



Smoking Cessation Program Targeting Adolescents: Saudi Arabia

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While developed countries have enjoyed a decreasing incidence of smoking over the last 30 years, in the developing world there are still reports of rapid smoking take-up. It seems that in developing countries tobacco smoking remains the number one cause of preventable death well into the future. To combat this costly habit, many governments have employed smoking cessation strategies since the 1960s. These programs have involved advertising the negative health impacts of smoking, increased taxation, targeted legislation, and even clinical counselling. This project aimed to explore and critically review the body of literature related to smoking cessation strategies in Saudi Arabia and assess their effectiveness. The project also aimed to use the data gathered to recommend legislative changes to smoking cessation programs. For the Saudi Arabian context, the results of the project found that the smoking cessation strategies, despite being revolutionary in many regards, still lacked depth, and that both males and females, particularly adolescents, were adopting smoking in increasing numbers. The recommendations of the project were for Saudi Arabian authorities to review a number of the current initiatives, and initiate further approaches to smoking cessation, such as stringent requirements for health warnings on cigarette packets.

Keywords: smoking cessation strategies, adolescents, smoking cessation

This article provides an evaluation of existing smoking cessation strategies in Saudi Arabia. The aim is to provide an outline of the issues facing smoking cessation programs in this country and, based on a critical evaluation of strategies documented in the literature in this field, to make some key recommendations for appropriate and carefully targeted measures for Saudi Arabia.

A wide range of studies confirm that there is a strong need to do more research on adolescent smoking cessation interventions to protect this vulnerable age group from smoking harm and to change the present disturbing trends. There is strong evidence that adolescent smoking has a strong correlation with health issues later in life (Patton, Coffey, Carlin, Sawyer, & Wakefield, 2006; Suruor, 2001). In 30 years of smoking cessation research in Saudi Arabia, it appears that the scientific recommendations made have not been implemented or enforced at

the national level (Al-Doghether, 2001), so there is a dire need to strengthen existing initiatives.

Adolescents are the most populous age bracket in Saudi Arabia (Suruor, 2001). Therefore, there is a pressing need for the Ministry of Health in Saudi Arabia to effectively monitor and encourage adolescent health, and to keep adolescents away from health compromising activities.

Background

Smoking Prevalence

Smoking levels in Saudi Arabia are quite alarming. According to a recent study by Abdallah, Kaabba, Saeed, Abdulrahman, and Raat (2007), 34% of male and 11% of female secondary school students were found to smoke and 66% started smoking as early as 12 years of age. The increase in smoking prevalence in Saudi Arabia has been extremely rapid. Since 1961, the quantity of tobacco-related imports has increased 40 times from

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1061 tons to 41,440 tons in 1987 (Siddiqui & Ogbeide, 2001). One study of school students in Saudi Arabia in 2001 found that up to 20% are current smokers and 16% are ex-smokers (Yousef & Anjum, 2001). Moreover, a study in 2000 found that, for the 15 to 18 years age bracket, one in three males and one in 10 females smoked in Saudi Arabia (Hashim, 2000). Of more than 1,500 high school students, including males and females, it was found that 22.3% (more than one in five) smoked (Abdallah et al., 2007). In a study 10 years ago, Abolfotouh, Mostafa, Alakija, Safy, Khattab, and Mirdad (1998) found that among a slightly older age bracket, college students, of over 2,600 education and medicine students, 17.5% and 13.6% smoked respectively. These results are an alarming indication that smoking is on the rise in the Kingdom of Saudi Arabia.

A global youth tobacco survey conducted by the Eastern Mediterranean Regional Office (EMRO) confirms the high percentage of cigarette use among 13- to 15-year-old students (World Health Organization [WHO], 2007). A survey completed in Saudi Arabia in 1999 and 2007, showed that in 1999 a total of 6% of males smoked daily, while females were not surveyed at that time; however, in 2007 the percentage of daily smoking for the 13- to 15-year-old age group in males increased to 9%, and the result for female students was 4% (WHO, 2007). These results are alarming, indicating that smoking tobacco is increasing and attracting teenagers from both genders.

The prevalence of smoking in Saudi Arabia is extremely high given that the bulk of the population receives information on the negative health effects of the habit (Mohamed, Loffredo, & Israel, 2006). Jarallah, Rubeaan, Nuaim, Ruhaily, and Kalantan (1999) reported that the overall prevalence of current smoking was 21.1% for males and 0.9% for females in 1999. This highlights a major difference between Saudi Arabia and other settings, as in a number of other countries female smoking incidence is considerably higher. Jarallah et al. (1999) also noted that 78% of smokers were young to middle-aged and that smoking prevalence was higher among married people, among uneducated people, and among those in certain occupations, such as manual workers, businessmen and army officers. Jarallah et al. (1999) stated that the highest rate of smoking is among 21 to 40-year-olds, at 67%. Generally, cigarette smoking is much more common in males, although its prevalence appears to be increasing in females in recent years (Jarallah et al., 1999).

Methodology

The research comprised a systematic search for articles published within the last 10 years in both English and Arabic languages. Articles considered were on the topics of smoking prevalence, smoking trends and smoking cessation interventions, as well as strategies that target

adolescents in Saudi Arabia. Data was accessed through electronic and hard copy sources with MEDLINE– OVID, Global Health–OVID, Proquest and Science Direct search engines used. In addition governmental and organisational data relevant to the topics were also searched.

Forms of Tobacco Use

In Saudi Arabia, people consume tobacco via cigarettes, but another major form of tobacco smoking is the use of shisha pipes (see Figure 1). In shisha pipe smoking, the tobacco smoke is drawn through a water filter. While there have been studies arguing that shisha pipe smoking is safer than cigarettes due to the water filter, the Saudi Arabia Government is keen to discourage the behaviour (*Anti-Smoking Program*, 2008). The tobacco used in shisha pipes is known as mu'asl in Arabic, and is similar to molasses in English. This tobacco is created through a process involving glycerin, essences, fragrant oil, and of course molasses (Mohamed et al., 2006).

The picture in Figure 1 depicts the main parts of the shisha (water pipe). The head, body, bowl and hose are the primary elements from which a shisha is assembled, and each can be bought individually in standard sizes. The smoker typically presses the fired-clay head onto the metal body, using tissue paper or a rubber fitting at the joint to make a seal. The interface between the body and the glass water bowl, which is typically rinsed and refilled each smoking session, is similarly sealed, as is the interface between the body side-arm and hose. The flexible hose is usually made of leather or other fibrous material, with each end terminating in a hollow wood fitting (Knishkowsky & Amitai, 2005; Mohamed et al., 2006).

Factors Influencing Adolescent Smoking Habits

Research indicates that the influence of friends is great in an adolescent's decision to experiment with smoking. Adolescents who associate with friends who smoke are at an increased risk of making the transition from experimental to regular use of tobacco (Distefan, Gilpin, Choi, & Pierce, 1998). Recent work has suggested that having friends who smoke, in contrast to the findings of Szabo, White, and Hayman (2006), is more important than parental smoking in predicting adolescent smoking (De Vries, Engels, Kremers, Wetzels, & Muddle, 2003).

Abdallah et al. (2007) conducted a study into gender difference according to variables such as prevalence, access to tobacco, knowledge and attitude, environmental tobacco smoke, cessation of smoking, tobacco-related advertisements and education on tobacco, among 1,505 adolescents at governmental schools in Tabuk, Saudi Arabia. The study found there were significant gender differences concerning sources of cigarettes, usual place of smoking, intensity of smoking, knowledge on addiction of tobacco, exposure to education on tobacco, attitudes and exposure to tobacco smoke in public places.

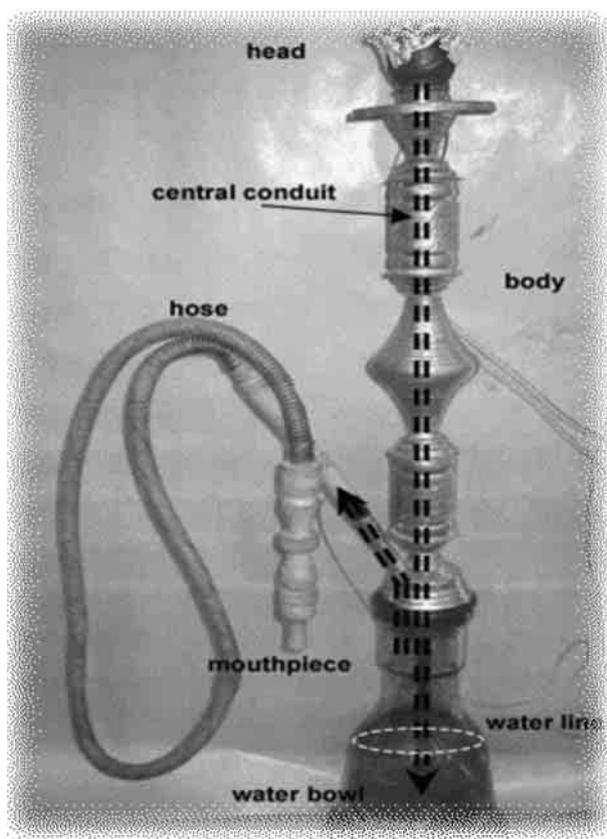


Figure 1
Shisha parts.

At the same time, no significant gender differences were found with respect to age of initiation, knowledge of health hazards of tobacco, exposure to media, desire to quit or exposure to tobacco smoke at home. This led them to conclude that, for adolescent smoking cessation in Saudi Arabia, different intervention strategies and policies in males and females are required, for example reducing youth access to cigarettes and intensive antitobacco programs in schools and communities.

A study by Al-Damegh, Mahmoud, Al-Alfi, Al-Hoqail (2004) examining the smoking habits among male secondary school students in Al-Qassim involving 2,203 students, found that the more pocket money received by the students, the higher the prevalence of smoking. It also confirmed that the influence of friends (63.5%) and family factors, especially a brother's smoking habits (24.8%) were vital predictors of smoking. This study also found that most of the students knew that smoking was harmful to their own health (89.3%) and to others' health (73.9%). The association between smoking and lung cancer was known by many of the students (84.3%), while 80.9% knew smoking contributed to chest diseases and heart diseases (78.2%), the relation to other diseases was less known.

Religion and Smoking in Saudi Arabia

In relation to beliefs, Al-Damegh et al. (2004) concluded that the religious aspect should also be an integral part of such programs, since students attending Islamic secondary schools had a lower prevalence of smoking compared to those attending technical and commercial secondary schools. These findings were also found in Jarallah et al.'s (1999) study. In fact, some religious scholars reported that tobacco products are prohibited in Islam based on authentic explanations of the Holy book 'Al-Qur'an', specifically AL-ARAF (The Heights) in chapter no. 7, Verse 157, which translated into English by Yusuf Ali (n.d.) reads:

Those who follow the messenger, the unlettered Prophet, whom they find mentioned in their own (scriptures), — in the law and the Gospel; — for he commands them what is just and forbids them what is evil; he allows them as lawful what is good (and pure) and prohibits them from what is bad (and impure); He releases them from their heavy burdens and from the yokes that are upon them. So it is those who believe in him, honour him, help him, and follow the light which is sent down with him, — it is they who will prosper.

The Origins of Smoking Cessation Programs

Previously, in the time of King Abdulaziz, King Saud, and King Faisal, smoking was banned in the Kingdom. It was reported that the monarchs disapproved of the behaviour. It was seen as a dirty and unsociable habit. However, after their time, the restrictions waned and many argued that, by the time of the end of World War II, smoking was becoming a popular behaviour for Saudi males, particularly shisha pipe smoking. While some sources state that smoking cessation in the Kingdom started in 1979 (*Anti-Smoking Program*, 2008), the majority of articles argue that it was not until 2001, and the establishment of the antismoking department, that the smoking cessation programs became highly active in their initiatives. As such, Saudi Arabia's smoking cessation strategies are relatively new and are only now starting to make a significant impact (Carroll & Rock, 2003).

Reducing the Amount of Nicotine per Cigarette

In 1979, following cooperation at a meeting of health ministers from the Gulf States, a document was formulated with 32 resolutions for tobacco control (Ahmad Moh'd, Sahar, Jawad, Sami, Salah, & Ayesha, 2008). One of these resolutions was restricting the amount of nicotine in each cigarette to less than 0.6mg (Ahmad Moh'd et al., 2008).

Saudi Arabia has also gradually increased the price of cigarettes through custom tariffs. Between 1979 and 2002, tariffs on tobacco products in Saudi Arabia rose by 150% (*Anti-smoking program*, n.d.). In addition, the tariffs for tobacco for shisha pipe smoking, known as mu'asl, also increased from 100% to 150% in the same period (Ahmad Moh'd et al., 2008).

Particularly since 1999, the Kingdom of Saudi Arabia has been a strong supporter of World Anti-smoking Day. On May 31 of every year, the Ministry of Health uses a number of forms of media to spread the antismoking message (Anti-smoking program, n.d.). In Saudi Arabia on this day there are a number of special programs put in place. The promotion of International Smoke-Free Day is observed across many countries in the Gulf region and is supported by the Gulf Countries Health Ministers Council. But the reason for this has been due to the influence of the WHO in 2004 (Khoja, 2008).

In the first six years of operation, the antismoking department, and a number of antismoking centres were developed. By the time of the review by WHO (2007), there were 17 antismoking centres fully equipped with educational and promotional materials. These antismoking centres were based in cities of the Kingdom of Saudi Arabia, with 8 centres in Riyadh. In addition, the WHO and the antismoking department reported that 28 small antismoking clinics had been established with plans to increase this total number to 38 within the next two years (Kingdom achievements, 2008; WHO, 2007).

The visibility and exposure of the antismoking department's programs included the antismoking mobile caravan program. The path of the antismoking mobile caravan can be seen below (Figure 2).

As seen from Figure 2 showing the map of Saudi Arabia, with the Red Sea on the left and the Arabian Gulf on the right, the antismoking mobile caravan starts in the capital city, Riyadh. Then it travels to some of the larger regional centres north of the capital in the Al-Qasim region. After that, the antismoking mobile caravan travels west to cities around Makkah and Medinah before it finishes its circuit in the east and returns to Riyadh. The antismoking mobile caravan operates in the summer months in Saudi Arabia and communicates to all popula-

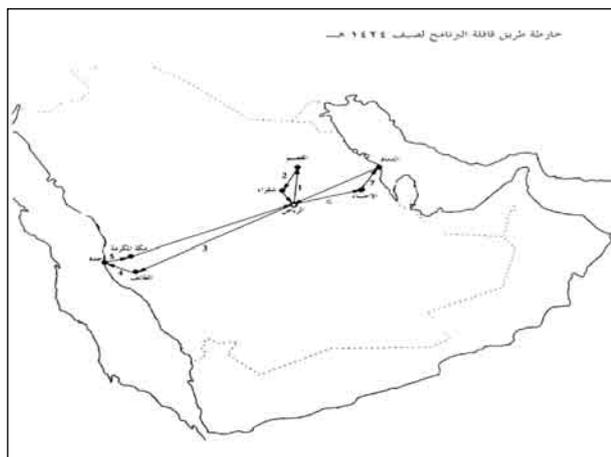


Figure 2

The antismoking mobile caravan program.

Source: *Saudi Anti-Smoking*, Report in Arabic to WHO, Eastern Mediterranean Regional Office, 2007, p. 19

tions. However, there is an operational emphasis on making an impact on adolescents smoking via the documents called 'the future generations'. These documents are pictures and written health warning on the negative impact of smoking, which are placed on the school book notes, so students can see them when they write their homework. The educational promotion of the antismoking mobile caravan involves distributing flyers about the harmful effects of smoking and displaying some of the consequences of smoking through images. The staff of the antismoking mobile caravan program are originally staff from the antismoking department and are also connected with local groups, such as universities and community associations, to arrange to hold lectures (Kingdom achievements, n.d.).

In 1999 Saudi Arabia won an award from WHO for its legislation banning smoking in not only government offices, airports, the Saudi airline and schools, but in two entire cities (Anti-smoking program, 2008). Makkah Al-Mokaramah and Al-Madinah Al-Monawarah have both been declared cities of religious significance and sites of religious pilgrimage (WHO, 2007). These cities are the only two whole cities that have banned smoking (Kingdom achievements, n.d.).

One initiative developed by the Saudi Anti-smoking Association based in Riyadh has been an e-based smoking cessation campaign. The campaign was created with the aim of targeting 1 million smokers in the Kingdom. The developers of the program chose the Holy month of Ramadan, September 1 to the September 30, 2008, to start the program. This has religious significance as it is widely believed by Muslims that because smoking harms the body, it is not supported by the Quran. Therefore, it is hoped that smokers understand that tobacco smoking is neither healthy nor virtuous. This e-based smoking cessation campaign is novel in many ways for Saudi Arabia because it encourages smokers to send their e-mail addresses to a web site, which will then keep in communication with the smoker electronically (Kingdom achievements, n.d.).

Analysis of Health Warnings on Cigarette Packs

By contrasting and comparing the health warnings on one brand of cigarette packs that are sold in Australia and Saudi Arabia, it is clear that there is considerable scope to improve this particular aspect of smoking cessation.

Figure 3 shows both the front and back of this brand of cigarette pack sold in Australia. The researcher suggests more emphasis should be placed on the health warning. As can be seen from the Figure, the warning is approximately 30% of the size of front of the pack and written in size 24 font, which can be clearly read and explained by the picture. The back side has a 100% health warning message with a large, confronting image, and the Quitline number is visible, and looks like a stamp on the picture for more emphasis. Furthermore,



Figure 3

Cigarette packs sold in Australia.

there is encouragement and advice, 'You can quit smoking call Quitline'; 'Talk to your doctor or pharmacist or visit Quitline web site'. In addition, on one of the sides of the packet, there are more health warnings and advice. The company is left with only one side of the packet for the brand name.

Figure 4 shows both the front and back of one brand of cigarette pack sold in Saudi Arabia. The researcher suggests more emphasis should be placed on the health warning. As can be seen from the Figure, the warning is only approximately 15% of the front side of the pack and written in size 10 font, which can hardly be read. The back side has no health warning at all. In addition, on one of the sides of the pack 'For adults only' is written, along with 'Tar 6mg, nicotine 0.5mg, and CO 7mg'. However, on the other side of the pack is the company's advertisement. So, the warnings are not very prominent at all and, in comparison, the Saudi health warning is very subtle.

Al-Mulla, Helmy, Al-Lawati, Nasser, Rahman, and Al-Mutawa (2008) found that 92.8% of smokers want to learn about smoking cessation strategies. Al-Yousaf and Karim (2001) found 95% of smokers know that smoking is harmful and 60% know that smoking is harmful for others. As nonsmokers had greater knowledge of the ill-effects of smoking upon their oral health, there is a need to develop location-specific interventions to control smoking habits in late adolescence (Almas, Maroof, McAllister, & Freeman, 2002). However, most of the researchers found there was a lack of comprehensive adolescent programs in the Kingdom, and they identified the

need to urgently start one in the near future to protect the new generation against smoking-related diseases. Thus, the Saudi Government, represented by the Ministry of Health, should establish an intensive plan to prevent and control this increasing trend among teenagers.

Evaluation

Stanton, Baade, and Moffatt (2006) recommend reaching students while they are in the 'contemplation stage', given the difficulty of quitting smoking once addicted. To this end, they suggest identifying these students and developing programs to reduce the likelihood of them progressing from contemplation to action. This may help to further reduce the uptake of smoking among secondary school students.

Recommendation for Smoking Cessation Program in Saudi Arabia

Al-Doghether (2001, p. 3) gave a clear recommendation in his article titled, 'Do We Need National Guidelines for Smoking Cessation?'

... evidence that exists on the delivery of cessation help throughout the primary health care system suggests that smoking cessation has not yet been integrated into routine primary health care in Saudi Arabia, and that there is no national strategy or consensus on what should be done and how it is to be done. This would suggest the need for national guidelines for smoking cessation.

Al-Dogether's (2001) recommendations demonstrate there is no current established program targeting smoking cessation and adolescents in particular. Al-Doghether's



Figure 4
Cigarette packs sold in Saudi Arabia.

(2001) recommendation that future generations need to be protected from the harm of cigarette or water-pipe tobacco smoking is crucial. There is a national need for more cooperation between the Ministry of Health and the School Health Department in the Ministry of General Education to introduce a carefully targeted program as part of the education curricula.

Limitations of Research on Smoking Habits of Adolescents

Hancock, Sanson-Fisher, Perkins, Girgis, Howley, and Schofield (2001) state that a number of researchers have found that adolescents exaggerate their responses; this is an ongoing limitation for survey-based research with adolescents. Adolescents have been confirmed as a difficult group to survey for a significant proportion of responses can be nonsensical (Hancock et al., 2001). For example, in a study of 2,571 students by Hancock et al. (2001), about 10% of the surveys returned contained nonsensical responses (such as 70,000 cigarettes smoked per day). Such responses need to be deleted from analysis. However, it is difficult to know the extent of nonsensical responses by these students. Furthermore, self-reporting of smoking habits by adolescents is known to be potentially inaccurate (Hancock et al., 2001). Lewis (2007) also points out that attrition and losses in follow-ups are particularly problematic in trials with young smokers. Additionally, Hancock et al. (2001) claim the amount of effort devoted to adolescent smoking research, coupled with the ever-increasing adolescent smoking rate, highlights the fact that a definitive strategy for adolescent smoking cessation is yet to be found.

Summary

There is well-established evidence that smoking increases the health risks of smokers and people in close proximity to smokers. This literature review has established that the authorities in the Kingdom of Saudi Arabia have clearly recognised the threats smoking poses for its future generations and that the authorities have responded with the introduction of a number of significant initiatives. These include increased taxation on tobacco products, legislative changes to ban smoking from specific religious sites, some public buildings and the national airline. In addition, the introduction of health promotion activities, such as the antismoking mobile caravan, are beginning the work of minimising the damage to their society from smoking. However, it is evident that the majority of smokers in Saudi Arabia are adolescent males and, as such, targeted and vigorous smoking cessation programs may be needed to address what appears to be a developing trend towards further smoking uptake. It is also evident that more young females are beginning to smoke and programs that include modifying the appearance of cigarette packets and additional educational programs through the national curriculum could also be considered in an attempt to promote further adolescent smoking cessation.

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