



Factors effective on students' leaving health education groups for tobacco use prevention on virtual networks: A qualitative study

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Abstract

BACKGROUND: This study was conducted with the aim to answer the following questions: What were the main reasons for students' leaving the Telegram network group? How could they be encouraged to stay in such groups?

METHODS: This was a qualitative study based on the content analysis method of Hsieh and Shannon. Using purposive sampling method, 24 students were recruited from the Islamic Azad University of Saez in Iran in 2020. Nvivo software was used for data analysis. The reliability of the findings was insured through transcribing the data as soon as possible, accurate recording of the steps of the study, and using a suitable data collection method.

RESULTS: The codes were placed into 10 subcategories and 3 main categories including the challenges of staying in the channel, smoking and not intending to quit, and motivational factors affecting the staying of individuals in the group.

CONCLUSION: Most of the participants reported the low attractiveness of the channel, the cost of the Internet, Telegram filtering, and cultural reasons as significant challenges. Using photos instead of texts, posing questions for group members to answer, putting story series on the channel, advertising on other channels for this channel, and photos or GIFs were described as motivations for staying on the channel.

KEYWORDS: Networks; Health Education; Student; Iran

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Introduction

Social media can play a dual role in tobacco use, both in promoting and quitting tobacco, so that exposure to cigarette advertisements and its brands in adolescents and young people can provoke them to smoke.¹ On the other hand, social media has been used to control smoking.² programs based on social

media campaigns have had a moderate effect on behavior change and health promotion.³

The unprecedented use of social media, including web and mobile platforms, are effective in quitting smoking. The exchanging of photos and videos in a virtual network generates new conversations that have had an effect on behaviour.⁴

Studies have shown that social network-based interventions such as Facebook can be effective on the acceptance of messages about behavior change in smoking.^{1,2,5} Moreover, studies have shown that social media-based

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interventions and cell phones can affect tobacco use cessation.^{3,6} Cell phone-based intervention is simple, feasible, and relatively inexpensive, and it can be used for health purposes, including tobacco use cessation programs.

A study showed that using online and Facebook ads that provided appropriate content, targeted reminders, and discussions to engage participants was effective in smoking cessation.⁷ Another study found that educational interventions through Facebook played an important role in smoking cessation among young adults.⁸

Other studies found that educational interventions through Facebook played an important role in smoking cessation among young adults.^{8,9}

The results of a study by ISPA (Iranian Student Opinion Polling Center in Jahade Deneshgahi University) showed that in March 2016, 71% of Iranian youth used Telegram and 49% used Instagram.⁶ Furthermore, about 80% of Telegram users in Iran did not leave Telegram after it was filtered by the government.¹⁰

It has been suggested that interventions through social networks by sending continuous messages to participants can be effective in smoking cessation.⁵

Previous studies have not investigated the reasons why people leave training groups for tobacco use prevention in virtual networks especially through the Telegram social network. Social media interventions could make the existing web-based tobacco cessation efforts succeed. The present study was conducted with the aim to initially investigate the effectiveness of tobacco prevention and control messages, based on the theory of planned behavior through the Telegram social network, on the attitudes and behaviors of students toward smoking (why students left training groups for tobacco use prevention in virtual networks). After 1 month, the students gradually left the Telegram group, so that, less than half of them remained in the group;

therefore, we conducted a qualitative study to investigate the reasons and motivations for leaving the group. However, after a significant number of the participants left the Telegram channel, we asked them to explain their reasons for leaving the group and how we could motivate them to stay in such groups. The results of this study can be useful for designing educational interventions presented through virtual networks to change tobacco-related behaviors.

Methods

This qualitative study was conducted based on Hsieh and Shannon's content analysis method in 2021.¹¹ Using purposive sampling method, 24 students who were studying primary education at the Islamic Azad University of Saez in Iran were recruited. The study inclusion criteria included being a university student and a member of Telegram channels, and not having a serious mental or physical problem based on a self-report survey. The study exclusion criteria included serious mental or physical problems and unwillingness to be in the Telegram channels. The participants previously participated in the quantitative study as explained in the introduction. After obtaining permission from the ethics committee of Kurdistan University of Medical Sciences, Iran, focused-group interviews were conducted to collect the data. One of the researchers, who had previously been trained to conduct in-depth interviews and had sufficient experience in qualitative research, facilitated the interviews. The objectives of the study were explained to the participants and written consent was obtained from them. They were also assured that their data would remain confidential. Group interviews were semi-structured interviews with note-taking during the interview. All conversations and the moods of the participants were recorded.

The main questions were: "What were the

main reasons for students to leave the Telegram health network group?" And "How could they be encouraged to participate in such groups?" All participants were encouraged to participate in the discussion, and each session ended when the answers became repetitive. For each group, the interview lasted 1 hour and 20 minutes, and they were interviewed in a classroom of the Islamic Azad University.

There was no need for an individual interview as the participants expressed their views comfortably in a homogenous group in terms of age, gender, field of study, and cultural status. However, in order to clarify some concepts, after determining their categories, we talked to 3 participants individually.

The steps of data analysis were as follows: First, interviews were written verbatim and read several times to get the overall viewpoints of the participants and a deep understanding of their experiences. Then, participants' significant points were coded, the codes were categorized and compared based on similarities and differences, subcategories and titles were prepared, and finally, the participants' opinions on each topic were described. Nvivo software (version 7; QSR International, Burlington, MA, USA) was used for data management. The correction of the data collection was guaranteed by assessing the authenticity of expressions in the writings, the long-term involvement of the researcher with the data, and the trustful relationship between the researcher and the participants. The reliability of the findings was ensured by their early transcription, accurate recording of the steps of the study, and a good

method of data collection. In order to stabilize the data, two members of the research teams performed the analyses independently (bookmarks code), then, compared their findings, and in case of any disagreement, they discussed and exchanged their views. Review and evaluation of the analyses were approved by 3 faculty members of the university, and the findings were confirmed.

Students who had expressed interest in the study participated in the study and signed an informed consent form. All ethical principles, including the confidentiality of the personal information of participants in the study and the right to leave the study, were taken into consideration. The interviewer introduced herself to the participants and explained the objectives of the study to them. The study was approved by the ethics committee of Kurdistan University of Medical Sciences with an IR code of ethics (MUK. REC. 1398.091).

Results

In total, 24 people including 10 girls (41.6%) and 14 boys (58.3%) were interviewed. Their mean age was 21.62 ± 3.45 years. The analysis of the interviews led to the identification of 171 initial codes, which resulted in 106 final codes in terms of differences, similarities, and proportions. The codes were placed into 10 subcategories and 3 main categories (Table 1). Each category was described as follows:

First main category: The challenges of staying in the channel

The participants' experiences revealed the challenges that led to leaving the Telegram channel.

Table 1. Main categories and subcategories related to the students' leaving the Telegram group

Main categories	Subcategories
Challenges of staying in the channel	No attractiveness Internet problems Lack of motivation Cultural and social barriers
Smoking and not planning to quit	Psychological factors Underlying factors Individual factors
Motivational factors affecting the individual's presence in the group	Perceived insensitivity Groups' attractiveness Using other social media

Overviewing the experiences presented, it seemed that lack of attractiveness of the channel and technical problems of the Internet were the most important challenges. Other challenges included lack of motivation, socio-cultural barriers, and psychological factors, all of which were categorized as the challenges of staying in the channel.

Lack of attractiveness of the channel: Most participants complained about the low appeal of the messages sent in the channel. For example, one participant said: "If the message is not interesting, students will leave the group soon; in fact, talking about things such as smoking is not interesting." (Participant one- a boy). Repeated and lengthy messages were also considered unappealing. One participant said: "Some of the texts were long" (participant one- a girl). It is noteworthy that many students reported that for young people it is more interesting to stay in channels or groups with a larger number of members, and they mentioned the small number of people in the group as one of the reasons for leaving it. For example, one student stated: "because the number of people in the channel is small, I think it is not an important and worthy channel." Moreover, she said that any page that has more followers attracts more attention on Instagram" (participant five-a girl). It seemed that short and non-repetitive messages and a higher number of people in a group were more attractive to the students. In addition, their leaving the channel was probably because the messages were solely about smoking, which made them boring for the participants.

Internet problems: Many participants noted Internet problems as a reason for leaving the channel. For example, one of them said: "Telegram is filtered and downloading VPNs increases data usage" (participant two- a girl). Another participant said: "If the messages do not increase data usage much, they are good, for example, I read the text of messages, but I

do not download the videos" (Participant thirteen- a boy). Another said: "Some people may not have enough internet data to stay in the channel. I did not leave the channel early, but I did not download the movies to save internet data" (Participant nine- a girl). Sometimes accessing the Internet is difficult which, in addition to the filtering of Telegram in Iran and the cost of the Internet, was one of the main concerns of the students.

Lack of motivation: Many students stated that they were not interested in the channel and they did not feel any need to join the group; therefore, they were not motivated to stay in the channel. For example, one of them stated: "I felt no need, because there was no smoker in my family, so I left the group" (participant five- a girl). Participants also claimed that the content was repetitive and boring. One of them stated: "When you see a lot of repetitive messages, you simply leave the group" (Participant eleven- a boy). From the participants' statements, it was inferred that the messages should fulfill their needs, and they should be sent at appropriate intervals. Of course, it was not possible to adapt the messages to their needs because, due to the confidentiality of personal information, they were not categorized as smokers or non-smokers.

Cultural and social barriers: Factors such as visibility of profile pictures to others, lack of trust in social media, and the personal interest of the channel managers seemed to be important. For example, one student stated: "Some people have profile pictures and they do not like others to see them" (participant four-a girl). These barriers stemmed from lack of confidence in social media and the importance of personal privacy. Another participant said: "Some may think that this channel follows the managers' personal interests" (participant seven- a boy). People probably have personal photos in their telegram profiles that they do not want anyone

to see, and therefore, they do not like to be in Telegram groups in which their profile photos can be seen by others.

Psychological factors: According to the experiences of the participants, psychological factors such as lack of interest in becoming aware of the dangers of smoking and evading reality were the reasons for leaving the channel. For example, one of the boys stated that he was afraid of the picture of his lungs, which showed that he was sick and his lungs were black, and he wanted to run away from that image (participant four- a boy). The same participant went on to say: "Once he explained the anatomy of the heart to us, we all put our hands on our hearts, we were afraid because we did not want to die, and we left the group because we did not want to know anything about our health" (Participant four- a boy). Warnings about the dangers of smoking seemed to be unpleasant for the participants and they were among the reasons for leaving the channel.

The second main category: Reasons for smoking and not intending to quit

The goal of our program was to prevent and control smoking; however, due to the confidentiality of personal information, the participants were not categorized as smokers and non-smokers (they were not asked whether they smoke or not). Many of them stated that they smoked and they were not willing to quit smoking, and this was why they left the Telegram channel; in fact, they did not feel any need to stay in the channel. However, this category included the three subcategories of background factors, individual factors, and perceived insensitivity.

Background factors: The participants stated the following reasons for their smoking and leaving the channel: a) easy access to cigarettes and places for smoking, b) economic factors such as unemployment, c) social factors such as common use of hookah in families, d) easier onset of smoking in university dormitories, e)

smoking as a common behavior for men, f) fathers and social celebrities as smoking symbols for the students, g) lack of recreational and entertainment environments. Such students did not want to stay in our Telegram channel. One of the boys said: "Unemployment is my reason for smoking" (participant 12- a boy). Another participant said: "We went to the gym first, the adults used to smoke there, and my friend started smoking because he felt that he was a man like them" (participant 10, a boy). Problems of quitting smoking such as losing relaxation were stated to be other reasons for smoking and leaving the channel. For example, one of the girls said: "People do not quit smoking until they have to; my father quit smoking because of lung cancer" (Participant 7- a girl).

Individual factors: Participants stated that, in addition to background factors, there were some individual factors that made them carry on smoking, and consequently, leave the channel. They emphasized emotional problems, attitudes, and family problems as the reasons for leaving the channel, which could be categorized as individual factors. These factors included failure in love, feeling that one is old enough to smoke, inability to say no, relieving pain, imitating others' behaviors (smokers), and lack of mutual understanding between the person and his/her family. One of the boys said: "Everyone has got a reason for smoking; they might be upset or have a problem" (participant 2- a boy). Another individual said: "Smokers feel that they are old enough to start smoking and they feel proud of themselves when they are smoking" (participant 8- a boy). One of the girls said: "Some people smoke because of failure in love, so they do not care about quitting smoking and they easily leave this channel" (participant 9- a girl).

Perceived lack of sensitivity: The reason for categorizing this subcategory was the participants' lack of understanding of the

harms of smoking, not thinking about the consequences of smoking, and preferring the temporary pleasure of smoking to its harms. One of the girls said: "They (smokers) think that smoking has not done anything to them so far, and so, it will not harm them in the future either" (participant six- a girl). Another one said: "A person might reason that I smoke a hookah now and I feel better; however, it does not matter what happens to my lungs later" (participant 6- a boy). Evading reality and preferring the present pleasure to the subsequent consequences of smoking was inferred from the participants' views. This was apparently logical, especially when considering the age of the participants.

Third main category: Motivational factors affecting the staying of individuals in the group

During the interview, participants were asked for their views on how to improve Telegram channels or groups in ways that will attract young people. We found two subcategories of group attractiveness and the use of other social media.

The attractiveness of the group: A significant majority of the participants mentioned the attractiveness of the channel as a reason to stay in it. Attractiveness, drawing attention, the authenticity of messages, paying attention to the problems of young people, having useful health and sports content, using photos instead of text, refusing direct advice, presenting questions as competitions for members of the channel, putting story series in the channel, advertising on other channels for this channel, humorous content, and GIFs were described as motivations to stay on the channel. There were also suggestions such as better alternatives to smoking like entertaining activities on the channel. A participant said: "You really have to discuss something that is in the world of that young man, in his real-life" (participant 9- a boy). Another stated: "I do not join a channel unless

it is very interesting" (participant 13- a boy).

Another participant said: "Young people are always looking for attractive things; therefore, channel owners must be creative to draw their attention" (participant 3- a boy). Another said: "It is better if the channel provides information about health because some people do not like smoking, rather they, especially men, prefer sports and sports news" (participant 9- a girl). Another boy said: "There is a black lung photo on a pack of cigarettes, but if they give us the whole story from beginning to end, it will be much better, like movies" (participant 2-a boy). We inferred that using multidimensional intervention programs with health and sports related content, which are also fun and creative, can play an effective role in channel attractiveness. Moreover, along with messages related to smoking, sending fascinating and interesting messages was also necessary.

Using other social media: Some participants stated that they preferred Instagram and WhatsApp messenger because they were faster and were not filtered. However, some were opposed to using WhatsApp Messenger because their phone number was visible. One of the boys said: "Use Instagram because it is better, everyone thinks it is better, but it uses more internet data" (participant 12 - a boy). Most participants emphasized the need to increase channel attractiveness, but their opinions about social media types were somewhat different.

Discussion

This study aimed to answer the following questions: What were the main reasons for students' leaving the Telegram network group? And how could they be encouraged to stay in such groups?

During the interviews, we were able to deduce from the participants' views, their reasons for leaving the channel, as well as how the groups should be designed and social media be used in the future. Most of them

noted the low attractiveness of the channel as one of the main challenges and suggested that increasing the attractiveness of the channel would improve it significantly. American researchers have also reached conclusive findings in evaluating a network-based smoking cessation program in qualitative interviews with adolescents. Participants preferred interactive activities to entertaining movies, and most reported the need to include game features in the app. They concluded that future web-based programs for teenagers should be designed in the form of intellectual games in order to provide them with the necessary skills and develop social interactions to prevent smoking.¹²

The cost of the Internet and Telegram filtering were also significant challenges. It should be noted that almost all participants were unemployed and financially dependent on their families.

The participants reported lack of motivation as another reason for leaving the channel because, on the one hand, they did not feel the need to remain, and on the other, they lost their motivation due to receiving repeated messages. Fatigue and loss of motivation due to repeated messages were also reported in other studies. Some respondents in a study said that excessive repetition of a message could easily bore that the members and reduced their interest and attention.¹³ The results of a systematic review showed that young people need reliable information through attractive messages.⁵

However, to study feeling needs, it may be necessary to categorize participants in terms of smoking (smokers vs. nonsmokers), to determine the smoking stages (heavy vs. light), or their decision to quit (those intending to quit vs. those still not intending) to form such groups separately. This would give them more motivation to stay in the group and to use the channel. A study of Facebook and smokers and non-smokers in

the United States highlighted the importance of assessing structural differences on online social networks as a critical component of network-based interventions.¹³

In addition, the motivation to quit smoking and to find ways to do so motivates people to stay in the group. For example, an intervention on Facebook to quit smoking between the ages of 18 and 25 showed that the participants stayed for much longer on the channel and they were more successful in quitting smoking.¹⁴ Moreover, a systematic review confirmed the success of smoking cessation programs on social media.¹⁵

In a study by Ramo *et al.*, 31% of participants showed interest in using Facebook to quit smoking.⁵ Social media approaches that respected privacy and were tailored to the participants' characteristics and willingness to quit smoking probably maximized participation. The interest in using Facebook to quit was greater among those who were more motivated to quit, those who had tried to quit the previous year, and those who had previously tried to get help from the Internet. In qualitative interviews on Facebook, social support and its comfort were identified as the strengths of the interview, while privacy was a major concern.⁵

In this study, the fear of disclosing personal information and loss of privacy was also important for the participants, and this was in line with the results of other studies. Another study showed that anonymity and confidentiality were important for the establishment of trust in adolescents and involving them in the intervention.¹³

Lack of interest in being informed about smoking hazards, fear of knowing the dangers of smoking, and evading reality were reported as the reasons for leaving the group. One of the characteristics of mankind is his remarkable ability to ignore or deny reality in the face of obvious facts, high capacity for self-deception and misconceptions, excessive

prejudice, optimism, and irrational risk-taking behavior. This has major implications for humans and many of the current serious problems they face, from personal health irresponsibility to ignoring global climate change which now threatens our species.¹⁶ One of the defense mechanisms in men is to deny or prove reality.

Individuals maintain a state of denial to protect themselves by not accepting the truth about what has happened in their lives. Failure to admit that something is wrong is a way to deal with emotional conflicts, stress, painful thoughts, and anxiety. People deny anything that makes them feel threatened or vulnerable, such as illness, addiction, eating disorder, personal violence, financial problems, or communication conflicts. In fact, when people do not acknowledge that there is a problem, they do not want to face the reality of a problem, or underestimate the possible consequences of that problem, they will deny it.¹⁷

Participants stated that smoking and unwillingness to quit were other reasons for leaving the channel. They believed that people who smoked or did not intend to quit did not need to stay in the channel. They wanted to talk more about the reasons for smoking and not quitting, and they wanted alternatives such as entertaining activities for smoking. They reported easy access to cigarettes, imitating adults and celebrities' behaviors, not having entertaining activities, mental health problems, failure in love, and not knowing the consequences of smoking as significant reasons for smoking.

It seems that better results would be obtained if the participants were categorized as smokers vs. nonsmokers, those who wanted to quit vs. those who did not, and we could use separate interventions for each group.

The participants reported a high number of members as one of the attractions of social media; this was probably due to their young age and their dependency on their friends' and

peers' behaviors. Maria de Guzman, a developmental specialist, said that in adolescence, peers played a major role in a person's life.¹⁸ In general, peer friendships provide positive opportunities for young people, despite the negative feelings of many parents toward peer relationships. Peer relationships are really important for healthy growth and they are essential for young people to become healthy adults. Despite its positive effects, peer relationships might potentially encourage problematic behaviors too,¹⁸ like increasing the number of likes to a message which has a similar effect.

In one study, teens underwent functional MRI while apparently viewing photos and posting them on Instagram. They were more likely to like photos with a high number of likes than photos with fewer likes. Viewing photos with a large number (compared to a small number) of likes was associated with greater activity in the neural regions of reward, social cognition, imitation, and attention. In addition, activation in the cognitive control network decreased when adolescents viewed high-risk images (as opposed to neutral images). These findings highlighted possible mechanisms under the influence of peers' behaviors during adolescence.¹⁹

Another recommendation of the participants for the improvement of the channel was to include useful health and sports materials. Multidimensional interventions are likely to meet the needs they sought and they might be cost-effective. Moreover, multidimensional school-based interventions to reduce the metabolic risk in urban minority young groups were promising.²⁰ However, in a review study, the benefits of diet and physical activity interventions were reported to be moderate. The effects of the most optimistic interventions such as SMS-based smoking cessation, diet, and physical activity on morbidity and mortality in high-risk groups were unclear and

should be carefully studied in robust trials;²¹ in fact, no systematic review study showed that multidimensional interventions were more effective than one-dimensional interventions.²² However, this requires careful investigation.

To improve factors that motivate individuals to stay in the group, most of the participants recommended increasing the attractiveness of the channel. Using photos instead of texts, posing questions for group members to answer, putting story series on the channel, advertising on other channels for this channel, humorous content, and photos or GIFs were described as motivations to stay on the channel. Attractiveness, drawing attention, the authenticity of the materials such as messages, and paying attention to the problems of young people were inferred to be important reasons for maintaining membership of the channel.

Stock et al. studied how to encourage recipients of a drug prevention program (including smoking) through interviews and their suggestions for improving the intervention were as follows: using various approaches, methods, and games, role plays, watching video clips, involving members more actively in group activities, and offering competitive activities with prizes on the channels.¹³ On Facebook, messages with photos are more attractive to the youth compared with messages without them.⁶

However, social media is widely used by the younger generation, adults, and the elderly population to find health information. Facebook users like to have more credible information on social media, and governments can promote a healthy lifestyle through Facebook, and by approving the right content.²³

The participants recommended the use of other social media such as WhatsApp messenger and Instagram. Findings from a study showed that Facebook had good potential as a low-cost platform for making young people respond to why they smoke, and

present to them the benefits of quitting smoking and the best ways to reduce smoking.

In an effort to make it suitable and attractive for young and adult smokers, there are several other popular image-based operating systems, such as Tumblr and Instagram, for embedding e-health intervention. Upcoming reviews for a larger study should include more interactive features in an online group (e.g., group chat features, weekly group photo topics, or assignments).²⁴

In general, we realized that the favorite media of the youth in Iran is Telegram, and based on this, we designed the present study.

Gold et al. provided the following recommendations based on their experiences of social networking: First, create a multidisciplinary team with all the necessary skills! Second, anticipate delays in getting approvals (ethical, legal, and organizational)! Third, resources, resources, and resources; time, money, staff, and knowledge (brain power) are required to design and maintain sites. Fourth, create interest (buzz) and get it done quickly. Fifth, keep your audience engaged! Sixth, Get viral! Seventh, define success and how to measure it!²⁵ In this study, due to the presence of both consumer and non-consumer students, it was not possible to distinguish their motives for leaving the Telegram channel. When teaching students through virtual networks, it is recommended to use attractive messages, and use photos and gifts instead of text. Moreover, it seems necessary to separate smoking cessation programs from prevention programs.

Conclusion

Most of the participants reported the low attractiveness of the channel, the cost of the Internet, Telegram filtering, and cultural reasons as significant challenges. Using photos instead of texts, posing questions for group members to answer, putting story series on the channel, advertising on other channels for this

channel, and photos or GIFs were described as motivations for staying on the channel.

Conflict of Interests

Authors have no conflict of interests.

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