Conference Paper

Association of External Factors with Successful Smoking Cessation among Indonesian Adult

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Abstract

The prevalence of smoking cessation in Indonesia was decreased from 5.4% (2010) to 4% (2013). This study aims to determine the relationship of external factors with successful smoking cessation among Indonesian adult. This is a cross sectional study using secondary data from "Global Adult Tobacco Survey" Indonesia 2011. A total of 3175 males and 235 females, aged 15+ years old were included in this study. Multiple logistic regression analysis was used to examine external factors associated with successful smoking cessation. The proportion of smoking quitter is about 15.7 percent. The external factors associated with successful smoking cessation were informed about household smoking restriction (OR: 2.5, 95% CI: 0.9 – 7.6), exposure to smoking dangers in newspaper (OR: 1.5, 95%CI:0.7 – 3.1), and unexposed to cigarette advertisement in television (OR: 2.4 95%CI: 1.4 – 4.2). Being informed of household smoking restriction, cigarette harmful effect, and unexposed to cigarette advertisement were important factors in successful smoking cessation. Cigarette dangers effect campaign and restriction of cigarette advertisement may be beneficial in supporting successful smoking cessation.

Keywords: External Factor, "Global Adult Tobacco Survey", Smoking Cessation

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1. INTRODUCTION

Smoking is one of the risk factors of the eight major causes of death [29, 30]. Proportion of deaths caused by smoking in Indonesia is around 21 percent, this proportion is higher than the proportion of death caused by smoking in the world and in the Southeast Asian region [32–34]. Globally, prevalence of current smokers decreased from 23 percent (2007) to 21 percent (2013), while the prevalence of smokers in Indonesia has increased annually at 34.2 percent (2007) to 36.3 percent (2013). Despite this, based on the regulation from Health Ministry affairs Number 40 of 2013, the target is to decrease in

smoking prevalence by 1% per year and reduction in novice smokers by 1% per year in Indonesia in 2015-2019. Based on *Riskesdas*, the percentage of people with smoking cessation in Indonesia has decreased from 5.4% (2010) to 4% (2013) [5, 11, 13, 33, 34].

Effective intervention in smoking cessation is to combine behavioral support and drug therapy. The benefit of smoking cessation is to improve the quality of life for smokers, reduce exposure to secondhand smoke, reduce health care expenditures for the treatment of diseases caused by smoking and decrease work absence due to smoking related disease, and provide benefits to the family's financial situation [3, 4, 20, 21, 31].

According to the results of the "Lembaga Menanggulangi Masalah Merokok" (LM3), 66.2 percent of 375 respondents tried to quit and failed. 42.9 percent of those who failed to stop do not know how to quit smoking [7]. The changes were influenced by the behavior of stimulation received by individual [18]. Which is the stimulation received to quit smoking on the individual external factors of behavior. External factors of smoking cessation are restriction on smoking at home, workplace smoking bans, health warnings on cigarette packs, exposure to media about smoking dangers, unexposed to cigarette advertisement, and visited places that applied no smoking area.

The restriction smoking at home encourage the intention to quit smoking. The restriction on smoking at home, the workplace and other public places have an impact on the reduction of exposure to cigarette smoke. The implementation of the smoking restriction is not only to increase the tendency of wanting to quit smoking, but also stepping up efforts to quit smoking [2, 14, 15]. Besides of the smoking restriction, health warnings on cigarette packs, exposure to antismoking advertising, and exposed to media about smoking dangers also affected smoking cessation. It increases the tendency of wanting to quit smoking and efforts to quit smoking as well [1, 10, 28].

This study aims to determine external factors of smoking cessation in Indonesia. External factors viewed are from household smoking restriction, workplace smoking bans, health warnings on cigarette packs, exposure to media about smoking dangers, unexposed to cigarette advertisement, and visited places that applied no smoking area.

2. METHODS

This cross-sectional study used secondary data from the Global Adult Tobacco Survey (GATS), 2011. Data GATS 2011, carried out in 19 provinces with 77 districts/cities. The dependent variable is smoking cessation while the independent variable is the external

factors consist of restriction on smoking at home, workplace smoking bans, health warnings on cigarette packs, exposure to smoking dangers, unexposed to cigarette advertisement, and visited places that applied no smoking area. The confounder variables are sex, age, age of smoking initiation, knowledge of smoking dangers, and economic status. The knowledge of smoking dangers is measured by the knowledge that smoke can cause and increase risk of stroke, heart attack, lung cancer, chronic obstructive pulmonary disease, bladder cancer, stomach cancer, and premature births. The number of question about the knowledge is nine questions. The population in this study is the population aged 15 years old or more. The analysis used univariable, bivariable, and logistic regression.

3. RESULTS

Table 1 show that the smoking cessation in Indonesia is around 15.7%. Only 5.6% applied restriction on smoking at home and only 8.6% has a ban on smoking in the workplace. More than half of the respondents see the health warnings on cigarette packs. 73% respondents have visited a no smoking area, more than half the respondents were exposed to the media about the dangers of smoking, and only 0.7% of respondents are not exposed to cigarette advertising.

Table 2 shows that exposure of media about smoking dangers are abundant on television than other media. More than half of the respondents are exposed to tobacco advertisement in stores, television, radio, billboards, posters, newspapers/magazines, movies, internet, and banners. There less Respondents are exposed to cigarette advertisement in public transport and public walls and the highest number of exposure is from the film media.

Table 3 shows that restriction on smoking at home resulted 2.5 times tendency to quit smoking than when there are no restrictions after the other variables are controlled. The tendency of smoking cessation is higher on the exposure of smoking danger in newspapers/magazines which is 1.5 times. The tendency of smoking cessation is higher if there is no exposure to cigarette advertisement on television which is 2.4.

4. DISCUSSION

The proportion of smokers with smoking cessation in Indonesia is 15.7%. The proportion of smoking cessation in Indonesia is lower than other countries, such as in

Table 1: Distribution of 15 Years Old Population Based on Smoking Cessation, External Factors, and Internal Factors in Indonesia in 2011.

Variable	n	%	Variable	n	%
Smoking Cessation			Family Members are smoking		
No	2855	84.3	Yes	2953	88.3
Yes	555	15.7	No	457	11.7
INTERNAL FACTORS			Coworkers are smoking		
Residence			Yes	523	15.8
Rural	1792	47.8	No	322	9.6
Urban	1618	52.2	Don't know	2565	74.6
Sex			EXTERNAL FACTORS		
Male	3175	94.3	Restriction smoking at home		
Female	235	5.7	Not Applied	3217	94.4
Education			Applied	193	5.6
Low (≤ SD)	1885	55.2	Smoking in the workplace restriction		
Middle (SMP – SMA)	1309	41.4	Not Applied	553	16.8
High (> SMA)	216	6.4	Applied	292	8.6
Age			Don't know	2565	74.6
Adolescent (15 – 24 years old)	407	17.4	See the health warning on cigarette packs (for the last 1 month)		
Adult (25 – 44 years old)	1624	47.3	No	1151	31.3
Pre elderly (45 – 59 years old)	873	23.7	Yes	2259	68.7
Elderly (46+ years old)	506	11	Ever visited no smoking area (for the last 1 month)		
Age of smoking initiation			Never	2226	66.8
Adolescent (15 – 24 years old)	2463	73)	Ever	1184	33.2
Adult (25+ years old)	369	9.8	Exposed to the media smoking dangers (for the last 1 month)		
Don't know	568	17.2	No	1621	45.5
Knowledge of smoking dangers			Yes	1789	54.5
Less (0 – 59)	2412	69.6	Exposed to cigarette advertisement (for the last 1 month)		
Enough (60 – 74)	391	12.3	Exposed to more than 4 advertising	1358	42.1
Good (75 – 90)	459	13.4	Exposed to 1 – 4 advertising	1532	44.9
Very Good (91 – 100)	148	4.7	Not exposed	520	13
Economic Status					
≤ Quintiles 2	1631	44.6			
Quintiles 3	476	14.4			
Quintiles 4	621	19.5			
Quintiles 5	682	21.5			

Table 2: Distribution of type of media about the dangers of smoking and type of cigarette advertisement for 15 years old and over population in Indonesia in 2011.

Variable	%	Variable	%
Media about smoking dangers		Advertising Tobacco	
Newspapers/Magazines	10.3	Cinemas	85.8
Television	40.1	Television	80.7
Radio	5.8	Internet	76.9
Billboard	32.7	Billboard	65.1
		Newspaper/Magazines	64.7
		Banners	64.4
		Radio	60.4
		Posters	58.0
		Stores	56.9
		Public Transportation	38.6
		Public Walls	38.4

Table 3: Relationship of External Factors and Smoking Cessation Indonesia in 2011.

Variabel	Smoking Cessation		OR Crude (95% CI)	OR Adjusted* (95% CI)
	No (%)	Yes (%)		
External Factors				
Restriction on smoking in the home	62.4	37.6	1.9 (1.5 – 2.3)	2.5 (0.9 – 7.6)
Smoking in the workplace restriction	79.9	20.1	1.2 (0.8 – 1.97)	0.5 (0.2 – 1.4)
See the health warning on cigarette packs	88.6	11.4	0.4 (0.3 – 0.5)	0.5 (0.2 – 0.97)
Ever visited a no smoking area (for the last 1 month)	83	17	1.2 (0.9 – 1.4)	1.04 (0.6 – 1.7)
Media exposure about smoking dangers (for the last 1 month) (reff not exposed)				
Newspaper/Magazine	76.4	23.6	1.8 (1.2 – 2.5)	1.5 (0.7 – 3.1)
Television	81.5	18.5	1.4 (1.1 – 1.9)	1.1 (0.5 – 2.3)
Radio	80.5	19.5	1.3 (0.8 – 2.3)	1.1 (0.4 – 2.7)
Billboards	82.7	17.3	1.2 (0.9 – 1.6)	1.2 (0.6 – 2.5)
Exposed to cigarette advertisement (for the last 1 month) (reff exposed)				
Television	79.9	20.1	1.5 (1.1 – 1.97)	2.4 (1.4 – 4.2)
Billboards	84.8	15.2	0.9 (0.7 – 1.2)	1.0 (0.5 – 1.9)
Posters	83.5	16.5	1.1 (0.9 – 1.4)	1.2 (0.7 – 2.1)
Newspaper/Magazine	84.2	15.8	1.01 (0.9 – 1.4)	1.3 (0.8 – 2.2)
Public walls	82.8	17.2	1.3 (1.1 – 1.7)	1.2 (0.6 – 2.2)
Banners	82.2	17.9	1.3 (0.9 – 1.6)	1.2 (0.7 – 2.1)
*controlled by sex, age, age of smoking initiation, knowledge of smoking dangers, no family members are smoking, no coworkers are smoking either				

Korea with 41.2% and 22.4% in South Australia. Results of multivariable analysis shows

that household smoking bans affect the smoking cessation in Indonesia in 2011. The household smoking bans increase the tendency to quit smoking, reduce exposure to smoke at home, and increase one's intention to quit smoking. Smokers who have a life partner that do not smoke also increases the tendency of wanting to quit smoking and better preparation to quit smoking as well [22]. Free smoke house is one form of smoking restrictions at home.

Based on study of Quit Tobacco Indonesia in Yogyakarta, the implementation of smoke-free homes can decrease the percentage of family members are smoke, diminish family members who smoke in the house, and increase public knowledge of smoking for health. Family support is very helpful in the campaign for a smoke-free program at home. Moreover, awareness of the husband, family members, and guests who smoke to a smoke-free home is also helping in the campaign itself [17, 19].

Workplace smoking restriction are affecting the implementation of smoking restriction at home and motivates implementation of household smoking restriction. The implementation of restriction on smoking at home and workplace can have an impact on a person's health status [16, 23]. Smokers who are in the free smoking area has a tendency to successfully quit smoking. Enforcement of smoke-free area allows one to stop and reduce cigarette consumption [25, 29]. Regulations imposing a partial smoking restriction, ventilation systems, and designing the smoking areas do not protect workers and the public from secondhand smoke. Application of the no smoking region is more effective if you apply the free smoking area by not providing rooms for smokers [24, 26, 27].

In addition, exposure to media about smoking dangers and un-exposure to cigarette advertisement also affect smoking cessation. Information about dangers of smoking in newspapers/magazines, posters, television, radio, internet, and the dangers of smoking in the pack of cigarettes increases the tendency to decide smoking cessation [8, 12]. Exposure to update the dangers of smoking on smokers cause the smokers finding a way to quit smoking by avoiding exposure to cigarette smoke of others and the belief that anti-smoking ads motivate smoking cessation. For nonsmokers, exposure of information about smoking dangers by avoiding exposure of the cigarette smoke [35].

Less ads cigarettes exposure increases the tendency to quit smoking. Advertisement sale of cigarette cause smoking cessation more difficult and increased the risk to start smoking. Reduction of exposure to sale of cigarettes advertisement and cigarette display seen by consumers can reduce unplanned cigarette purchase and enhance the succession of smoking cessation [6, 9].

Limitations of this study is the inclusion of using cross-sectional study so it is difficult to distinguish the variables that cause and the variables of effect. So this study is weak to measure causal relationship. There is a possibility of recall bias on the variable of starting age in smoking which caused error estimation. In addition, variables used in this study are limited. In the variable if media exposure about smoking dangers and exposure to cigarette advertisement, the frequency of exposure was not contained in the GATS questionnaire 2011. On visiting places that applied no smoking area, the options are only 'ever' or 'never' visited a place that has been enacted free smoking area.

5. CONCLUSIONS

Based on the results of the research and discussion, the proportion of smokers who quit smoking in Indonesia is about 15.7%. This number includes the low proportion of quit smoking compared to other countries. External factors that play a role in the behavior of smoking cessation is the restriction of smoking at home, ban of smoking in the workplace, unexposed cigarette advertisement (television, newspapers/magazines, the walls of the public, banner), exposure to media about smoking dangers (newspapers/magazines), and the frequency of visiting places that applied no smoking area.

The researchers suggest that the central and local governments implement restriction on smoking in the workplace and not providing special room for smoking in the no smoking region and spread contact which can be reached by the public when finding a violation of the no smoking region, increase efforts to implement restrictions on cigarette advertising on television, newspapers/magazines, the walls of the public, and banners, and dissemination of media dangers of tobacco by using newspaper/magazines, as well as re-functioning the media used for cigarette advertisement to a media of showing the dangers of smoking by using walls of the public. Parents and society must be applying smoke-free houses by forbidding smoker to smoke at home (both family members and guests), banned smoking in public meetings, stickers smoke-free home the front door of every house, and ban smoking in front of children and pregnant women (although outside the house), and provide support for family members quit smoking.

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