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Expert Opinion Article

Assessing the Impact of Public Health Campaigns on Smoking Cessation Rates

Atef Eid Madkour Elsayed[1]*, Albatool Mohammed Alqahtani[2], Haneen Hassan Alhayaza[3], Saher Abdulaziz Alzahrani[4], Nejad Yahya Al Shareef[5], Abdullah Hussain O Alsaiari[6], Sarah Ali Abdullah Al Bin Ahmed[7], Mohammed Rafat Tashkandi[8], Nawaf Saleh Almalki[9], Mohammed Ahmed Alharbi[10], Shaima Mohammed Alghuraybi[11], Ammar Mohammed Ali Alamri[12], Nujud Ibrahim Almutlaq[13]

[1]*Consultant, King Abdulaziz Hospital, Sakaka, Saudi Arabia
[2]Dentist, Moh / King Faisal University
[3]Dentist- Moh
[4]Medical Student, College of Medicine (Jeddah), Ibn Sina National College, Jeddah, Saudi Arabia
[5]Dentist
[6]GP
[7]Dentist-Moh
[8]Student (MBBS)
[9]College Of Medicine, Ibn Sina National College, Jeddah, Saudi Arabia
[10]MBBS
[11]Preventive Medicine Resident, King Saud University Medical City, Riyadh
[12]General Practitioner, Alnamas General Hospital, Alnamas-Aseer, Saudi Arabia
[13]Student- Medicine And Surgery

***Corresponding Author:** Atef Eid Madkour Elsayed
*Consultant, King Abdulaziz Hospital, Sakaka, Saudi Arabia

Abstract

Background: Public health campaigns are a cornerstone in addressing tobacco use, aiming to inform, motivate, and support individuals in quitting smoking. Despite their widespread implementation, challenges such as relapse rates and disparities in access to cessation resources persist. This study assesses the impact of public health campaigns on smoking cessation rates, focusing on campaign exposure, behavioral responses, and demographic variations.

Methods: A quantitative cross-sectional study was conducted among 384 adults aged 18 and above, comprising current smokers and recent quitters. Participants were selected via stratified random sampling from urban and suburban settings. Data were collected using structured questionnaires, covering demographics, smoking history, campaign exposure, and cessation behavior. Statistical analyses, including chi-square tests and logistic regression, were performed to evaluate associations between campaign exposure and quitting outcomes.

Results: The majority of participants (77.6%) reported being motivated to quit due to campaign exposure, with television/radio being the most common medium (55.2%). However, only 29.2% utilized support services, and 38.5% successfully quit smoking. Relapse rates among quitters were 24.5%. Younger, educated, and urban participants showed higher responsiveness to campaigns. Repeated exposure to messages significantly correlated with increased motivation to quit.

Conclusion: Public health campaigns effectively motivate smoking cessation but face limitations in sustaining long-term abstinence and connecting individuals with support services. To enhance impact, campaigns should integrate continuous messaging, tailored interventions for vulnerable groups, and stronger linkages to cessation resources. A multi-dimensional approach combining media efforts with policy and infrastructure support is essential for lasting public health gains.

Background

Public health campaigns have long served as a vital strategy in addressing widespread health concerns, including tobacco use. These campaigns are designed not only to inform the public about the dangers of smoking but also to encourage healthier behaviors and provide resources to support cessation efforts. With the evolution of media and communication channels, public health authorities have been able to craft targeted messages that reach diverse populations across various platforms, amplifying the impact of their efforts. As smoking continues to be a leading preventable cause of illness and death, evaluating the effectiveness of these campaigns becomes increasingly important (Langley et al., 2012).

Smoking cessation has been a critical objective for global health organizations, given its implications for both individual and societal health outcomes. Tobacco use is associated with numerous chronic

conditions, including cardiovascular disease, respiratory illnesses, and cancer. Public health campaigns aim to reduce smoking prevalence by influencing behavioral change through education, awareness, and emotional appeal. Over the years, many countries have adopted comprehensive strategies that include mass media campaigns, pictorial warnings, community outreach, and policy interventions to tackle this public health challenge (Onwuzo et al., 2024).

The effectiveness of these campaigns depends on several factors, including message clarity, cultural relevance, delivery methods, and audience engagement. Campaigns that employ emotional appeals, personal testimonials, and graphic imagery have often shown greater success in encouraging smokers to quit. In addition, the timing, frequency, and consistency of campaign messages play a crucial role in reinforcing awareness and promoting sustained behavioral change. Campaigns that are integrated into broader tobacco control strategies tend to have a stronger and more lasting impact (Davis et al., 2022).

Another critical element in campaign success is accessibility. Providing information alone may not be sufficient; public health efforts must also ensure that resources such as quitlines, counseling services, and cessation aids are readily available and well-publicized. Campaigns that connect individuals with concrete tools and support systems are more likely to achieve meaningful reductions in smoking rates. This highlights the need for a comprehensive approach that combines persuasive messaging with practical assistance (Perman-Howe et al., 2022).

Demographics also influence how public health campaigns are received. Age, gender, socioeconomic status, and cultural background can affect how individuals respond to anti-smoking messages. Tailoring campaigns to specific populations ensures that the content is relevant and resonant, increasing the likelihood of engagement and behavior change. Youth-oriented campaigns, for instance, often utilize social media and peer-driven messaging, while adult campaigns may focus on health consequences, financial costs, and family well-being (Golechha, 2016).

Evaluating the outcomes of public health campaigns is essential for continuous improvement and resource allocation. Tracking smoking cessation rates over time, assessing shifts in public attitudes, and analyzing the reach and recall of campaign messages can provide valuable insights. Such evaluations help public health professionals determine what works, for whom, and under what conditions, enabling the development of more targeted and effective interventions (Bafunno et al., 2020).

Technology has further enhanced the scope and precision of public health campaigns. With the rise of digital platforms, campaigns can now be tailored in real-time and delivered through interactive and engaging formats. Online tools allow for personalized feedback, social support networks, and gamification of the quitting process, which can boost motivation and adherence. The digital transformation of public health messaging presents both opportunities and challenges in reaching diverse audiences with credible and compelling content (Angeli et al., 2024).

Despite these advancements, challenges persist in reducing smoking rates. Tobacco companies continue to market their products aggressively, sometimes undermining public health efforts. Additionally, misinformation and skepticism about cessation methods can hinder campaign effectiveness. Overcoming these barriers requires sustained advocacy, regulatory enforcement, and public trust in health authorities and scientific evidence (Levy et al., 2018).

Furthermore, disparities in health literacy and access to healthcare can limit the reach of smoking cessation campaigns in vulnerable populations. People in rural or low-income communities may face additional barriers to quitting, including limited access to cessation programs and lack of culturally appropriate messaging. Addressing these inequities is crucial to ensuring that all individuals have the opportunity to benefit from public health initiatives (Kuipers et al., 2020).

The social environment also plays a significant role in smoking behaviors. Peer influence, family habits, and workplace culture can either support or hinder cessation efforts. Public health campaigns must consider these social determinants and work in tandem with community leaders, educators, and employers to create supportive environments for quitting. This multi-sectoral approach can reinforce individual efforts and foster a culture of health (Onwuzo et al., 2024).

In summary, public health campaigns are a cornerstone in the fight against tobacco use, aiming to inform, motivate, and empower individuals to quit smoking. Assessing their impact provides a basis for refining strategies, enhancing outreach, and maximizing public health benefits. As smoking patterns evolve and new challenges emerge, continuous evaluation and adaptation of these campaigns will be essential to sustaining progress and achieving long-term tobacco control goals.

Methodology

Study Design

This research employed a **quantitative cross-sectional study design** to assess the impact of public health campaigns on smoking cessation rates. The study utilized structured questionnaires to collect data from participants in both urban and suburban settings. The goal was to measure associations

between exposure to public health campaigns and attempts or success in quitting smoking.

Study Setting and Population
The study was conducted across three major public health centers and five community outreach locations in a metropolitan region, where national anti-smoking campaigns had been actively promoted over the last five years. The target population included adults aged 18 and above who were current smokers or had quit smoking within the past 12 months.

Sample Size and Sampling Technique
A total sample of **384 participants** was determined using Cochran's formula, based on a 95% confidence interval and a 5% margin of error, assuming a 50% estimated response rate. Participants were selected using **stratified random sampling** to ensure representation across age groups, gender, and geographical areas (urban vs. suburban). Within each stratum, individuals were selected using simple random sampling from registries of outpatient and community health service users.

Inclusion Criteria
Participants were included in the study if they met the following criteria:
- Aged **18 years or older**.
- Identified as a **current smoker** or a **recent quitter** (within the last 12 months).
- Reported **exposure to at least one national or local public health anti-smoking campaign** in the past two years.
- Provided informed consent to participate in the study.

Exclusion Criteria
Participants were excluded if they:
- Were **younger than 18 years**.
- Had **no exposure** to public health campaigns.
- Had a **diagnosed mental or cognitive impairment** that affected their ability to provide reliable responses.
- Declined to give informed consent.

Data Collection Tools
Data were collected using a **pre-validated, structured questionnaire** comprising both closed- and open-ended questions. The questionnaire was divided into sections assessing:
1. **Demographics** (age, gender, education, employment, residence).
2. **Smoking history** (duration, frequency, previous cessation attempts).
3. **Campaign exposure** (type, medium, frequency of exposure).
4. **Behavioral impact** (intent to quit, actual quitting, relapse, use of cessation services).

The questionnaire was available in both English and Arabic to accommodate linguistic preferences. It was pilot tested on 30 individuals prior to deployment to ensure clarity and reliability.

Data Collection Procedure
Data collection was carried out between **January and March 2025**. Trained data collectors approached eligible participants at health centers and community health outreach sites. After obtaining informed consent, participants were asked to complete the questionnaire anonymously, either on paper or via a digital tablet. Each session took approximately 15–20 minutes.

Ethical Considerations
The study protocol was approved by the **Institutional Review Board (IRB)** of the affiliated university. All participants were informed about the objectives of the study, their right to withdraw at any point, and the confidentiality of their responses. No identifying personal information was collected to ensure privacy and data protection.

Data Analysis
Collected data were coded and entered into **SPSS version 26** for statistical analysis. Descriptive statistics (frequencies, percentages, means, and standard deviations) were used to summarize participant characteristics and responses. **Chi-square tests** and **logistic regression analyses** were employed to identify associations between campaign exposure and smoking cessation outcomes, with significance set at $p < 0.05$.

Results
A total of **384 participants** were included in the study. The data collected aimed to assess the association between exposure to public health campaigns and smoking cessation behavior. The analysis presents descriptive statistics related to demographic characteristics, smoking status, campaign exposure, and quitting behavior. Frequencies and percentages are used to illustrate the distribution of variables, and interpretations follow each table to highlight notable findings.

Table 1: Demographic Characteristics of Participants (n = 384)

Variable	Category	Frequency (n)	Percentage (%)
Gender	Male	278	72.4%
	Female	106	27.6%
Age Group	18–29 years	92	24.0%
	30–44 years	140	36.5%
	45–59 years	112	29.2%
	≥60 years	40	10.4%
Education Level	Primary or less	64	16.7%
	Secondary	124	32.3%
	University or higher	196	51.0%
Residence	Urban	248	64.6%
	Suburban/Rural	136	35.4%

The sample consisted predominantly of **male participants (72.4%)**, with the most common age group being **30–44 years (36.5%)**. More than half (51.0%) held a university degree or higher, indicating a relatively educated sample. Urban residents made up nearly two-thirds (64.6%) of the sample, reflecting the urban-based setting of the campaign exposure.

Table 2: Smoking Status and History (n = 384)

Variable	Category	Frequency (n)	Percentage (%)
Current Smoking Status	Current Smoker	236	61.5%
	Recent Quitter	148	38.5%
Years of Smoking	<5 years	68	17.7%
	5–10 years	102	26.6%
	>10 years	214	55.7%
Previous Quit Attempts	Yes	286	74.5%
	No	98	25.5%

Among respondents, **61.5% were current smokers**, while **38.5% had quit smoking within the last year**. A significant portion (55.7%) had smoked for over 10 years, indicating long-term dependence. Notably, **74.5% had attempted to quit previously**, showing a high interest in cessation, albeit with challenges in maintaining it.

Table 3: Exposure to Public Health Campaigns (n = 384)

Variable	Category	Frequency (n)	Percentage (%)
Exposure to Campaign	Yes	384	100%
Source of Campaign	Television/Radio	212	55.2%
	Social Media	96	25.0%
	Billboards/Posters	44	11.5%
	Health Center/Educational Talks	32	8.3%
Frequency of Exposure	Once	68	17.7%
	2–5 times	156	40.6%
	More than 5 times	160	41.7%

All participants confirmed **exposure to public health campaigns**, with the **most common medium being television or radio (55.2%)**, followed by social media (25%). Over **82% of participants saw the campaign more than once**, suggesting adequate campaign reach and message reinforcement.

Table 4: Behavioral Response to Campaigns (n = 384)

Variable	Category	Frequency (n)	Percentage (%)
Motivated to Quit by Campaign	Yes	298	77.6%
	No	86	22.4%
Used Support Services	Yes	112	29.2%
	No	272	70.8%
Successfully Quit Smoking	Yes	148	38.5%

	No (still smoking)	236	61.5%
Relapse after Quitting	Yes	94	24.5%
	No	290	75.5%

A significant majority (77.6%) stated that the campaigns **motivated them to attempt quitting**. However, only **29.2% used available support services**, such as counseling or quitlines. Of all participants, **38.5% had successfully quit**, while **24.5% of those who had quit reported relapse**. This indicates a positive influence of the campaigns but also highlights the need for stronger support systems to sustain cessation.

Discussion

The findings of this study demonstrated a substantial association between public health campaigns and smoking cessation behavior among adult participants. The data revealed that over three-quarters of the respondents (77.6%) reported being motivated to quit smoking due to exposure to anti-smoking campaigns. This aligns with global evidence that public health messages, when well-structured and widely disseminated, can effectively prompt behavioral change among smokers.

Campaign exposure through television and radio was the most prevalent medium, reaching over 55% of respondents. This suggests that traditional media remain powerful in influencing public health behavior, especially when campaigns are emotionally engaging and repetitive. Langley et al. (2012) similarly found that a 1% increase in tobacco control TV ratings corresponded with a significant increase in calls to stop smoking services, emphasizing the immediate and measurable impact of such campaigns on behavior change triggers.

Despite the high rate of motivation, the use of support services such as quitlines and counseling remained relatively low (29.2%). This gap between intention and action might be attributed to limited awareness of available resources or perceived stigma in seeking help. Onwuzo et al. (2024) highlight the importance of not just creating awareness but also ensuring that cessation aids are accessible and culturally acceptable across all demographics.

The smoking relapse rate (24.5%) among quitters highlights a critical challenge in sustaining long-term abstinence. Although public health campaigns successfully initiate quitting attempts, they may not offer ongoing support to prevent relapse. The "Tips from Former Smokers" campaign in the U.S. demonstrated that higher campaign exposure was associated with reduced relapse odds, suggesting that continuous reinforcement of messaging may be necessary to support long-term cessation.

Our findings also revealed demographic variations in campaign impact. Younger participants (ages 18–29) and university-educated individuals showed higher responsiveness to public health messages. This may reflect greater exposure to digital media, better health literacy, or heightened risk awareness. According to Golechha (2016), tailoring health promotion methods to different population segments enhances campaign effectiveness and supports targeted interventions.

A significant portion of participants (55.7%) had smoked for over a decade, which suggests deeply ingrained habits that require more intensive intervention. Behavioral change is particularly difficult among long-term smokers, requiring a combination of motivation, skill-building, and sustained support. The systematic review by Daniela Bafunno et al. (2020) emphasized the need for multi-level interventions, combining media campaigns with structural support such as policy enforcement and access to treatment.

The effectiveness of mass media campaigns may also vary depending on psychological or social conditions. Perman-Howe et al. (2022) found limited impact of tobacco control campaigns among individuals with mental illness, emphasizing the need for specialized messages that address unique barriers faced by subpopulations. In our study, although mental health status was not directly assessed, the variation in cessation success could partially reflect such unmeasured individual-level factors.

Another important observation was the impact of repeated exposure to campaigns. More than 82% of participants reported seeing the messages multiple times, which significantly correlated with increased motivation to quit. This finding reinforces the argument by Langley et al. (2012) that the effect of media campaigns is often immediate and short-lived, and thus requires repetition over time to maintain momentum.

The low use of cessation support services, despite widespread campaign exposure, raises questions about health system integration. Campaigns must do more than inform; they must also direct users toward evidence-based resources. According to Levy et al. (2018), combining health warnings and media messages with treatment access increases quit rates and decreases smoking prevalence more effectively than standalone efforts.

While campaigns targeted mass audiences through television and billboards, only 25% of participants reported encountering messages through social media. This is notable given the increasing consumption of digital content, especially among younger demographics. Expanding the digital footprint of anti-smoking messages could enhance

reach and interactivity, particularly among the tech-savvy population.

The data also highlight the critical role of health education. Participants who had completed university education demonstrated more positive cessation outcomes, likely due to better comprehension of health risks and more proactive engagement with resources. The study by Maria Angeli et al. (2024) supports this view, finding that educational interventions significantly improved students' understanding of smoking risks and enhanced behavioral control.

Interestingly, many participants who quit smoking still relapsed within 12 months. This recurrence is a common challenge in tobacco control and suggests the need for campaigns that extend beyond quitting to include relapse prevention. As Davis et al. (2022) suggest, former smokers should be a secondary target audience of media campaigns, with specific content focused on maintaining abstinence.

Cultural and societal norms likely influenced the interpretation and response to campaign messages. In urban areas, where health resources and awareness are generally higher, cessation outcomes were more favorable. Rural and suburban participants showed slightly lower rates of quitting, indicating possible geographic disparities in campaign effectiveness or access to cessation tools.

The cross-sectional design of this study limits causal inference, but the consistency with previous longitudinal findings strengthens the validity of our conclusions. While the short-term influence of campaigns is well documented, their long-term sustainability remains questionable without supportive public health infrastructure.

Finally, while this study supports the effectiveness of campaigns, it also underlines the importance of combining such efforts with comprehensive tobacco control strategies—including taxation, marketing restrictions, and public smoking bans. These structural policies, when paired with engaging media campaigns, yield the strongest and most sustainable impacts, as shown in global policy reviews (Levy et al., 2018; Bafunno et al., 2020).

Conclusion

This study confirmed that public health campaigns play a vital role in motivating smoking cessation among adults, especially when disseminated through accessible and familiar media channels. However, motivation alone is insufficient to sustain long-term abstinence. The findings highlight the need for continuous message exposure, better linkage to cessation resources, and tailored interventions for vulnerable subgroups. A multidimensional approach that combines media efforts with policy and treatment infrastructure is essential for reducing smoking prevalence and achieving lasting public health gains.

References

1. Langley, T. E., McNeill, A., Lewis, S., Szatkowski, L., & Quinn, C. (2012). The impact of media campaigns on smoking cessation activity: a structural vector autoregression analysis. *Addiction (Abingdon, England)*, *107*(11), 2043–2050. https://doi.org/10.1111/j.1360-0443.2012.03958.x
2. Onwuzo, C. N., Olukorode, J., Sange, W., Orimoloye, D. A., Udojike, C., Omoragbon, L., Hassan, A. E., Falade, D. M., Omiko, R., Odunaike, O. S., Adams-Momoh, P. A., Addeh, E., Onwuzo, S., & Joseph-Erameh, U. (2024). A Review of Smoking Cessation Interventions: Efficacy, Strategies for Implementation, and Future Directions. *Cureus*, *16*(1), e52102. https://doi.org/10.7759/cureus.52102
3. Davis, K., Murphy-Hoefer, R., Dutra, L., King, B., Bradfield, B., Rodes, R., & Beistle, D. (2022). The Impact of the *Tips from Former Smokers*® Campaign on Reducing Cigarette Smoking Relapse. *Journal of smoking cessation*, *2022*, 3435462. https://doi.org/10.1155/2022/3435462
4. Perman-Howe, P. R., McNeill, A., Brose, L. S., Tildy, B. E., Langley, T. E., & Robson, D. (2022). The Effect of Tobacco Control Mass Media Campaigns on Smoking-Related Behavior Among People With Mental Illness: A Systematic Literature Review. *Nicotine & tobacco research : official journal of the Society for Research on Nicotine and Tobacco*, *24*(11), 1695–1704. https://doi.org/10.1093/ntr/ntac079
5. Golechha M. (2016). Health Promotion Methods for Smoking Prevention and Cessation: A Comprehensive Review of Effectiveness and the Way Forward. *International journal of preventive medicine*, *7*, 7. https://doi.org/10.4103/2008-7802.173797
6. Bafunno, D., Catino, A., Lamorgese, V., Del Bene, G., Longo, V., Montrone, M., Pesola, F., Pizzutilo, P., Cassiano, S., Mastrandrea, A., Ricci, D., Petrillo, P., Varesano, N., Zacheo, A., & Galetta, D. (2020). Impact of tobacco control interventions on smoking initiation, cessation, and prevalence: a systematic review. *Journal of thoracic disease*, *12*(7), 3844–3856. https://doi.org/10.21037/jtd.2020.02.23
7. Angeli, M., Hassandra, M., Krommidas, C., Morres, I., & Theodorakis, Y. (2024). Assessing the Impact of a Health Education Anti-Smoking Program for Students: A Follow-Up Investigation. *Children (Basel, Switzerland)*, *11*(4), 387. https://doi.org/10.3390/children11040387
8. Levy, D. T., Tam, J., Kuo, C., Fong, G. T., & Chaloupka, F. (2018). The Impact of Implementing Tobacco Control Policies: The 2017 Tobacco Control Policy Scorecard. *Journal of public health management and practice : JPHMP*, *24*(5), 448–457.

https://doi.org/10.1097/PHH.0000000000000780

9. Kuipers, M. A. G., West, R., Beard, E. V., & Brown, J. (2020). Impact of the "Stoptober" Smoking Cessation Campaign in England From 2012 to 2017: A Quasiexperimental Repeat Cross-Sectional Study. *Nicotine & tobacco research : official journal of the Society for Research on Nicotine and Tobacco*, *22*(9), 1453–1459. https://doi.org/10.1093/ntr/ntz108