

Factors of Relapse Behavior on Workers at “X” Hospital Medan

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Keywords: Thought Associated with Relapse, Anxiety, Subjective Happiness, Nicotine Dependency, Smoking Relapse Behaviour

Abstract: **Background:** Smokers tried to quit for the previous 12 months, and most fail to stop and relapse after cessation of assistance or without assistance. **Objective:** The aim of this study is to examine factors thought associated, anxiety, subjective happiness, and factor of nicotine dependency on smoking relapse behaviour for workers in "X" Hospital Medan. This study uses an explanatory research approach. **Method:** The research subjects were employees in Hospital X Medan who returned to smoking after having stopped with duration a month to 6 month as many as 38 people who fit the inclusion criteria and were used as research samples. Data analysis uses multiple logistic regression analysis. **Result:** The results of this study is thought about relapse, subjective happiness and nicotine dependency factor affect to smoking relapse behaviour in workers in Hospital "X" Medan with a value of $p < 0.05$. **Conclusion:** Suggestions in research, treatment needs to be done through cognitive and affective approaches to smokers so that they can avoid relapse of smoking and efforts to eliminate the carbon monoxide content in the body through a pharmacological approach.

1 INTRODUCTION

Cigarettes contain nicotine which is an addictive chemical, when inhaled there is the release of another chemical called dopamine which results in individuals feeling better. Unfortunately, after dopamine is gone, these symptoms will return, where smokers want to continue smoking. Smokers also become physically dependent on nicotine, where smokers will continue to smoke to get the same effect. (Kesehatan et al., 2010)

Cigarettes are addictive and dangerous a person who smokes 10 cigarettes per day has an average life expectancy of 5 years shorter and is 20 times more likely to develop lung cancer than a non-smoker. According to WHO, the tobacco epidemic is one of the biggest public health threats facing the world, there are more than 7 million people per year die. More than 6 million of these deaths are active smokers, and around 890,000 are passive smokers, people who do not smoke but are exposed to cigarette smoke (Organization WH., 2017).

Indonesia is the third country with the largest number of smokers in the world after China and India. Increased cigarette consumption has an impact on the higher rates of cigarette disease and increased mortality. In 2030 it is estimated that the death rate

from smoking will reach 10 million and 70% of them come from developing countries. If this continues, 650 million people will be killed by cigarettes, of which half the productive age will lose their life. (Hartono, 2018)

Cigarettes have a negative impact on the health of various diseases that can occur due to smoking are lung cancer, hypertension, coronary heart disease, bronchitis and other diseases (Kesehatan, 2012). Because of the dangers of the effects of smoking, the government is trying to stop smoking. one of them is the inclusion of health hazard warnings on each front and back side of cigarette packs which contain images of physical conditions due to smoking, the application of Non-Smoking Areas including the provision that places for smoking in public places must be open spaces that are directly related to outside air, prohibited promotional advertisements and sponsorship, controlling advertising of tobacco products and broadcasting in the media.

Government efforts have been optimal to stop smoking for smokers, but quitting smoking is not an easy thing, many smokers after quitting smoking again and is called relapse. Relapse means a smoker returns to smoking regularly again after stopping. Most people who stop returning relapse, the rate of relapse usually occurs in the first week and 3 months

and also can relapse 1 year after stopping (Yong et al., 2018; Hughes et al., 2008).

Based on research, In 45 million Americans smoke, 70% smokers say they want to quit, some very addicted smokers make a serious effort to stop but are only able to stop for several hours, other smokers can stop within a month and every year only 3% of smokers are successful in quitting smoking. In other research, smokers tried to quit for the previous 12 months, and most fail to stop and relapse after cessation of assistance or without assistance. The risk of relapse is difficult to completely disappear and remains at 10% every year even after 30 years of abstinence (Benowitz, 2010; García-Rodríguez et al., 2013).

Factors of the effects of relapse were smoking due to a positive influence (36.6%) and negative effects (34.3%), lack of control (10.1%), smoking habits factors (6.7%), desire to smoke (6.3%), and social pressure (5.9%). Unemployment and having a mental disorder in the past increase the likelihood of relapse in a situation that has a negative impact. Being single and quitting smoking to save money is associated with an increased likelihood of relapse in positive influence situations (Piñeiro et al., 2017). Another factor is There was a significant interaction between number of friends who smoked and duration of abstinence, suggesting that a higher proportion of friends who smoke was only associated with an increased risk of relapse after approximately a month post quitting. Self-efficacy also a strong predictor (Herd et al., 2009). Lunden, Pittman, Prashad, Malhotra, & Sheffer, (2019) found other factors of relapse, 67% of respondents were engaged in routine activities when respondents initiated relapse, 26% were as a coping with new or different situations (Lunden et al., 2018).

The difficulty of quitting smoking is because when smokers stop smoking for only one hour, smokers will experience feelings of anxiety, feel very difficult to hold back, irritable, easily discouraged, and depressed. Smokers also experience sleep disorders, frequent waking at night, hunger, increased body weight, decreased ability to remember simple work, and encourage the emergence of compulsive behavior (Liem, 2010).

Based on the results of a preliminary survey in Indonesia, several workplaces were still seen by working smoking while working in a room that should not have been done. One of them is in the hospital health service. Coworkers are seen working while smoking in a closed room and the condition of the room using air condition. As many as 70% of them claimed to have stopped smoking especially

during working hours and tried not to smoke, but because the smoking cessation behavior made them feel uncomfortable, there was a desire to continue smoking especially when they saw friends smoking so that they eventually returned to smoking. In addition, 30% of workers feel more like working with smoking because smoking makes the body feel better and feels calmer. The number of cigarettes consumed in 80% of the workers surveyed spends up to 10 cigarettes per day, 20% of other workers spend up to 20 cigarettes per day. Although they have the intention and effort to quit smoking, they have not succeeded because of the above factors and even who can't afford to stop smoking at all. If viewed from previous research and from the survey results it can be concluded that there are several factors that can affect the relapse behaviour of smoking habits, positive factors as a form of pleasure and negative thinking factors. Thus, in this study we would like to examine further about factors related to relapse, anxiety, subjective happiness factor, and factor of nicotine dependence on smoking.

2 LITERATURE REVIEW

Definition of relapse: relapse is return to the initial behavior during the behavior change process (Bandura, 1995).

Relapse as a learning experience to focus coping skills, to know identify the prevent future. And the others defitions is subject who reported resuming smoking (even apuff) after obtaing 24 hours of abstinence (Borland et al., 2006).

Factors of relapse (Greenhalgh et al., 2016):

1. Physiological factors (e.g. level of nicotine dependence, withdrawal symptoms)
2. Behavioural factors (e.g slips-ups, pattern of smoking)
3. Environmental Factors (e.g living or working with smokers, having smoking friends, home or workplace subject to smoke, free policies or seeing tobacco product displayed)
4. Psychological or emotional/affective factors (e.g stress, depressions, happiness, anxiety, psychiatric disorders)
5. Cognitive factors (e.g knowledge, self-exempting belief, perceived disadvantages, motivation, self efficacy)
6. Barriers to acces to intervention (e.g affordable quitting medication.treatment programme)
7. Social Contact or life circumstances that may reult in the smoker giving quitting a low priority.

3 RESEARCH METHOD

3.1 Sample

Sample is representatives population based cross sectional study in which participants in this workers who smokers in workplace. Sample is 38 person with accidental sampling who was found smoking in the working room when the research was conducted.

3.2 Data Collection

Data collection is done with primary data in the form of a questionnaire. Questionnaire subjective happiness using the Oxford Happiness Questionnaire, An anxiety questionnaire uses the scale of the State-Trait Anxiety Inventory (S-AI) Form Y by Spielberg, the cigarette dependency questionnaire uses the Fagerstrom scale form. Data analysis used logistic regression analysis.

4 RESULT

Table 1: Charateristic and Odd Ratio (OR) with 95% Confidence Interval (CI)

Charateristic	Total	B	P (value)	95% CI
Time of relapse				
< 1month	12 (31.6%)	-	-	-
> 1 month	26 (68.4%)			
NRT Use				
Exist	0	-	-	-
Does not exist	38 (100%)			
Age group				
18-24	0			
25-34	9 (23.7%)			
35-44	20 (52.6)			
45-54	9 (23.7%)			
>55				
Education				
High school and below	0			
College/university and above	38 (100%)			
Variabel				
Nicotine dependency				
High Dependency	6 (15.8%)	10.195	0.006	1.769-58.750
Middle Dependency	20 (52.6%)			
Low Dependency	12 (31.6%)			
Subjective happiness				
Heavy Happiness	5 (13.25)	.83	.024	.010-.717
Middle Happiness	24 (63,2%)			
Low happiness	9 (23.7%)			
Anxiety				
High Anxiety	0	-	-	-
Middle Anxiety	29 (76.3%)			
Low Anxiety	9 (23.7%)			
Thought associated with Relapse				
Positive Thought	12 (31.6%)	.020	0.007	.001-.336
Negative Thought	26 (68.4%)			

Based on the results of the study it was found that 68.4% of respondents relapse smoking after more than one month of quitting smoking, and amounting to 31.6% of relapse only less than 1 month after quitting smoking. Smoking dependents were larger in the middle dependency category (52.6%), smokers with heavy dependence were 15.8% and smokers were mildly dependent 31.6%. Of the 38 respondents, most felt low of happiness, which was 23.7%, and respondents who had positive thoughts about smoking were 31.6% and those who had negative thoughts were 68.4%. Positive thinking that smokers know the dangers and effects of smoking but have not been able to stop smoking, while respondents think negatively about smoking such as feeling smoking is fun, smoking can solve problems and smoking can increase morale.

From the results of the regression analysis it was found that the subjective of happiness, nicotine dependency and thought of smoking variables had an influence on the relapse behaviour, while the most influential variable in this study was the nicotine dependency variable (p-value 0.006). Smokers who have a high dependency tend to have a greater chance of relapse by 10,195 in smokers who have low nicotine dependence.

5 DISCUSSION

Smoking is a habit that is difficult to stop because of the presence of addictive substances in cigarettes that make smokers become dependent and difficult to stop. This study was conducted to see the effect of the concepts of thought, anxiety, happiness and the level of nicotine dependence in relapse behaviour on workers at the X Hospital services in Kota Medan. From the results of the study it was found that the most influential factor on the behaviour of relapse was the factor of nicotine dependence. Other influential factors are happiness and thought.

5.1 Nicotine Dependence

Nicotine addiction is a condition when a person experiences dependence on nicotine substances found in tobacco products. The condition of nicotine addiction usually makes it difficult for smokers to escape the effects of nicotine. This is in line with the research of Febriyantoro (2016) which states that the initial response of unpleasant cigarettes will shift into obsessive activities which if stopped will cause imbalances in the body because initially smokers will feel bitter and cough and nauseous and will

eventually get used to it. To reduce this, smokers must continue to smoke and become dependent

When someone wants to quit smoking they will experience withdrawal symptoms known as things that have negative effects on the body such as depressed mood, insomnia, anxiety, difficulty concentrating, restlessness and cigarette craving. These symptoms can cause clinical, cognitive and social distress disorders. And this is the main cause of relapse of smokers to consume cigarettes (Caponnetto et al., 2012). According to Fagerstrom, many cigarette addicts show difficulties in quitting smoking permanently, even though smoking activities are very dangerous, smokers should be able to quit smoking easily, especially when smokers think of hazard risks in terms of health and health costs (Hearterton et al., 1991).

Based on the results of the study, nicotine dependence is the most influential factor in relapse behavior where a smoker who experiences a high dependency tends to relapse as much as 10,950 times greater than smokers who have a low dependency. According to the results of the study, smokers became dependent and could not stop smoking, especially at work because if they do not smoke, they find it difficult to concentrate, easily hungry, as a way to deal with drowsiness in working hours and because they see other co-workers smoking. Previously, the smokers who had been studied had already stopped either because of health conditions or because of the age with various periods of stopping, namely 2 days to the longest, namely 6 months. But it can't stop completely because of these factors. There were respondents who stated that after previously stopping. Other respondents are currently smoking more numbers after trying to quit smoking. He can spend up to 22 cigarettes per day which previously had a maximum of only 10 cigarettes per day. And other respondents stated that relapses smoke even if only a few cigarettes a day, but every day he feels obliged to consume cigarettes. Other respondents stated that the first activity after waking up in the morning was to take a shower while smoking and admit that it was already addicted to cigarettes.

Other smoking dependency behaviors appear to violate existing rules, namely those listed in Law No. 36 of 2009 concerning Health which also includes Non-Smoking Area Regulations where one of the areas including Non-Smoking is a Health Service Facility and Workplace.¹⁸ The hospital studied, smokers were seen smoking inside the room while working with rooms using AC, this is a sign of dependency where it is not able to resist not smoking

in the workplace, especially working in a health service place.

5.2 Happiness

This study states that there is an influence of happiness factors on relapse behavior. This is in line with the Stickle research study, et.al. (Stickley et al., 2015) this study examined the relationship between smoking status and happiness in nine FSU countries. We found that ex-smokers and never smokers were significantly happier than current smokers. Within the individual countries ex- smokers were happier than current smokers in all countries except Kyrgyzstan, with higher nicotine dependencies compared to smokers who had low levels of nicotine dependencies. Other studies have suggested that Happiness was significantly moderated between dependence and abstinence-induced increases in composite withdrawal ($\beta = 7.17, p < .001$), such that predictive power of dependence on withdrawal increased proportionately weaker levels of SH increased (Liataud et al., 2017).

One of the neurotransmitters in the brain is Dopamine, which functions to improve mood and activate feelings of pleasure. This is the reason why people smoke again. When quitting smoking, smokers will easily feel anxious and more irritable if their body does not get nicotine intake as their defence, smokers must return to smoke.

When a person smokes, it will quickly go to brain, nicotine then increases brain activity in the prefrontal lobe, cortex, thalamus and visual system, resulting in the release of dopamine which will trigger a pleasant sensation in the brain. Thus, smoking is used as an outlet when facing unpleasant problems, even though it is only a tentative feeling that is only felt throughout nicotine work alone (Nabila et al., 2017). The results of this study found that the tendency of higher relapse occurred at 0.83 times compared to smokers who feel more happy. Respondents in this study stated that relapse occurs because self-defence to mask unpleasant feelings becomes a pleasant feeling as an effect of nicotine work. As respondents felt that by returning to smoking the feeling of being passionate about work, feeling stressed could be lighter when smoking, and respondents also felt more relaxed, feeling they did not need to think hard because they would enjoy taking smoking. Smokers should realize that the emergence of happy feelings is only an immediate effect as a result of smoking, the feeling of pleasure they feel is not because they are positively happy, but only a temporary feeling that actually harms them.

5.3 Thought

According to the results of a previous study conducted by Febriyanto (Febriyanto et al., 2018), one of the causes of smoking dependence is the assessment of cigarette advertisements where men's perceptions of smokers look macho and can be through whatever obstacles occur in their lives. Some irrational thoughts on smokers are (Kesehatan et al., 2010) as an escape to create calm when facing severe problems, (Organization WH., 2017) facilitating concentration, (Hartono, 2018) preferring smoking rather than consuming alcohol. According to the Lundenet et al. study in 2019, 26% of respondents said that smoking was to get pleasure where when he woke up in the morning, the first thing he thought about was cigarettes. He imagined the cigarette in his mouth and wanted to immediately smoke as soon as he woke up in the morning. 19% of respondents reported that smokers did not want to stop smoking because when he thought not to smoke, it tormented him so that he did not want to stop smoking. Based on the results of this study, smokers who have negative thoughts about smoking have an opportunity to relapse than those who have a positive judgment from several recipes. in this study the respondents knew of the negative effects of smoking only the respondents ignored what they knew, because the thing they prioritized was they thought that cigarettes were good and they were still healthy by smoking because smoking can increase their enthusiasm. humans tend to do what they think, this is seen by respondents who have stated that cigarettes are fun and delicious, so it will be difficult to avoid cigarettes and it will continue and continue smoking. they should think more about the dangers and negative effects of smoking so that they can slowly leave their habit of not smoking anymore.

5.4 Strengths and Limitations

A major strengths of this study is we included some indicator (happiness, anxiety, thought o relapse, nicotine dependency) in the analysis, as far as, we know that have not been examined in Sumatera Utara before. From the result, have a insight could be improvement of smoking cessation or relapse prevention treatment. A limitation of this study is the data the collect at one moment (accidental sampling) so, the sample cannot be generalized. The second limitation is the data not bioche could be improvement of smoking cessation or relapse prevention treatment. A limitation of this study is the data the collect at one moment (accidental sampling)

so, the sample cannot be generalized. The second limitation is the data not biochemically validated. In this report related chemically validated. In this report related chemically validated. In this report related to social-desirability bias, we should be minimized.

5.5 Implication

This study emphasizes the importance of control nicotine dependency, so it is recommended for smokers, when they want to stop smoking it is better to do therapy related to nicotine replacement therapy so that smokers who have stopped can be consistent and not have relapse.

6 CONCLUSIONS

Based on the results of the research conducted, it was found that there are factors that influence the behavior of relapse in smokers, namely nicotine dependence, pleasure and thought factors. Whereas those that have no effect are intelligence. The most dominant factor influencing is the factor of nicotine dependence

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