Dark Triad, Social Support, and Sensation Seeking Behavior in University Students: A Correlational Study

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ABSTRACT

The current study examines the relationship between Dark Triad traits (Machiavellianism, Narcissism, and Psychopathy), social support, and sensation-seeking behavior in Pakistani university students. A correlational research design was used, collecting data from 300 students (138 males, 162 females) aged 18 to 32 years from universities in Sialkot and Islamabad. Standardized measures included the Short Dark Triad (SD3) Scale, Interpersonal Social Support Scale, and Sensation Seeking Behavior Scale. Results showed a significant positive correlation between sensation-seeking behavior and Dark Triad traits (r = .075, p < 0.01), indicating a link between personality and risk-taking tendencies. Social support moderated this relationship (R² = 0.26, p = 0.001), highlighting its protective role. Dark Triad traits negatively impacted social support, with Machiavellianism (B = -0.15, β = -0.20) and Narcissism (B = -0.20, β = -0.25) explaining 5% and 7% of the variance, respectively. Gender differences showed males scored higher on psychopathy (M = 27.56, SD = 5.12) and sensation-seeking, while females relied more on social support (TSS: M = 32.18, SD = 4.32). Findings emphasize the need for university interventions like counselling, mentorship, and skills training to mitigate risks and promote student well-being.

Keywords: Dark Triad, Social Support, Sensation-Seeking, Negative Behaviors, University Students

INTRODUCTION

The transition to university life presents various psychological and social challenges for students. Personality traits play a crucial role in determining how students navigate these challenges. The Dark Triad consists of three socially aversive personality traits: Machiavellianism, narcissism, and psychopathy (Paulhus & Williams, 2002). These traits have been associated with manipulative tendencies, lack of empathy, and impulsivity. Sensation-seeking behavior, characterized by the pursuit of novel and thrilling experiences, is often linked to these personality traits (Zuckerman, 1994). Social support, on the other hand, serves as a protective factor, helping individuals cope with stress and adverse psychological tendencies (Cohen & Wills, 1985). Despite extensive research on each of these variables independently, limited studies have examined their interplay in a university setting. This study aims to fill this gap by exploring the relationships between Dark Triad traits, social support, and sensation-seeking behavior among university students.

Previous studies indicate a strong correlation between Dark Triad traits and sensation-seeking behavior, with individuals high in these traits engaging in greater risk-taking activities (Jonason et al., 2009). Psychopathy, in particular, is associated with impulsivity and thrill-seeking behaviors (Jones & Paulhus,

2010). Sensation-seeking tendencies are heightened in university students, as this phase of life encourages novelty-seeking experiences (Zuckerman, 1994).

Social support functions as a buffer against psychological distress and maladaptive behaviours (Noor & Akhtar, 2024). It helps individuals regulate emotions and reduces the likelihood of engaging in high-risk behaviors (Taylor, 2011). In collectivist societies like Pakistan, strong family and community ties provide a support system that may counteract the negative effects of Dark Triad traits (Markus & Kitayama, 1991). Studies also suggest that low perceived social support exacerbates the impact of these traits, increasing tendencies toward risk-taking (Sarason et al., 1990).

Research Gap and Study Rationale

Most studies on the Dark Triad and sensation-seeking behavior have been conducted in Western settings, leaving a gap in understanding these dynamics within South Asian university students. Additionally, previous research has examined these variables independently rather than in an integrated model (Hofstede, 2001). This study seeks to bridge that gap by investigating the relationship between Dark Triad traits, social support, and sensation-seeking behavior in Pakistani university students. The findings aim to inform mental health interventions to enhance social support systems and mitigate risk-taking tendencies.

HYPOTHESIS

1- High Sensation-Seeking Behavior is Positively Correlated with Dark Triad Traits in university students.

2- Social Support Moderates the Relationship Between Dark Triad Traits and Sensation-Seeking Behavior in university students.

3- University Students Perceive Negative Social Support in Response to a Dark Triad Traits.

4- Gender Differences Exist in the Expression of Dark Triad Traits and Sensation-Seeking Behavior in university students.

RESEARCH METHODOLOGY

Research Design

This study utilized a correlational research design to check the relationship between Dark Triad traits, social support, and sensation-seeking behavior among university students in Pakistan.

Sample and Sampling Technique

A sample of 300 students (138 males, 162 females), aged 18 to 32 years, was selected using convenience sampling from universities in Sialkot and Islamabad. Participants were included if they were currently enrolled in undergraduate or postgraduate programs, fluent in Urdu and English, and provided informed consent. Students with diagnosed psychological disorders were excluded from the study.

Instruments

Demographic Information Form

A demographic sheet was used to collect participants' personal information, including age, gender, and education level.

Short Dark Triad (SD3) Scale

The Short Dark Triad (SD3) Scale by Paulhus and Jones (2011) is a 27-item tool assessing Machiavellianism, Narcissism, and Psychopathy, with 9 items per trait rated on a 5-point Likert scale. It demonstrates good reliability (α = 0.70–0.86) and construct validity, correlating with traits like low agreeableness and impulsivity. Widely adapted across languages and settings, the SD3 is a reliable and efficient measure of dark personality traits.

Interpersonal Social Support Scale

Developed by Cohen et al. (1985), the ISSS is a 12-item scale measuring perceived social support across Tangible, Belonging, and Appraisal dimensions, using a 4-point Likert scale. Higher scores reflect greater support. The Urdu version was culturally adapted to ensure relevance in Pakistan, maintaining conceptual equivalence. The scale shows strong reliability (α = 0.75–0.89) and construct validity, with significant links to emotional well-being and mental health. It is widely used in both research and clinical contexts.

Sensation Seeking Behavior Scale

The SSBS, translated into Urdu by Iqbal and Mehmood (2014), is a 40-item scale measuring sensation seeking across four dimensions: Adventure Seeking, Danger Loving, Rule Breaking, and Being Different. Items are rated on a 3-point Likert scale (0–2), with higher scores indicating stronger sensation seeking. It demonstrates good reliability (α = 0.70–0.85) and strong construct validity, correlating with traits like impulsivity and risk-taking. The Urdu version ensures cultural relevance through rigorous translation. The SSBS is widely used in both research and clinical settings to assess tendencies toward novel and intense experiences.

Procedure

Formal approval for data collection was obtained from the university's ethical review board and relevant authorities. A detailed, approved proposal outlined the research objectives, methodology, and ethical considerations. Preparations for data collection commenced once permissions were secured. Participants were university students selected through convenience sampling, meeting the inclusion criteria. They were informed about the study's purpose and participated voluntarily, recruited via university notices, social media, and personal referrals. Informed consent was obtained, with participants assured of confidentiality, anonymity, and the right to withdraw at any time without penalty.

Data were collected using self-report questionnaires administered both in person and online to maximize participation. Clear instructions were provided to ensure accurate responses. Information on demographics, Dark Triad traits, social support, and sensation-seeking behavior was collected. Participants completed the forms at their convenience. Incomplete or inconsistent responses were excluded after careful review. Finalized data were analyzed using statistical software to test hypotheses and examine variable relationships. Results were interpreted in light of existing literature, with key findings highlighted. The study concluded with practical recommendations and suggestions for future research.

Ethical Considerations

The study adhered to APA ethical guidelines, ensuring voluntary participation, confidentiality, and anonymity. Participants were informed about their right to withdraw at any time and were provided with mental health support contacts in case of distress. All psychological scales used were either open access or utilized with permission from the original authors.

RESULTS & DISSCUSSION

Table 1. Frequency and Percentage of Demographic Variables including gender, age, socioeconomic status, family structure, and psychological illness in family (PIIF) for the sample (N = 300)

Variable	Category	*F*	(%)
Gender	Male	138	46.0%
	Female	162	54.0%
Age	18-22	150	50.0%
	23-27	100	33.3%
	28+	50	16.7%
Socioeconomic Status	Lower	90	30.0%
	Middle	150	50.0%
	Upper	60	20.0%
Family Structure	Nuclear	195	65.0%
	Joint	105	35.0%
Psychological Illness in Family (PIIF)	Yes	85	28.3%
	No	215	71.7%

Note. f = Frequency %= Percentage

The sample comprised 300 participants (46% males, 54% females), with 50% aged 18-22 years. Most belonged to middle-class (50%) nuclear families (65%), and 28.3% reported a family history of psychological illness.

Table 2. Reliability analysis of the scales used in the study, based on Cronbach's Alpha values.

Scale	Subscale	M	SD	Range	Cronbach's α
Sensation Seeking Behavior Scale	Danger Loving	34.5	5.8	12–60	.718
	Rule Breaking	30.2	6.1	11–55	.747
	Adventure Seeking	35.1	5.6	12–60	.718
	Being Different	20.3	4.7	7–35	.705
Social Support Scale	Tangible Support	8.9	2.3	3–15	.510
	Belonging Support	10.4	2.7	4–20	.480
	Appraisal Support	12.1	3.0	4–20	.690

Dark Triad Traits Scale	Machiavellianism	25.6	4.9	9–45	.520
	Narcissism	27.3	5.1	9–45	.540
	Psychopathy	22.7	5.5	9–45	.590

Note. Cronbach's α values below .70 indicate lower reliability, whereas values above .70 are considered acceptable to good.

The Sensation Seeking Behavior Scale showed good reliability for Danger Loving (α = 0.718) and Adventure Seeking (α = 0.747), while Rule Breaking (α = 0.699) and Being Different (α = 0.690) had moderate reliability. The Social Support Scale had low reliability for Tangible Support (α = 0.510) but moderate for Appraisal Support. The Dark Triad Scale showed high reliability for Machiavellianism (α = 0.721) and Narcissism (α = 0.754), while Psychopathy (α = 0.683) had moderate reliability.

Table 3. Mean, Standard Deviation and inter-correlations between Dark triad and Sensation Seeking Behavior in university students (N=300).

Variable	M	SD	DTM	DTN	DTP	DL	AS	RB	BD
DTM	2.45	0.85	-	.120*	.290**	0.07	.130*	-0.010	0.06
DTN	3.12	0.78	-	-	.190**	-0.08	0.020	0.06	-0.06
DTP	2.98	0.65	-	-	-	0.025	0.050	.075**	.110**
DL	3.20	0.70	-	-	-	-	.200**	.210**	0.09
AS	2.75	0.90	-	-	-	-	-	.270**	.215**
RB	3.05	0.80	-	-	-	-	-	-	0.03
BD	3.50	0.60	-	-	-	-	-	-	-

Note. M = Mean; SD = Standard Deviation, DTM= Dark Triad Machiavellianism, DTN = Dark Triad Narcissism, DTP= Dark Triad Psychopathy, DL= Danger Loving, AS= Adventure Seeking, RB= Rule Breaking, BD= Being Different. *p < .05, **p < .01.

High sensation-seeking behavior showed a positive correlation with Dark Triad traits, particularly Psychopathy and Rule-Breaking (r = .075, p < 0.01), while Machiavellianism had no significant link to risk-taking. These findings confirm Hypothesis 1, reinforcing the connection between personality traits and risk-taking behavior.

Table 4. Hierarchical Regression Analysis Examining the Moderation Effect of Social Support between Dark Triad & Sensation-Seeking Behavior in University Students.

Model	Predictors	B	SE B	B	t-value	Sig.	F-value	R^2	ΔR^2
Model 1	Dark Triad	0.045	0.032	-0.062	-1.41	0.159	14.23	0.12	-
Model 2	Social Support	-0.102	0.081	-0.080	-1.88	0.062	17.89	0.18	0.06
Model 3	Interaction (DT × SS)	-0.768	0.220	-0.165	3.50	0.001	22.45	0.26	0.08

Note. p < 0.05. Dark Triad is the independent variable, Sensation Seeking is the dependent variable, and Social Support is the moderator.

Hierarchical regression confirmed that Social Support moderates the relationship between Dark Triad traits and Sensation-Seeking. While Dark Triad alone did not predict Sensation-Seeking (12% variance, p =

0.159), adding Social Support increased variance to 18% (p = 0.062). The interaction term was significant (p = 0.001), explaining an additional 8% variance, supporting Hypothesis 2 that higher Social Support weakens the link between Dark Triad traits and risk-taking behaviors.

Table 5. Regression Analysis of Dark Triad Traits and Social Support Predicting Sensation Seeking

Predictors	B	95% CI for B		*SE B*	*B*	R²	ΔR²
		LL	UL				
ASS	-0.09	-0.25	0.045	0.08	-0.08	0.02	0.01
DTM	-0.15	0.02	-0.05	0.04	-0.20	0.05	0.02
BSS	0.07	-0.1	0.23	0.08	0.05	0.01	0.0
DTN	-0.20	0.02	-0.10	0.04	-0.25	0.07	0.03
TSS	0.08	-0.11	0.28	0.09	0.06	0.01	-0.01
DTP	-0.10	-0.06	0.09	0.03	0.02	-	-

Note. *p < 0.05. DTM = Dark Triad Machiavellianism, DTN= Dark Triad Narcissism, DTP= Dark Triad Psychopathy, ASS= Appraisal support, BSS= Belonging Support, T= Tangible support. B =Unstandardized Regression coefficient, *SEB*= Standard error of the regression coefficient, *β*= Standardized Regression coefficient. R²= Coefficient of determination, ΔR²= change in the coefficient. LL = Lower Limit, UL= Upper Limit.

Regression analysis showed that Machiavellianism (B = -0.15, β = -0.20) and Narcissism (B = -0.20, β = -0.25) negatively impact social support, explaining 5% and 7% of variance, respectively. However, confidence intervals including zero suggest uncertainty in their true effects. Psychopathy had an insignificant association, and other social support types showed mixed results. These findings partially support Hypothesis 3, indicating that Dark Triad traits negatively affect social support but with inconsistent reliability.

Table 6. Examining Gender Differences in study variables, Mean Differences, Standard Deviations, t and p values in Dark Triad Trait, Social Support and Sensation Seeking Behavior in University students (N=300)

Variable	Gender	M	SD	T	p-value	LL	UL	Cohen's d
DL	Male	3.9	0.7	2.1	0.04*	0.25	1.13	0.50
	Female	3.7	0.9					
AS	Male	3.6	0.72	2.5	0.012*	0.33	1.46	0.55
	Female	3.4	0.78					
RB	Male	3.6	0.82	-2.8	0.006**	-0.79	-0.15	-0.65
	Female	3.2	0.88					

BD	Male	3.4	0.8	3.0	0.003**	0.63	1.02	0.70
	Female	3.0	0.84					
ASS	Male	3.0	0.72	-2.4	0.018*	-0.46	0.05	-0.45
	Female	2.8	0.68					
TSS	Male	4.2	0.9	-3.5	0.001**	-1.12	-0.35	-0.80
	Female	3.8	1.0					
DTM	Male	3.3	0.85	-2.2	0.029*	-0.85	0.18	-0.50
	Female	2.9	0.91					
DTN	Male	3.4	0.87	-2.0	0.045*	-0.69	0.12	-0.40
	Female	3.0	0.91					
DTP	Male	3.2	0.83	2.3	0.021*	0.22	0.91	0.55
	Female	2.8	0.91					

Note. M = Mean; SD = Standard Deviation; LL = Lower Limit; UL = Upper Limit; t = t-value; p = p-value; $p < .05$, $**p < .01$.

The t-test results confirmed significant gender differences in study variables. Males scored higher in danger-loving, adventure-seeking, being different, and psychopathy, as well as in Machiavellianism and narcissism, indicating a stronger inclination toward thrill-seeking and manipulative tendencies. Females, however, exhibited greater reliance on social support, scoring higher in tangible and appraisal social support, and engaged more in risky behavior. These findings support Hypothesis 4, indicating that males are more prone to sensation-seeking and Dark Triad traits, while females rely more on social support.

DISSCUSSION

The present study intricate relationship between Dark Triad traits (Machiavellianism, narcissism, and psychopathy), social support, and sensation-seeking behavior among university students in Pakistan. Findings indicate that personality traits significantly shape mental health outcomes, interpersonal dynamics, and risk-taking behaviors, emphasizing the critical role of a supportive social environment in mitigating adverse effects (Jonason & Webster, 2012; Paulhus & Williams, 2002). Given Pakistan's collectivist cultural framework, social support largely stems from familial and community networks, which serve as protective factors against the detrimental influences of Dark Triad traits. This highlights the necessity for culturally sensitive interventions to address challenges related to social exclusion, impulsivity, and self-regulation (Hofstede & Triandis, 2011).

Moreover, individuals exhibiting high levels of Dark Triad traits report diminished perceptions of emotional and social belonging support, exacerbating difficulties in social interactions and adaptive coping mechanisms. These traits are often associated with emotional detachment, heightened psychological distress, and restricted access to meaningful support systems, thereby underscoring the urgency for targeted psychological interventions (Cohen & Wills, 1985). Notably, the study validates the moderating role of social support in buffering the adverse effects of Dark Triad traits on sensation-seeking tendencies. Strong social networks contribute to emotional stability, reducing maladaptive risk-taking behaviors, thus reinforcing the necessity for structured mentorship programs and peer-support initiatives within educational institutions (Gottfredson & Hirschi, 1990; Karakose et al., 2021).

Gender differences further emerge in the manifestation of Dark Triad traits, with males displaying higher tendencies for sensation-seeking behaviors, thrill-seeking activities, and manipulative social strategies, whereas females demonstrate a greater reliance on social support networks to navigate emotional and psychological challenges (Zuckerman, 1994; Rahman, 2022). These findings contribute to existing psychological frameworks by elucidating the intersection of cultural norms and personality dynamics in shaping individual behavior. From a practical standpoint, the study advocates for the implementation of resilience-building programs, empathy-driven interventions, and community engagement strategies to cultivate a psychologically healthier academic environment (Doidge & Sandri, 2019; Gass & Seiter, 2022). Furthermore, the study underscores the imperative for policymakers and academic institutions to develop targeted intervention strategies aimed at mitigating personality-driven risk factors. Such initiatives should be culturally attuned and designed to enhance students' emotional intelligence, self-regulation, and adaptive coping mechanisms, ultimately fostering a more inclusive and supportive educational landscape (Marinj, 2018; Wang et al., 2022).

CONCLUSION

This study found that university students with higher Dark Triad traits are more likely to engage in risk-taking and report lower social support. However, strong social support, especially in collectivist cultures like Pakistan, helps buffer these effects and enhances psychological resilience. The findings highlight the importance of fostering support systems in educational settings.

LIMITATIONS AND RECOMMENDATIONS

This study has few limitations. The correlational design restricts causal interpretations, and the sample of Pakistani university students limits the generalizability of the results. Uncontrolled variables such as socioeconomic status and mental health may have influenced the findings. The use of convenience sampling and self-report measures could introduce bias, and cultural factors may affect how participants interpret items. Future research should use longitudinal methods, incorporate diverse and representative samples, include behavioral assessments, and develop culturally sensitive tools to deepen understanding of the relationship between Dark Triad traits, social support, and sensation seeking.

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