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The impact of social media-based support groups on smoking relapse prevention in Saudi Arabia

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ABSTRACT

Background and objective: Tobacco smoking remains a major preventable cause of mortality and morbidity across the globe. People who attempt to quit smoking often experience episodes of relapse before finally quitting. Understanding the part that social networking sites and social media can play in smoking cessation and prevention of relapse is important to aid the development of novel techniques to curb the smoking epidemic. This study investigated the use of extra-treatment provided outside of the formal healthcare setting, bolstered by online social support in order to prevent smoking relapse in Saudi Arabia.
Methods: This cross-sectional study included 473 smokers taking part in smoking cessation intervention programs run by the Riyadh branch of King Abdul-Aziz Medical City and PURITY, a Saudi anti-smoking association. Only subjects who expressed an interest in quitting smoking, and those attempting to quit, were considered for inclusion. The sample was divided into three groups: subjects who subscribed to support groups on Twitter (n = 150), and WhatsApp (n = 150), and a control group of subjects who had not subscribed to any social media support groups (n = 173).
Results: A significant difference was found between the mean average numbers of people who quit smoking among the three groups, with social media support proving to be more effective than other traditional methods. Our findings imply that Twitter and WhatsApp users found it easier to quit smoking than those who did not take part in these social media groups.
Conclusion: Social media provides a good platform to discuss smoking cessation treatment, and thus reduce smoking relapses. Our findings support the suggestion that more social media support groups should be developed to help people to effectively cease smoking after abstinence. Individuals who struggle to quit smoking should be encouraged to join support groups on their social media platform of choice to increase their likelihood of quitting. Future studies should assess the effectiveness of social media to help people quit smoking by including a greater diversity of social media platforms, including Facebook, Snapchat, and Instagram.

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1. Introduction

Smoking is a leading preventable cause of death, and the second highest contributor to the global disease burden; however, smoking rates have declined over the last decade. Efforts to assist and encourage smokers to quit are a significant element of public health campaigns against this epidemic [1]. According to the World Health Organization, smoking causes approximately 6 million deaths each year [1], of which, over 5 million deaths are directly related to tobacco smoking. The current global smoking population is estimated to be around 1 billion. Eighty percent of smokers live in low-income and middle-income countries, i.e. the regions where the burden of smoking-related illness is cited to be the highest [2].

Smoking is highly prevalent in the Saudi Arabian population. Bassiony [3] indicated that the prevalence of smoking ranges between 2.4 and 52.3% across various demographic groups; for example, 12–29% of school students, 2.4–37% of university students, 25% of the elderly, and 11.7–52% of adults are smokers. In the Saudi population, smoking prevalence among males was between 13 and 38%, and between 1 and 16% among females.

Evidently, smoking is sufficiently prevalent in Saudi Arabia to warrant efforts to reduce it. One remedy for the widespread habit of smoking is to encourage its cessation among groups of smokers. However, cessation is constrained by relapse tendencies. In 1992, Garvey and colleagues observed that around 90% of smokers who attempt to quit experience relapse within 1 year, and most relapse in the early days and weeks following the cessation effort. The existence of a greater proportion of smokers in the surrounding environment also amplifies the likelihood of relapse, although further investigation revealed that demographic variables such as education level, gender, and age did not predict relapse [4].

The Internet is a helpful resource for individuals seeking a variety of health-related information. Substantial improvements in social media technologies, and their ubiquity, provides new opportunities to offer geographically distant consumers with cost-effective, easily accessible, personalized health content, as well as social network-based support. The literature demonstrates social support as a suitable approach to address high smoking relapse rates [5]. Two forms of social support have been eminent; namely, intra-treatment social support, and extra-treatment social support [6]. Intra-treatment social support is provided by a healthcare practitioner and is considered a part of the treatment program. In terms of smoking, intra-treatment support aims to encourage cessation by sharing information about the effectiveness of various quitting modalities, and asserting the belief that quitting is possible. Intra-treatment support also communicates care and concern with reference to patients' feelings, and encourages them to talk about the cessation processes.

Extra-treatment social support aims to creating a way for other people to positively influence smokers by encouraging and supporting them to quit through information-sharing and discussion. This type of social support usually comprises a recruited network of family members, friends, workmates, and all those who lie outside of the treatment plan.

Acknowledging the potential effectiveness of social support, interventions for promoting smoking cessation have gone further by integrating social media platforms to enhance social support against relapse. Alrukban [7] indicated that social media allows smokers using a particular quitting intervention to connect with others in the same situation. Patients can therefore share their thoughts and experiences, and inspire others by reporting their successes about what seems to have worked for them [7]. It also helps patients to connect with healthcare practitioners, and other supportive friends and family members [8].

Evidence suggests that social media-based support is more effective than traditional approaches to social support. For instance, in 2016, Baskerville and colleagues established that adults who used social media support after attempting to quit smoking were two times more likely to succeed than those who utilized traditional approaches. These findings were based on a comparison between the achievements of subjects in the 'Break it Off' social media campaign, and those who used a telephone helpline [9].

In light of its potential effectiveness, there is an increased interest in research into the use of social media for support. Nevertheless, research evaluating the utility and effectiveness of social media is in its infancy, especially in Saudi Arabia. As a result, social media support for smokers attempting to quit is limited [10]. A few studies have focused on intra-treatment social media support, but they have ignored extra-treatment support [11–13].

Studies that have found social media to be effective have also noted that the provision of misleading information is a concern. According to Almotairi [11], subjects can only rely on the views of an informed practitioner. Considering that social media support circles do not necessarily include such practitioners, the risk of encountering misleading information is particularly inherent [14,15], raising questions as to the utility of extra-treatment media social

support. The objective of this study was to investigate the use of extra-treatment, in the form of social media support groups, for preventing smoking relapse among the Saudi population.

2. Methods

2.1. Study design

A cross-sectional exploratory/descriptive research design was used to determine the relationship between extra-treatment social media support and smoking relapse prevention. Three different groups of smokers were surveyed and the rates of smoking relapse were compared between them. The three groups included participants who had subscribed to one of two types of extra-treatment social media support group; one on Twitter and the other on WhatsApp. The third (control) group of smokers did not subscribe to any social media-based extra-treatment support group.

2.2. Study area and settings

Considering several regions from which the potential research population could be recruited, this study was limited to Riyadh only. Like any capital city, the population of Riyadh is assumed to include individuals from different socioeconomic backgrounds. Therefore, a study conducted in Riyadh should comprise smokers with wide-ranging demographic characteristics.

2.3. Study subjects, sample size and sampling technique

All participants were smokers taken from the smoking cessation intervention programs designed by King Abdul-Aziz Medical City, Riyadh, and PURITY, a Saudi anti-smoking association in Riyadh. Only those subjects who expressed interest in quitting and attempting to quit were considered for participation. Neither non-smokers nor smokers with no intention to quit smoking were included.

The researchers visited King Abdulaziz Medical City hospital in Riyadh, and PURITY in Riyadh, to recruit smokers participating in the cessation intervention program, based on the selection criteria. The total convenience sample size was 473, of which 150 participants were selected from subjects subscribed to a Twitter-based support group, 150 were subscribed to a WhatsApp-based support group, and a control group (n = 173) of subjects not subscribed to any social media support group but who were instead offered telephone-based interventions.

2.4. Data collection methods, instruments used, and measurements

Data were collected from participants face to face using the survey questionnaire. The questionnaire was designed to be as objective as possible to ensure reliable results, and were divided into two sections: participants' demographic characteristics (e.g., gender, age, duration of smoking), and participants' experiences of quitting smoking after subscribing to the social media-based extra-treatment support group. The purpose of the questionnaire was to investigate the elements of perceived cessation experiences (dependent variables), such as satisfaction with support, cessation success, and perceived usefulness.

2.5. Data analysis and data management plan

Data were analyzed using Statistical Package for Social Sciences (SPSS) software, version 20. Data management was carried out by categorizing subscribers of WhatsApp-based and Twitter-based support groups. Statistical analysis was conducted to determine any significant differences between the three groups. Five
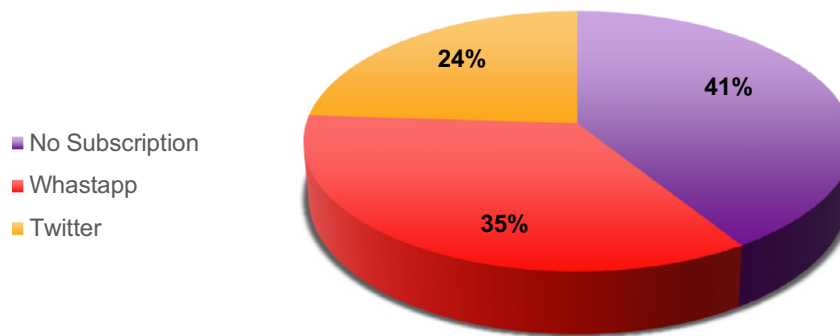
Fig. 1. Study participants' subscriptions to social media-based support groups.
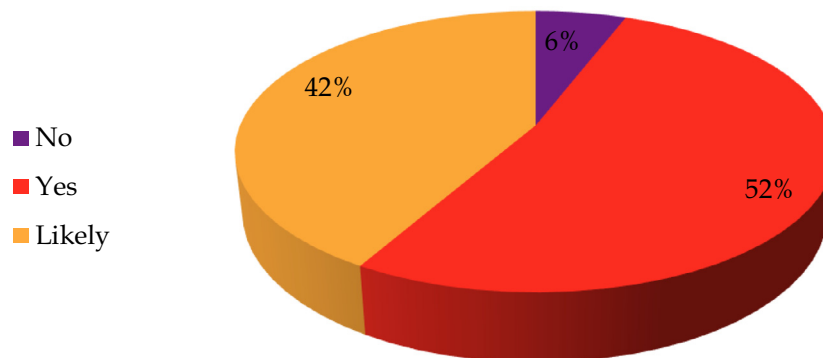

Fig. 2. Responses of participants asked whether or not their smoking frequency had reduced after joining a social media-based smoking cessation support group.

variables were assessed to measure participants' cessation experiences: subscription to a social media support group, classification of smoking frequency, satisfaction with the subscribed social media support group, smoking cessation after subscription to the social media support group, and participant recommendations. Findings were reported using simple descriptive statistics including frequency analysis and counts in summary charts. Differences between the means of the three groups were analyzed using analysis of variance (ANOVA) and post hoc tests. The Chi-square test was used to compare categorical variables between subgroups.

2.6. Ethical approval

Ethical approval was acquired from the local institutional review board (Committee of Scientific Research and Publication). Written, informed consent was acquired from all respondents to the survey. Participants' confidentiality was maintained throughout.

3. Results

This study investigated the use of extra-treatment in the form of social media support groups in preventing smoking relapse among the Saudi population. Overall, 35% of participants were subscribed to a WhatsApp-based support group, 24% to Twitter-based support groups, and 41% had no subscription (Fig. 1).

Participants in the two social media support groups were asked whether their smoking frequency had reduced since subscribing to these groups. Forty-two percent alleged they had experienced a reduction, 6% stated they had not reduced smoking frequency, and 52% believed that they were likely to reduce smoking frequency in future (Fig. 2).

When those using social media support services were asked if they were satisfied with the support groups, 75% stated they were satisfied and only 9% assumed they were not satisfied (Fig. 3).

As shown in Fig. 4, 53% of the participants who subscribed to a social media support group said they had experienced a reduction in their smoking habit after participating in a social media support group; 45% said their habit had likely been reduced, and only 2% had not reduced their smoking habit.

Of all participants, 73% recommended social media support groups for helping to prevent smoking relapses, while 2% did not (see Fig. 5). Whereas, 25% of the respondents were likely to recommend social media support groups in future. Table 1 also summarizes these findings.

As shown in Table 2, participants reported that subscribing to social media support groups is useful for preventing smoking relapses. With an *F*-test value of < 1.96 at the significance level of < 0.05, this confirmed a statistically significant difference between the mean scores of the three groups, implying that at least one mean of one group was significantly different from the rest. On the other hand, there was no significant difference found between the groups in terms of participants' satisfaction with social media support groups.

Study participants were asked if they would recommend social media support groups to prevent smoking relapse. An *F*-test value > 1.96 at a significance level of < 0.05 indicated a there was a significant difference in terms of recommendations to participate in a social media group. Post hoc analysis (see Tables 3–7) identified significant differences between groups and highlight the varying means.

As well as comparing one of the three participant groups with the other two post hoc tests also confirmed the mean differences between the groups, and the statistical significance. In terms of whether or not social media support groups reduced the frequency
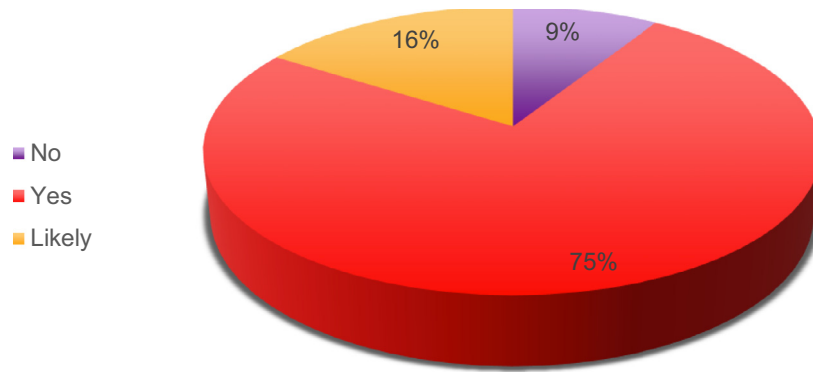
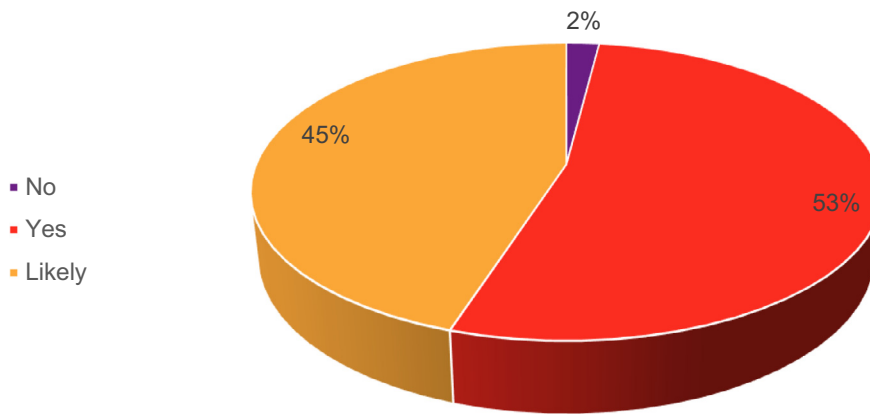**Fig. 3.** Participants' satisfaction with social media support groups.

Fig. 4. Responses of participants asked whether or not their participation in social media support groups helped to reduce smoking.
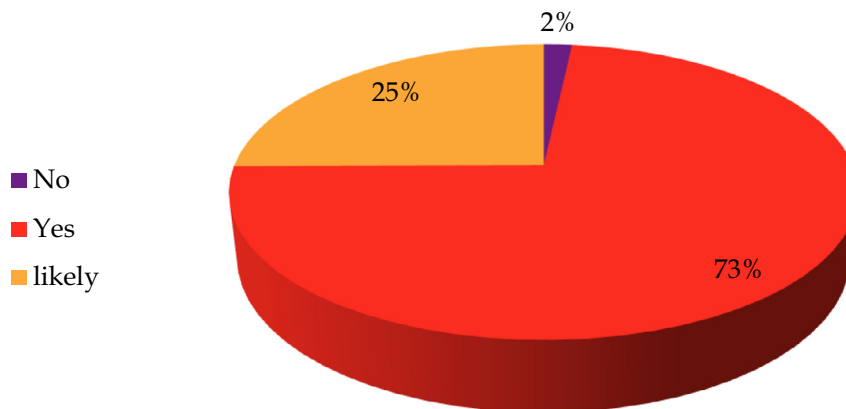

Fig. 5. Pie chart showing participants' responses to the question, "Would you recommend social media support groups for helping to prevent smoking relapses?".

of smoking, the mean difference between those subscribed to a WhatsApp group and those not subscribed to Whatsapp was – 0.924, suggesting that more WhatsApp users reported a greater decrease in smoking frequency than those who did not use this service. The mean difference in reported reduction of smoking frequency between those subscribed to Twitter and those not subscribed to Twitter was 1.668, favoring Twitter. The mean difference between those subscribed to Twitter and those subscribed to WhatsApp was significant with a mean difference of 0.744, thus favoring twitter. However, comparing the three groups, less difference was found between those subscribed to social media (WhatsApp and Twitter) than between those not subscribed.

A significant difference of 0.312 was found between those subscribed to WhatsApp and those not recommending the use of so-

cial media assistance to quit smoking, favoring WhatsApp. This means that WhatsApp users more often recommended social media to assist with quitting smoking.

Additionally, differences were observed between those subscribed to WhatsApp and Twitter in recommending the use of social media assistance to quit smoking. The mean difference between the two groups was 0.252, favoring WhatsApp, and suggesting that WhatsApp users are more likely to advocate for the use of social media assistance than Twitter users. According to the results of statistical analysis by Tukey's honest significant difference and Duncan's tests, those not subscribed to social media support groups created one segment, and those subscribed to social media support groups created another segment in terms of recommend-

Table 1
Questions asked to determine participants' satisfaction levels with and experiences of social media support groups, and experience of relapse after subscribing to social media support groups.

Questions	Responses	N	%	Cumulative percentage
When quitting smoking, did you subscribe to a social media support group to help prevent you from relapsing?	No	147	28.4	41.4
	Yes, WhatsApp group	123	23.8	76.1
	Yes, Twitter group	85	16.4	100
	Total	355	68.7	100
	Missing (System)	162	31.3	
Since subscribing to a social media support group, have you reduced your smoking frequency?	No	13	2.5	5.8
	Yes	117	22.6	58.3
	Likely	93	18	100
	Total	223	43.1	100
	Missing (System)	294	56.9	
Are you satisfied that social media support groups help to prevent smoking relapse?	No	20	3.9	8.9
	Yes	169	32.7	84.4
	Likely	35	6.8	100
	Total	224	43.3	100
	Missing (System)	293	56.7	
Do you think that your participation in a social media support group helped you to reduce your smoking habit?	No	5	1	2.2
	Yes	119	23	55.1
	Likely	101	19.5	100
	Total	225	43.5	100
	Missing (System)	292	56.5	
Would you recommend participating in a social media support group to prevent smoking relapse?	No	4	0.8	1.7
	Yes	169	32.7	74.9
	Likely	58	11.2	100
	Total	231	44.7	100
	Missing (System)	286	53.3	

*Missing values.

Table 2
Summary of analysis of variance (ANOVA).

Question	Variable	Sum of squares	Degrees of freedom	Mean square	F	Sig.
Since subscribing to a social media support group, have you reduced your smoking frequency?	Between groups	47.615	2	23.807	187.338	0
	Within groups	27.831	219	0.127		
	Total	75.446	221			
Are you satisfied that social media support groups help to prevent smoking relapse?	Between groups	1.082	2	0.541	2.287	0.104
	Within groups	52.039	220	0.237		
	Total	53.121	222			
Do you think that your participation in a social media support group helped to prevent you from relapsing and was useful in helping you to quit smoking?	Between groups	0.811	2	0.406	1.403	0.248
	Within groups	63.898	221	0.289		
	Total	64.71	223			
Would you recommend participating in a social media support group to prevent smoking relapse?	Between groups	4.06	2	2.03	10.181	0
	Within groups	45.262	227	0.199		
	Total	49.322	229			

ing the use of social media and changes in the frequency of smoking after subscription.

4. Discussion

The results of our study demonstrate that using social media-based support groups offers a slight advantage to quitting smoking when compared to traditional support methods. Study participants who reported that they use WhatsApp and Twitter-based social support groups were more likely to report a decrease in their smoking frequency than those who did not subscribe to such services, particularly Twitter users. WhatsApp users were more likely than Twitter users to advocate for the use of social media assistance to quit.

The findings of our study are supported by published evidence, which has also highlighted that social media-based support is more effective than traditional approaches. Baskerville et al. reported that individuals who received social media-based support during the "Break it off" campaign were two times more likely to quit smoking than those who followed traditional methodologies [9]. Our findings were also consistent with studies that demonstrated social media to be a unique platform for supporting smok-

Table 3
Summary of Post-hoc test.

Dependent variable	(I) During the smoking cessation, did you subscribe to one of the social media Support groups to prevent smoking relapse?	(J) During the smoking cessation, did you subscribe to one of the social media support groups to prevent smoking relapse?	Mean Difference (I–J)	Standard Error	Sig.	95% confidence interval	
						Lower bound	Upper bound
Since subscribing to a social media support group, have you reduced your smoking frequency?	No	Yes, WhatsApp	−0.924*	0.101	0	−1.16	−0.69
		Yes, Twitter	−1.668*	0.103	0	−1.91	−1.43
	Yes, WhatsApp	No	0.924*	0.101	0	0.69	1.16
		Yes, Twitter	−0.744*	0.05	0	−0.86	−0.63
	Yes, Twitter	No	1.668*	0.103	0	1.43	1.91
		Yes, WhatsApp	0.744*	0.05	0	0.63	0.86
Are you satisfied that social media support groups help to prevent smoking relapse?	No	Yes, WhatsApp	0.133	0.133	0.576	−0.18	0.45
		Yes, Twitter	−0.008	0.136	0.998	−0.33	0.31
	Yes, WhatsApp	No	−0.133	0.133	0.576	−0.45	0.18
		Yes, Twitter	−0.141	0.069	0.101	−0.3	0.02
	Yes, Twitter	No	0.008	0.136	0.998	−0.31	0.33
		Yes, WhatsApp	0.141	0.069	0.101	−0.02	0.3
Do you think that your participation in a social media support group helped to prevent you from relapsing and was useful in helping you to quit smoking?	No	Yes, WhatsApp	−0.157	0.143	0.518	−0.49	0.18
		Yes, Twitter	−0.232	0.147	0.254	−0.58	0.11
	Yes, WhatsApp	No	0.157	0.143	0.518	−0.18	0.49
		Yes, Twitter	−0.076	0.076	0.578	−0.25	0.1
	Yes, Twitter	No	0.232	0.147	0.254	−0.11	0.58
		Yes, WhatsApp	0.076	0.076	0.578	−0.1	0.25
Would you recommend participating in a social media support group to prevent smoking relapse?	No	Yes, WhatsApp	−0.312*	0.103	0.008	−0.56	−0.07
		Yes, Twitter	−0.06	0.107	0.838	−0.31	0.19
	Yes, WhatsApp	No	0.312*	0.103	0.008	0.07	0.56
		Yes, Twitter	0.252*	0.063	0	0.1	0.4
	Yes, Twitter	No	0.06	0.107	0.838	−0.19	0.31
		Yes, WhatsApp	−0.252*	0.063	0	−0.4	−0.1

* Significant difference at $P < 0.05$ according to Tukey's honest significant difference test.

Table 4
Summary of Tukey's honest significance and Duncan's multiple range test.

Since subscribing to a social media support group, have you reduced your smoking frequency?					
Statistical test	When attempting to quit smoking, did you subscribe to a social media support group to prevent smoking relapse?	N	Subset for alpha = 0.05		
			1	2	3
Tukey's honest significant difference[a,b]	No	14	0.21		
	Yes, WhatsApp	123		1.14	
	Yes, Twitter	85			1.88
	Sig.		1	1	1
Duncan's[a,b]	No	14	0.21		
	Yes, WhatsApp	123		1.14	
	Yes, Twitter	85			1.88
	Sig.		1	1	1

Means for groups in homogeneous subsets are displayed.
[a] Uses harmonic mean sample size = 32.850.
[b] Group sizes are unequal. The harmonic mean of the group sizes is used. Type I error levels are not guaranteed.

Table 5
Summary of Tukey's honest significance and Duncan's multiple range test.

Are you satisfied that social media support groups help to prevent smoking relapse?			
Statistical test	When attempting to quit smoking, did you subscribe to a social media support group to prevent smoking relapse?	N	Subset for alpha = 0.05 1
Tukey's honest significant difference[a,b]	Yes,WhatsApp	123	1
	No	15	1.13
	Yes, Twitter	85	1.14
	Sig.		0.449
Duncan's[a,b]	Yes, WhatsApp	123	1
	No	15	1.13
	Yes, Twitter	85	1.14
	Sig.		0.258

Means for groups in homogeneous subsets are displayed.
[a] Uses Harmonic Mean Sample Size = 34.657.
[b] Group sizes are unequal. The harmonic mean of the group sizes is used. Type I error levels are not guaranteed.

Table 6
Summary of Tukey's honest significance and Duncan's multiple range test.

Do you think that your participation in a social media support group helped to prevent you from relapsing and was useful in helping you to quit smoking?			
Statistical test	When attempting to quit smoking, did you subscribe to a social media support group to prevent smoking relapse?	N	Subset for alpha = 0.05 1
Tukey's honest significant difference [a,b]	No	16	1.25
	Yes, WhatsApp	123	1.41
	Yes, Twitter	85	1.48
	Sig.		0.158
Duncan's[a,b]	No	16	1.25
	Yes, WhatsApp	123	1.41
	Yes, Twitter	85	1.48
	Sig.		0.082

Means for groups in homogeneous subsets are displayed.
[a] Uses harmonic mean sample size = 36.410.
[b] Group sizes are unequal. The harmonic mean of the group sizes is used. Type I error levels are not guaranteed.

Table 7
Summary of Tukey's honest significance and Duncan's multiple range test.

Would you recommend participating in a social media support group to prevent smoking relapse?				
Statistical test	When attempting to quit smoking, did you subscribe to a social media support group to prevent smoking relapse?	N	Subset for alpha = 0.05	
			1	2
Tukey's honest significant difference[a,b]	No	22	1.05	
	Yes, Twitter	85	1.11	
	Yes, WhatsApp	123		1.36
	Sig.		0.793	1
Duncan's [a,b]	No	22	1.05	
	Yes, Twitter	85	1.11	
	Yes, WhatsApp	123		1.36
	Sig.		0.517	1

Means for groups in homogeneous subsets are displayed.
[a] Uses harmonic mean sample size = 45.907.
[b] Group sizes are unequal. The harmonic mean of the group sizes is used. Type I error levels are not guaranteed.

ing cessation. Social media is thought to increase positive interactions, particularly among young adults who tend to care that their friends and peers should quit smoking, change their behavior, and decrease social isolation [16–18].

One study of a Dutch adult population revealed the importance of the social network, since having friends or family members who smoke is strongly associated with smoking cessation and relapse [19]. Another Dutch study, which utilized a digital social media intervention called "Happy Ending", reported that 44.7% of participants had quit smoking for 7 or more days after 3 months [20]. In a randomized controlled trial, participants who received telephonic intervention in the form of a 'Smoker's Helpline', had a 7-day quit rate at 3-month follow-up of 19.8%, showing that direct interventions can also be helpful [21].

In a US study, Fisher et al. identified that 56% of patients wanted their healthcare providers to use social media to provide health information, book appointments, report on tests, prescribe medicines, and to create a question-and-answer forum. Of those who did not use social media themselves, 41.6% still recommended its use. However, 48% of participants stated that they preferred to be communicated with by mail or by mobile telephone, citing privacy and confidentiality as big concerns and barriers to the use of social media [12].

Our study identified WhatsApp to be a useful tool for having discussions about smoking cessation. Likewise, a systematic review also found WhatsApp Messenger to be a promising tool for communication between professionals and members of the public [22]. Using a Facebook page called "Crush the Crave" as a tool for smoking cessation, Struik revealed the positive impact of social networking sites on supporting young adults who are trying to quit smoking or who have become smoke-free [18]. Other researchers have also investigated the role of social forums in health promotion interventions, and have observed similar findings; however, these relied on the pivotal role and direction of a group moderator rather than on member contributions [23,24]. A Chinese randomized trial found the reported smoking relapse rate of WhatsApp users to be lower than that of Facebook users and control groups at follow-up. WhatsApp users reportedly experienced greater changes in internal stimuli, higher self-reported abstinence, and more participant and moderator posts [25].

As in our study, Murnane and Counts found Twitter to be effective in unraveling abstinence and relapse from smoking [26]. However, another study found that, when discussing smoking cessation, tweet content was mostly irrelevant and inconsistent with clinical guidelines; 43% of such tweets concerned e-cigarettes, and 48% linked out to commercial smoking cessation sites [27]. On the other hand, Lakon et al. examined the use of Twitter for coping with smoking withdrawal, and suggested that it could be used as a platform for delivering adult smoking cessation interventions. Across networks, abstinence from smoking was reported to be 35% 7 days after the quit date, 49.38% after 30 days and 46.88% after 60 days. This was demonstrated among small groups and dyads of abstainers and non-abstainers [28].

The use of electronic information and social media for acquiring healthcare information is widely recognized [29–31]. In a study of an adult Saudi population, which evaluated the health-related uses of social networking sites, around one-third of the study population discovered incorrect health information on these sites, and believed healthcare providers to be the most trustworthy sources of health information [7]. Studies from Saudi Arabia [11] and Korea [13] have found various other approaches to be helpful, including school-based interventions, enforced prohibition of cigarettes to minors, mass media, and public education [11]. Other successful interventions have included a Saudi Arabian Government ban on smoking and tobacco sales in Madinah, Makkah City, Adarriyah Province, and picnic spots close to Riyadh such as Wadi Laban and Wadi Hanifa [32]. In Jeddah, a new clinic has been established to provide evidence-based smoking cessation treatment and counseling. Posters are on display in this clinic, videos about quitting smoking are shown on hospital TV, and related information is also published in magazines and newspapers to increase awareness among members of the public. The clinic organizes an annual 'No Smoking Day' on May 31st, and hospital staff are made aware of this event via email [33].

Other interventions are therefore effective for smoking cessation, especially for those who do not use social media. Integrating such tactics with social networking sites may prove even more effective for helping people to stop smoking, depending on individuals' preferences.

4.1. Limitations

This study was conducted in Riyadh, the capital city of Saudi Arabia, therefore recruitment was limited to participants from only one region and might limit the generalizability of our data. However, we assume that the population of Riyadh includes people from different socioeconomic backgrounds, thus our participants covered wide-ranging demographic characteristics. Finally, cross-sectional study designs tend to limit causal inferences.

5. Conclusion

Tobacco smoking is the principal cause of preventable deaths worldwide. Social support tends to help decrease smokers' stress earlier during the post-quit period, thus making cessation of smoking more likely after a quit attempt. This study demonstrated that the use of social media as a support system can make a small difference to quit rates over other traditional means. Significant differences were found between the mean number of cessation achievements among the three groups studied, and revealed that using social media support is more effective than other traditional means of support. Social media support groups may influence long-term smoking and help to prevent relapse. Subscribers to twitter and WhatsApp-based support groups found it to quit smoking than those who did not subscribe.

Based on the results of this study, we recommend the development of mechanisms to appropriately train the people responsible for developing and administrating such support groups, and that this training should be specifically designed for those seeking assistance to quit smoking. These developers and group admins should remain aware of discussions taking place within their forums so that irrelevant information, negative thoughts, and harmful content can be avoided. Furthermore, we recommend that more individuals, especially those struggling to quit smoking, should be encouraged to join support groups on the social media platform of their choice so as to increase the effectiveness of their quit attempt(s). In addition, future studies should be conducted to evaluate the effectiveness of a wider range of social media platforms (e.g., Facebook, Snapchat, Instagram) in helping people to quit smoking.

Competing interests

The authors declare that they have no conflicts of interest.

Acknowledgments

Supplementary materials

Supplementary material associated with this article can be found, in the online version, at doi:10.1016/j.cmpb.2018.03.005.

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