Male	Egyptian	19	Currently Smoking	Cigarettes, waterpipe, pipe, e-cigarettes	7–8 cigarettes per day
12	23	Male	Jordanian	11-12	6 months abstinence	Cigarettes, pipe	N/A
13	22	Male	Egyptian	15	Currently smoking	Cigarettes, waterpipe, pipe, e-cigarettes	Cigarettes: 5–6 per day Waterpipe: occasionally
14	21	Male	Jordanian	15	Currently smoking	Cigarettes, e-cigarettes, pipe, waterpipe, nicotine pouches	One and a half packs of cigarettes per day
15	21	Male	Syrian	12	Currently smoking	Cigarettes, pipe, e-cigarettes, nicotine pouches, waterpipe	Cigarettes: around one pack per day Waterpipe: 1–2 times per week Chewable tobacco: whenever smoking is not accessible
16	20	Male	Egyptian	14	Currently smoking	Cigarettes, pipe, waterpipe	Cigarettes: one and a half packs a day Pipe: twice per day Waterpipe: once every 1–2 weeks

Continued

Table 1. Continued

Participant identifier	Age (years)	Gender	Nationality	Initiation age (years)	Current smoking status	Tobacco products ever used	Current frequency
17	20	Female	Qatari	17	Currently smoking	Pipe, cigarettes, waterpipe, e-cigarettes	Pipe: 3–5 times a day, or more Cigarettes: 2 per day Waterpipe: twice a week E-cigarettes: once a week
18	22	Male	Syrian	14	Currently smoking	Cigarettes, waterpipe, pipe, e-cigarettes	Cigarettes: half a pack per day Waterpipe: once every 4 months
19	21	Male	Syrian	12-13	Currently smoking	Cigarettes, pipe, waterpipe, e-cigarettes	Cigarettes: 1 pack per day, or less Waterpipe: 1–2 times per day Pipe: once every couple of days
20	26	Male	Qatari	16	Currently smoking	Waterpipe, cigarettes, pipe	Waterpipe: 1–2 times per day Cigarettes: 1 pack per 5 days Pipe: occasionally

of cigarette tar and other toxins, effectively 'balancing out' or reversing the damage caused by smoking.

Relying on tobacco use for stress relief and negative emotions

Another barrier reported by most participants (n=14) was their reliance on smoking as a coping mechanism for stress. These individuals expressed that smoking assists them in managing various stressors encountered in academic, social, or occupational contexts. Some believed that abstaining from tobacco would exacerbate their inability to cope with stress and navigate pressure, asserting that smoking enables them to remain focused and composed. Many participants also highlighted stress as a contributing factor to multiple relapses following cessation attempts. Moreover, several participants mentioned using smoking as a means to alleviate anger and escape from problems, expressing concerns that without smoking, their anger issues would intensify, and they would struggle to cope with mental distress.

Being discouraged by friends to quit tobacco use

All participants mentioned having friends who smoke. Some participants (n=5) highlighted the necessity of distancing themselves from their smoking peers and refraining from socializing with them as a crucial step toward quitting. This social influence emerges as a significant barrier to cessation and a prominent factor contributing to relapses. Many participants underscored that the presence of smokers in their social milieu serves as a primary reason for their continued smoking behavior. They noted that observing their friends smoking prompts an urge to smoke, even when they did not previously feel the need or the craving to do so.

Additionally, many participants highlighted smoking as a social activity they engage in with their friends. They remarked that gatherings devoid of smoking tend to be dull, and that smoking enhances the enjoyment of their social interactions. Some participants noted feeling obliged to accept a cigarette when offered by a friend, regardless of whether they felt the desire to smoke. Furthermore, one male participant suggested that declining a cigarette offered by a friend could be perceived as disrespectful.

Family tobacco use

Among the 20 participants, 14 reported having at least one immediate family member who smokes tobacco. Among the remaining six participants, three mentioned having relatives outside their immediate family who smoke. Furthermore, six participants with smoking family members admitted that their families' smoking habits have encouraged them to start smoking themselves and prohibited them from quitting.

Masculine culture that praises male smoking behavior

Cultural norms that glorify smoking have created societal pressures, particularly for males, concerning tobacco quitting. Participants acknowledged that smoking is culturally perceived as a masculine trait and that they believe it helps boost a man's self-confidence. Most of our male participants who endorsed this theme has mentioned a perceived relationship between smoking and having certain traits such as independence, recklessness, and a sense of 'coolness'.

In addition, five of our male participants reported that when they inform their friends of their attempts to quit smoking, their friends ridicule them for their decision.

Table 2. Key themes identified from qualitative interviews conducted at Qatar University, 2022 (N=20)

Themes	Frequency	Quotes
Individual barriers		
Willingness and readiness to quit tobacco use	8	*'No matter who it is or what they do to try to help someone quit, this person won't quit unless they have the willingness to.'* (P18) *'I realized that if someone wants to quit, they need to have the willingness to. No pills or nicotine gums will make him quit. They might be of little help but those things remain secondary. The primary factor in quitting is one's own decision.* *I don't think there is a doctor in the world who can make a smoker quit, if there is, the chance would be 0.1%. It depends 100% on the smoker's willingness and has nothing to do with the doctor or medications.'* (P19)
Absence of readiness	15	*'I want to quit and I believe there will be a time that I will quit. I like smoking now as a guy and you know specially while hanging out with my friends, but this is a temporary phase. There will be a time where I will want to start living a healthy lifestyle, most probably after getting married because I will have kids and I wouldn't want to harm them.'* (P15)
Misconceptions regarding tobacco-related health risks	16	*'The breathing will not be the same when you're a smoker vs when you're not, obviously, but as I told you, we are still young, the effects of smoking will not be as severe as when you are 40 years old.'* (P14) *'As long as I'm filtering I'm okay, I smoke very lightly. So you're dirtying your lungs and there is tar and all of that. There's this arterial disease, I forgot what it's called, and there's hypertension and etc. However, in parallel when you go to the gym on a daily basis and you run every day, you are doing some kind of filtering right?'* (P8)
Behavioral and lifestyle		
Relying on tobacco use to cope with stress and negative emotions	14	*'I have a lot and having a lot will make you stressed. And cigarettes do help in some situations. If I already have a lot going on and I'm stressed and decide that I'm also not going to smoke, it will all be too much for me to handle. I feel like if I quit smoking now, I will probably fall back into it soon.'* (P7)
Social networks		
Being discouraged by friends to quit tobacco use	5	*'All of my friends smoke. I think I can quit by staying away from them. If I go out with them I'll see one of them smoking so it'll make me want to smoke again.'* (P16) *'There's also this thing among guys, if he offers you a cigarette and you don't take it, it's like you didn't respect him. A couple of days ago one guy offered me a cigarette but I said no thank you I don't want to, he told me to take it and I said not again, he said come on take it life is short, and he kept insisting until I took it.'* (P8)
Family tobacco use	17	*'My mom smokes shisha and cigarettes. My mom's side of the family are also all smokers. I think family has one of the strongest influences on you, it affects you in many ways because it's family. So to be honest, yes I do think my mom's smoking behavior did affect me even more than my friends I guess.'* (P2) *'My mom is a smoker and I spend a lot of time with her. Every morning we have to sit together and smoke a cigarette with our morning coffee. It's like a ritual to us. I was actually encouraged by her. I was like Mama if I want to try cigarettes I want to try it with you. She was like yes try it. I think the family influence was definitely there because most of family members smoke and I saw how much they enjoy it, so I was curious about how it feels to smoke with your coffee. We are also very heavy coffee drinkers at my household.'* (P3)
Sociocultural barriers		
Masculine culture that praises male smoking behavior	5	*'Personally, as a guy, smoking makes me feel confident.'* (P15) *'It started when we used to see the cool men on TV shows smoke so we wanted to be like them. Just like in Peaky Blinders.'* (P18) *'As a teenager I used to tie smoking with masculinity, independence, and carelessness.'* (P19) *'You know how reckless boys are in middle school and high school. All my friends used to smoke and we used to tie smoking with masculinity.'* (P20) *'There are many people who made fun, as in "why do you want to quit?", "Oh please Mr. Pink Lung". They started making fun as in why quit? What happened to the world?'* (P18)

DISCUSSION

This study aimed to explore the major barriers to quitting tobacco use among university students in Qatar. Applying the main concepts of HBM and SEM, the findings showed that these barriers are multidimensional and shaped by individual, behavioral, social, and cultural factors (Figure 1 in the Supplementary file depicts these factors).

The center of the model represented the individual barriers. Participants clearly undermined cessation efforts in the absence of willingness and the lack of readiness to quit. According to previous research, the perceived importance of willingness poses a barrier to successful quitting, since believing that willingness is necessary was found to undermine the cessation attempts[33]. An intervention study assessing the factors related to the readiness to quit tobacco use among young adults has shown that older age is positively associated with readiness to quit smoking. Smokers who were ready to quit were significantly older than those who were not ready[34]. Some of our participants who stated that they are not ready to quit tobacco use have mentioned that they believe they are still young and that they plan to quit when they get married and have children. Health promotion messages can be created to enhance quitting tobacco use among university students by clarifying that the presence of willingness to seeking tobacco cessation is important; however, quitting tobacco is multifactorial that requires the presence of other support factors to be effective and successful.

It is documented in the literature that low risk perception of tobacco use is a barrier to smoking cessation[10], which is consistent with our findings. A study about the perceptions of the relative harm of cigarettes among US youth has found that the majority of youth perceived the harmfulness of cigarettes as dose-dependent[35]. In alignment with this finding, some of our participants attributed claims of their health not being significantly affected by tobacco to the low frequency of smoking. This reflects that participants in our study have a low level of knowledge in regard to hazards and addiction associated with tobacco use.

The second level of the model is representing the barriers shaped by behavior and lifestyle of the participants. The barrier addressed by most of our participants was relying on tobacco to cope with stress caused by busy work and study schedules; this was recognized as a barrier to smoking cessation in many studies in the literature[10,36]. In fact, a study assessing the quitting barriers among young adults in the US has identified the 'loss of a way to handle stress' as the second most common barrier to quitting smoking[36]. In addition, other studies reported that managing emotions and mood was also a barrier[10,37], which also aligns with our findings.

The third level of the model is representing social networks as a barrier. Friends' smoking behaviors have been recognized as a barrier to quitting in many studies[36-38]. In fact, one study has identified it as the topmost common barrier to cessation among young adults[36]. In our study, some participants have attributed their relapses to seeing their friends smoke, and have stated that being surrounded by smokers is a major barrier for them to seek tobacco cessation. In addition, one study in Malaysia has addressed the 'cigarette culture' where offering a cigarette to a friend is considered as a token of friendship[38]. This finding is consistent with our theme of peer pressure as a barrier to quitting tobacco. Moreover, tobacco use among family members and its influence on young adults' tobacco use and their intention to quit have been documented in the literature[39], which aligns with our findings. Smoker students in our study reported that tobacco use among their family members and other relatives was a strong predictor for their tobacco use and a barrier to quitting. Thus, tobacco-prevention strategies should focus on involving the entire family.

Finally, the upper level in the figure is addressing the Arab culture as a barrier to tobacco cessation. Previous research has recognized cultural values of self-reliance and independence as barriers to smoking cessation among some vulnerable groups[10], which was reflected among some of our male participants as a barrier to quitting due to the social pressure of the masculine Arab culture.

Implications for research and practice

More qualitative research is needed to understand the family role in influencing tobacco quitting among young adults in Qatar considering the important role of family in the Middle East, and specifically the Gulf region, in influencing health behaviors among the young generation[40]. There is also a call to conduct research among women in this region to explore how the prevailing social norms and stigma around women using tobacco affects their decision-making to quit. In addition, quantitative research can be conducted to examine students' readiness and its determinants among those who are trying to quit smoking, which would support professionals working with young adults who are trying to quit tobacco use. Future quantitative research is needed on the barriers to smoking cessation.

Health education campaigns on campus and through the university social media platforms can be organized to enhance health literacy and fight the misconceptions related to health risks associated with tobacco use among students. Inviting families to join campus campaigns is crucial considering the influence of family members' tobacco smoking behavior on their youth tobacco use and their intension to quit. These educational campaigns can also aim to change the cultural beliefs and attitudes related to tobacco use, especially among male student smokers. Moreover, the findings inform mental health services on and off the university campus about the mental health needs of students which were preventing them from quitting tobacco use. The findings will inform the implementation of a tobacco-free campus policy and support the health-promoting campus initiative at Qatar University[41].

Strengths and limitations

The use of inductive, qualitative approach has allowed us to gain a rich description and a better understanding of the different prohibitors to quitting tobacco use among university students in Qatar. Our study contributes to the limited literature available on the relevant perceptions of young Arab smokers and their experiences with quitting tobacco use. Moreover, applying triangulation in the methodology is considered a strength in our study. Triangulation was applied in the data analyses in which two researchers conducted independent analyses and met later to discuss any conflict and reached agreement. In addition, two theories (HBM and SEM) were applied to construct the interview guides and informed the analyses.

On the other hand, one of the main limitations in this study was the low recruitment of Qatari participants, both male and female, and the low recruitment of female participants. This was due to the cultural taboo around smoking, especially in the Qatari culture. Another limitation was the potential recall bias within the two former smokers within our sample, which may have affected the reliability of their accounts[21].

CONCLUSIONS

This study helped explore the various prohibitors to quitting tobacco use among university students in Qatar. The individual prohibitors included perceived willingness and readiness to quit tobacco use and misconceptions regarding tobacco-related health risks. Related to behavioral and lifestyle factors, participants reported that relying on tobacco use to cope with stress and negative emotions was a prohibitor to quit. Moreover, participants claimed that peer pressure, family tobacco use, and the Arab masculine culture that praises male smoking behavior were the sociocultural prohibitors to quit tobacco. The findings highlight the need to design cultural-sensitive, and family-based interventions to support youth quit tobacco use.

REFERENCES

1. The Tobacco Atlas: Prevalence. 2018. Updated October 26, 2023. Accessed May 20, 2025. https://tobaccoatlas.org/topic/prevalence/
2. World Health Organization. Tobacco. World Health Organization; 2025. Accessed May 20, 2025. https://www.who.int/news-room/fact-sheets/detail/tobacco
3. AlMulla A, Mamtani R, Cheema S, et al. Epidemiology of tobacco use in Qatar: Prevalence and its associated factors. PLOS ONE. 2021;16(4):e0250065. doi:10.1371/journal.pone.0250065
4. Nasser AM, Geng Y, Al-Wesabi SA. The prevalence of smoking (cigarette and waterpipe) among university students in some Arab countries: A systematic review. Asian Pac J Cancer Prev. 2020;21(3):583-591. doi:10.31557/APJCP.2020.21.3.583
5. Kurdi R, Al-Jayyousi GF, Yaseen M, Ali A, Mosleh N, Abdul Rahim HF. Prevalence, Risk Factors, Harm Perception, and Attitudes Toward E-cigarette Use Among University Students in Qatar: A Cross-Sectional Study. Front Public Health. 2021;9:682355. doi:10.3389/fpubh.2021.682355
6. Al-Jayyousi GF, Kurdi R, Islam N, Alhussaini NWZ, Awada S, Abdul Rahim H. Factors Affecting Waterpipe Tobacco Smoking among University Students in Qatar. Subst Use Misuse. 2022;57(3):392-401. doi:10.1080/10826084.2021.2012695
7. Centers for Disease Control and Prevention. Smoking and Tobacco Use. Smoking Cessation: Fast Facts. Centers for Disease Control and Prevention; 2024. Accessed May 20, 2025. https://www.cdc.gov/tobacco/php/data-statistics/smoking-cessation/index.html
8. Centers for Disease Control and Prevention. Smoking Cessation: Fast facts. Centers for Disease Control and Prevention; 2024. Accessed May 20, 2025. https://www.cdc.gov/tobacco/php/data-statistics/smoking-cessation/index.html
9. Centers for Disease Control and Prevention. Evidence-based cessation services can help make quit attempts more successful. Centers for Disease Control and Prevention; 2021. Accessed May 20, 2025. https://archive.cdc.gov/www_cdc_gov/globalhealth/stories/2021/evidence-based-cessation-services-can-help-make-quit-attempts-more-successful.html
10. Twyman L, Bonevski B, Paul C, et al. Perceived barriers to smoking cessation in selected vulnerable groups: a systematic review of the qualitative and quantitative literature. BMJ Open. 2014;4:e006414. doi:10.1136/bmjopen-2014-006414
11. Al-Hashel D, Mohammed F, Jaffar K, et al. Barriers to Quit Smoking among Adult Smokers. Bahrain Med Bull. 2012;34(4). Accessed May 20, 2025. https://www.bahrainmedicalbulletin.com/december_2012/Barriers_Quit_Smoking.pdf
12. Baig M, Bakarman MA, Gazzaz ZJ, et al. Reasons and Motivations for Cigarette Smoking and Barriers against Quitting Among a Sample of Young People in Jeddah, Saudi Arabia. Asian Pac J Cancer Prev. 2016;17(7):3483-3487. Accessed May 20, 2025. https://journal.waocp.org/article_32542_0ce2d788e4fe4825c335c0db2eced3af.pdf
13. Al-Jayyousi GF, Kurdi R, Alsaei S, Al-Kaabi H, Alrushdi AJ, Abdul Rahim HF. Students' perceptions of a university 'No Smoking' policy and barriers to implementation: a cross-sectional study. BMJ Open. 2021;11(6):e043691. doi:10.1136/bmjopen-2020-043691
14. Al-Jayyousi G, Shraim M, Hassan D, et al. University students' and staff attitudes toward the implementation of a "tobacco-free" policy: A view from Qatar. Prev Med Rep. 2024;38:102605. doi:10.1016/j.pmedr.2024.102605
15. Al-Qashoti MR, Aljassim R, Sherbash MAM, Alhussaini NWZ, Al-Jayyousi GF. Tobacco cessation programs and factors associated with their effectiveness in the Middle East: A systematic review. Tob Induc Dis. 2022;20:84. doi:10.18332/tid/153972
16. Al-Jindi L, Al-Sulaiman N, Al-Jayyousi GF. Barriers to seeking tobacco cessation services: a qualitative assessment of university students' needs in Qatar. Health Educ Res. 2024;39(3):212-227. doi:10.1093/her/cyae006
17. Sharma M. Theoretical Foundations of Health Education and Health Promotion. 4th ed. Jones & Bartlett Learning; 1979.
18. Dahlgren G, Whitehead M. Policies and Strategies to Promote

Social Equity in Health: Background Document to WHO – Strategy Paper for Europe. Accessed May 20, 2025. https://core.ac.uk/download/pdf/6472456.pdf
19. Sundler AJ, Lindberg E, Nilsson C, Palmér L. Qualitative thematic analysis based on descriptive phenomenology. Nurs Open. 2019;6(3):733-739. doi:10.1002/nop2.275
20. Centers for Disease Control and Prevention. Glossary. Centers for Disease Control and Prevention; 2017. Accessed May 20, 2025. https://archive.cdc.gov/www_cdc_gov/nchs/nhis/tobacco/tobacco_glossary.htm
21. Volk RJ, Mendoza TR, Hoover DS, Nishi SPE, Choi NJ, Bevers TB. Reliability of self-reported smoking history and its implications for lung cancer screening. Prev Med Rep. 2020;17:101037. doi:10.1016/j.pmedr.2019.101037
22. Vangeli E, Stapleton J, Smit ES, Borland R, West R. Predictors of attempts to stop smoking and their success in adult general population samples: a systematic review. Addiction. 2011;106(12):2110-2121. doi:10.1111/j.1360-0443.2011.03565.x
23. Penrod J, Preston DB, Cain RE, Starks MT. A discussion of chain referral as a method of sampling hard-to-reach populations. J Transcult Nurs. 2003;14(2):100-107. doi:10.1177/1043659602250614
24. Rosenstock IM. Why people use health services. Milbank Mem Fund Q. 1966;44(3):94-127.
25. Bronfenbrenner U. Toward an experimental ecology of human development. Am Psychol. 1977;32(7):513-531. doi:10.1037/0003-066X.32.7.513
26. Lavrakas PJ. Encyclopedia of Survey Research Methods. Sage Publications, Inc.; 2008.
27. Lapelle NR. Simplifying qualitative data analysis using general purpose software tools. Field Methods. 2004;16(1):85-108. doi:10.1177/1525822X03259227
28. Patton MQ. Qualitative Research & Evaluation Methods. 3rd ed. Sage Publications, Inc.; 2002.
29. Williams M, Moser T. The art of coding and thematic exploration in qualitative research. Int Manag Rev. 2019;15(1):45-55. Accessed May 20, 2025. http://www.imrjournal.org/uploads/1/4/2/8/14286482/imr-v15n1art4.pdf
30. Miles MB, Huberman AM. Qualitative Data Analysis: An Expanded Sourcebook. 2nd ed. Sage Publications, Inc.; 1994.
31. Etter JF. Associations between smoking prevalence, stages of change, cigarette consumption, and quit attempts across the United States. Prev Med. 2004;38(3):369-373. doi:10.1016/j.ypmed.2003.11.006
32. Akl EA, Jawad M, Lam WY, Co CN, Obeid R, Irani J. Motives, beliefs and attitudes towards waterpipe tobacco smoking: a systematic review. Harm Reduct J. 2013;10:12. doi:10.1186/1477-7517-10-12
33. Hughes JR, Naud S. Perceived role of motivation and self-efficacy in smoking cessation: A secondary data analysis. Addict Behav. 2016;61:58-61. doi:10.1016/j.addbeh.2016.05.010
34. Maier LJ, Ramo DE, Kaur M, Meacham MC, Satre DD. Factors associated with readiness to quit smoking among young adults enrolled in a Facebook-based tobacco and alcohol intervention study. Addict Behav. 2020;111:106524. doi:10.1016/j.addbeh.2020.106524
35. Ambrose BK, Rostron BL, Johnson SE, et al. Perceptions of the relative harm of cigarettes and e-cigarettes among U.S. youth. Am J Prev Med. 2014;47(2 Suppl 1):S53-S60. doi:10.1016/j.amepre.2014.04.016
36. Carlson S, Widome R, Fabian L, Luo X, Forster J. Barriers to Quitting Smoking Among Young Adults: The Role of Socioeconomic Status. Am J Health Promot. 2018;32(2):294-300. doi:10.1177/0890117117696350
37. El Hajj MS, Sheikh Ali SAS, Awaisu A, Saleh R, Kheir N, Shami R. A pharmacist-delivered smoking cessation program in Qatar: an exploration of pharmacists' and patients' perspectives of the program. Int J Clin Pharm. 2021;43(6):1574-1583. doi:10.1007/s11096-021-01286-3
38. Chean KL, Goh LG, Liew KP, et al. Barriers to smoking cessation: A qualitative study from the perspective of primary care in Malaysia. BMJ Open. 2019;9(7):e025491. doi:10.1136/bmjopen-2018-025491
39. Sharma R, Martins N, Tripathi A, et al. Influence of family environment and tobacco addiction: A short report from a post-graduate teaching hospital, India. Int J Environ Res Public Health. 2020;17(8):2868. doi:10.3390/ijerph17082868
40. Aljayyousi GF, Abu Munshar M, Al-Salim F, Osman ER. Addressing context to understand physical activity among Muslim university students: the role of gender, family, and culture. BMC Public Health. 2019;19(1):1452. doi:10.1186/s12889-019-7670-8
41. Al-Jayyousi GF, Alsayed Hassan D, Abdul Rahim H, et al. Health and well-being in the context of health-promoting university initiatives: Protocol for a mixed methods needs assessment study at Qatar University. JMIR Res Protoc. 2024;13:e58860. doi:10.2196/58860

CONFLICTS OF INTEREST

The authors have completed and submitted the ICMJE Form for Disclosure of Potential Conflicts of Interest and none was reported.

FUNDING

This work was supported by a University Student Grant (QUST-1-CHS-2022-339). The funding organization had no role in designing this research study, collecting and analyzing the data, or in the writing of the manuscript.

ETHICAL APPROVAL AND INFORMED CONSENT

Ethical approval was obtained from the Institutional Review Board of Qatar University (Approval number: QU-IRB 1644-EA/21; Date: 2021). Participants provided informed consent.

DATA AVAILABILITY

The data supporting this research are available from the authors on reasonable request.

AUTHORS' CONTRIBUTIONS

GFAJ: conceptualization, project administration and supervision, conducting interviews, analysis process, interpretation of findings, writing, revising and editing of the manuscript. LAJ and NAS: data collection, conducting and transcribing all the interviews, writing and analysis process, interpretation of findings. All authors read and approved the final version of the manuscript.

PROVENANCE AND PEER REVIEW

Not commissioned; externally peer-reviewed.