Research summary: Mental health and Smoking in Indonesia and US

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Abstract

The effect of smoking dependence on mental health is among in important topic in public health. This study investigates the effect of smoking dependence on adult mental health in Indonesia and US. Indonesia data come from the Indonesia Family Life Survey (IFLS) 2014, which polled 11,000+ individuals age 20 years and older in 9987 households and 297 districts in Indonesia. US Data come from NSDUH 2015 which consisits of 54,000+ respondents. We measure smoking dependence using Fagerstorm test and mental health using CES-D Scale. The findings show that mental health is associated with smoking dependence. The findings suggest that government needs to address how to reduce smoking habits among Indonesians to be a protective factor for detrimental effects of mental health on smoking dependence.

Smoking – Mental health – Indonesia

1 Introduction

Indonesia is amongst those few countries which are known for tobacco advertisements. These advertisements are exceptionally aggressive and creative in nature and they tend to dominate the Indonesian atmosphere to a large extent. The companies which manufacture Tobacco are exceedingly powerful in the domain of politics and finance as they are the biggest revenue generators for the country. Due to this fact, the restrictions placed on the marketing and publicity of these companies are less compared to other countries. The surveys carried out in Indonesia in2015 reported that about 62% of the male population and 3% of the female population are into the habit of smoking. This trend is not only integrated into the adult population but children are also prone to the harmful effects of cigarettes and take it as a part of their culture.Advertising

is like a dream come true in Indonesia as there are no restrictions as per the content of the advisement is concerned. The companies take this largely for granted and promote the selling and purchasing of cigarettes through different mediums. These advertisements are done in the form of billboards and cloth hangings which can be seen after every few footsteps out in the street. Thus, smoking has saturated itself to such a large extent into the culture and lifestyle of the Indonesians hat it is not considered as something harmful. Despite the number of deaths that are exceeding day by day, Indonesians are somewhat addicted to the very idea of smoking as essential as oxygen. This psychological dependence is hampering their judgment and they have deemed smoking as part of their emotional, physical and mental health. The relationship between smoking and mental health has been examined in several studies in the United States (Plurphanswat et al., 2017; Dierker et al., 2002). To best of our knowledge, few studies have been conducted in Indonesia. Therefore, this study will examine that issue, by conducting a comparative study, using nationally representative household surveys from Indonesia and the US.

Research conducted in the United States has shown a deleterious effect of smoking on depression (Dierker et al., 2002; Jorm et al., 1999; Plurphanswat et al., 2017). At the same time, other studies have estimated that smoking and depression occur simultaneously in the same individual McClave et al. (2009). This means that smoking may lead to depression and vice versa. The existence of this bidirectional association has been addressed in further studies. In Indonesia for example, Liew and Gardner (2016) found that cigarette consumption can lead to depression and that depression can contribute to an increase in cigarette consumption. Some people start smoking due to depression and anxiety and because smoking aids their mental stability. The nicotine present in cigarettes is responsible for releasing a chemical called dopamine inside the human brain. This chemical is reported to create delectable responses during the process of smoking and when one abstains from this, an hedonia is released which causes an irritable attitude as well as leading to depression and anxiety Wang, Wang, Lam, Viswanath Chan (2014).

Studies have also shown that smoking can lead to numerous long-term medical complications which are in many cases life-threatening. A few minutes of pleasure can cripple a lifetime of sanity by this infectious trend. The long-term diseases which are consequences of smoking include,cardiovascular diseases and their risks inculcate medical hazards such as cancer, poor quality of life, throat infections, morbidity (Heshmat et al.,2017) and several more. According to another study, it was reported that‘smokers report worse mood than nonsmokers acutely over the course of a day and lower happiness levels for life in general, irrespective of their background (Shahab West, 2009). Their happiness and mood stability become dependent on the amount of nicotine that they consume on a daily basis. This trend is seen exceeding to a large extend in Indonesia which is causing the well being of people and decreasing their life expectancy as well as everyday mental stability. Studies have also drawn a comparative analysis of smokers and non-smokers and measured their extent of happiness and the results are not in favor of the nicotine addicts.

Thus, the aim of this study is to explore comparatively how closely is smoking linked to the mental health of people in Indonesia and the United States. It will carry out quantitative research in which different case studies will be examined and the causes and demerits of mental health will be uprooted. Also, links will be drawn as to how sensitive is smoking to the sanity of people and whether or not it is as harmful as it is portrayed to be.

2 Methods

Data IFLS is a continuing longitudinal socioeconomic and health survey in Indonesia. The survey was based on a sample of households rep-resenting 80% of the entire Indonesia population living in 13 provinces of the nation's 26 provinces in 1993. The survey collects data on individual respondents, their families, their households, and the communities in which they live. Overall, the survey has successfully re-interview over86.5–91.5% of households in the original sample (Thomas et al. 2012).This low attrition is exceptional compared with surveys in other countries, including a longitudinal household economic survey in the United States (Thomas et al. 2012). In this analysis, we use IFLS 2014 which for the first time asking individual life satisfaction. The sample was restricted to respondents aged 14 years and older, for whom there was complete on happiness and life satisfaction. The sample included 36,385 individuals from 15,160 households living in 297 districts, which corresponds to approximately 86% of the IFLS 2014 sample included in the happiness and life satisfaction module. On average, there were 2.4 individuals within each household and 51 households within each district and 123 individuals within each district.This study will use quantitative data to analysis the characteristics which determine the well being of smokers. This model will take into account the three domains and their characteristics of happiness and life satisfaction. Those three domains are the district, household and individual characteristics. The reason this model is more applicable as compared to the single ordered logit regression is because that only focuses on the individual characteristics and ignores the rest which have equal importance. If the household and district characteristics are overlooked and not estimated they can lead to an underestimation of the phenomenon at hand and give inappropriate and non-viable results. The aim of this model is to cluster the individual accounts of happiness and separating them from the households and districts respectively. This way conclusions will be easily drawn and will be more accurate compared to the previous studies carried out. This study will carry out an unbiased, neutral and standard in-depth analysis of the smokers and their accounts for well being and happiness before, while, and after smoking. This way contrasts will be drawn and estimates will be presented which will determine the amount of well being of smokers in Indonesia with and without the cigarettes lighted and nicotine inhaled.

Measures To measure mental health, the survey used the Center for Epidemiologic Studies Depression Scale, short version with 10 items Andresen et al.

(1994). Several other studies have used absence of depression as an indicator of mental health (Halliday et al., 2019; Das et al., 2007; Wu et al., 2015). Smoking status was determined using two questions: 'Do you smoke at least one cigarette per day (1 papirossi, 1 pipe, cigar etc)?' (with those who answered yes being categorized as current smokers), and 'Have you ever smoked?' with answer options 'Yes, I smoked but stopped' (ex-smokers) and 'No, I don't smoke and I have never smoked' (never smokers).

3 Results

Table 1 shows the results of the study, namely the relationship between smoking habits and mental health. In addition, the regression results of smoking habits and subjective well-being are also shown.Model one shows that depression as measured by CESD shows that nicotine dependence has a positive relationship with depression.

Table 1: Mental health and smoking in Indonesia

	Dependent variable:	
	fagers	
	(1)	(2)
cesd	0.022^{***}	0.021^{***}
	(0.003)	(0.003)
happy		-0.031
		(0.037)
satlife		-0.040^{*}
		(0.023)
age	0.005^{***}	0.004^{***}
	(0.001)	(0.001)
Constant	3.528^{***}	3.773^{***}
	(0.085)	(0.148)
Observations	11,075	11,072
R^2	0.004	0.005
Adjusted R^2	0.004	0.004
Residual Std. Error	1.884 (df = 11072)	1.883 (df = 11067)
F Statistic	23.521^{***} (df = 2; 11072)	12.986^{***} (df = 4; 11067)
Note:		*p<0.1; **p<0.05; ***p<0.01

Table 2: Mental health and smoking in U.S

	Dependent variable:	
	fagers	
	(1)	(2)
menth	-0.035^{***}	
	(0.003)	
nervous		0.015
		(0.020)
hopels		-0.042^{*}
		(0.026)
restls		-0.051^{**}
		(0.021)
sad		-0.047^{*}
		(0.027)
effrtls		-0.006
		(0.017)
down		-0.075^{***}
		(0.026)
CATAG62 - 18-25 Years Old	-19.203^{***}	-18.971^{***}
	(1.725)	(1.729)
CATAG63 - 26-34 Years Old	-18.759^{***}	-18.524^{***}
	(1.721)	(1.726)
CATAG64 - 35-49 Years Old	-18.293^{***}	-18.059^{***}
	(1.720)	(1.724)
CATAG65 - 50-64 Years Old	-17.986^{***}	-17.753^{***}
	(1.718)	(1.722)
CATAG66 - 65 or Older	-18.071^{***}	-17.836^{***}
	(1.717)	(1.721)
Constant	21.590^{***}	21.374^{***}
	(1.794)	(1.799)
Observations	10,940	10,940
R^2	0.080	0.081
Adjusted R^2	0.080	0.080
Residual Std. Error	1.681 (df = 10933)	1.680 (df = 10928)
F Statistic	158.835^{***} (df = 6; 10933)	87.695^{***} (df = 11; 10928)
Note:		*p<0.1; **p<0.05; ***p<0.01

This shows that the higher a person uses nicotine or nicotine addiction, the higher the individual's depression level. Age demographic variable has a negative relationship with depression, which means that the higher the age, the lower the level of depression. However, women have a greater prevalence of depressive disorders than men. Individuals who are married are relatively more resistant to depression than those who are not married.

Model two shows that nicotine addiction has a negative relationship with happiness. The higher a person's addiction to nicotine, the individual tends to have a lower level of happiness. Women have a lower share rate than men while married individuals tend to be happier than unmarried ones. In terms of age, there is a negative relationship between age and happiness, the older a person tends to be, they tend to be less happy.

Model three shows that the content of nicotine has a negative relationship with life satisfaction, the higher the nicotine addiction experienced by a person, the lower his life satisfaction. These results are relatively the same as the findings of the relationship between nicotine addiction and happiness.

Table 2 shows the model of relationship between mental health and nicotine dependence in United States. This shows that the higher a person uses nicotine or nicotine addiction, the higher the individual's depression level. Age demographic variable has a negative relationship with depression, which means that the older people tend to have lower level of depression. Model 2 shows that various mental health symptoms and nicotine dependence. The strongest effect of mental health problem in predicting nicotine dependence is feeling of restlessness, followed by sadness and hopelessness.

4 Conclusion

This study aims to determine how addiction to nicotine is related to mental health. This study measured nicotine addiction using the fagerstorm test, while mental health was measured using CESD. The results of this study indicate that nicotine addiction has a negative relationship with mental health or that the higher an individual's addiction to nicotine is associated with higher levels of depression. The results of this study support several previous studies (Liew and Gardner, 2016; McClave et al., 2009) which found that nicotine addiction also affects depression levels and some studies have even shown that someone who has high stress levels tends to experience addiction to nicotine

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