



A Comparative Study Between Nicotine Dependents and Non-Nicotine Dependents on Stress.

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Abstract:

This research was a comparative study between 104 nicotine dependent and 106 non-nicotine dependent adults on sub-scales of Stress. Nicotine Dependence was measured using by using the Fagerstrom Test for Nicotine Dependence. In order to identify the sample for nicotine dependence Fagerstrom Test for Nicotine Dependence was used and a criterion was set. For, that purpose individuals obtaining a score of 5 and above on the scale were selected in the group for nicotine dependence. Non-Nicotine dependent were defined as those who have never smoked in their lifetime. Stress was measured by the Smiths Stress Symptom Inventory Scale (2002) developed by Smith. Using the technique of stratified random sampling, 210 English-speaking adults who had a minimum education of 12th standard in the age range of 18-24 years with a middle class status from the urban area of Pune city were selected for this study. A randomized between-group post-test design was used. Using the statistical analysis of variance, for nicotine dependent and non-nicotine dependent group on the sub-scales of stress the degree of freedom (df) and significance was obtained. For the sub-scale of worry/ negative emotions, Attention deficits, Autonomic arousal/ Anxiety, Striated muscle tension, Depression and Interpersonal conflict/ Aggression the df obtained was 1 and the significance was 0.00 for all the sub-scales other than depression sub-scale which was 0.003. Thus, it was found that nicotine dependents scored significantly higher on all the sub-scales of stress than non-nicotine dependents.

Keywords: Nicotine Dependence, Stress.

INTRODUCTION:

Nicotine dependence (addiction) would be defined as a “behavioural pattern in which the use of a given psychoactive drug is given sharply higher priority over other behaviours which once had a significantly higher value” (World Health Organization, 2002). Nicotine addiction is now referred to as tobacco use disorder in the *Diagnostic and Statistical Manual of Mental Disorders, Fifth Edition (DSM-5)* (American Psychological Association, 1994).

STRESS

Stress is defined as “The physiological response of the body to external stressors.” (Selye, 1974). Stress involves external stimuli, the physiological response that mediate between stimulus and response” (Cox, 1975; cited in Juneja, 2004).

STATEMENT OF THE PROBLEM:

To compare stress between nicotine dependent and non- nicotine dependent.

RATIONALE OF THE STUDY:

The researcher has chosen the topic due to personal and psychological significance. The study can be of importance to the field of psychology in assessing people to get a broader view about the psychological effects of nicotine dependence on stress. Therefore, the study will help spread awareness on a global level as it will educate the youth that smoking has a direct effect on health. Thus, the present study can benefit the society as a whole to overcome this bad habit and search for a better means to deal with their stress so that they can sustain healthy relationships.

SIGNIFICANCE OF THE STUDY

The present study is an attempt to help spread awareness about nicotine dependence and its effect on stress, and in turn on the individual's health. It can help spread awareness on global level that smoking does not add as shelter to overcome stress and can help overcome the misconception that smoking is a form of relaxation or that it reduces stress. The study can

enhance nicotine patch treatment or nicotine replacement therapy for smoking cessation through increased awareness in society.

OBJECTIVE OF THE STUDY.

1. To study and compare stress between nicotine dependents and non- nicotine dependents.

LITERATURE REVIEW

This literature review is based on which the hypothesis was formulated.

Since the tool has 6 sub- scales the hypothesis was formulated based on the 6 sub- scales

NICOTINE DEPENDENCE AND WORRY/ NEGATIVE EMOTIONS

Strine et. al.(2005) upon administering the HRQOL (Health Related Quality of Life) survey to individuals over 18 it was found that smokers have poorer mental health than people who never smoked (Strine et. Al, 2005).Feldner et. al. (2007) investigated the association between post-traumatic stress symptoms and smoking motives, revealing that higher levels of post- traumatic stress symptoms were linked with smoking to reduce negative mood states (Feldner et. Al, 2007).

NICOTINE DEPENDENCE AND ATTENTIONAL DEFICITS

A study by Paul et al, (2006) concluded that smokers showed deficits on complex cognitive tasks when compared with non-smokers.Sabia et al (2008) concluded that smokers performed worse on memory recall and fluency tasks when compared with non-smokers and ex-smokers (Paul et al,2006)

NICOTINE DEPENDENCE AND ANXIETY

Johnson et al (2000) Heavy smoking was reported to be associated with onset of anxiety disorders during adolescence and adulthood.Soest (2009) concluded that smoking dependence was associated with anxiety symptoms (Soest, 2009).

NICOTINE DEPENDENCE AND DEPRESSION

Goodman and Capitan (2000) found that current smoking was a strong predictor of developing depressive symptoms. A research was conducted by Breslau, Kilbey and Andreski (1991) they found that there is an association between nicotine dependence and depression (Breslau, Kilbey and Andreski, 1991).

NICOTINE DEPENDENCE AND INTERPERSONAL CONFLICTS

Sharma et al, (2011) revealed that smokers irrespective of age and type of school were significantly higher on stress, anxiety, family conflict and family control. Sumariya and Malik (2009) hypothesized that smokers are more aggressive compared to non-smokers.

NICOTINE DEPENDENCE AND STRAINED MUSCLE TENSION

Alkherayf et al, (2009) found that daily smokers especially men are at higher risk than non-smokers and occasional smokers for developing low back pain. Ditre et al, (2011) found that smoking may be a risk factor for development of pain along with worsening pain that already exists (Ditre et al, 2011).

METHODOLOGY**VARIABLES, DEFINITION AND HYPOTHESIS.****i) Independent variable: Nicotine dependence**

Definition: Nicotine dependence (addiction) would be defined as a behavioural pattern in which the use of a given psychoactive drug is given sharply higher priority over other behaviours which once had a significantly higher value (World Health Organization, 1982). Thus, nicotine dependence is characterized by both tolerance and withdrawal symptoms in relation to nicotine use (DSM-V).

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Hence, nicotine dependence can be measured by using Fagerstrom Test for Nicotine Dependence as a tool. For, that purpose individuals obtaining a score of 5 and above on the scale were selected in the group for nicotine dependence.

Non- Nicotine dependent were defined as those who have never smoked in their lifetime.

ii) Dependent variable: Stress

Definition: Stress is the physiological response of the body to external stressors (Selye, 1974).

Hence, stress can be measured using Smith's Stress Symptom Inventory as a tool.

iii) Controlled variables:

- Age range
- Socio-economic status
- Minimum qualification

HYPOTHESES

- 1) The scores on worry/ negative emotions will be significantly higher among nicotine dependents than non- nicotine dependents.
- 2) The scores on attentional deficits will be significantly higher among nicotine dependents than non- nicotine dependents.
- 3) The scores on Autonomic arousal/ anxiety will be significantly higher among nicotine dependents than non- nicotine dependents.
- 4) The scores on striated muscle tension will be significantly higher among nicotine dependents than non- nicotine dependents.
- 5) The scores on depression will be significantly higher among nicotine dependents than non- nicotine dependents
- 6) The scores on Striated muscle tension will be significantly higher among nicotine dependents than non- nicotine dependents.

SAMPLE

The sample included 210 adults inclusive of 51 females and 53 males (104 nicotine dependent adults), 53 males and 53 females (106 non-nicotine dependent adults). The Sample was selected from middle-class families belonging to Pune city, age range was 18 to 24 years, XIIth standard English medium, nicotine dependent sample was selected by measuring their intensity for physical dependence to nicotine.

TOOLS**Fagerstrom Test for Nicotine Dependence (FTND) by Fagerstorm, 1991**

Fagerstrom Test for Nicotine Dependence (FTND) was developed in 1991 by Fagerstorm and is a self-report measure that assesses intensity of physical dependence to nicotine(Heatherton et al., 1991). The 6 items in Fagerstrom test of nicotine dependence include 2 items on Heaviness of Smoking Index. The items are summed to yield a total score of 0-10ranging from very low dependence to very high dependence.

3.3.2.ii) Smith's Stress Symptom Inventory (SSSI) by Smith,2002

The Smiths Stress Symptom Inventory (SSSI) for measuring stress was developed in 2002 by Smith to measure frequently reported stress symptoms. The fourpointLikert type scale that measures frequently reported stress symptoms including 6 symptom categories: worry/negative emotion, attentional deficits, striated muscle tension, autonomic arousal/anxiety, depression, interpersonal conflict/anger. The scale included 35items (trait version).

EXPERIMENTAL DESIGN

Randomized Two-Group post-test.

STATISTICAL ANALYSIS:

The research being a comparative research between nicotine-dependents and non- nicotine-dependents on the sub-scales of stress there will be two different groups which would estimate

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two different means and the independent variable has 2 or more categories; therefore, ANOVA was used.

The difference between means, with the standard error taken into account, will give a level of significance, the exact level at which values are significant from each other. Statistical analysis was done with the help of statistical software SPSS and was used as the research finding.

RESULTS

The statistics used to analyze the data collected was Descriptive Statistics and One Way Analysis Of Variance (ANOVA)

Table.a. Descriptive

Table a. showing Group Statistics on the sub-scales of Stress among Nicotine Dependents and Non- Nicotine Dependents.

	N	MEAN	Std. Deviation	Std. Error
W/NE Non-Nicotine Dependents	106	21.689	6.1896	0.6012
Nicotine Dependents	104	24.865	5.3717	0.5267
Total	210	23.262	6.0002	0.4141
AD Non-Nicotine Dependents	106	12.915	3.9668	0.3853
Nicotine Dependents	104	14.856	3.6455	0.3575
Total	210	13.876	3.9244	0.2708
AA/A Non-Nicotine Dependents	106	19.717	5.5080	0.5350
Nicotine Dependents	104	25.442	5.4127	0.5308
Total	210	22.552	6.1574	0.4249
SMT Non-Nicotine Dependents	106	7.764	2.8269	0.2746
Nicotine Dependents	104	9.577	2.7824	0.2728
Total	210	8.662	2.9420	0.2030
D Non-Nicotine Dependents	106	4.198	1.6757	0.1628
Nicotine Dependents	104	4.923	1.8259	0.1720
Total	210	4.557	1.7849	0.1232
IC/A Non-Nicotine Dependents	106	11.604	3.6559	0.3551
Nicotine Dependents	104	13.519	3.6417	0.3571
Total	210	12.552	3.7646	0.2598

From table a. it was observed that the total number of participants (N) included in the study was 210 adults. The total number of nicotine dependent adults was 104 and the total number of non-nicotine dependent adults was 106.

The mean, standard deviation and standard error of mean for the nicotine dependent and non-nicotine dependent groups were further discussed depending on the sub-scales of stress respectively.

Worry/ Negative Emotions

The mean for non- nicotine dependent adults on worry/ negative emotions was 21.869, the standard deviation was 6.1896 and the standard error of mean was 0.6012

The mean for nicotine dependent adults on worry/ negative emotions was 23.865, the standard deviation was 5.3717 and the standard error of mean was 0.5267.

The total mean calculated for the two groups was 23.262, the standard deviation was 6.0002 and the standard error of mean was 0.4141 respectively.

Attentional deficits

The mean for non- nicotine dependent adults on attentional deficits was 12.915, the standard deviation was 3.9668 and the standard error of mean was 0.3853

The mean for nicotine dependent adults on attentional deficits was 14.856, the standard deviation was 3.6455 and the standard error of mean was 0.3575

The total mean calculated for the two groups was 13.876, the standard deviation was 3.9244 and the standard error of mean was 0.2708 respectively.

Autonomic arousal/ anxiety

The mean for non- nicotine dependent adults on Autonomic arousal/ anxiety was 19.717, the standard deviation was 5.5080 and the standard error of mean was 0.5350.

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The mean for nicotine dependent adults on Autonomic arousal/ anxiety was 25.442, the standard deviation was 5.4127 and the standard error of mean was 0.5308

The total mean calculated for the two groups was 22.552, the standard deviation was 6.1574 and the standard error of mean was 0.4249 respectively.

Striated Muscle Tension

The mean for non- nicotine dependent adults on striated muscle tension was 7.764, the standard deviation was 2.8269 and the standard error of mean was 0.2746

The mean for nicotine dependent adults on striated muscle tension was 9.577, the standard deviation was 2.7824 and the standard error of mean was 0.2728

The total mean calculated for the two groups was 8.662, the standard deviation was 2.9420 and the standard error of mean was 0.2030 respectively.

Depression

The mean for non- nicotine dependent adults on depression was 4.198, the standard deviation was 1.6757 and the standard error of mean was 0.1628

The mean for nicotine dependent adults on depression was 4.923, the standard deviation was 1.8259 and the standard error of mean was 0.1720

The total mean calculated for the two groups was 4.557, the standard deviation was 1.7849 and the standard error of mean was 0.1232 respectively.

Interpersonal conflicts/ aggression

The mean for non- nicotine dependent adults on interpersonal conflicts/ aggression was 11.604, the standard deviation was 3.6559 and the standard error of mean was 0.3551

The mean for nicotine dependent adults on interpersonal conflicts/ aggression was 13.519, the standard deviation was 3.6417 and the standard error of mean was 0.3571

Nicotine Dependents and Non-Nicotine Dependents on Stress.

The total mean calculated for the two groups was 12.552, the standard deviation was 3.7646 and the standard error of mean was 0.2598 respectively.

Table b. Analysis Of Variance

Table b. showing the Analysis Of Variance (ANOVA) for nicotine dependents and non-nicotine dependents on the sub-scales of stress.

		Sum of Squares	df	Mean Square	F	Sig.
W/NE	Between Groups	529.753	1	529.753	15.753	.000
	Within Groups	6994.842	208	33.629		
	Total	7524.595	209			
AD	Between Groups	197.709	1	197.709	13.612	.000
	Within Groups	3021.072	208	14.524		
	Total	3218.781	209			
AA/A	Between Groups	1720.761	1	1720.761	57.699	.000
	Within Groups	6203.163	208	29.823		
	Total	7923.924	209			
SMT	Between Groups	172.507	1	172.507	21.926	.000
	Within Groups	1636.488	208	7.868		
	Total	1808.995	209			
D	Between Groups	27.590	1	27.590	8.992	.003
	Within Groups	638.224	208	3.068		
	Total	665.814	209			
IC/A	Between Groups	192.604	1	192.604	14.466	.000
	Within Groups	2769.320	208	13.314		
	Total	2961.924	209			

The degree of freedom, F value and significance for the nicotine dependent and non-nicotine dependent group was discussed depending on the sub-scales of stress respectively.

Worry/negative emotions.

From table b. it was observed that for the worry/ negative emotions subscale the degree of freedom (df) obtained was 1, the F value was 15.753 and the significance was 0.00 indicating that there was a significant difference between the two groups.

Attentional deficits

From table b. it was observed that for the Attentional deficits subscale the degree of freedom (df) obtained was 1, the F value was 13.612 and the significance was 0.00 indicating that there was a significant difference between the two groups.

Autonomic arousal/Anxiety

From table b. it was observed that for the Autonomic arousal/ Anxiety subscale the degree of freedom (df) obtained was 1, the F value was 57.699 and the significance was 0.00 indicating that there was a significant difference between the two groups.

Striated muscle tension

From table b. it was observed that for the striated muscle tension subscale the degree of freedom (df) obtained was 1, the F value was 21.926 and the significance was 0.00 indicating that there was a significant difference between the two groups.

Depression

From table b. it was observed that for the depression subscale the degree of freedom (df) obtained was 1, the F value was 8.992 and the significance was 0.003 indicating that there was a significant difference between the two groups.

Interpersonal conflict/ aggression

From table b. it was observed that for the interpersonal conflict/aggression subscale the degree of freedom (df) obtained was 1, the F value was 14.466 and the significance was 0.00 indicating that there was a significant difference between the two groups.

DISCUSSION

It could be observed from table a and table b that for nicotine dependents and non-nicotine dependents the significance was 0.00 on the subscale of worry/negative emotions. The mean for non- nicotine dependents was 21.869 and for nicotine dependents was 23.865. Thus, indicating that nicotine dependents were significantly higher than non-nicotine dependents on worry/negative emotions. Therefore, the hypothesis stating that “The scores on worry/ negative emotions will be significantly higher among nicotine dependents than non- nicotine dependents” was accepted.

It could be observed from table a and table b that for nicotine dependents and non-nicotine dependents the significance was 0.00 on the subscale of attentional deficits. The mean for non- nicotine dependents was 12.915 and for nicotine dependents was 14.856. Thus, indicating that nicotine dependents were significantly higher than non-nicotine dependents on attentional deficits. Therefore, the hypothesis stating that “The scores on attentional deficits will be significantly higher among nicotine dependents than non- nicotine dependents” was accepted.

It could be observed from table a and table b that for nicotine dependents and non-nicotine dependents the significance was 0.00 on the subscale of Autonomic arousal/ anxiety. The mean for non- nicotine dependents was 19.717 and for nicotine dependents was 25.442. Thus, indicating that nicotine dependents were significantly higher than non-nicotine dependents on Autonomic arousal/ anxiety. Therefore, the hypothesis stating that “The scores on Autonomic arousal/ anxiety will be significantly higher among nicotine dependents than non- nicotine dependents” was accepted. It could be observed from table a and table b that for nicotine dependents and non-nicotine dependents the significance was 0.00 on the subscale of striated muscle tension The mean for non- nicotine dependents was 7.764 and for nicotine dependents was 9.577. Thus, indicating that nicotine dependents were significantly higher than non-nicotine dependents on striated muscle tension. Therefore, the hypothesis stating that “The scores on striated muscle tension will be significantly higher among nicotine dependents than non- nicotine dependents” was accepted.

It could be observed from table a and table b that for nicotine dependents and non-nicotine dependents the significance was 0.003 on the sub-scale of depression The mean for non-nicotine dependents was 4.198 and for nicotine dependents was 4.923. Thus, indicating that

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nicotine dependents were significantly higher than non-nicotine dependents on depression. Therefore, the hypothesis stating that “The scores on depression will be significantly higher among nicotine dependents than non- nicotine dependents” was accepted.

It could be observed from table a and table b that for nicotine dependents and non-nicotine dependents the significance was 0.00 on the sub-scale of interpersonal conflicts/ aggression .The mean for non- nicotine dependents was 11.604 and for nicotine dependents was 13.519. Thus, indicating that nicotine dependents were significantly higher than non-nicotine dependents on interpersonal conflicts/ aggression. Therefore, the hypothesis stating that “The scores on interpersonal conflicts/ aggression will be significantly higher among nicotine dependents than non- nicotine dependents” was accepted.

CONCLUSION

The conclusions of the study are as follows:

- The hypothesis stating that “The scores on worry/ negative emotions will be significantly higher among nicotine dependents than non- nicotine dependents” was accepted.
- The hypothesis stating that “The scores on attentional deficits will be significantly higher among nicotine dependents than non- nicotine dependents” was accepted.
- The hypothesis stating that “The scores on Autonomic arousal/ anxiety will be significantly higher among nicotine dependents than non- nicotine dependents” was accepted.
- The hypothesis stating that “The scores on striated muscle tension will be significantly higher among nicotine dependents than non- nicotine dependents” was accepted.
- The hypothesis stating that “The scores on depression will be significantly higher among nicotine dependents than non- nicotine dependents” was accepted.
- The hypothesis stating that “The scores on interpersonal conflicts/ aggression will be significantly higher among nicotine dependents than non- nicotine dependents” was accepted.

LIMITATIONS OF THE STUDY:

Nicotine Dependents and Non-Nicotine Dependents on Stress.

- Participants were limited to those between the age range of 18 to 24 years belonging to middle class from Urban area of Pune city only were included.
- Research included only those participants scoring moderate or higher (5 and above) on nicotine dependence
- Research included individuals smoking cigarettes but did not include those consuming smokeless tobacco or any other tobacco product containing nicotine
- The test being a self-report questionnaire, the possibility of social desirability and response biases cannot be ruled out.

SUGGESTIONS FOR FUTURE RESEARCH:

- Expanding sample size
- Including different metropolitan cities
- Including all the strata of the society
- Compare stress levels among high nicotine dependents and non-nicotine dependents by including a third category for low nicotine dependence due to the variation in intensity/degree of nicotine dependence.

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