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Original article

Personality traits and smoking behavior in patients at the Check – up Clinic, King Chulalongkorn Memorial Hospital

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Background: Cigarettes are caused of health issues and premature death of the smoking population, including the cause of other problems, such as other types of illegal drugs usage, which is the sources of crimes. Thus, recognition of smoking behavior will become increasingly important. Personality traits might associate with cigarette consumption. However, there are still restricted numbers of studies with conflicting data.

Objectives: To study factors association between personality and smoking behaviors in patients at the Check – up Clinic, King Chulalongkorn Memorial, Hospital.

Methods: This study is a cross-sectional descriptive study. Data collection was performed using a personal information questionnaire, Fagerstrom Test for Nicotine Dependence and International Personality Item Pool (IPIP). Demographic data were presented by frequency, percentage, mean and standard deviation (SD) and in-depth statistics and student unpaired *t* - test. The associated factors of personality traits were analyzed using Pearson correlation.

Results: One hundred and fifteen subjects had the average mean age of which 80.0% of the subjects were male. Subjects with smoking relatives were approximately found 55.7% and the smoking acquaintances were 99.1%. From last year, 89.6% of the subjects had used other abusing substance instead of cigarettes which was alcohol. None of any subjects had been using hazard narcotics such as amphetamine, crystal meth, marijuana, opium, morphine, and heroin. The subject's nicotine addiction average mean scores were mostly in low level which were classified as a non-addiction nicotine while the smoker's average IPIP Personality mean score had the lowest emotion stability of 3.7 ± 1.0 and had the highest agreeableness of 5.8 ± 1.1 .

Conclusions: Smokers had the lowest PIP Personality score in emotion stability aspect and the highest score in agreeableness aspect.

Keywords: Smoking behavior, five factor personality, cigarettes.

Cigarettes has been a type of narcotic which is harmful to smokers and surrounding people as it's also the cause of serious diseases that affects to the deaths of the population. The World Health Organization (WHO) had estimated that by 2030, there will be 8 million deaths per year from tobacco consumption (GCTR, 2008) and more than 600,000 deaths due to smoke exposure by smokers (WHO, 2011).⁽¹⁾ The Thai population's health impact of tobacco

consumption was found that tobacco consumption had a negative effect on health and is a major risk factor resulting in the third highest disease burden after the risk of inappropriate sexual behavior and alcohol risk factors.⁽²⁾ A study on the relationship between smoking behavior factors that was significantly related to smoking behaviors includes the following: amount of income, person living with, smoking family members, smoking close, smoking period, the amount of cigarettes consumed per day, residential area, income of parents or guardians, while the smoking effects on health perception had no differences.⁽³⁻⁵⁾ Smoking had affections in using drugs as the findings had shown that the research found that people who smoke are more likely to use other types of drugs more than non-smokers. Therefore, smoking may be a gateway drug to substance abuse.⁽⁶⁻⁸⁾

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Personality is an individual differences reflection had studied and categorized the division of personality traits in to 5 categories: neuroticism, extraversion, openness, conscientiousness, agreeableness^(9,10) as the source of accepted 5 personality traits in nowadays in applying to various cultures. According to the study of relationships of the 5 personality traits and the use of cigarettes, high scores were found in neuroticism, openness, extraversion and agreeableness and low score in conscientiousness.^(11 - 16)

According to such information, it is clearly that cigarettes are caused of health issues and premature death of the smoking population, including the cause of other problems, such as other types of illegal drugs usage, which is the sources of crimes. In average Thai population smokes 10 cigarettes every 15 years. Less than 15.1 million people smoke, such as 46.4% and those from the private sector more than 579 million (percentage 53.4%). However, there has never been a study of the 5 personality traits with smokers in Thailand. This study aimed to study factors association between personality and smoking behaviors in patients at Check-up Clinic, King Chulalongkorn Memorial Hospital.

Materials and methods

This study was a descriptive research in a particularity period. Research objectives were to study the smoking behaviors and related factors. Subject were smoking subjects group who took physical checkup at Preventive and Social Medicine Department, Chulalongkorn University, 115 subjects with aged more than 18 years old and were obtained through purposive sampling. Data were collected in April – May 2019. Research entering criterions were smokers aged more than 18 years old and is capable in listening, speaking, reading and writing in Thai language. The subject exclusion criterion was subjects with severe mental symptoms and cannot cooperate. This study has been approved by the Ethics Committee or the Institutional Review Board (IRB) of the Faculty of Medicine, Chulalongkorn University, Bangkok, Thailand, IRB No. 515/61. In the term of the

questionnaires, the researcher had collected the data and clarified the questionnaire by themselves. Statistical tests used were percent, frequency, averages, standard deviation, student unpaired *t* - test. The associated factors of personality traits were analyzed using Pearson correlation.

The general personal information questionnaire was consisted of gender, age, marital status, education level, occupation, current income, family members who are smokers, acquaintance who are smokers, history of congenital diseases, totally 12 items. In term of nicotine dependence, the authors used Fagerstrom Test for Nicotine Dependence⁽¹⁷⁾ which has test-retest reliability at 0.64 level which consisted of 6 questions. The high total score of the test can define the nicotine drugs addiction level as the criterion below:

- (0 - 3 points) Non-nicotine addiction;
- (4 - 5 points) Moderately nicotine addiction;
- (6 - 7 points) Moderately nicotine addiction with high tendency in turning to a high - level nicotine addiction;
- (8 - 9 points) Very high-level nicotine addiction;
- and,
- (10 points) The highest level of nicotine addiction.

However, the Thai version of International Personality Item Pool (IPIP) was implemented in assessing the personality traits with 60 items, 5 factors of personality traits including: neuroticism, extraversion, openness to experience, agreeableness, and conscientiousness, which can be calculated the full score by scoring 10 points on each factor of personality trait. If the score is lower than 5, it means that the personality trait in that factor is low, score 5 - 6 means that the personality trait in that factor is average and more than 6 points means that the personality trait in that factor is high. The neuroticism in this IPIP test has the opposite characteristic of the neuroticism in five-factor model personality. The IPIP was highly correlated with the NEO - FFI, which was the reliable tool measuring personality, level as the criterion below.

Factors of personality	Question	items
Emotion stability	1, 8, 15, 22, 29, 36, 42, 48, 49, 53, 54, 57, 58, 59, 60	15
Perfectionism	2, 9, 16, 23, 30, 37, 43, 47, 50, 52, 56	11
Conscientiousness	3, 6, 10, 13, 17, 20, 24, 27, 31, 34, 35, 38, 41, 44, 45	15
Openness	4, 7, 11, 14, 18, 21, 25, 28, 32, 39, 46, 51, 55	13
Agreeableness	5, 12, 19, 26, 33, 40	6

1 and 10 points, extremely deviation; 2, 3, 8, 9 points, strongly deviation; 4, 7 points, slightly deviation; 5, 6 points, average.

Statistical analysis

To summarize the characteristics of the participants, descriptive statistics, percentage and frequency were used for categorical variable and mean, standard deviation (SD) were calculated for continuous variable. Student unpaired *t* – test and Pearson correlation were used to explore the relationship between personality traits and smoking behavior. All statistics tests were considered significant at *P* < 0.05

Results

According to the 115 smoking subjects, found that 92 subjects (80.0%) were male with the average age of 38.6 ± 10.9 years, the lowest were 18 years, the highest were 65 years, the most status were marital status 68 subjects (59.1%), single status with 44

subjects (38.3%), widowed status with 2 subjects (1.7%), divorced/separated status with 1 subject (0.7%). Most educational level was secondary level with 33 subjects (28.7%) and the least minimum educational level was higher than Bachelor Degree (1.7%) with 2 subjects, average monthly income was 20,169.6 baht, minimum income was 4,000 baht and maximum income was 100,000 baht. Subjects with directed relationship smoking family members were 64 smokers (55.7%) and the smoking acquaintances were 99.1% with 114 subjects. From last year, 103 subjects (89.6%) had used other narcotic instead of cigarettes which was alcohol. Subjects with non-congenital disease were 102 subjects (88.7%), the most common congenital disease was hypertension with the number of 8 people (7.0%) (Table 1).

Table 1. Demographic characteristics of the subjects (n = 115).

Demographic data	n	Percentage
Age (years) 38.6 ± 10.9	115	100.0
Gender		
Male	92	80.0
Female	23	20.0
Career		
Trading	32	27.8
Employee	29	25.2
Private company	19	16.5
Unemployed	15	13.0
Private business	5	4.4
Government official	4	3.5
Retirement	2	1.7
Others	9	7.8
Marital		
Single	44	38.3
Married	68	59.1
Widow	2	1.7
Divorced/Separated	1	0.7
Education		
Primary school	18	15.7
Secondary school	33	28.7
High school/Vocational	30	26.1
Diploma/Diploma	14	12.2
Bachelor	17	14.8
Higher than bachelor's degree	2	1.7
Others	1	0.9
Monthly income Median = 20,000, IQR = 12,000, 25,000		
Smoking family members with directed relationship		
acquaintance smokers	64	55.7
Groups of drug users last year	114	99.1
Alcoholism	103	89.6
Others	0	0.0
Congenital diseases	13	11.3
High blood pressure	8	7.0
Rheumatism	4	3.5
Diabetes	3	2.6
Hyperlipidemia	2	1.7
Digestive diseases	2	1.7
Circulatory disease and heart disease	1	0.9

The results of the study showed that the average score of nicotine addiction in the subject was mostly in the non - nicotine group with a score of 0 - 3 with the number of 105 people (91.3%) and moderately nicotine addiction and have a high chance to develop into a high-level nicotine addiction with the number of 10 people (8.7%) (Table 2).

The subjects of IPIP personality test average score classified into emotion stability was 3.7 ± 1.0 , extraversion was 4.8 ± 0.8 , openness was 5.3 ± 1.0 , conscientiousness was 5.7 ± 0.8 and agreeableness is 5.8 ± 1.1 . The IPIP personality average score descending to ascending were: agreeableness, conscientiousness, openness, extraversion and emotion stability (Table 3).

The IPIP personality average score of extraversion aspect in non-nicotine addiction subjects was 4.7 ± 0.8 and in moderately nicotine addicted subjects was up to 5.3 ± 0.6 (Table 4).

The comparison results of IPIP personality test classified. The comparison results of IPIP personality test classified by other substance abuse in a year found that emotion stability personality users were 4.3 ± 1.3 and the non - users were 3.6 ± 0.9 with statistically significant differences at the level 0.05 (Table 5). Substance abuse was alcohol and none of any subjects had been using hazard narcotics. Moreover, the comparison results of IPIP personality test classified by smoking family members with directed relationship found that conscientiousness, openness, agreeableness were different statistically significant at the level 0.05.

Table 2. The average of nicotine dependence scores (n = 115).

Nicotine dependence score	n	Percentage
Non-nicotine addiction (0 - 3 points)	105	91.3
Moderately nicotine addiction (4 - 5 points)	8	7.0
Moderately nicotine addiction and have a high chance to develop into a high-level nicotine addiction (6 - 7 points)	2	1.7
Very high-level nicotine addiction (8 - 9 points)	0	0.0
The highest level of nicotine addiction (10 points)	0	0.0

Table 3. The average of IPIP personality scores.

IPIP personality score	n = 115 Average score (Max 10)
Emotion stability Min = 1.3, Max = 7.0, Median = 3.7	3.7 ± 1.0
Extraversion Min = 2.3, Max = 6.4, Median = 4.8	4.8 ± 0.8
Conscientiousness Min = 4.0, Max = 7.5, Median = 5.7	5.7 ± 0.8
Openness Min = 2.5, Max = 7.1, Median = 5.8	5.3 ± 1.0
Agreeableness Min = 3.8, Max = 8.8, Median = 5.8	5.8 ± 1.1

Table 4. Association between nicotine dependence score and personality traits (n = 115).

Personality traits	Personality score				<i>t</i>	<i>P</i> - value
	Non-drug addiction		Moderately drugs addiction			
	Mean	SD	Mean	SD		
Emotion stability	3.7	1.0	4.4	1.1	-1.902	0.085
Extraversion	4.7	0.8	5.3	0.6	-2.617	0.022*
Conscientiousness	5.7	0.8	5.6	0.8	0.451	0.661
Openness	5.3	1.0	5.5	0.7	-0.744	0.470
Agreeableness	5.7	1.1	6.4	1.0	-1.935	0.079

**P* < 0.05

Table 5. The results of the comparison of the average of personality scores.

Personality traits	Substance usage in one year		<i>P</i> - value
	Non-drugs usage n = 12	Drugs usage n = 103	
Emotion stability	3.6 ± 0.9	4.3 ± 1.3	0.001*
Extraversion	4.9 ± 0.8	4.4 ± 0.8	0.135
Conscientiousness	5.7 ± 0.8	5.6 ± 0.9	0.126
Openness	5.4 ± 0.9	5.0 ± 1.3	0.875
Agreeableness	5.9 ± 1.1	5.4 ± 1.1	0.344

**P* < 0.05

Discussions

The research.⁽¹¹⁾ found that smokers had high score in neuroticism personality which was consistent with this study found that the subjects had low score classified into emotion stability.⁽¹²⁻¹⁵⁾ Therefore, the study⁽¹⁶⁾ on African-American subjects found that emotional instability score (neuroticism) had higher risk of smoking. On the contrary, it was not found in low scores of conscientiousness which was consistent with the research.⁽¹¹⁻¹⁶⁾ From the study, it was found that the subjects had a high score of conscientiousness and the highest agreeableness score which wasn't consistent.⁽¹²⁾ The IPIP personality average score in extraversion was statistically significant related to nicotine addiction at the level 0.05 which was consistent with.^(12,14) There is no significant relationship and if compared the average score of IPIP personality. In addition, the average scores of IPIP personality on neuroticism of substance abuse users last year were 4.3 ± 1.3 and the non - substance abuse users were 3.6 ± 0.9 had significant differences at the level of 0.05. Combinations of personality traits (styles or types) have been related to smoking, reported that the impulsive and insecure personality types, which are both characterized by low

conscientiousness and high neuroticism, are more likely to be current smokers. Analyses on the present subject are highly consistent with their findings and are some what consistent with the findings of an interaction between neuroticism and psychoticism but not with the finding of interaction between neuroticism and extraversion and the level of conscientiousness seems to be a moderator factor in the relationship between neuroticism and smoking. Neuroticism was related to smoking particularly among individuals with low scores.⁽¹⁹⁻²⁰⁾

Factors related to smoking behavior found that subjects with directed relationship family member smokers were 55.7% and acquaintance smokers were 99.1%, which was consistent with the study of⁽⁴⁻⁵⁾ found that smokers used other types of drugs such as alcohol, 89.6%, but did not find any other serious type of narcotics according to study of⁽⁶⁾ which was probably because the research subjects were not able to provide actual information according to the culture and the data collection in such place contained just a general health examination department, so there is a small possibility that people with serious substance abuse will be found.⁽⁶⁻⁸⁾

The limitation of this study is to be a cross-sectional descriptive study in the subjects of smokers who were admitted only to the Department of Preventive and Social Medicine Department only. Therefore, it cannot be used as a substitute for general smokers and may have independent variables that are other common factors related to personality and behavior of smoking and not in the scope of the study. Moreover, most subjects were not considered non-nicotine dependence. Suggestions for further studies should study in the larger subject group to be used as a representative of the general population should study factors related to personality and smoking behavior in various dimensions. However, further study should study in nicotine dependence subjects with additional assessment or mini-interview.

Conclusion

Smokers had the lowest IPIP personality score in emotion stability aspect and the highest score in agreeableness aspect.

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Conflict of interest

The authors, hereby, declare no conflict of interest.

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