Use of the target group index survey to evaluate the cigarette smoking profile in Saudi Arabia

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ABSTRACT

الأهداف: دراسة السمات الإعلامية، ورسم صورة للمدخنين في المملكة العربية السعودية باستخدام مسح مؤشر المجموعة المستهدفة.

الطريقة: أجري هذا البحث المنزلي في المركز العربي لبرنامج مكافحة التدخين، الرياض، المملكة العربية السعودية باستخدام مؤشر المجموعة المستهدفة في 21 مدينة بالمملكة العربية السعودية وذلك في مارس 2008م. لقد تم اختيار عينة عشوائية متعددة المراحل ضمت 7003 فرداً تبلغ أعمارهم 15 عاماً أو أكثر من ذلك. لقد تمت مقابلة كل شخص بمنزله باستخدام استبيان منظم، وقد شمل الاستبيان السمات الاجتماعية والاقتصادية، والتعرض للإعلام، وكذلك معلومات عن التدخين.

النتائج: وصلت نسبة المدخنين بين الرجال إلى 35.9% بينما كانت 2.3% بين النساء، وكانت نسبة المدخنين مرتفعة جداً بين المشاركين والذين تتراوح أعمارهم ما بين 30-49 عاماً بالمقارنة مع من هم أصغر سناً (p=0.001). أشارت النتائج إلى أن 22.3% كانوا يدخنون بشراهة، و69.3% كانوا يدخنون السجائر المعتادة، وقد حاول 22.4% من المدخنين الإقلاع عن التدخين ولكنهم فشلوا. وشملت أهم الطرق التي لجأ إليها المدخنون للإقلاع عن التدخين كلاً من: مضغ النيكوتين (18.5%)، والتنويم (14%)، ولصقة النيكوتين (8%)، والإبر الصينية (3%). وكان (98%) من المدخنين يشاهدون التلفاز يومياً، ويلاحظون الإعلانات الكبيرة خارج البيوت، وكان 46% منهم يستخدمون الانترنت يومياً.

خاتمة: يمكن استخدام مؤشر المجموعة المستهدفة لرسم خلفية كاملة للمدخنين، وتحديد السمات الإعلامية المختلفة والتي قد يكون لها أكبر الأثر في رسائل مكافحة التدخين.

Objectives: To draw a profile, and study the media habits for cigarette smokers in Saudi Arabia using the Target Group Index survey (TGI).

Methods: A household survey using the TGI sample was conducted in March 2008 in 21 cities in Saudi Arabia. A sample of 7003 individuals aged 15 years or more, male and females, living in town and cities, were randomly selected using the multistage sampling technique. One individual per household was interviewed using a structured questionnaire covering socio-economic profile, media exposure, and cigarette consumer information. The study was conducted in Arabian Center for Tobacco Control, Riyadh, Kingdom of Saudi Arabia.

Results: Cigarette smoking was 35.9% in males, and 2.3% in females. This was significantly higher in the age group 30-49 years compared with younger ages (p=0.001). Among smokers, 22.3% were heavy smokers, 69.3% were using regular flavor cigarettes, and 22.4% tried to quit smoking but failed. The most common methods of quitting smoking were; nicotine gum (18.5%), hypnosis (14%), nicotine patch (8%), and acupuncture (3%). Ninety-eight percent of the smokers watched TV daily, noticed mainly big outdoor ads, and 46% used the Internet daily. Favorite TV and radio channels, newspaper, magazine, and interesting topics for the smokers were recorded, and the main smoker profile was drawn.

Conclusion: The TGI can be used to draw a smoker profile and identify different segments with the greatest opportunities to send anti-smoking messages.

According to the World Health Organization (WHO), tobacco is a public health priority. However, it is the single most preventable cause of death. Tobacco use kills more than 5 million people per year. This number may increase to 8 million per year by the year 2030 if current patterns continue.[1] Smoking prevalence and cigarette consumption are decreasing in many developed countries, however, this is not the case in developing countries. Cigarette consumption in the United States has been declining steadily over several decades.[2] In Saudi Arabia, the market for tobacco increased at a compound annual growth rate of 3.9% between 2003 and 2008, and 4.1% between 2004 and 2008.[3] The cigarette category has led the tobacco market in Saudi Arabia, accounting for a share of 98.6% in 2008, and 99.3% in 2009.[3] To evaluate tobacco use in Saudi Arabia, many survey studies have been conducted. However, they were either local, with small sample size, or targeting special groups.[4] Some studies tried to understand attitudes and behavior of smokers, but they were limited to specific target groups.[5-7] Repeating surveys that measure smoking prevalence only, is not the ideal tool in fighting against tobacco use. Understanding smoker profiles and habits is a crucial step in designing no tobacco campaigns and in sending tobacco quitting messages. In this aspect, the use of marketing tools such as the Target Group Index (TGI) survey, which is used by industrial companies to study usage habits of their products, may be an interesting experience. The TGI is a continuous survey of consumer usage habits. It is the longest established single source marketing and media survey in Britain, and was established by the British Market Research Bureau (BMRB) in 1969. The TGI has since expanded into over 70 countries with over 700,000 people being interviewed every year. The TGI is usually used by Brand Owners, their Creative, Media, Direct Marketing and Promotions agencies and Media Owners. They extensively use the TGI to help develop more efficient marketing strategies and advertising campaigns. The TGI enables the users to understand consumer attitudes, motivations, and behavior, and to develop marketing and communications strategies.[8] The aim of this study was to draw a profile, and study the media habits for cigarette smokers in Saudi Arabia using the TGI survey, and to discuss TGI advantages and limitations.

Methods. In March 2008, the Pan Arab Research Center (PARC) in cooperation with the British Market Research Bureau (BMRB) carried a national survey out using the TGI sample. The target populations included Saudi and non-Saudi's living in Saudi Arabia, 15 years of age and more. The sample was designed and generated by PARC and BMRB. Using a multistage (5 stages) sampling technique, 7003 persons living in 21 cities and towns in Saudi Arabia were included. In the first stage, the Kingdom was divided into 5 sectors then, 21 cities were selected randomly using a computer generated sample. Riyadh, Buraidah, and Uneza in the Central region; Dammam, Al-Khobar, Al-Houfouf, Al-Qataif, and Mibarza in the Eastern region; Hael, Tabouk, Arar, and Qurayat in the Northern region; Abha, Khamis Mushait, Jizan, Najran, and Al-Baha in the Southern region, and Jeddah, Al-Madina, Al-Taif and Mekkah in the Western Region. In the second stage, each region was divided into Administrative Units/Sectors defined by the Municipalities. In the third stage, each Administrative Unit was further subdivided into Clusters/Communities. A Cluster was defined as a compact agglomeration within a determined large polygon of roads/streets. In the fourth stage, each cluster was divided into blocks. A block was defined as a small tract of land outlined by streets or roads and contains houses, buildings, and so forth, which are separated by strips of land. In the previous 4 stages, sample selection was automated, (computer generated). In the fifth stage, households were selected. The household is the Sample Unit, selected at fixed intervals, along a random path drawn inside the blocks. Only one person was selected from each household. A fixed number of interviews were conducted within each sample block.

Data were collected using a standard international questionnaire developed by the BMRB, and used in more than 70 countries in a network of harmonized market and media survey.[8] The Arabic version of the questionnaire was used continuously and tested in relation to the international version. The questionnaire used, contained 2 parts. The first part; contains information regarding socio-economic profile (age, gender, nationality, income, and residence), media exposure (type), personal activity diary (name and time per day of media exposure). The interviewers administered this part. The second part; cigarette consumer information (number of cigarettes per day, flavor and brand, giving up smoking) was self-completed by the respondent upon coaching. The questionnaire was collected 4-5 days after placement.

The Statistical Package for Social Sciences (SPSS Inc., Chicago, IL, USA) version 17 was used for data analysis. Data were presented using proportions and 95% confidence interval, and using Chi-square to test the significance of association between qualitative variables. P-values were considered significant if <0.05. Statistical analysis was carried out on the actual sample

not on the weighted figures used to produce the TGI report.

Ethical considerations. The study was approved by the Ethical Committee of the Tobacco Control Program, Ministry of Health, Saudi Arabia. Informed consent was taken from all the participants. The study was conducted under the International Code of the European Society for Opinion and Marketing Research, (ICC/ESOMAR). It guarantees the distinction between research and commercial activities and the confidentiality of personal identity.[9]

Results. Out of the 7003 included in the study, 51% were males and 49% were females. Saudis represented 62% of the sample and Arab residents, 25%. **Table 1** illustrates the sample characteristics, and shows that gender, nationality, and regional sample distribution were comparable to the national figures and reflect the quality of sample selection. At the national level, **Table 2** shows that 19.6% were current smokers, 36% males and 3% females. The percentage was 20.3 in resident Arabs, compared with 19.6% in Saudis. When nationality was weighted for the national proportion, it became significantly higher in the resident Arabs (26%) compared with Saudis (19%), *p*=0.0001. The rate was higher in the Arab males 24.1% followed by 18% in Saudi males, then Arab females 1.3%, then

1.1% in Saudi females. Overall, females represented 6% of the smokers in our sample. Among the current smokers, 91.2% were cigarette smokers, and the remaining smoked cigars or the "tobacco pipe." Out of the respondents, 7.2% smoked on average <5 cigarettes per day, 21.4% smoked 5-10 cigarettes/day, 43.3% smoked 11-20 cigarettes/day, 23.3% smoked 21-40 cigarettes/day, and 4.8% smoked >40 cigarettes/day. The percentage of light smokers (<10 cigarettes/day) was higher in females (52%) compared with males (27%), *p*=0.0001. No significant difference was found between Saudi and non-Saudi Arabs. Out of 1236 respondents, 69.4% smoked regular flavored cigarettes, 27.3% smoked light cigarette, and only 3.3% were using the ultra light cigarette. Marlboro is the leading brand of cigarettes in Saudi Arabia at 52.4%, followed by L&M and Carlton. Of the Marlboro smokers, 27% were heavy smokers, governing the largest share among all the other brands. Thirty-two percent of the Carlton smokers were light smokers, followed by L&M at 30%. Out of the 1376 smokers, 303 (22%) tried to quit smoking but failed. Out of the 5627 current non-smokers, 52 (1%), were ex-smokers. The most common methods

Table 1 - Sample characteristics (N=7003).

Variables	n	(%)
Nationality		
Saudi	4332	(61.9)
Arab	1781	(25.4)
Non-Arab	890	(12.7)
Gender		
Male	3543	(50.6)
Female	3460	(49.4)
Age (years)		
15-19	761	(10.9)
20-29	2399	(34.3)
30-39	2212	(31.6)
40-49	1107	(15.8)
50& more	524	(7.5)
Monthly income (SR)		
0-3000	918	(13.1)
3001-6000	2752	(39.3)
6001-9000	1391	(19.9)
9001-15000	774	(11.1)
>15000	165	(2.4)
Unknown	1003	(14.3)
Cities		
Riyadh	1609	(23.0)
Jeddah	1118	(15.9)
Eastern	1044	(14.9)
Mekka	524	(7.5)
Madinah	493	(7.1)
Other	2215	(31.6)

Table 2 - Current smoker's characteristics according to nationality, gender, age, income, and regional distribution.

Variable	Current smokers			*P*-value
	n	(%)	95% confidence interval	
Total sample (n=7003)	1376	(19.6)	18.73-20.6	
Nationality				
Saudi* (n=4332)	851	(19.6)	18.48-20.87	Not significant
Arab* (n=1781)	362	(20.3)	18.49-22.29	
Gender				0.0001
Male (n=3543)	1273	(35.9)	34.35-37.54	
Female (n=3460)	103	(2.9)	2.45-3.61	
Age (years)				0.0001
15-19 (n=761)	92	(12.1)	9.90-14.67	
20-29 (n=2399)	436	(18.2)	16.66-19.79	
30-39 (n=2212)	495	(22.4)	20.67-24.19	
40-49 (n=1107)	251	(22.7)	20.26-25.28	
≥50 (n=524)	102	(19.5)	16.21-23.17	
Monthly income (SR)				Significantly higher in 3000-6000 group, *p*=0.02 compared to lower income, *p*=0.04 to higher
0-3000 (n=918)	160	(17.4)	15.06-20.07	
3001-6000 (n=2752)	568	(20.6)	19.15-22.21	
6001-9000 (n=1391)	255	(18.4)	16.35-20.49	
9001-15000 (n=774)	130	(16.8)	14.27-19.66	
>15000 (n=165)	30	(18.2)	12.78-25.10	
Cities				Significantly higher in Riyadh and Madinah, *p*=0.0001
Jeddah (n=1118)	166	(14.9)	12.84-17.10	
Riyadh (n=1609)	522	(32.4)	30.17-34.80	
Eastern (n=1044)	88	(8.4)	6.85-10.32	
Mekka (n=524)	88	(16.8)	13.75-20.34	
Madinah (n=493)	155	(31.4)	27.40-35.77	
Other (n=2215)	357	(16.1)	14.62-17.73	

*weighted sample showed a significant higher proportion in Arab (26%) versus 19% in Saudi, *p*=0.0001.

of quitting smoking were; nicotine gum (18.5%), hypnosis (13.7%), nicotine patch (8%), acupuncture (3%), and 32% used other methods. Nicotine gum was found to be the most effective method used by smokers to stop smoking. Of the current smokers, 98% watched TV daily. The remaining watched TV, but for fewer days and hours. Ninety percent of the smokers on an average watched TV for 1-5 hours per day. The MBC, Al-Jazeera, Al-Arabia, MBC2, Rotana Cinema, Dubai TV, LBC, Future TV, and Saudi Channel 1, were the top channels watched by the smokers. For radio, Quran (29%) was the favorite for the smokers, followed by MBC (15.4%), Saudi radio (11%), and the Emirates (2.2%). The Middle East (Elsharg Alawsat) is the most common newspaper read by smokers (26%), followed by Okaz (24%), Alriyadia (sport) (11%), Al-Hayat (11%), and AAA (9%), then AleQtesadia (8%). It worth mentioning that Health and medical news are at the seventh level of attention for smokers. For the weekly magazines, Zahrat AlKhalej was read by 12%, and Sayedity by 11.2%. Eighty percent of smokers noticed the large outdoor advertisements on the road side, 44% noticed the small road side ads, 48% noticed the large ads on buildings, 13% noticed bus ads, and 12% noticed ads in the airport. Forty-six percent of the smokers use the Internet daily.

Discussion. The advantage of TGI is that it is a continuous survey of consumer usage and habits, which can be used to monitor trends of tobacco smoking status and habits. This can help decision makers to address target groups using tobacco control programs through a better understanding of smoker's habits and their use of media. As the use of TGI is affected by many limitations; it is marketing and media oriented. It measures only cigarette, cigar, and tobacco pipe smoking and it does not include other types of tobacco use like water pipe (shisha), one of the most common methods of smoking tobacco among Arabs.[10] The TGI conducted in Saudi Arabia includes only Arabs, Saudis, and Non-Saudis as the media is mainly directed to Arabic speakers in Saudi Arabia. It covers mainly the urban areas (cities and towns). Also, the TGI measures only the prevalence of current smokers, which, alone, is not the appropriate method to measure progress of reducing harm from smoking. The Center for Disease Control (CDC) recommends the use of additional measures to monitor trends in smoker's behavior.[11] Additional measures can be added to the TGI to make it sensitive enough to measure trends in tobacco smokers' behavior. The weighted percentage of the total population smoking cigarettes in Saudi Arabia was 21%, compared with 14% in Bahrain, 21% in Kuwait, 13% in Qatar, and 15% in the UAE, using the same TGI survey.[12] At the top end of the scale, the percentage was 47% in Greece, and 41% in Turkey. It is below 10% in some African countries, such as Kenya, Tanzania, and Uganda. The latest TGI survey in 2010, showed that the percentage of population smoking cigarettes in Saudi Arabia, increased to 22.4%, compared with 21% in 2008, and 20.5% in 2006. Even if the percent remains constant, this means that the absolute numbers of smokers are increasing with population growth.[13]

In a study conducted to determine the prevalence and determinants of cigarette smoking among Saudi nationals in 3 regions of Saudi Arabia, the overall prevalence of current cigarettes smoking was 21.1% for males, and 0.9% for females.[14] No urban/rural difference was found. Most smokers (78%) were young to middle-aged (21-50 years old). The data for this study were obtained during a national cross-sectional survey of chronic metabolic disorders in Saudi Arabia, which was conducted between 1990 and 1993. The very low cigarette smoking prevalence of 21.1% in Saudi males compared with 36% in our study, and 0.9% in Saudi females compared with 3% in our study may be explained not only by the time difference of >10 years, but also because their study included only 3 main regions and did not include the central region which includes Riyadh, the capital. Also, current smoking was defined as one or more cigarette daily for 6 months or more before the survey. This definition will exclude a substantial proportion of light smokers. This was reflected in the high proportion of heavy smokers in their study 59%, compared to only 26% in our study. Also, our study was conducted only in urban areas, in cities and towns more smokers are expected. The placement and self-completion of the consumer part of the questionnaire in our study may encourage respondents to declare their smoking status in a conservative society like Saudi Arabia. In our sample, 7% smoked less than 5 cigarettes per day, and 28% of the total number of smokers in our sample used light or ultra light cigarettes. Specific messages can be sent to this group. Smoking low-tar, low-nicotine cigarettes has the same unfavorable effect on the coronary microvascular functions as smoking regular cigarettes.[15] The TGI data tells us that watching television remains the dominant media pastime among consumers worldwide, with the average claimed daily viewing time reaching 3 hours and 20 minutes. It also shows that Internet penetration keeps growing. This is consistent with our study.[16] Knowing preferred TV channels would help to direct anti-smoking messages. Can we use the marketing tools used by the companies to market their product to market healthy life styles including no tobacco campaigns? Marketing healthy eating is a model for that. There is increasing pressure for companies in terms of delivering new healthy and nutritional options for consumers. However, the main

challenge for companies working in the food and drinks industries, and indeed pharmaceuticals and leisure, is to remain aware of the latest trends and shifts in consumer attitude and behavior, and to act quickly.[17] In the UK, Blackburn with Darwen Primary Care Trust (PCT) has commissioned an independent specialized agent to assist with the development of a social marketing strategy to improve public health in the PCT area. One of the aims was how to market quitting smoking messages, and to answer the following key questions for campaign design; Who is the target audience?; Where do they live?; and What is the target audience like? Such data can be used not only to identify lifestyle types and subtypes, but also it can identify where each type is clustered.[18] A research source such as the TGI is an essential tool in keeping up with consumer demands, and developing the right messages to communicate the attributes and health benefits of new products to customers.

In conclusion, our study shows that regarding the cigarette smoker profile in Saudi Arabia; a smoker is usually a middle class, middle aged male, living in Riyadh and Jeddah, smoking 10-20 regular flavored cigarettes per day. He watches TV daily, mainly MBC, AlJazeraa, AlArabia, Rotana, and Dubai channels. His favorite radio band is the Holy Quran and MBC. He usually notices the big roadside advertisements. More than three-quarters of them have not tried to quit smoking. The TGI does not show only one profile, but it can identify different profiles in different segments. Once we have identified the segments in which the greatest opportunities exist, it is possible to design a message to fit the target, and then determine the most effective means of communication. It can also be used in monitoring trends and behavioral changes. Further research can be carried out to evaluate targeted educational messages according smoker habit profiles in Saudi Arabia. As the use of TGI is affected by many limitations; it is marketing and media oriented. It measures only cigarette, cigar, and tobacco pipe smoking and it does not include other types of tobacco use like water pipe (shisha), The TGI conducted in Saudi Arabia includes only Arabs, Saudis, and non-Saudis as the media is mainly directed to Arabic speakers in Saudi Arabia. It covers mainly the urban areas (cities and towns). Also, the TGI measures only the prevalence of currents smokers, which, alone, is not the appropriate method to measure progress of reducing harm from smoking.

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