Sistematik Bir Derleme: Birinci El Sigara Bırakma Müdahalesinde Tercih Edilen Yaklaşımlar

A Systematic Review: Preferred Approaches of First-hand Smoking Intervention

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ÖZ

Tütün kullanımı ciddi bir halk sağlığı riski oluşturmaktadır. Sigarayı bırakma konusundaki çabaların artması, ülkede sigara içmeyle ilişkili sağlık risklerinin azaltılmasına yardımcı olabilir. Bu çalışmada, dünya çapında yapılan seçilmiş sigara bırakma müdahaleleriyle ilgili Cinahl, Proquest ve Scopus'ta 2007'den 2017'ye kadar yayınlanmış makalerin elektronik veritabanları kullanılarak PRISMA çerçevesinde sistematik bir incelemesi yapılmıştır. Resimli sağlık uyarı levhası, kitle iletişim araçları, bırakma hattı ve internet müdahalesi olmak üzere dört müdahaleden oluşan 22 çalışmaya kapsamlı bir taramadan sonra ulaşılmıştır. Seçilen makaleler, eğitimli hakemler tarafından Karma Yöntem Değerlendirme Aracı (KYDA) 2018 sürümü kullanılarak değerlendirilmiştir. Çalışma bulguları tematik olarak sentezlenmiştir. Bu sistematik derleme sigarayı bırakma müdahale programlarının özellikleri ve tercihlerine odaklandı. Sonuç olarak, araştırma uygun bütçe tahsisi ve planlaması için faydalıdır.

Anahtar Kelimeler: Bırakma hattı, internet müdahalesi, kitle iletişim araçları, resimli sağlık uyarı etiketleri, sigarayı bırakma

ABSTRACT

Tobacco use creates a serious public health risk. Increased efforts in smoking cessation could aid in the reduction of health risks associated with smoking in the country. In this study, systematic review using PRISMA framework and electronic database searching of published paper from 2007 until 2017 in Cinahl, Proquest, and Scopus related to selected first-hand smoking cessation interventions that has been done world widely. Twenty-two studies consist of four interventions which pictorial health are warning sign label, mass media, quit line and internet intervention have been compared and accessed after thorough screening. The selected articles were assessed with the use of Mixed Method Appraisal Tool (MMAT) version 2018 by trained reviewers. Study findings to be synthesized thematically. This evidence review focused on the characteristics and preferences of first-hand stop smoking intervention programs. As a result, the research is useful for proper budget allocation and planning.

Keywords: Internet intervention, mass media, pictorial health warning labels, quit line, smoking cessation

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INTRODUCTION

Tobacco use need to be curbed and controlled. In accordance with that according to WHO report on the Global Tobacco Epidemic 2013,[1] WHO has introduced MPOWER consists of six components which are monitor (M) the tobacco use by policies, protect (P) people from tobacco, offer (O) a help to quit smoking, warn (W) people about danger of cig-arette, enforce (E) ban and advertisement of cigarette, and raise (R) the taxes of tobacco. In the years since the launch of MPOWER, the obstacles faced have been great. Despite these obstacles, there are now 5 billion people covered by at least one best-practice tobacco prevention measure 3.9 billion more than in 2007. On the other hand, 2.6 billion people remain unaffected by evidence-based tobacco

regulation.[2]

According to WHO report on the Global Tobacco Epidemic 2017,[3] tobacco use causes more than 7 million deaths per year worldwide. If the pattern of smoking across the globe does not change, more than 8 million people each year will die from tobacco-related illnesses by 2030.[4]

According to Hong et al.[5] in Global Adult Tobacco Survey 2011, 23.1 % Malaysia aged 15 years above are smokers.

In this database searching, four first-hand smoking intervention approaches been compared such as (I) pictorial health warning labels, (II) quit-line, (III) mass media, and (IV) internet intervention.

A systematic review was conducted to identify and describe the range of literature on smoking intervention and to access evidence of worldwide preference in selected first hand smoking intervention. The benefit of this study is to compare successfulness among identified four available first-hand smoking cessation interventions that community commonly engaged. Therefore, financial allocation will wisely utilize and allocated. In the end of this study, the preference of stop smoking intervention can be concluded. The research questions were; (I) what char-

acteristics must a first-hand stop smoking intervention program have? and (II) which first-hand smoking cessation interventions will take precedence?

MATERIALS AND METHODS

The paper was Editor invited review. Ethics committee approval is not required. This study was registered under PROSPERO.

Scope of Review: Systematic review has been used in this study. In order to maximize credibility, dependability, confirmability and validity of the findings, we have established multiple reviewers, enhanced the methodological framework and multiple revision. A series of training exercises were conducted among reviewer prior to commence screening process in order to ensure the reliability between reviewer.

Prisma: The author used the method called PRISMA (Preferred Reporting Items for Systematic reviews and Meta-Analyses), which includes identified resources used to run the systematic review, eligibility and exclusion criteria, steps of the review process and data abstraction and analysis for four types of smoking intervention which were pictorial health warning label (PWLs), mass media, quit line
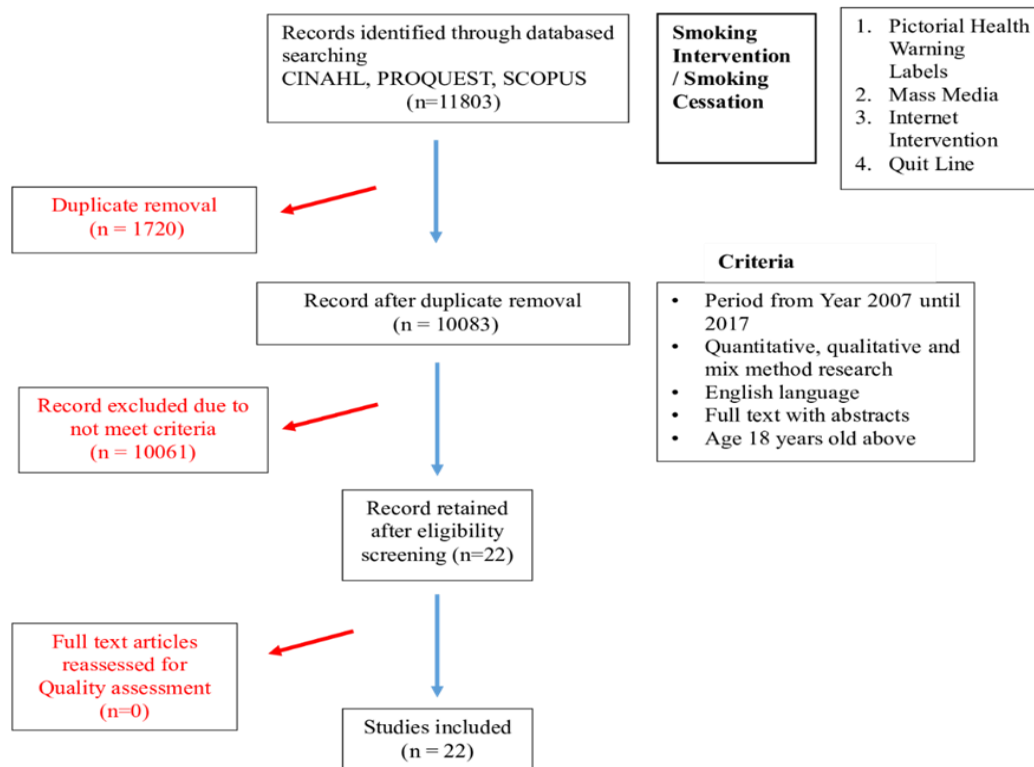

Figure 1. Process of literature search.

and internet intervention (refer Figure I : Process of Literature Search). PRISMA it offers special benefits for systematic review.[6]

Resources: This study search strategy was using electronic database searching of published paper from 2007 until 2017 in CINAHL, PROQUEST, and SCOPUS related to determined first-hand smoking cessation interventions keyword.

Systematic Review Process:

Identification: Few phases were involved in the systematic review process. The review process was performed on January 2018 until April 2018. The studies selection was completed over 4 months. Relying on previous studies and expert review, keywords similar and related to smoking intervention and cessation were used. Besides that, Population, Intervention, Comparison, Outcome (PICO) tool has been used as part of search strategy protocol. The PICO protocol adapted from Dobbie et al.[7]

Population/Participant/Problem: Tobacco consumption must be restricted. Despite the fact that a lot of money has been spent on smoking interventions, the positive impact remains small.

Intervention: Smoking Cessation / Smoking Intervention direct to first hand smokers such as PWLs, mass media, quit line and internet intervention.

Comparison or Control: The impact of the four interventions will be tabulated and discussed

Outcome: The intervention will be focused when the preferred smoking intervention is determined.

Keywords and Searching Information Strategy: "smoking intervention" or "smoking cessation" AND a combination of "pictorial health warning label" or "mass media" or "internet intervention" or "quit line"

At this stage, after careful screening, two duplicated articles were removed.

Screening Eligibility: Several eligibility and exclusion criterion are determined. First with regard to literature type, only article journals with empirical data are selected which means review article, book series, book, chapter in book and conference proceeding are all excluded. Second, in order to avoid any confusion and difficulty in translating, the searching efforts excluded the non-English publication and focused only on articles published in English. Thirdly, with regard to timeline, a period of 10 years is selected (between 2007 and 2017), an adequate period of time to see the evolution of research and related publications. As the review process focused on first hand smoking intervention, articles indexed in selected journal to be chosen. Study that involve one gender only, related with mental health and specific for pregnant women to exclude from the study.

Studies that have been found using searching keywords were screening by titles and all criteria of inclusion and exclusion that not meet were rejected.

Table 1. Article quality assessment.

No	Article	Reviewer 1	Reviewer 2	Need further discussion?	Reviewer 3	Decision
1	Nagelhout GE, et al.[12]	High	High	-	-	Accept
2	Kowitt SD, et al.[13]	High	High	-	-	Accept
3	Cantrell J, et al.[14]	High	High	-	-	Accept
4	Guillaumier A, et al[15]	High	High	-	-	Accept
5	Mead EL, et al[16]	High	High	-	-	Accept
6	Evans AT, et al[17]	High	High	-	-	Accept
7	Cho YJ, et al[18]	High	High	-	-	Accept
8	Thrasher JF, et al[19]	High	High	-	-	Accept
9	Richardson S., et al[20]	High	High	-	-	Accept
10	Nonnemaker JM, et al[21]	High	High	-	-	Accept
11	Baskerville NB, et al[22]	High	High	-	-	Accept
12	Griffin E., et al[23]	High	High	-	-	Accept
13	Grunseit AC., et al[24]	High	High	-	-	Accept
14	Zhu SH., et al[25]	High	High	-	-	Accept
15	Guy MC, et al[26]	High	High	-	-	Accept
16	Lal A, et al[27]	High	High	-	-	Accept
17	Nohlert E., et al[29]	High	High	-	-	Accept
18	Vallone DM., et al[30]	High	High	-	-	Accept
19	Harakeh Z., et al[31]	High	High	-	-	Accept
20	Ramo DE., et al[33]	High	High	-	-	Accept
21	Brown J.,et al[34]	High	High	-	-	Accept
22	Saul JE., et al[35]	High	High	-	-	Accept

Table 2. Study list.

No	References	Study Design	Quality Appraisal	Intervention	Main theme	Sub Theme	Remark	Intervention*
1	Nagelhout GE, et al.[12]	Quasi Experimental Study	High	Pictorial Health Warning Label	Transportable	Appropriate Design And Information	Warning label responses did not differ by education	(-)
2	Kowitt SD, et al.[13]	Experimental Study	High	Pictorial Health Warning Label	Transportable	Appropriate Design And Information	Appropriate design and information contributes to the success of anti-smoking message delivery. However, too many demand on types of label.	(±)
3	Cantrell J, et al.[14]	Experimental Study	High	Pictorial Health Warning Label & Internet	Transportable	Appropriate Design And Information	Appropriate design and information contributes to the success of anti-smoking message delivery	(+)
4	Guillaumier A, et al[15]	Experimental study	High	Mass Media	Transportable	Emotion Content	Emotive content provides impact to the smokers to quit smoking	(+)
5	Mead EL, et al[16]	Cross Sectional Study	High	Pictorial Health Warning Label	Transportable	Emotion Content	Emotive content provides impact to the smokers to quit smoking. However, too many demand on types of label.	(±)
6	Evans AT, et al[17]	Randomized Controlled Trial	High	Pictorial Health Warning Label	Transportable	Emotion Content	Emotive content provides impact to the smokers to quit smoking. However, too many demand on types of label.	(±)
7	Cho YJ, et al[18]	Cross Sectional Study	High	Pictorial Health Warning Label	Transportable	Emotion Content	Emotive content provides impact to the smokers to quit smoking. However, too many demand on types of label.	(±)
8	Thrasher JF, et al[19]	Experimental study	High	Pictorial Health Warning Label	Transportable	Emotion Content	Emotive content provides impact to the smokers to quit smoking. However, too many demand on types of label.	(±)
9	Richardson S., et al[20]	Cross Sectional Study	High	Quit line & mass media	Transportable	Emotion Content	Positive campaigns were most effective at increasing quitline calls, those with negative emotive content were also found to impact on call rates but only at higher levels of exposure	(+)

*: Indicator ((-)= Negative impact, (+)= Positive impact, (±)= Inexplicit impact).

Table 2. Continue.

10	Nonnemaker JM, et al [21]	Experimental study	High	Mass Media	Transportable	Right Content	Appropriate design and information contributes to the success of anti-smoking message delivery	(+)
11	Baskerville NB, et al [22]	Quasi Experimental Study	High	Pictorial Health Warning Label & Quit line	Availability	Toll Free Availability	Implementation of toll free for quit line was associated with treatment reach	(+)
12	Griffin E., et al [23]	Cross Sectional Study	High	Quit Line	Availability	Appropriate Design And Information	Appropriate design and information contributes to the success of anti-smoking message delivery. the quit line less effective in reaching rural smokers	(-)
13	Grunseit AC., et al [24]	Cross Sectional Study	High	Quit line	Reliable	Dynamic Interaction	Interpersonal factor play a vital role to ensure dynamic contact with smokers and receive effective communication acceptance	(+)
14	Zhu SH., et al [25]	Randomized Controlled Trial	High	Quit line	Transportable	Language	Use different languages that suited to smokers makes effective communication that both parties understand	(+)
15	Guy MC, et al [26]	Cross Sectional Study	High	Quit line	Reliable	Referral	Mode of entry into a quitline service for smoking cessation is related to treatment outcomes	(+)
16	Lal A, et al [27]	Cross Sectional Study	High	Quit line	Availability	Appropriate Design And Information	Intervention that can be provided by a centralized service for a large population, and to reach people in isolated communities.	(+)
17	Nohlert E., et al [29]	Randomized Controlled Trial	High	Quit line	Cost Effective	Proactive Service	There are no different for Quit line to have proactive service or reactive service	(±)
18	Vallone DM., et al [30]	Cross Sectional Study	High	Mass Media	Cost Effective	Funding	National funding contribute to the success of the campaign	(+)
19	Harakeh Z., et al [31]	Experimental study	High	Mass Media	Transportable	Informative Information	Further evidence to support antismoking ads placed with movies because of their possible effect on young adult smoking behaviour	(+)
20	Ramo DE., et al [33]	Experimental study	High	Internet	Availability & Cost Effectiveness	Viewable	Internet Intervention viewable via mobile phone	(+)
21	Brown J.,et al [34]	Randomized Controlled Trial	High	Internet	Availability & Cost Effectiveness	Viewable	Implemented easily and made freely available.	(+)
22	Saul JE., et al [35]	Experimental study	High	Internet	Transportable & Reliable	Easily Understand	Reported not coming back to website due already found right information.	(+)

*: Indicator ((-)= Negative impact, (+)= Positive impact, (±)= Inexplicit impact).

Abstract been read to categorize the studies into 3 which were relevant, not relevant and potentially relevant. However, some of relevant studies and all of potentially relevant were rejected after full text screening. We will contact the article's correspondence via e-mail if there is any confusion or require more clarification to ensure that the article is correctly chosen for review.

Quality Assessment: 2 trained reviewers assessed 22 studies independently, with the use of the appraisal method Mixed Methods Appraisal Tool (MMAT), version 2018.[8] Papers were only included in the review if all reviewers agreed on it and achieved high quality. If there was disagreement, a third reviewer was invited to appraise the paper.[9] (refer Table 1: Article quality assessment). The quality of study will be in the Table 2.

Data Abstraction and Analysis: The data was extracted by reading through abstracts first, then full articles (in-depth) to identify relevant themes and sub-themes. Qualitative analysis was carried out using content analysis to identify themes related to the characteristics of the smoking cessation intervention analyzed. Sub-themes were then organized by the authors around themes established by typology. In order to ensure consistently code the papers, the first author read and coded all the papers with other co-authors periodically coding randomly selected papers and comparing these results to address any inconsistencies in the coding process. When inconsistencies occurred, they were discussed among the author team and codes for all papers in the set was adjusted accordingly to ensure consistency.[10] During the coding stage, the category validation was established through an interactive process of assessing, reviewing and revisiting by content expert. The main objective of conducting this expert review was to ensure the clarity, relevance and appropriateness of each theme; these expert reviews helped on establish the theme validity. Based on the feedback and concerns received from the reviewers, necessary adjustments were made. This practice adapted from Shaikh et al.[11]

Operational Definition: The availability theme refers to the accessibility of products, such as that which can be viewed and easily identified and which has a positive impact on the community. The reliability theme refers to the trusted product which has been accepted and which has had an impact on its implementation. The cost-effective theme is how effective the product is in terms of cost savings versus impact. The transportable theme refers to the context in which information is conveyed in the right and appropriate content, informative, interactive and easily understood, which will have an impact on smokers.

Indicator (+) means the theme under the intervention show positive impact in the implementation. Indicator (-) means the theme under the intervention show negative impact in the implementation. Indicator (±) means the theme under the intervention was inexplicit in implementation.

RESULTS

Findings of this study were elaborated based on specific interventions for the smoking cessation which are pictorial health warning label (PWLs) , quit-line, mass media and internet interventions. In the phase of identification, all articles were identified using three online database searching which are Cinahl, Proquest, and Scopus ; Total 11 803 articles identified. However, only 22 articles were chosen for this study after thorough screening been conducted. Following a quality assessment, all articles were deemed of high quality.

In each intervention, related issue was summarized based on the characteristic of the study. Table 2 shows the finding of each study that had been reviewed based on specific interventions and Table 3 shows cumulative intervention grading based grading in Table 2.

The review resulted in for 4 main themes related to smoking intervention practices. The results provided a comprehensive analysis of the current smoking

Table 3. Intervention grading.

Theme	Pictorial Health Warning Label	Internet Intervention	Mass Media	Quit line
Availability	2(+)*	2(+)*	ND*	2(+)* , 1(-)*
Reliability	ND*	1(+)*	ND*	2(+)*
Cost effectiveness	ND*	2(+)*	1(+)*	1(±)*
Transportable	5(±)*,1(+)*, 1(-)*	2(+)*	4(+)*	2(+)*

*: Indicator ((-)= Negative impact, (+)= Positive impact, (±)= Inexplicit impact, ND= Not discuss).

intervention practices practiced by the world. The four main themes are availability, reliability, cost effectiveness and, transportable. There were 12 sub themes generated after thorough discussion across team members. The sub themes were presented in the Table 1.

Pictorial Health Warning Label (PWLs): The two themes were identified for PWLs as availability and transportable. However, theme reliability and cost effectiveness were not identified in the listed study. There was 1 (+) study identified for theme availability, and 7 studies produced element transportable. However, in 7 studies there were 1 study provides (-), meanwhile 5 studies provide 5 (±) and only 1 study provides positive (+) supports for theme transportable in PWLs.

Internet Intervention: The four themes were identified in internet intervention which were availability, transportable, cost effectiveness and reliability. All study shows positive impact on the implementation. The 2 studies provide positive (+) for theme availability, reliability and transportable. However, only 1 study provides positive (+) for theme reliability.

Mass Media: The 2 themes were identified in mass media intervention such as cost effectiveness and transportable. However, the other 2 themes were not identified in this study. The 4 studies provide positive (+) supports for theme transportable. Meanwhile only 1 study provides positive (+) in theme cost effectiveness.

Quit line: The four themes were extracted under quit line intervention. The 2 studies provide positive (+) in theme transportable and reliability and 1 study provides positive (+) in theme cost effectiveness. However, in theme availability, the 2 studies provide positive (+), meanwhile 1 study provide negative (-) on the implementation.

DISCUSSION AND CONCLUSION

Pictorial Health Warning Label (PWLs): Nagelhout et al.,[12] Kowitt et al.,[13] and Cantrell et al.[14] supported that appropriate design and information contributes to the success of anti-smoking message delivery. Guillaumier et al.[15] supported highly emotive advertisements providing good reasons to quit may be the most effective in promoting the antismoking message among groups with high smoking rates. Mead et al.,[6] Evans et al.,[17] Cho et al.,[18] and Thrasher et al.[19] collectively provide evidence that emotive content influences smokers to quit smoking. Supported by Richardson et al.,[20] positive campaigns were most effective at increasing quit line calls,

those with negative emotive content were also found to impact on call rates however only at higher levels of exposure. Study by Nonnemaker et al.[21] showed evidence that right content in cessation media campaign effectively to increase quit attempts within vulnerable subgroups.

In the context of availability, using picture on cigarettes pack is effective warnings by making smoker to expose about health information and increasing their risk of smoking knowledge.[16,17] Cigarettes pack with text give smoker an idea to quit smoking.[19] Rather than just text, pictures help smokers remember more information about health risks.[14,16] Their quit attention increasing as they arouse by negative effect of smoking that shown by picture.[17,19] Moreover, demand for cigarettes packs with PWLs is lower than text only.[19]

Majority of adult have favour attitude towards larger health warning labels. However, male smoker who have lower quit intention of smoking less likely to have favour on large size of PWLs.[13] Demand for plain cigarettes pack with PWLs is the lowest than text warning only, PWLs with text and PWLs, text with branded packaging. However, young smoker generally tends to smoke even the packaging is plain and not choose the brand.[19]

Quit line: According to Baskerville et al.[22] implementation of toll free for quit line was associated with treatment reach, however, Griffin et al.[23] stated that the quit line less effective in reaching rural smokers. They suggested more campaign or promotion required for rural area.

In view of transportable, advertisement by media for quit line reach help to increase demand for quit line because of advertisement is one of the ways to tell smoker that there is another intervention for them to quit. Advertisement can be form of radio, newspaper, billboard or on television. It will be easier for smoker to get the information by through advertisement. According to Grunseit et al.,[24] in quit line, interpersonal factor plays a vital role to ensure dynamic contact with smokers and receive effective communication acceptance. Information that need to convey shall use appropriate language that can understand by the recipient of the information. Active communication plays a vital role in ensuring the intervention is effective. Supported by Zhu et al.[25] that use of different languages that suited to smokers makes effective communication that both parties understand. It will be crucial factor to ensure message will be transferred and received efficiently. The dynamic interaction between health providers builds

trust in product reliability through information acceptance. This was supported by Grunseit et al.[24] that drives caller satisfaction in quit line. Guy et al.[26] shared that smokers referred to the quit line by a health care provider were more likely to quit smoking than were those who self-referred.

The finding from Lal et al.[27] that call-back counselling was a cost-effective intervention for smoking cessation that can be provided by a centralised service for a large population, and to reach people in isolated communities. However, in rural area, quit line is less likely to be one of the ways for smoking cessation because of they are not exposed to advertisement as much as urban area. The Local Government Association,[28] agreed that some rural areas lacked high-speed internet access and mobile phone networks, resulting in a networking gap. According to Nohlert et al.,[29] there are no different for Quit line to have proactive service or reactive service. However, the researcher recommended to explore further on cost effectiveness for type of service to be offered.

In view of reliability of service, smoker perception towards counsellor of quit line also important because human need good communication for making something success. However, it is undeniable that human error can happen during communication and give negative impact toward service given.[24] Successfulness of smoking cessation by quit line also depend on counsellor attitude, education and protocols. Participants perspective on quit line were influenced by service provided by their care, rapport, quality information, adherence to service standards, convenience, personal relevance, low expectations and personal responsibility.[24]

In view of cost effectiveness, Lal et al.[27] supported that call back counselling be a medium that is cost effective for smoking intervention. People that living in rural area are much less likely to use Quit line as their smoking cessation intervention.[23] However, as PWLs had put quit line label, the number of calling from rural residence has been increased.[22]

Introduction of toll free for quit line provides wide availability to smokers to call for smoking treatment.

Mass media: Vallone et al.[30] suggested the national funding contribute to the success of the campaign. Some movie or drama series scene always being copied by viewers especially young generation. Though, it was no effect between movie with or without smoking scenes in contribute of smoking attempt. But, there is an increasing effect for quit attempt for movie with anti-smoking advertisement

in between the movies.[31] Advertisement of smoking cessation in between movie help smoker to remember the advertisement better for quit smoking attempt. Research by Hasson et al.[32] supportted that brain activities during watching movie increase cognitive response.

Internet intervention: According to Ramo et al.[33] and Brown J et al.[34] information through online more practical, viewable and accessible as information easily can find thru mobile phone. This is good to have the smokers to get more information, later thru right information, the smokers can find the treatment. Ramo et al.[33] and Brown J et al.[34] also shared that internet intervention were successful due to online support, freely available and easily viewable thru mobile phone. Study by Saul et al.[35] found that more than a quarter of "one-hit-wonders" reported not coming back to a smoking cessation website because they had quit smoking or found the information they needed.

As internet networking has grown and larger use from time to time, it can be as platform for smoking cessation intervention. Advertisement on social media like facebook, instagram and twitter are a new approach for people especially young generation to increase their awareness toward smoking behaviour. It was also stated by Ramo et al.[33] that people are spending more time on social media and attitude of sharing information on social media is one of the ways to spread the information faster.

Internet intervention for smoking cessation bring benefits for low socioeconomic status as the quit attempts is higher than high socioeconomic status.[34]

In conclusion, the review showed often the interventions are interrelated and will be successful while the synergy is going. The combination of element smoking intervention is one of the initiatives in ensuring an effective approach in dealing with smoking issues. The information that smokers need to obtain must be comprehensive and easily accessible. Among the first-hand intervention, Internet services shows wide coverages on the revealed characteristics compared the other interventions. This systematic review has several strengths of this study. The strength of this study can be determined by searching multiple databases and aligned the anti-smoking campaign in term of prioritization of planning and financial allocation. The study's limitations include only four first-hand smoking cessation interventions and language bias.

Ethics Committee Approval: Editor invited review.

REFERENCES

1. WHO report on the global tobacco epidemic [online] Luxembourg: World Health Organization 2013, pp.15-17. Available at: http://apps.who.int/iris/ bitstream/10665/85380/1/9789241505871_eng.pdf. Accessed 2019 July 25.

2. World Health Organization. WHO report on the global tobacco epidemic, 2019: offer help to quit tobacco use: executive summary. Geneva: World Health Organization, 2019 Available at : https://www.who.int/teams/health-promotion/tobacco-control/who-report-on-the-global-tobacco-epidemic-2019. Accessed 2019 July 25.

3. World Health Organization. WHO Report on the Global Tobacco Epidemic, 2017 . Geneva: World Health Organization, 2017. Available at: https://www.who.int/tobacco/global_report/2017/en/. Accessed 2019 Jan 31.

4. World Health Organization. WHO Report on the Global Tobacco Epidemic, 2011 Geneva: World Health Organization, 2011 . Available at: https://www.who.int/tobacco/global_report/2011/en/. Accessed 2018 Feb 22.

5. Hong YH, Soh P, Khan N, Abdullah MM, Tan B. The Effectiveness of anti smoking advertising : The roles of Message and Media. Int. J. Bus. Manag . 201;8(19):55-62. doi:10.5539/ijbm.v8n19p55

6. Sierra-Correa PC., Cantera Kintz J R. Ecosystem-based adaptation for improving coastal planning for sea-level rise: A systematic review for mangrove coasts. Mar. Policy 2015;51:385-393. doi:10.1016/j.marpol.2014.09.013

7. Dobbie F, Angus K, Littlecott H. et al. Facilitators and barriers to the delivery of school-based smoking prevention interventions for children and young people: a protocol for a systematic review of qualitative studies. Syst Rev. 2018;56(7):1-6. doi:10.1186/s13643-018-0715-8

8. Hong QN, Pluye P, Fàbregues S, et al. The Mixed Methods Appraisal Tool (MMAT) version 2018 for information professionals and researchers. Educ Inf. 2018;31(4):285-291. doi:10.3233/EFI-180221

9. Wu XV, Chan YS, Tan KHS, Wang W. A systematic review of online learning programs for nurse preceptors. Nurse Educ Today. 2018;60:11-22. doi:10.1016/j.nedt.2017.09.010

10. Haider LJ, Boonstra WJ, Peterson GD, Schluter M. Traps and Sustainable Development in Rural Areas: A Review. World Dev. 2018;101:311-321. doi:10.1016/j.worlddev.2017.05.038

11. Shaikh AA, Karjaluoto H. Making the most of information technology & systems usage: A literature review, framework and future research agenda. Comput. Hum. Behav. 2015;49:541–566. doi:10.1016/j.chb.2015.03.059

12. Nagelhout GE, Willemsen MC, de Vries H, et al. Educational differences in the impact of pictorial cigarette warning labels on smokers: Findings from the international tobacco control (ITC) Europe surveys. Tobacco Control. 2016;25(3):325-332. doi:10.1136/tobaccocontrol-2014-051971

13. Kowitt SD, Noar SM, Ranney LM, Goldstein AO. Public attitudes toward larger cigarette pack warnings: Results from a nationally representative U.S. sample. PLoS ONE. 2017;12(3):1–14. doi:10.1371/journal.pone.0171496

14. Cantrell J, Vallone DM, Thrasher JF, et al. Impact of Tobacco-Related Health Warning Labels across Socioeconomic, Race and Ethnic Groups: Results from a Randomized Web-Based Experiment. PLoS ONE. 2013;8(1):e52206. doi:10.1371/journal.pone.0052206

15. Guillaumier A, Bonevski B, Paul C, d'Este C, Durkin S, Doran C. Which Type of Antismoking Advertisement Is Perceived as More Effective? An Experimental Study With a Sample of Australian Socially Disadvantaged Welfare Recipients. Am J Health Promot. 2017;31(3):209-216. doi:10.4278/ajhp.141125-QUAN-593

16. Mead EL, Cohen JE, Kennedy CE, Gallo J, Latkin CA. The role of theory-driven graphic warning labels in motivation to quit: a qualitative study on perceptions from low-income, urban

smokers. BMC Public Health. 2015;15:92. doi:10.1186/s12889-015-1438-6

17. Evans AT, Peters E, Strasser AA, Emery LF, Sheerin KM, Romer D. Graphic warning labels elicit affective and thoughtful responses from smokers: Results of a randomized clinical trial. PLoS ONE. 2015;10(12):1-23. doi:10.1371/journal.pone.0142879

18. Cho YJ, Thrasher JF, Swayampakala K, et al. Does Reactance against Cigarette Warning Labels Matter? Warning Label Responses and Downstream Smoking Cessation amongst Adult Smokers in Australia, Canada, Mexico and the United States. PLoS One. 2016;11(7):e0159245. doi:10.1371/journal.pone.0159245

19. Thrasher JF, Rousu MC, Hammond D, Navarro A, Corrigan JR. Estimating the impact of pictorial health warnings and "plain" cigarette packaging: evidence from experimental auctions among adult smokers in the United States. Health Policy. 2011;102(1):41-8. doi: 10.1016/j.healthpol.2011.06.003. Epub 2011

20. Richardson S, Langley T, Szatkowski L, et al. How does the emotive content of televised antismoking mass media campaigns influence monthly calls to the NHS Stop Smoking helpline in England?. Prev Med. 2014;69:43-48. doi:10.1016/j.ypmed.2014.08.030

21. Nonnemaker JM, Allen JA, Davis KC, Kamyab K, Duke JC, Farrelly MC. The influence of antismoking television advertisements on cessation by race/ethnicity, socioeconomic status, and mental health status. PLoS One. 2014;9 (7):e102943. Published 2014 Jul 17. doi:10.1371/journal.pone.0102943

22. Baskerville NB, Hayward L, Brown K, Hammond D, Kennedy RD, Campbell HS. Impact of Canadian tobacco packaging policy on quitline reach and reach equity. Preventive Medicine. 2015;81:243-250. doi:10.1016/j.ypmed.2015.09.010

23. Griffin E, Moon G, Barnet R. Examining the significance of urban-rural context in tobacco quitline use: does rurality matter? Int J Public Health. 2015;60(3):327-33. doi: 10.1007/s00038-014-0634-y

24. Grunseit AC, Gwizd M, Lyons C, Anderson C, O'Hara BJ. Polite, professional, practical: What drives caller 'satisfaction' with the New South Wales Quitline, Australia. Drug Alcohol Rev. 2018;37(Suppl 1):S223-S234. doi: 10.1111/dar.12593

25. Zhu SH, Cummins SE, Wong S, Gamst AC, Tedeschi GJ, Reyes-Nocon J. The effects of a multilingual telephone quitline for Asian smokers: a randomized controlled trial. J Natl Cancer Inst. 2012;104(4):299-310. doi:10.1093/jnci/djr530

26. Guy MC, Seltzer RG, Cameron M, Pugmire J, Michael S, Leischow SJ. Relationship between smokers' modes of entry into quitlines and treatment outcomes. Am J Health Behav. 2012;36 (1):3-11. doi:10.5993/ajhb.36.1.1

27. Lal A, Mihalopoulos C, Wallace A, Vos T. The cost-effectiveness of call-back counselling for smoking cessation. Tob Control. 2014;23:437-442. doi:10.1136/tobaccocontrol-2012-050907.

28. Local Government Association. Health and wellbeing in rural areas 2017; 1–47. Available at: https://www.local.gov.uk/sites/default/files/documents/1.39_Health in rural areas_WEB.pdf. Accessed 2019 July 25.

29. Nohlert E, Ohrvik J, Helgason AR. Effectiveness of proactive and reactive services at the Swedish National Tobacco Quitline in a randomized trial. Tob Induc Dis. 2014;12(1):9. doi:10.1186/1617-9625-12-9

30. Vallone DM, Duke JC, Cullen J, McCausland KL, Allen JA. Evaluation of EX: a national mass media smoking cessation campaign. Am J Public Health. 2011;101(2):302-309. doi:10.2105/AJPH.2009.190454

31. Harakeh Z, Engels RC, Vohs K, van Baaren RB, Sargent J. Exposure to movie smoking, antismoking ads and smoking intensity: an experimental study with a factorial design. Tob Control. 2010;19(3):185-90. doi:10.1136/tc.2009.030684

32. Hasson U, Landesman O, Knappmeyer B, Vallines I, Rubin N, Heeger D. Neurocinematics: The Neuroscience of Film. Projections. 2008;2:1-26. doi:10.3167/proj.2008.020101

33. Ramo DE, Rodriguez TM, Chavez K, Sommer MJ, Prochaska JJ. Facebook Recruitment of Young Adult Smokers for a Cessation Trial: Methods, Metrics, and Lessons Learned. Internet Interv. 2014;1(2):58-64. doi:10.1016/j.invent.2014.05.001

34. Brown J, Michie S, Geraghty AW, et al. Internet-based intervention for smoking cessation (StopAdvisor) in people with low and high socioeconomic status: a randomised controlled trial. Lancet Respir Med. 2014;2(12):997-1006. doi:10.1016/S2213-2600(14)70195-X

35. Saul JE, Amato MS, Cha S, Graham AL. Engagement and attrition in Internet smoking cessa-

tion interventions: Insights from a cross-sectional survey of "one-hit-wonders." Internet Interv 2016;5:23-29. doi:10.1016/j.invent.2016.07.001