

ORIGINAL ARTICLE

A Qualitative Study: The Perception on Anti-Smoking Campaign among Smokers in Kuantan

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ABSTRAK

Tabiat merokok adalah perilaku yang tidak sihat malah membahayakan bukan sahaja diri sendiri malahan masyarakat sekeliling. Walaupun terdapat banyak kempen anti-merokok telah diperkenalkan oleh kerajaan, namun keberkesanannya masih di tahap rendah. Oleh itu objektif kajian ini adalah untuk meneroka faktor utama kegagalan kempen anti-merokok di Malaysia, meneroka keberkesanan “Klinik Berhenti Merokok” dan menemui penyelesaian terbaik untuk memastikan kempen yang dijalankan berkesan pada masa akan datang. Ini adalah kajian rentas kualitatif di mana temuduga dijalankan di kalangan lima sukarela responden yang terdiri dari perokok dan bekas perokok di kawasan awam dan tiga klinik berhenti merokok yang terpilih. Data dianalisis dengan menggunakan analisis bertema. Kajian ini mendapati beberapa faktor penyumbang dari perspektif perokok dan pihak berkuasa perlu diberi keutamaan untuk penambahbaikan iaitu kurang kreativiti yang minimum dalam menguruskan promosi anti-merokok, kurang kreativiti dah terhadap kesihatan, permintaan bahan pencetus semangat di tempat kerja, dan dalam pengurusan tekanan yang lemah. Hasil kajian mengesyorkan bahawa kempen bermula di sekolah rendah dan menengah, improvisasi tanda amaran penyakit, meluaskan kawasan promosi, memberi ganjaran semasa kempen dan perokok perlu mengambil inisiatif melibatkan diri dalam program ini. Kerajaan perlu menumpukan perhatian kepada program pencegahan merokok terlebih dahulu, daripada program intervensi berhenti merokok yang mungkin melibatkan kos kewangan yang tinggi.

Kata kunci: berhenti merokok, merokok, perokok

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ABSTRACT

Smoking is an inevitably unhealthy habit among Malaysian that could harm not only the smokers but also the community. Even though there are a lot of anti-smoking campaign had been introduced by the government but the effectiveness is still marginal. Thus, the objectives of this study were to explore the main factor related to the failure of anti-smoking campaign in Malaysia, to explore the effectiveness of “Smoking Cessation Clinic” and to discover the best solution to ensure the campaign is effective in the future. This is a qualitative cross-sectional study. Interviews were conducted among five voluntary respondents which were smokers and ex-smoker at Public area and selected smoking cessation clinics in Kuantan. This study used thematic analysis to analyse the data. This study found that few contributing factors from the perspective of smokers need to be prioritised by higher authority for improvements. Those contribution factors are minimal creativity on managing anti-smoking promotion, low self-awareness about health, demand on energizer at workplace and poor stress management. Findings recommend that the campaign shall start from primary and secondary school, improvise warning sign of disease, widening the promotion area, provides reward during campaign and smokers to take initiative to involve in the program. Furthermore, the government also needs to focus on the prevention of start smoking rather than the intervention to quit smoking that may cost lots of financial demand.

Keywords: smoking cessation, smoker, smoking

INTRODUCTION

Smoking tobacco is one of the Malaysia’s leading cause of preventable death, accounting for some 20000 deaths per year. If no drastic measures are taken by the year 2020, the annual death rate from tobacco smoking is projected to reach 30000 (Lee & Tam 2014). Smoking alone is estimated to be responsible for 22% of cardiovascular diseases in industrialized countries and for the vast majority of some cancers and chronic respiratory diseases (Sassi & Hurst 2008).

The latest report on smoking status among Malaysian in National Health

and Morbidity Survey 2015 (IPH 2015) showed that about 22.8% of smokers aged 15 years and above which indicated 4,991,458 of population, in that population about 4.85 million (43%) of men meanwhile 143,566 (1.4%) women were smokers. And also, a study conducted on Malaysian elderly had been done in 2016, showed that the prevalence of the smokers was still high and the percentage of males was higher than female which was 28.1% for male and 2.9% for female (Lim et al. 2016) .

The government played a good role in reducing smokers’ numbers. However, without the smokers’ cooperation, any

planned agenda could not be fulfilled. In all of Malaysia, awareness of the smoking hazard should be inculcated and cultivated to prevent this type of habit from becoming a norm in the community. As a result, people may no longer care and bother about this bad habit.

According to Tobacco and E-Cigarette Survey Among Malaysian Adolescents (TECMA) 2016 (IPH 2016), current tobacco use among youth, males and females are 24.3% and 3.7%, respectively. The immediate precaution is needed in order to prevent the younger generation from the smoking habits. Therefore, further research and studies should be conducted in order to know whether the current anti-smoking campaign is effective or not.

In this study, the main factors of the anti-smoking campaign failure were explored through the opinion of the smokers in order to know any weakness that occurred during the periods of the campaign.

Anti-smoking campaign plays a significant role in reducing the number of users of tobacco. However, it does not give huge impact on the smokers to quit smoking. Previous research on the Malay males showed that only 18.4% of smokers agreed that the anti-smoking campaign was successful in raising awareness of the risk of smoking but less of their health concerns (Ismail et al. 2015). In Singapore, the perception among smokers on anti-smoking campaign were studied and the findings showed that, most of the participants showed their attitude that they were against

the message campaign by ignoring the content of the message campaign and felt less sensitive on the fear content advertisement that warns the people not to smoke (Shahwan et al. 2016).

This study focused on exploring the main factors why anti-smoking campaign in Malaysia is having minimal impact. It is therefore important to improve the effectiveness of the campaign to be carried out in the future by searching for the shortfall from the previous campaign.

The outcome of this study will also be able to help the government to come out with new strategies in approaching smokers on the danger of smoking on their health and the implication of public health. By hoping for this, the number of smokers can decrease through this research study by making more effective and approachable anti-smoking campaign.

MATERIALS AND METHODS

A qualitative cross-sectional study with face to face interviews was conducted among the smokers and ex-smokers to explore the main factors of the minimal impact of the anti-smoking campaign. The semi-structured questionnaires were developed as guidance during the interview. The questionnaires were cross-checked by content experts to ensure the validity and reliability. The study was conducted at around public area in Kuantan areas such as Teluk Cempedak and Taman Gelora and also in three selected clinics which were; Health Clinic Bandar Kuantan, Health Clinic Beserah, and Health Clinic Jaya Gading.

Table 1 : Focus group participant

Participants	Age	Gender	Ethnicity	Status of smokers	Involvement in smoking cessation clinic
Participant 1	41	Male	Malay	Still smoking	Yes
Participant 2	42	Male	Malay	Ex-smokers	No
Participant 3	21	Male	Malay	Still smoking	No
Participant 4	25	Male	Malay	Still smoking	No
Participant 5	53	Male	Malay	Still smoking	Yes

The five voluntary respondents were recruited using purposive sampling with the inclusion criteria of smokers, ex-smokers, local residents in Kuantan, aged between 20-60 years and being able to understand Malay and English languages during the interview. The exclusion criteria of this study were secondary smokers, unwillingly to participate and those suffering from mental illness. Duration of the interviews were limited to 60 minutes until data was saturated. The interview session was tape-recorded to be interpreted. The data collection only started after receiving the approvals.

The recording was transcribed manually by listening and examining for transcription. It was listened to and read a few times to obtain the information clearly and get the initial idea. The data was processed using thematic analysis.

The study was conducted from March 2018 until the end of 31st May 2018. The Malaysia Research Ethics Committee approval for this study was obtained (reference NMRR-18-550-39716 (IIR)).

The Transtheoretical Model developed by Proshka and Diclemente in the late of 1970s was chosen in this qualitative research. According to

Wayne 2019, smokers shall explore six stages which are pre-contemplation, contemplation, determination, action, relapse, and maintenance in order to stop smoking. Key informants shared their experiences within stages by providing informative information related to smoking cessation issues and potential improvement of smoking cessation programme.

RESULTS

A total of consented five males of mixed ages were interviewed and spread across the study sites (Table 1). The female participants refused to participate in this study.

This study found that there are few contributing factors from smokers' perspectives that needed to be taken up to the higher authority for better improvement. Few themes were extracted through the questionnaires. (Table 2) and discussed according to cited respondent conversation.

Theme A1: Promotional strategy *Minimal creativity on managing anti-smoking promotion*

Four respondents responded that current anti-smoking campaign factors have a minimal impact due

Table 2 : Questionnaires and theme extracted

Themes	Categories
Q1. Why the anti-smoking campaign held in Malaysia failed to achieve its objective?	
Theme A1 : Promoting Strategies	<ul style="list-style-type: none"> · Unattractive campaign · Repeating the same content · Incomplete information
Theme A2 : Awareness	<ul style="list-style-type: none"> · Not aware on outcome of smoking
Theme A3 : Job Content	<ul style="list-style-type: none"> · Work demand need a lot of commitment to focus
Theme A4 : Stress Management & Motivation	<ul style="list-style-type: none"> · Workload in working place
Q2. Do the smokers realize the existence of program “Klinik Berhenti Merokok”? If yes, does it helps the government to reduce the number of current smokers?	
Theme A1 : Promoting strategies	<ul style="list-style-type: none"> · Promotion not widely spreading
Theme A4 : Stress Management & Motivation	<ul style="list-style-type: none"> · Different level of motivation of the smokers to change the habits
Q3. What is the best solution to ensure the anti-smoking campaign is really effective on the smoker in the future?	
Theme A5: Campaign	<ul style="list-style-type: none"> · Campaign need to focus on primary and secondary students.
Theme A6 : Warning advertisement	<ul style="list-style-type: none"> · Show warning pictures of complication of smoking.
Theme A7: Widening the area	<ul style="list-style-type: none"> · Doing medical checkup and have the slot to promote “Klinik Berhenti Merokok”
Theme A8: Appreciation	<ul style="list-style-type: none"> · Give reward during the campaign to attract smokers to quit.
Theme A9 : Self-effort	<ul style="list-style-type: none"> · Planning activities, keep busy prevent smoking.

to unattractive advertising, repetitive campaign content, and incomplete channel information that can help smokers stop smoking. Participant 1, 4 & 3 shared that the campaign was not interesting to attract the smokers to know more on the campaign.

Participant 1 mentioned during the interview, *“The campaign is not attractive to attract the smokers.”*

Participant 4 also agreed that the campaign is not really attractive as he said, *“The campaign only involves with the*

things that need “lot of talks”. After listening those talks, return to home and everything that we got during the talks was gone.”

Participant 3 also gave the respond like, *“The campaign is not attractive and should not focus on advertisement way only.”*

For comment on repeating the same content during the campaign, participant 1 & 4 also commented on this. As the participant 1 said that, *“The advertisement is much scarier on the cigarettes box but it is only*

effective during the early promotion. The people felt afraid during the early existence of that advertisements but soon, they felt nothing when lot of time being exposed that warning pictures."

Participant 4 also support on repeating the same content is boring as,

"At first exposure to the anti-smoking advertisement, I was affected with the campaign but too much exposure to the advertisement, I felt nothing."

Lastly, participant 2 responded that the campaign was not really attractive as there was a lot of things not included in the advertisement in order for the smokers to know the right way to assist and help them to stop smoking. As he said,

"There are many people still do not know the right channel for them to get the treatment. In television, it just only advertisements to promote the campaign but never include the right channel to seek the treatment."

Theme A2: Awareness

Low self-Awareness about health

Participant 4 said also that usually, the smokers took initiative to quit smoking if they feel sick. They are much more aware if diagnosed with the sickness as that time they already realized they got it because of their habit. He said, *"...and the people do not have awareness except when they feel sick or one of the family members is sick. Later, they realize to stop smoking when they face one of these situations."*

Theme A3: Job Content

Demand on energizer at work place

Participant 2 also voiced out a job that need a lot of commitment to focus and energy also could be the factor for anti-smoking campaign failed to reach the objective. He mentioned that, *"The job like security guard, lorry driver and the people who wear uniform can be the factor. I observed that the people who are working as security guard need cigarettes to avoid them from sleepy when working on night shift. It is also the same reason for the lorry drivers to smoking. In cigarettes also contain nicotine that give them the strength like drugs. Mostly, I found that my client who are working as police or security guard are really hard to quit smoking."*

Theme A4: Stress Management and Motivation

Poor stress management

The factors of starting smoking could be stress in the workplace. Participant 2 mentioned,

"Stress in the workplace can be also the factor, for example the job that need the worker to concentrate in thinking like my client who are ex accountant. Not only accountant, like architect need also concentration when work. In cigarettes also, they also have the things that can increase the "relax" hormone which is dopamine. The workers also experienced that when they smok, lot of idea comes to their mind and sometimes, they could stay up until 4 am."

DISCUSSION

In general, smokers' feedback

responded that Malaysia's anti-smoking campaign was not effective in reducing the number of smokers in Malaysia. Publication on the anti-smoking message plays an important role in raising awareness of the dangers of smoking. The ordinary method such as the warning label does not seem to motivate smokers in Malaysia because the study reported that the warning labels in Malaysia were very weak and the government needed to find other ways to encourage smokers to quit before implementing the warning labels campaign. The researcher also found that the earlier phase of "Tak Nak Merokok" campaign was successful. The total number of those who quit smoking was relatively higher than the second phase. There are no positive effect during the study showed smoking quitting attempt because of little community-based activity involve at that time (Fathelrahman et al. 2013). This is supported by another study in Sarawak that pictorial health warning was not effective for the certain population and it need to be improved that the labels need to be more noticeable, believable and memorable to the smokers (Rahman et al. 2015).

The previous studies also correlate in this study commented by the respondent. Two participants which are participant 1 & 5 said that lack of promotion and not widely spread made the smokers did not know the existence of the Smoking Cessation Clinic. Participant 1 said during the interview,

"It is success but the promotion regarding with "Smoking Cessation Clinic" was not widely known. For me,

I knew the existence of this program when I ask the clinic staff about the program. However, some people who do not come to the clinic will not know the existence of "Smoking Cessation Clinic"."

The second smoker who attend the program, quoted the same statement said by participant 5. He said, *"The program is not really effective because the information like advertisement, pamphlet, and brochure only place in the clinic only. Only the people who make follow up at the clinic only know such information."*

Supported also by others study, (Durkin et al. 2013) the advertisement that more prone to show the negative effect of smoking on health is more effective as it induced the feeling of fear to start smoking. Previous study also found that a significant association between level of knowledge and level of practice towards anti-smoking campaign (Jaafar et al. 2019).

Suggestion made by participant 4 on maintaining advertisement that show the warning picture of such diseases which are the complication of smoking.

"Maintain the advertisements that show the warning sign of smoking such as the pictures of mouth and tongue cancers and locate these pictures on web sites to ease the people view the pictures."

Moreover, awareness among the smokers is the vital step to quit smoking. Through the study, the smokers were not aware on the negative effect of smoking on their health, unless they would take the move when they got the disease. Even though, there was

an act being implemented such as Tobacco Hazard Prevention Act of 1997, it was not really made significant effect to the health perception of the smokers as the best education for them was their personal experience than other peoples' experience (Hsieh & Lo 2017). Smokers might less likely agree that smoking causes harm compared to the non-smokers (Lipkus & Mays 2018). The smokers who had a high perception of smoking's harmful belief had a high tendency to stop smoking because it was related to emotional control over health status. Smokers were prevented from feeling worried and distress to avoid health screening in order to know the current state of health. So it was so difficult for smokers to stop smoking (Kaufman et al. 2018). Due to the mortal belief and fear also, intention to do health screening decrease among smokers (Shahwan et al. 2016). Besides, avoidance for health screening also related with negative health behavior of the smokers that influenced the individual's judgement on their overall health goal and disease prevention and also not engaging with vigorous activities (Byrne et al. 2010).

The working environment could be the factor that it is difficult to control smoking because the workers need to cooperate fully in such strength and concentration as well as the work that required a long working hour. The nature of the job as a soldier requiring a great deal of commitment to achieving good performance influences the workers to begin smoking in relieving stress on the workload. The financially independent and distant factor from the point of view of parents and

also group gathering among co-workers influenced them to start smoking (Khattab et al. 2017). The long working hour also leads to the smokers to increase their consumption of cigarettes, the former smokers also more likely to smoke again when they worked in long working hours which was more than 50 hours a week in Australia and 60 hours in the United Kingdom (Angrave et al. 2014).

Smokers usually smoke for stress relievers when faced with difficult and stressful event and workload. The smokers in Korea found that smoking as a stress reliever even though they knew that smoking had a negative impact on their health. Nicotine dependence was more prone to the smokers who were working in high organization and lack of appreciation (Son et al. 2016).

High level of stress also only put up the result of negative expectation and did not help the smokers to quit smoking (Robles et al. 2016). Another study describes smoking could reduce the trigger level of being emotional which result in relaxation and more effective to relieve stress compared to resting without smoking (Choi et al. 2015). People who chose smoking as the method to release stress had low stress coping mechanism and were not likely to be engage to deal with stress. If the depression was well balanced with active coping mechanism and also social support from the surrounding, the tendency for them to smoke would reduce (Sun et al. 2011).

The government took another incentive by inventing the existence of "Smoking Cessation Clinic" in all Health Clinic around Malaysia.

From the feedback, the respondents who were joined that program had perceptions that this program can reduce the number of smokers around the country. However, this program was not well promoted to the other smokers and most of them did not realise the existence of these clinics. The promotion area should be widened instead of just placing the poster and information in the clinic. The health care provider can also promote the public through the inclusion in the public of the slot of the smoking intervention during the health check. Thus, people who just came to the clinic because of the other illness can know the program's existence. Promotion requires to be proactively approaching the public as the government spent a lot of money to ensure that this clinic was well run. Usually, the smokers who attend "Smoking Cessation Clinic" in Malaysia were dominantly male, middle-aged and educated and mostly they were successfully quit smoking

Recommendation made by participant 5, he suggested that, *"Instead of doing medical checkup, adding also a slot for health campaign. Usually, the people who have been diagnosed by diseases due to smoking will cease smoking. Meanwhile, the smoker who do not have disease will not try to stop smoking. In ensuring people know the existence of "Smoking Cessation Clinic", make a promotion about that program during health checkup."*

To tell the truth, a succession to stop smoking requires a lot of motivation to change behavior. Even there were a lot

of activities and follow-up treatment with the consultant, not all smokers who joined "Smoking Cessation Clinic" could stop smoking. Some of them were internally highly motivated to stop smoking and tried to join all the support programs in the clinic but were still hesitant about their action to stop smoking. Sometimes, some of them already decided that they would stop smoking when they feel ready to do so because of they might experience a lot of obstacles that disturb the process of smoking cessation. Thus, through the program, they thought that seeking of support group might be better rather than stand it alone (Wee et al. 2011). Low motivation as a result of strong sociocultural norm among smokers group in accepting their wrongdoing as they became addictive on it and also low efficacy made them discontinue smoking cessation (Lee & Paek 2012).

Based on the comment by participant 2, he said that different level of acceptance among these smokers made different result to stop smoking. Some of them can follow the activities that had been organized but some cannot cope with the program. *"50/50. Some people cannot follow the activities in that program. Everyone has different ability to stop smoking."*

The effectiveness of anti-smoking campaign against smokers must start with the prevention steps, especially during period of school year. Through the finding, the factor of the smokers starts to smoking because of peer influence. Hence, the campaign need to focus on the prevention of smoking among primary and secondary students. Peer influence play an

important role in determining the healthy behavior among the student and also the potential factor for the student to start smoking. The smoking prevention program need to concern more on the development of social skills in resisting the peer influencer by refusing the offer to smoke in order to endure the bad influencer and the risky behavior from the peers. The strengthening of this skill could prevent the students not try to do risky behavior that could harm them (Dahlui et al. 2015).

Two participants, participant 1 & 3 suggested that the campaign need to focus on the students since their first steps in primary until secondary school. This is to ensure that they already understand and aware on the harm if they start smoking.

Participant 1 responded that, *"The campaign must focus on primary school. When the smokers start smoking since primary school, it is hard for them to stop smoking. It is easier to stop smoking if the person is newbie. The person who has 2-3 years of smoking found out that it is difficult to stop smoking."*

Supported also by participant 3, *"The government need to make the anti-smoking campaign for the school. When they grow older, it is hard for them to quit smoking except when they are sick. Overall, the people who are aged below 22 realize about the danger of the smoking and just beginners."*

To boost the level of the motivation among smokers, the appreciation like giving reward such as money in every program might attract the smokers to

join the program. These smokers more likely to correct the mistake when the reward was imposed compared to punishment introduced (Duehlmeyer et al. 2018).

Participant 2 suggested that every campaign need to have reward in order to motivate the smokers to join with the program. He proposed that, *"Each of campaign need to provide the reward such as money to attract the smokers to stop smoking."*

Moreover, self-effort could be an additional stimulus in changing the smoking habit. Planning activities such as physical activity in keeping the smokers busy could reduce the cigarette consumption. Being active in physical activity could reduce the tendency for the smokers in craving to smoke within short term period and not for the long term effects (Vander et al. 2018). Physical activity may produce the enjoyment for the people who involved with the activities that they wanted to join and very satisfying to them. A case study reported that, when involving with high physical activity, the desire to smoke is reduced than the people who were less active (Audrain-McGovern et al. 2013). Keeping doing and maintaining vigorous activity such as running, keeping in touch with the consultant about activity level every 6 months should be suggested in every plan to ensure the continuation of smoking abstinence success (Priebe et al. 2017).

Proposed by participant 3, he said that, *"For the smokers, keep your life busy with activities... Through sport, the temptation to smoke will decline as lot of stamina need to be used when*

doing this activity.”

CONCLUSION

Anti-smoking campaign held in Malaysia showed less effects in minimizing the number of Malaysian smokers based on smokers' views. Throughout the study, ideas and ways of campaign need to be refreshed with new approach to attract smokers to quit smoking. “Smoking Cessation Clinic” reduced the number of smokers but must be widely promoted to the community. The health care providers need to go beyond the circle of clinic community to introduce this program to public community. Furthermore, the smokers also want the government to focus on the prevention rather than the intervention to quit smoking that may cost lot of financial demand.

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REFERENCES

- Angrave, D., Charlwood, A., Wooden, M. 2014. “Working time and cigarette smoking: Evidence from Australia and the United Kingdom,” *Soc Sci Med* **112**(C): 72-9
- Audrain-McGovern, J., Rodriguez, D., Cuevas, J., Sass, J. 2013. Initial insight into why physical activity may help prevent adolescent smoking uptake. *Drug Alcohol Depend* **132**(3): 471-8.
- Byrne, M.M., Davila, E.P., Zhao, W., Parker, D., Hooper, M.W., Caban-Martinez, A., Dietz, N., Huang, Y., Messiah, A., Lee, D.J. 2010. Cancer screening behaviors among smokers and non-smokers. *Cancer Epidemiol* **34**(5): 611-7.
- Choi, D., Ota, S., Watanuki, S. 2015. Does cigarette smoking relieve stress? Evidence from the event-related potential (ERP). *Int J Psychophysiol* **98**(3): 470-6 .
- Dahlui, M., Jahan, N.K., Majid, H.A., Jalaludin, M.Y., Murray, L., Cantwell, M., Su, T.T, Al-Sadat, N. 2015. Risk and protective factors for cigarette use in young adolescents in a school setting: What could be done better? *PLoS ONE* **10**(6): e0129628
- Duehlmeier, L., Levis, B., Hester, R. 2018. Effects of reward and punishment on learning from errors in smokers. *Drug Alcohol Depend* **188**: 32-8.
- Durkin, S., Bayly, M., Cotter, T., Mullin, S., Wakefield, M. 2013. Potential effectiveness of anti-smoking advertisement types in ten low and middle income countries: Do demographics, smoking characteristics and cultural differences matter? *Soc Sci Med* **98**: 204-13.
- Fathelrahman, A.I., Li, L. , Borland, R., Yong, H.H., Omar, M., Awang,R., Sirirassamee, B., Fong, G.T., Hammond, D. 2013. Stronger pack warnings predict quitting more than weaker ones: Finding from the ITC Malaysia and Thailand surveys. *Tob Induc Dis* **11** (1):20.
- Hsieh, C.R., Lo, T.F. 2017. Are smokers too optimistic about their health status: Ex ante perception versus ex post observation. *China Economic Review* **43**: 169-83.
- Institute for Public Health (IPH) 2015. National Health and Morbidity Survey 2015 (NHMS 2015). Vol. II: Non-Communicable Diseases, Risk Factors & Other Health Problems; 2015.
- Institute for Public Health (IPH) 2016. Tobacco & E-Cigarette Survey Among Malaysian Adolescents (TECMA) 2016
- Ismail, S., Juni, M.H., Kcmani, K., Saliluddin, M.S., Zakwan, R.A., Tiong, L.R. 2015. The perception towards national anti-smoking initiatives among Malay male smokers. *Iranian J Publ Health* **43**(Suppl 3): 194-200.
- Jaafar, M.H, Alias, N., Yusof, A.M, Md Isa, M.L. 2019. Knowledge, attitude and practice towards available anti-smoking campaign among adults in Kuantan *Mal J Med Health Sci* **15**(3): 61-6.
- Kaufman, A.R., Dwyer, L.A., Land, S.R., Klein, W. M.P., Park, E.R. 2018. Smoking-related health beliefs and smoking behavior in the National Lung Screening Trial. *Addict Behav* **84**: 27-32.
- Khattab, A.M., AbdelFattah, E.B., Abozahra, A.K.E.A. 2017. Study of smoking habit among soldiers in Cairo Security Forces Hospital. *Egypt J Chest Dis Tuberc* **66**: 267-77.
- Lee, H., Paek, H. 2012. Impact of norm perception and guilt on audience response to anti-smoking norm PSAs: The case of Korean male smokers. *Health Educ Behav* **72** (5): 503-11
- Lee, M.Y, Tam, C.L 2014. Smoking and burden of ill health: a review of the malaysian context. *IJCRIMPH* **6**: 7
- Lim, K.H., Jasvinder, K., Cheong, S.M., Ho, B.K., Lim, H.L., Teh, C.H., Ambigga, D. 2016. Prevalence of smoking and its associated factors with

- smoking among elderly smokers in Malaysia: Findings from a nationwide population-based study. *Tob Induc Dis* **14**: 8
- Lipkus, I.M., Mays, D. 2018. Comparing harm beliefs and risk perceptions among young adult waterpipe tobacco smokers and nonsmokers: Implications for cessation and prevention. *Addict Behav Rep* **7**: 103-10
- Priebe, C.S., Atkinson, J., Faulkner, G. 2017. Run to Quit: An evaluation of a scalable physical activity-based smoking cessation intervention. *Mental Health and Physical Activity* **13**: 15-21
- Rahman, M.M., Arif, M.T., Abd Razak, M.F., Suhaili, M.R., Tambi, Z., Akoi, C., Gabriel, B.M., Hussain, H. 2015. Effectiveness of pictorial health warning on cigarette packages: A cross-sectional study in Sarawak, Malaysia. *Malays Fam Physician* **10** (3): 19-26.
- Robles, Z., Garey, L., Hogan, J., Bakhshaie, J., Schmidt, N.B., Zvolensky, M.J. 2016. Examining an underlying mechanism between perceived stress and smoking cessation-related outcomes. *Addict Behav* **58**: 149-54.
- Sassi, F., Hurst, J. 2008. The prevention of lifestyle-related chronic diseases: an economic framework. OECD. Retrieved from: <https://www.oecd.org/els/health-systems/40324263.pdf> [25th March 2008].
- Shahwan, S., Fauziana, R., Satghare, P., Vaingankar, J., Picco, L., Chong, S.A., Subramaniam, M. 2016. Qualitative study of Singaporean youths' perception of antismoking campaigns: What works and what does not. *Tob Control* **25**(e2): e101-e106.
- Son, S.R., Choe, B.M., Kim, S.H., Hong, Y.S., Kim, B. G. 2016. A study on the relationship between job stress and nicotine dependence in Korean workers. *Ann Occup Environ Med* **28**(1): 27.
- Sun, J., Buys, N., Stewart, D., Shum, D. 2011. Mediating effects of coping, personal belief, and social support on the relationship among stress, depression, and smoking behaviour in university students. *Health Education* **111**(2): 133-46
- Vander, W.M.W., Coday, M., Stockton, M.B., McClanahan, B., Relyea, G., Read, M.C., Wilson, N., Connelly, S., Richey, P., Johnson, K.C., Ward, K.D. 2018. Community-based physical activity as adjunctive smoking cessation treatment: Rationale, design, and baseline data for the Lifestyle Enhancement Program (LEAP) randomized controlled trial. *Contemp Clin Trials Commun* **9**: 50-9.
- Wayne, W.L. 2019. *The Transtheoretical Model (Stages of Change)*. Retrieved from Behavioral Change Models: <http://sphweb.bumc.bu.edu/otlt/MPH-Modules/SB/BehavioralChangeTheories/BehavioralChangeTheories6.html> [9th September 2019].
- Wee, L.H., Shahab, L., Bulgiba, A., West, R. 2011. Conflict about quitting predicts the decision to stop smoking gradually or abruptly: Evidence from stop smoking clinics in Malaysia. *Journal of Smoking Cessation* **6**(1): 37-44.

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