Exploring The Social, Cognitive And Biological Motives Behind Smoking Dependence In Relation To Stress Among Young Adults.

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Abstract

The study aimed to unfold the social, cognitive, and behavioural motives behind smoking dependence in relation to stress among young adults. A sample of 100 subjects in the age group between 18 and 25 was selected through purposive sampling. To assess these variables, tools including Wisconsin Index of Smoking Dependence Motives (WISDM) (Piper ME, Piasecki TM, Federman EB, Bolt DM, Smith SS, Fiore MC, Baker TB. 2004). Perceived Stress Scale (PSS) Cohen, S., & Williamson, G. (1988) were used. The data obtained were analysed using Pearson correlation coefficient. The results showed that there existed a significantly positive correlation all the 11 motivational domains and stress , starting with affiliative attachment(r= .415**, p <0.01) , automaticity(r= .419**, p<0.01), loss of control(r= .289**, p<0.01), cognitive enhancement(r= .370**, p<0.01), craving(r= .466**, p< 0.01), cue exposure/associative processes(r= .418**, p<0.01), Affective Enhancement(r= .418**, p<0.01), social/environmental goals(r= .242**, p<0.01), taste/sensory properties(r= .396**, p<0.01), While Tolerance(r= .096, p<0.01) and weight control (r= .414**, p<0.01) had comparatively weaker positive correlation with stress The study gives an overall understanding as to how a person cope with stress depending on smoke and what are the motivations behind smoking. This suggests a potential intervention scope for either of the two variables to curb various mental health conditions with physical health and, other emotional difficulties.

Keywords: Smoking Dependence, social motives, cognitive motives behavioural motives, affiliative attachment, automaticity, loss of control, cognitive enhancement, craving, cue exposure/ associative processes, social/environmental goals, taste and sensory process, tolerance, taste, affective enhancement, weight control.

1. Introduction

Smoking involves the act of inhaling and exhaling the fumes produced by burning various plant materials, with tobacco being the most commonly associated substance. The latent establish of substance dependence, which encompasses all psychoactive substances, is defined by the Diagnostic and Statistical Manual of Mental Disorders, Fourth Edition (DSM-IV; American Psychiatric Association [APA], 1994) as a collection of cognitive, behavioural, and physiological symptoms that characterize compulsive use.

Quitting smoking can also significantly improve overall health and reduce the burden of stress-related health risks. It is worth noting that while smoking may temporarily provide a perceived relief from stress, the long-term health consequences and negative impact on overall well-being far outweigh any potential short-term benefits. Developing healthier coping mechanisms and seeking support are crucial in managing stress effectively without relying on smoking. Such more extensive networks of friends in turn affect choices about smoking and other health behaviours. Despite the fact that the idea of connected lives usually involves personal relationships, we argue that interconnected lives should also take into account fewer intimate relationships, such as those with neighbours and colleagues, as these interpersonal relationships are probably important for one's well-being and health (Erickson, 2003)

Pandey, Ravi Pratap (2019) investigated three hypotheses, The first hypothesis suggested that smoking beliefs would be negatively linked to smoking behaviour and positively associated with the mental health of youth. The second hypothesis proposed that autonomous behaviour would be negatively related to smoking behaviour and positively related to mental health compared to motivation and amotivation. The third hypothesis stated that family and school involvement would have a negative correlation with smoking behaviour and a positive correlation with mental health. Conversely, incremental beliefs, autonomous motivation, family participation, cohesiveness, expressiveness, and autonomy were linked to reduced smoking behaviour and improved mental health in adolescents. The study emphasized the importance of interventions that foster healthy relationships within the family and school environments to promote youth happiness and decrease smoking behaviour. These findings underscore the significance of incorporating these factors into strategies aimed at addressing the psychological well-being of young individuals.

Thomeer, et al., (2019) conducted a study investigating how social connections influence smoking behaviour throughout the life course. While demographic factors related to smoking are well-known, understanding why individuals start, quit, or avoid smoking, and how these reasons are linked to their relationships, remains limited. To explore this, the researchers conducted in-depth interviews with 60 individuals aged 25 to 89. Participants shared their experiences and motivations related to smoking, including their initiation, continuation, quitting, or avoidance of smoking. The findings revealed that social ties have both positive and negative effects on smoking behaviour at different stages of life. Those who never smoked and consistent smokers emphasized the role of initial social ties in their decision to smoke, considering subsequent relationships to have less influence. However, individuals who quit smoking or experienced relapses attributed their smoking behaviour to mature social ties. Quitting individuals emphasized the importance of social relationship transitions, while relapsed smokers cited increased instability in interpersonal relationships as a reason for fluctuating nicotine consumption. The study highlights the critical role of social connections in shaping smoking behaviour trajectories throughout one's life, emphasizing the need to consider social ties when examining smoking patterns and developing interventions to promote healthier behaviours.

Scales, et al., (2009) In their study the aim was to explore the adolescents' beliefs about smoking as a stress-relieving mechanism and the sources of these beliefs. The findings revealed that participants mentioned using cigarettes to calm their nerves, seeking social acceptance, and being influenced by their environment as reasons for smoking. They also identified family issues, romantic relationship problems, and school-related stress as common stressors. While most participants believed that smoking helps alleviate stress, a few held the belief that cigarettes do not actually reduce stress. When discussing smoking in popular media, participants predominantly referred to instances where individuals smoke to cope with stress.

2. Methodology

3.1. AIM: To Explore the social, biological and cognitive smoking motives and its dependence in relation to stress among young adults.

3.2. RESEARCH PROBLEM: To examine the relationship between social, biological and cognitive motives between smoking dependence and perceived stress among young adults.

3.3. OBJECTIVES:

- To examine the social, cognitive, and biological motives involved in smoking dependence among young adults experiencing stress.
- To identify the specific cognitive, social, and biological factors that mediate or moderate the relationship between stress and smoking dependence among young adults.
- To provide recommendations for the development of targeted interventions and prevention strategies addressing stress-related smoking dependence among young adults.

3.4. HYPOTHESES:

H1. There will be a significant relation in social, cognitive, and biological smoking dependence motives and stress tendency.

H2. There will be a significant effect of smoking dependence motives from stress.

3.5. SAMPLE:

The size of the sample was 100. Participants were young adults aged 18-28, having different occupations.

- ❖ Inclusion criteria
    1. The students should be smoking on daily basis.
    2. Should understand English.
    3. Young adults both male and female (50 male & 50 female) within the age group of 18-28.
- ❖ Exclusion criteria
    1. Students without smoking background should be excluded.
    a. **RESEARCH DESIGN:**

The Research type is Exposed Facto Design.

b. **MEASURES:**

1. **Brief Wisconsin Index of Smoking Dependence Motives Scale (WISDM)**: The 37 items from the original 68- item that make up the Brief Wisconsin Index of Smoking Dependence M0tives (WISDM) (Piper et al. 2O14). A measurement scale was developed to assess different motivational factors associated with smoking. These factors include affiliative attachment, automaticity, loss of control, cognitive enhancement, craving, cue exposure/associative processes, affective enhancement, social/environmental goads, taste/sensory properties, tolerance, and weight control. The scale employs a 7-point Likert scale, ranging from "Not true of me at all" to "Extremely true of me." Participants rate their agreement with statements corresponding to each motivational domain. The scale exhibits strong internal consistency, with alpha coefficients ranging from O.88 to O.96 for individual subscales, and an overall alpha coefficient between O.98 and O.99. While most subscales demonstrated good to strong reliability, the cue exposure scale showed moderate reliability. In summary, this scale provides a reliable assessment tool to evaluate different motivations underlying smoking behaviour and offers valuable insights into individuals' smoking-related tendencies.

2. **Perceived Stress Scale (PSS-10)**: The Perceived Stress Scale (PSS) is a classic stress assessment instrument. The tool, while originally developed in 1983, remains a popular choice for helping us understand how different situations affect our feelings and our perceived stress. The PSS-1O is a 10-item self-report measure of global perceived stress. A total score ranging

from 0 to 40 is computed by reverse scoring the four positively worded items and then summing all the scale items. Higher scores indicate greater levels of perceived stress. Subscale scores were computed by summing the six negatively worded items (Items 1, 2, 3, 6, 9, and 1O) for Factor 1 ("Negative") and the four positively worded items (Items 4, 5, 7, and 8) for Factor 2 ("Positive"), with higher scores indicating greater negative distress/stress feelings and greater positive stress feelings and coping abilities, respectively. The Cronbach's alpha of the PSS-10 was evaluated at >.70. The test-retest reliability of the PSS-1O was assessed and met the criterion of >.70.

c. VARIABLES:

Independent Variable: Stress
Dependent Variable: Social, Biological and Cognitive Motives of Smoking Dependence

d. **PROCEDURE**:

For this study participants were identified, and their consent was taken. The Questionnaire was developed, and the briefings were given to the participants. The age range was set at a proper level so that no manipulations can be found in the further research. The google form was circulated among the smoking participants, participants who smoke daily and are dependent on the same. The data was collected using the WISDM-37 scale and the PSS-10 scale. The data was collected by using Google form from the smoker young adult's population only and methods of statistical analysis were applied. Purposive sampling was done to find out the results. Then, the collected data was analysed using statistical analysis of correlation. Thereafter, results were compiled, and trends were studied.

e. **STATISTICAL ANALYSIS**:

To analysis following statistical measures were obtained.

1. Descriptive statistics
2. Correlation

3. RESULTS

In this study, the relationship of various motivating factors of smoking dependence were assessed with the stress tendencies of a person. The Smoking Dependence motives had further sub variables including affiliative attachment, automaticity, loss 0f control, behavioral choice/melioration, cognitive enhancement, craving, cue exposure/associative processes, affective enhancement, social/environmental goads, taste/sensory properties, tolerance, and weight control. For the study, the statistical analysis done ate correlation. The results of the same are represented below.

Table1: Descriptive Statistics Showing means and SD (N= 100, Male=50 and Female= 50)

Descriptive Statistics

	Minimum	Maximum	Mean	Std. Deviation
Affilative Attachment	1.0	7.0	2.650	1.4042
Automacity	1.0	6.5	3.098	1.1314
Loss of Control	1.0	7.0	2.850	1.1254
Cognitive Enhancement	1.0	7.0	3.567	1.4082
Craving	1.6	6.9	3.041	1.0205
Cue Exposure	1.4	7.0	3.153	1.0533
Social Environmental goal	1.4	6.9	3.253	1.1115
Taste	1.3	7.0	3.763	1.2662
Tolerance	1.3	7.0	3.508	1.1058
Weight Control	1.3	7.0	3.697	1.0658
Affective Enhancement	1.3	7.0	4.057	1.2704
Total Score	21.4	3663.5	72.545	361.0281
Perceived Stress Scale	5	32	19.60	7.061

N=100 , 50 males, 50 females

Table 2: Bivariate Correlation showing correlation among affiliative attachment, automaticity, loss of control, behavioral choice/melioration, cognitive enhancement, craving, cue exposure/associative processes, affective enhancement, social/environmental goads, taste/sensory properties, tolerance, and weight control.

Correlations Statistics for Key Study Variables

Variables	Perceived Stress Scale
Affilative Attachment	O.415[**]
Automacity	O.419[**]
Loss 0f Control	O.289[**]
Cognitive Enhancement	O.370[**]
Craving	O.466[**]
Cue Exposure	O.418[**]
Social/Environmental goal	O.431[**]
Taste	O.242[*]
Tolerance	O.396[**]
Weight Control	O.096
Affective Enhancement	O.414[**]
Total Score	1

** Correlation is significant at the O.O1 level (2-tailed).   *   Correlation is significant at the O.O5 level (2-tailed).

4. Discussion

Smoking and stress often intersect in the lives of young adults, creating a complex relationship that merits attention. For many young adults, smoking serves as a coping mechanism to alleviate stress and provide a temporary sense of relief. The act of smoking may be perceived to regulate emotions and reduce anxiety in challenging situations. However, research suggests that smoking exacerbates stress levels in the long run. Nicotine, the addictive substance in cigarettes, can alter brain chemistry and contribute to heightened stress responses. Moreover, the social and environmental factors associated with smoking, such as peer influence and tobacco advertising, can further perpetuate stress among young adults. Understanding the intricate interplay between smoking and stress in this population is crucial for developing effective interventions and support systems that address the underlying motivations behind smoking and provide healthier stress management strategies.

The present study found the relationship between smoking dependence, its motives like different motivational domains, including affiliative attachment, automaticity, loss of control, cognitive enhancement, craving, cue exposure/associative processes, Affective Enhancement, social/environmental goads, taste/sensory properties, tolerance, and weight control and stress.

Positive Relation Between Affilative Attachment Smoking Dependence Motives and Perceived Stress:

As per the findings of analysis, it is seen that there is a significant positive correlation between Affilative attachment and Stress (r= .415**, p <0.01). Affilative attachment is characterized by strong emotional attachment to smoking and cigarettes. The correlation coefficient (r) indicates the strength and direction of the relationship between Affilative attachment and Stress. In this case, the positive sign indicates a positive relationship, meaning that as Affilative attachment t scores increase, Stress scores tend to increase as well.

Positive Relation Between Automacity and Stress:

The analysis showed that there was significant positive correlation between automacity and perceived stress. (r= .419**, p<0.01). The correlation coefficient (r) indicates the strength and direction of the relationship between automacity and perceived stress. In this case, the positive sign indicates a positive relationship, meaning that as automacity scores increase, perceived stress levels tend to increase as well.

Positive Relation Between Loss of Control and Stress:

As per the findings of analysis, it is seen that there is a significant positive correlation between Loss of Control and Stress. (r= .289**, p<0.01). Loss of Control is based on the notion that once dependence becomes ingrained, the dependent person believes that he or she has lost volitional control over drug use because of any of a variety of factors (e.g., urges, loss of other reinforcers, automaticity). The correlation coefficient (r) of .289 indicates the strength and direction of the relationship between Loss of Control and Stress. In this case, the positive sign indicates a positive relationship, meaning that as Loss of Control scores increase, Stress levels also tend to increase.

Positive Relation Between Cognitive Enhancement and Stress:

The analysis showed that there was significant positive correlation between Cognitive Enhancement and perceived stress (r= .370**, p<0.01). Cognitive Enhancement is characterized by smoking to improve cognitive functioning (e.g., attention). The correlation coefficient (r) indicates the strength and direction of the relationship between Cognitive Enhancement and perceived stress. In this case, the positive sign indicates a positive relationship, meaning that as Cognitive Enhancement scores increase, perceived stress levels also tend to increase. However, the findings suggest that there is a significant positive relationship between Cognitive Enhancement and perceived stress. Higher levels of Cognitive Enhancement are associated with higher levels of perceived stress.

Positive Relation Between Craving and Stress:

The analysis showed that there was significant positive correlation between Craving and perceived stress (r= .466**, p< 0.01). Craving is characterized by smoking in response to craving or experiencing intense and/or frequent urges to smoke. The correlation coefficient (r) indicates the strength and direction of the relationship between Craving and perceived stress. In this case, the positive sign indicates a positive relationship, meaning that as Craving scores increase, perceived stress levels also tend to increase.

Positive Relation Between Cue Exposure and Stress:

As per the findings of analysis, it is seen that there is a significant positive correlation between Cue Exposure and stress. (r= .418**, p<0.01). Cue Exposure is characterized by frequent encounters with non-social smoking cues or a strong perceived link between cue exposure and the desire or tendency to smoke. The correlation coefficient (r) indicates the strength and direction of the relationship between Cue Exposure and stress. In this case, the positive sign indicates a positive relationship, meaning that as Cue Exposure scores increase, levels of stress also tend to increase.

Positive Correlation between Social/Environmental Goals and Stress:

As per the findings of analysis, it is seen that there is a significant positive correlation between Social/Environmental Goals and stress. (r= .418**, p<0.01). It is Characterized by social stimuli or contexts that either model or invite smoking. The correlation coefficient (r) indicates the strength and direction of the relationship between Social/Environmental Goals and stress. In this case, the positive sign

indicates a positive relationship, meaning that as Social/Environmental Goals scores increase, levels of stress also tend to increase.

Positive Relation between Taste and Sensory Properties and Stress:

As per the findings of analysis, it is seen that there is a significant positive correlation between Taste and stress. (r= .242*, p<0.05). Taste and sensory properties are characterized by the desire or tendency to smoke to experience the or sensory and/or gustatory effects of smoking. The correlation coefficient (r) indicates the strength and direction of the relationship between Taste and stress. In this case, the positive sign indicates a positive relationship, meaning that as Taste scores increase, levels of stress also tend to increase.

However, the findings suggest that there is a significant positive relationship between Taste and stress. However, it is important to note that the correlation coefficient value of .242 indicates a relatively weak correlation.

Positive Relation Between Tolerance and Stress:

As per the findings of analysis, it is seen that there is a significant positive correlation between Tolerance and stress (r= .396**, p<0.01). Tolerance is characterized by the principal need of individuals to smoke increasing amounts over time to experience the desired effects or the ability to smoke large amounts without acute toxicity. The correlation coefficient (r) indicates the strength and direction of the relationship between Tolerance and stress. In this case, the positive sign indicates a positive relationship, meaning that as Tolerance scores increase, levels of stress also tend to increase. However, the findings suggest that there is a significant positive relationship between Tolerance and stress. Higher levels of Tolerance are associated with higher levels of stress.

Weak Positive Correlation between Weight Control and Stress:

The analysis showed that there was significant positive correlation between Weight Control and perceived stress. (r= .096, p<0.01). Weight Control is characterized by the use of cigarettes to control body weight or appetite. The correlation coefficient (r) indicates the strength and direction of the relationship between Weight Control and perceived stress. In this case, the positive sign indicates a positive relationship, meaning that as Weight Control scores increase, levels of perceived stress also tend to increase.

Positive Relation Between Affective Enhancement and Stress:

The analysis showed that there was significant positive correlation between Affective Enhancement and perceived stress (r= .414**, p<0.01). Affective Enhancement is the combination of positive reinforcement and negative reinforcement. The correlation coefficient (r) indicates the strength and direction of the relationship between Affective Enhancement and perceived stress. In this case, the positive sign indicates a positive relationship, meaning that as Affective Enhancement scores increase, levels of perceived stress also tend to increase.

Positive Correlation Between Total Score and Stress:

The total Score suggested a positive correlation between Smoking Dependence Motives and Stress (r= .466**, p<0.01). The correlation coefficient (r) indicates the strength and direction of the relationship between Smoking Dependence Motives (Total Score) and stress. In this case, the positive sign indicates a positive relationship, meaning that as the Total Score of Smoking Dependence Motives increases, levels of stress also tend to increase.

In summary, the findings suggest that there is a significant positive relationship between Smoking Dependence Motives (Total Score) and stress. Higher scores on Smoking Dependence Motives are associated with higher levels of stress. However, it is important to note that correlation does not imply causation, and further research would be needed to determine the underlying mechanisms and causality between these variables.

It can be interpreted that from these 11 subscales of smoking dependence motives, there can be a broad three sub dimensions which can be Social, Cognitive, and Biological. According to the characteristics of 11 different motivational domains, including affiliative attachment, automaticity, loss of control, cognitive

enhancement, craving, cue exposure/associative processes, Affective Enhancement, social/environmental goads, taste/sensory properties, tolerance, and weight control.

Overall, the results of the study support the hypothesis that:

H1. There will be a significant relation in social, cognitive, and biological smoking dependence motives and stress tendency.

CONCLUSION:

The primary aim of the study was to analyse the social, biological, and cognitive motives of smoking dependence among young females and males. The hypotheses aimed at understanding correlation within these variables these hold for another, while also to assess the gender differences on both the scales. This is done with the help of correlation analysis.

For Correlation, the findings revealed that there was a positive correlation between all the 11 motivational domains and stress , starting with affiliative attachment($r= .415^{**}$, $p <0.01$) , automaticity($r= .419^{**}$, $p<0.01$), loss of control($r= .289^{**}$, $p<0.01$), cognitive enhancement($r= .370^{**}$, $p<0.01$), craving($r= .466^{**}$, $p< 0.01$), cue exposure/associative processes($r= .418^{**}$, $p<0.01$), Affective Enhancement($r= .418^{**}$, $p<0.01$), social/environmental goals($r= .242^{**}$, $p<0.01$), taste/sensory properties($r= .396^{**}$, $p<0.01$), While Tolerance($r= .096$, $p<0.01$) and weight control ($r= .414^{**}$, $p<0.01$) had comparatively weaker positive correlation with stress. As per the findings, there is a significant positive correlation in assessments of stress and smoking dependence motives within young males and females. As the study found correlation hence, the study should be taken forward, and have a scope to reveal more aspects than just correlation in the future.

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