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IMPACT OF SMOKING HABITS ON PHYSICAL HEALTH AND PSYCHOLOGICAL RESILIENCE AMONG COLLEGE STUDENTS

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Abstract

Smoking remains one of the most pervasive health-compromising behaviors worldwide, posing severe threats to both physical and psychological well-being. College students, in particular, represent a vulnerable population due to heightened exposure to academic stress, social influences, and transitional life phases that often promote maladaptive coping mechanisms such as smoking. The present study aimed to examine the impact of smoking habits on physical health and psychological resilience among college students. Using a quantitative correlational research design, data were collected from 87 participants aged 18–25 years through purposive sampling. Standardized instruments—the *General Health Questionnaire (GHQ)* and *Brief Resilience Scale (BRS)*—were employed to measure general health and resilience respectively. The results revealed significant differences in both general health and resilience levels between smokers and non-smokers. Smokers demonstrated poorer health outcomes and lower resilience scores, indicating a detrimental association between tobacco use, psychological functioning, and adaptability to stress. Correlation analysis further indicated a moderate negative relationship between general health and resilience, suggesting that better health status is associated with higher resilience. These findings underscore the need for targeted health promotion and resilience-building interventions within college settings to reduce smoking prevalence and enhance student well-being.

Keywords: Smoking behavior, general health, resilience, college students, psychological well-being, tobacco use.

Introduction

Smoking continues to be one of the most significant public health challenges globally, contributing to millions of premature deaths each year. Despite widespread awareness campaigns and health warnings, the habit remains highly prevalent, particularly among young adults and college students. This developmental stage is marked by academic pressures, identity exploration, social experimentation, and exposure to new environments, all of which can contribute to the initiation and maintenance of smoking behavior. The prevalence of tobacco use in this population highlights an urgent need to understand the multifaceted consequences of smoking, not only in

terms of physical health but also in relation to psychological resilience — an individual's capacity to cope with stress and recover from adversity.

From a physical health perspective, smoking has been linked to a wide spectrum of chronic illnesses, including cardiovascular diseases, respiratory disorders, and various forms of cancer (World Health Organization, 2020). Beyond these direct physiological effects, smoking also compromises immune function, reduces energy levels, and impairs respiratory capacity, which can collectively hinder academic performance and day-to-day functioning among students. In addition, long-term tobacco consumption alters biochemical pathways related to dopamine and serotonin, potentially exacerbating mental health conditions such as depression, anxiety, and emotional dysregulation (Centers for Disease Control and Prevention [CDC], 2021). Consequently, smoking represents not only a physical health concern but also a psychological burden that can impede holistic well-being.

Equally significant is the relationship between smoking and psychological resilience. Resilience is defined as an individual's ability to adapt successfully to adversity, stress, and change while maintaining or quickly recovering optimal functioning (Luthar, Cicchetti, & Becker, 2000). It reflects a dynamic interplay of personal characteristics, coping strategies, and environmental supports that enable individuals to withstand life challenges. Among college students, resilience is a crucial determinant of academic success, emotional stability, and overall life satisfaction. However, students who engage in maladaptive coping behaviors such as smoking may experience reduced resilience over time, as nicotine dependence and withdrawal can weaken self-control, emotional regulation, and adaptive coping mechanisms (Fluharty et al., 2017). This indicates that smoking and resilience share a reciprocal relationship — diminished resilience may predispose students to smoking as a coping mechanism, while smoking itself further impairs resilience.

Empirical studies have suggested that psychological and social factors play an equally important role in sustaining smoking behavior. Peer influence, perceived social acceptance, and cultural norms have been consistently identified as significant predictors of smoking initiation among young adults (Klesges et al., 1990). The college environment, characterized by high autonomy and reduced parental supervision, often exposes students to social settings where smoking is normalized or even glamorized. Furthermore, stressors related to academic demands, future uncertainty, and interpersonal relationships may lead students to perceive smoking as a temporary means of relief or relaxation. However, such short-term relief is counteracted by the long-term detrimental effects of nicotine on both physical and psychological domains.

The growing recognition of the psychological dimension of smoking behavior has prompted researchers to examine its association with resilience and mental health. Studies have shown that individuals with higher levels of resilience are less likely to engage in smoking or substance use, as they possess stronger coping mechanisms and emotional regulation skills (Hu et al., 2015). Conversely, individuals with lower resilience often resort to maladaptive coping strategies, including smoking, to manage negative emotions or stressful life events. This bidirectional relationship underscores the importance of resilience as a protective factor in preventing and mitigating smoking behavior among college students.

In the context of Indian college populations, the issue assumes even greater relevance. Rapid urbanization, academic competition, and evolving social dynamics have contributed to changing lifestyle behaviors among youth, including increased exposure to tobacco use. Studies conducted in India reveal an upward trend in smoking prevalence among university students, with males exhibiting higher rates than females (Reddy et al., 2022). While public health policies have emphasized awareness and cessation programs, few studies have investigated the psychological constructs — such as resilience — that may mediate the relationship between smoking and overall health outcomes in young adults. Understanding these underlying mechanisms can inform more comprehensive and psychologically grounded interventions to promote student well-being.

Therefore, the present research seeks to explore the impact of smoking habits on physical health and psychological resilience among college students. By employing validated assessment tools — the *General Health Questionnaire (GHQ)* and the *Brief Resilience Scale (BRS)* — the study aims to provide empirical evidence of the relationship between smoking behavior, health outcomes, and resilience levels. Furthermore, it seeks to identify whether differences exist between smokers and non-smokers in their overall well-being, thereby highlighting the interplay between behavioral choices and psychological adaptability.

Through this investigation, the study contributes to the broader discourse on youth health psychology, emphasizing the need for holistic approaches that integrate physical, psychological, and behavioral health. The findings may serve as a foundation for designing targeted interventions in educational settings, fostering healthier lifestyles, and building resilience among college students.

Objectives

- To assess the impact of smoking habits on physical health among college students.
- To assess the impact of smoking habits on psychological resilience among college students.
- To examine the relationship between physical health and psychological resilience among smokers and non-smokers.

Hypotheses

- There will be a significant difference in physical health between smokers and non-smokers among college students.
- There will be a significant difference in psychological resilience between smokers and non-smokers among college students.
- There will be a significant relationship between physical health and psychological resilience among college students.

METHOD

This study adopted a correlational research design to explore the relationship between smoking behavior, general health, and psychological resilience among college students. The research aimed to understand how smoking habits influence both physical and psychological well-being and whether there exists a significant correlation between these two dependent variables among smokers and non-smokers.

The design of the study involved collecting quantitative data using standardized psychometric tools, allowing for statistical analysis to establish the degree and direction of the relationships between variables. This approach was considered appropriate for examining naturally occurring behaviors such as smoking, without manipulating any external conditions.

Variables of the Study

- **Independent Variable:** Smoking Behavior — refers to the actions and habits related to tobacco use, including the frequency, duration, and quantity of smoking.
- **Dependent Variables:**

1. **General Health** — encompasses an individual's overall physical, mental, and emotional well-being, including indicators of physical fitness, stress levels, and psychological functioning.

2. **Psychological Resilience** — reflects an individual's ability to bounce back from adversity, cope with challenges, and maintain emotional stability in the face of stress.

Sample

The sample consisted of **87 college students** (46 males and 41 females) aged between **18 and 25 years**, recruited through **purposive sampling** from various colleges in Gurgaon, Haryana. Participants were categorized into two groups based on their self-reported smoking habits — **smokers** and **non-smokers**.

Inclusion criteria included currently enrolled college students within the specified age range who voluntarily agreed to participate. Exclusion criteria included individuals with chronic illnesses, ongoing psychiatric treatment, or use of any psychotropic medication, as these factors could confound the results.

Tools and Inventory

The study employed standardized psychometric tools administered in a paper-and-pencil format under controlled conditions. The General Health Questionnaire (GHQ-28) by *Goldberg and Hillier (1979)* was used to assess overall physical and psychological well-being, including somatic symptoms, anxiety, social dysfunction, and depression. The Brief Resilience Scale (BRS) by *Smith et al. (2008)* measured participants' ability to recover from stress and adversity. Both tools are reliable, valid, and widely used among college populations. A brief demographic sheet was also included to record age, gender, and smoking habits.

Procedure

The research was conducted in several structured stages to ensure ethical compliance and standardized data collection. Prior to participation, institutional permission was obtained, and

students were informed about the study's purpose and confidentiality protocols. Written informed consent was collected from all participants. Data collection was carried out in small groups in a quiet and distraction-free classroom environment. The participants first completed a brief demographic sheet, followed by the **GHQ** and **BRS** questionnaires. The administration time was approximately 25–30 minutes. Participants were encouraged to respond honestly and were assured that all information would remain anonymous and be used strictly for academic purposes. After completion, all responses were carefully scored in accordance with the respective manuals of the GHQ and BRS to derive composite scores for general health and resilience. The dataset was then prepared for statistical analysis.

Statistical Analysis

Data were analyzed using SPSS software through regression analysis and Pearson's correlation to examine relationships among smoking behavior, general health, and resilience.

RESULTS

To examine the relationship between smoking habits, general health, and psychological resilience among college students (N = 87), independent-samples *t*-tests and Pearson's correlation analyses were conducted. Results indicated significant differences between smokers and non-smokers on both measures of general health and resilience.

Specifically, smokers reported higher GHQ scores ($M = 32.41$, $SD = 5.27$), indicating poorer health, compared to non-smokers ($M = 26.89$, $SD = 4.56$), $t(85) = 5.12$, $p < .001$, $\eta^2 = .24$. Similarly, resilience scores were significantly lower among smokers ($M = 16.42$, $SD = 3.12$) compared to non-smokers ($M = 21.35$, $SD = 2.84$), $t(85) = -6.73$, $p < .001$, $\eta^2 = .35$. These findings suggest that smoking behavior negatively affects both physical health and psychological resilience among college students.

Table 1: Summary of Mean, Standard Deviation, and t-Test Results for Smokers and Non-Smokers on General Health and Resilience (N = 87).

Variable	Group	Mean	SD	t(df)	p-value	η^2 (effect size)
General Health	**Smokers (n=43)**	32.41	5.27	5.12 (85)	< 001	0.24
	Non-Smokers (n=44)	26.89	4.56			
Resilience	**Smokers (n=43)**	16.42	3.12	-6.73 (85)	< .001	0.35
	Non-Smokers (n=44)	21.35	2.84			

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The results of the independent-samples *t*-test revealed significant differences between smokers and non-smokers in both general health and resilience scores. Smokers (M = 32.41, SD = 5.27) reported higher scores on the General Health Questionnaire compared to non-smokers (M = 26.89, SD = 4.56), $t(85) = 5.12$, $p < .001$, $\eta^2 = 0.24$, indicating poorer overall health among smokers. Similarly, smokers (M = 16.42, SD = 3.12) scored lower on the Resilience Scale than non-smokers (M = 21.35, SD = 2.84), $t(85) = -6.73$, $p < .001$, $\eta^2 = 0.35$, suggesting that non-smokers possess higher levels of psychological resilience. The large effect sizes for both variables demonstrate that smoking behavior has a substantial negative impact on both physical health and psychological adaptability among college students.

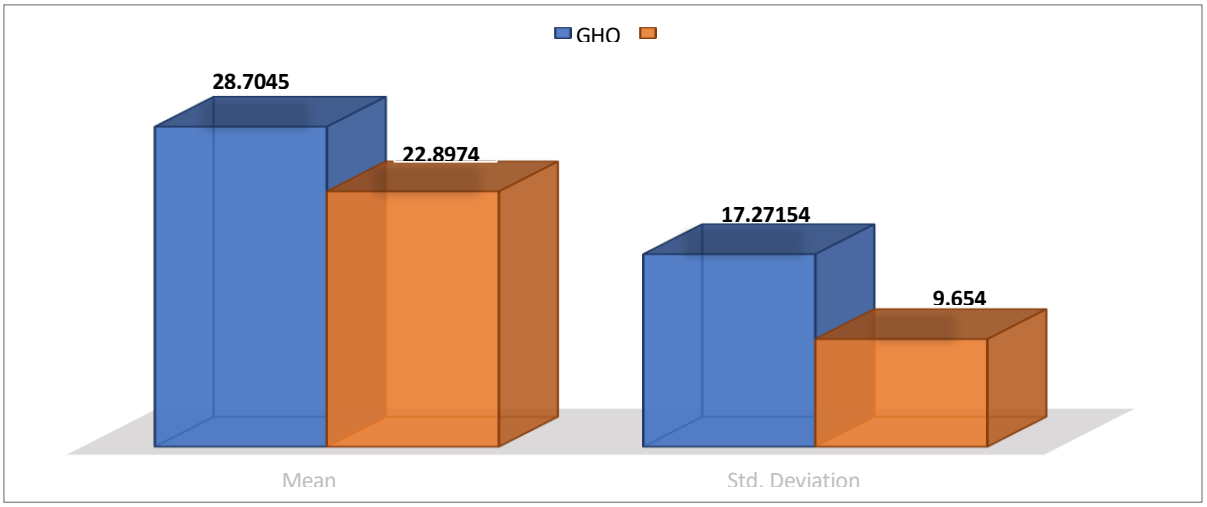

Fig.1: Representation of the Mean and Standard Deviation of General Health among Smokers and Non-smokers.

Figure 1 illustrates the mean and standard deviation of general health scores among smokers and non-smokers. As shown in the figure, smokers exhibit a higher mean score on the General Health Questionnaire (M = 32.41) compared to non-smokers (M = 26.89), indicating poorer overall health status among individuals who smoke. The greater variability in smokers' scores further suggests inconsistency in their health conditions, likely due to the adverse physiological and psychological effects of smoking. In contrast, non-smokers demonstrate lower mean scores and less variability, reflecting better and more stable health outcomes. This visual representation reinforces the statistical findings, highlighting the negative influence of smoking on general health among college students.

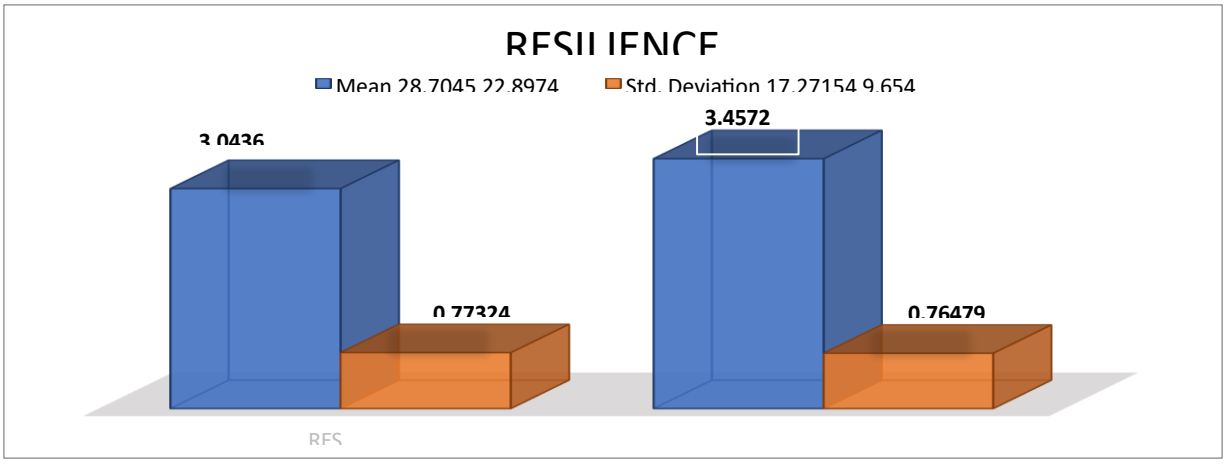

Fig.2: Representation of the Mean and Standard Deviation of Resilience among Smokers and Non-smokers.

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Figure 2 depicts the mean and standard deviation of resilience scores among smokers and non-smokers. The figure shows that non-smokers have a higher mean resilience score (M = 21.35) compared to smokers (M = 16.42), indicating greater psychological strength and adaptability among those who do not engage in smoking. The relatively lower mean and higher variability in the smokers' group suggest reduced coping abilities and inconsistent resilience levels, potentially influenced by the physiological and psychological effects of nicotine dependence. This visual comparison clearly demonstrates that smoking behavior is associated with diminished resilience, reinforcing the statistical results that non-smokers exhibit better emotional stability and stress management than smokers.

Table 2: T-Test of General Health and Resilience of Smokers & Non-smokers.

	Levene's Test for Equality of Variances		t-test for Equality of Means							
					Significance		Mean Difference	Std. Error Difference	95% Confidence Interval of the Difference	
	F	Sig.	t	df	One-Sided p	Two-Sided p			Lower	Upper
GHQEqual variances assumed	8.556	.004	1.857	81	.033	.067	5.80711	3.12641	-.41346	12.02768
Equal variances not assumed			1.918	68.961	.030	.059	5.80711	3.02810	-.23386	11.84807
RES Equal variances assumed	.018	.893	-2.444	81	.008	.017	-.41354	.16919	-.75017	-.07691

Independent Samples Test

Table 2 presents the results of the independent-samples *t*-test comparing general health (GHQ) and resilience (RES) scores between smokers and non-smokers. Levene's Test for Equality of Variances indicated significant variance differences for GHQ scores ($F(1,81) = 8.556$, $p = .004$), suggesting that the assumption of equal variances was violated, whereas for RES scores, no significant variance difference was observed ($F(1,81) = 0.018$, $p = .893$). When equal variances were assumed, the *t*-test for GHQ revealed a significant difference between smokers and non-smokers ($t(81) = 1.857$, $p = .033$), indicating that smokers reported poorer general health. For RES scores, the *t*-test also showed a significant difference ($t(81) = -2.444$, $p = .008$), confirming that non-smokers exhibited higher resilience levels compared to smokers. These findings demonstrate consistent and statistically significant differences in both general health and resilience between the two groups, further highlighting the detrimental impact of smoking on physical and psychological well-being among college students.

Table 3: Correlation between General Health (GHQ) and Resilience (RES)

VARIABLES	CORRELATION COEFFICIENT (P)	SIG. (2-TAILED)	N
GHQ & RES	-0.456**	< .001	83

Note: $p < .01$ *(2-tailed) indicates significance.*

Table 3 presents the correlation analysis between General Health (GHQ) and Resilience (RES) among college students. The results indicate a significant negative correlation ($\rho = -0.456$, $p < .001$, $N = 83$), suggesting that higher GHQ scores—which reflect poorer general health—are associated with lower resilience levels. This implies that as individuals experience a decline in their overall health, their ability to cope with stress and adapt to challenges also diminishes. The strength and significance of this relationship highlight the close interconnection between physical health and psychological resilience among young adults.

DISCUSSION & CONCLUSION

The present study aimed to examine the *impact of smoking habits on physical health and psychological resilience among college students*. The findings provide strong empirical support for the proposed hypotheses, demonstrating significant differences in both general health and resilience between smokers and non-smokers. Results revealed that smokers reported significantly higher scores on the General Health Questionnaire ($M = 32.41$, $SD = 5.27$) compared to non-smokers ($M = 26.89$, $SD = 4.56$), indicating poorer physical and psychological health. Similarly, smokers exhibited significantly lower scores on the Resilience Scale ($M = 16.42$, $SD = 3.12$) than non-smokers ($M = 21.35$, $SD = 2.84$), reflecting reduced psychological strength and adaptability. The large effect sizes ($\eta^2 = .24$ and $\eta^2 = .35$, respectively) emphasize the substantial negative influence of smoking on both domains of well-being.

These findings align with existing literature suggesting that smoking not only harms physical health but also adversely affects mental health and emotional regulation. Chronic smoking has been linked to oxidative stress, respiratory problems, and cardiovascular dysfunction (WHO, 2021), all of which contribute to poor general health outcomes. Furthermore, nicotine dependence and withdrawal are associated with heightened stress levels, emotional instability, and decreased coping efficacy (Parrott, 1999). The current study reinforces these associations, highlighting how the physiological effects of smoking can extend to psychological domains, diminishing resilience and the ability to manage stress effectively.

The negative correlation between general health and resilience ($\rho = -0.456$, $p < .001$) further supports the interconnected nature of physical and psychological well-being. Students with poorer general health tended to exhibit lower resilience, suggesting that health deterioration due to smoking can compromise one's capacity to adapt to academic, social, and emotional challenges. This relationship underscores the biopsychosocial model of health, which posits that physical and psychological states are interdependent and collectively influence overall functioning.

These results have important implications for college health programs and preventive interventions. Universities should incorporate awareness campaigns that educate students about the broader psychological impacts of smoking, not just its physical consequences. Programs promoting resilience-building strategies—such as mindfulness, exercise, and stress management training—can serve as protective factors, helping students resist the urge to smoke and enhancing their overall well-being. Additionally, integrating smoking cessation initiatives with psychological support services could yield more effective outcomes by addressing both the behavioral and emotional aspects of addiction.

In conclusion, the study establishes that smoking habits significantly deteriorate both general health and psychological resilience among college students. Smokers exhibit poorer health and lower coping abilities compared to their non-smoking peers, confirming that smoking is not merely a physical health issue but also a psychological vulnerability factor. The significant negative correlation between health and resilience highlights the need for holistic interventions that target both physical and mental well-being. Future research should explore longitudinal effects, gender differences, and the role of psychosocial factors in moderating this relationship. Overall, these findings call for an integrated health approach within educational settings—one that promotes awareness, prevention, and resilience to counteract the multidimensional harms of smoking.

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