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## Standardisation Of Short Dark Tetrad (SD4) In Indian College-Going Population.

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### ABSTRACT

The Dark Tetrad, a cluster of personality traits- narcissism, Machiavellianism, psychopathy, everyday sadism-is a significant area of study in psychology as it impacts individual behaviour and societal dynamics. This preliminary study aims at standardizing the Short Dark Tetrad (SD4) scale, developed by Paulhus et al., (2020) on the Indian college-going population. Further, we investigate the correlation patterns among the dark tetrad traits. A sample (N=1011) of college students, ages 15-39, from diverse backgrounds was selected via random purposive sampling. Statistical analysis indicated a high reliability of 0.81 (Cronbach Alpha) and exploratory factor analysis and confirmatory factor analysis validates the Short SD4 in the Indian college-going population. Findings also reveal a low but positive relationship among the four traits of dark tetrad.

### Introduction

Dark personality traits are subclinical socially aversive tendencies that can manifest in various settings, including the workplace and academia (Paulhus, 2014). The Dark Triad of personality, which includes psychopathy, Machiavellianism, and narcissism, has been the focus of several personality studies (Blötnér & Beisemann, 2022). These characteristics entail unfavourable actions such as conceit, hostility, exploitation, and manipulation (Rauthmann & Will, 2011). There is a belief that the Dark Triad traits tend to lead to norm-breaking behaviour and transgressions however, a meta-analysis revealed robust associations between the Dark Triad characteristics, indicating conceptual repetition (Muris et al., 2017). However, psychopathy is the predominant malicious attribute, which means that scales tend to overpredict psychopathy scores and rarely predict variance in other traits (Dinić et al., 2020). The Dark Tetrad is an evolution of the Dark Triad and includes everyday sadism, an additional dark characteristic that also negatively affects social behaviour (Muris et al., 2017). With a foundation of manipulation and callousness, these evil inclinations can take many different forms based on strategies or manoeuvres.

Machiavellianism is a personality trait inspired by Niccolò Machiavelli, an Italian Renaissance political analyst and diplomat (Wastell & Booth, 2003). This trait incorporates resistance to social pressure, an arbitrary

worldview, a disdain for interpersonal interactions, self-interest, and a pragmatic perspective of other people. The notion of Machiavellianism was developed in 1970 by Richard Christie and Florence L. Geis, who identified leaders with authority over their followers and possessed a set of tenets consistent with those found in Machiavelli's "The Prince" and "The Discourses" (Hunt & Chonko, 1984). Research has shown that Machiavellianism is positively correlated with nihilism and helplessness but negatively correlated with subjective well-being, feelings of self-worth, hope in the face of adversity, and well-being (McHoskey et al., 1999). Barlow et al. (2010) suggest that emotional intelligence can serve as a counterbalance to Machiavellianism by examining the relationship between Machiavellianism and the theory of mind. Additionally, Bagozzi et al. (2013) found that while Machiavellians have a more negative relationship with perspective-taking and emotional sharing, they are more emotionally aware than other people.

The concept of narcissism, originating from the Greek myth of Narcissus, is a multifaceted aspect of personality that has been studied in the field of psychiatry since the early 1900s. Havelock Ellis first used the term autoerotic sexual behaviour in 1898 (Levy et al., 2012), and it was later employed by Paul Näcke in 1899 to describe sexual perversions (Grenyer, 2013). Sigmund Freud (1914) defined narcissism as a self-management mechanism that aligns with societal norms



(Tyler, 2007). Narcissism can generally be described as an exaggerated sense of self-importance and entitlement, prioritizing one's desires over others (Krizan, 2018). This trait is characterized by grandiosity, reactivity, entitlement, reward-driven actions, and a need for attention. Narcissism can be either healthy or pathological, reflecting varying ways of organizing personality and psychological needs (Pincus & Lukowitsky, 2010). Studies have found that child maltreatment is a risk factor for developing narcissism (Gao et al., 2023), and grandiose and vulnerable narcissism can contribute to the fear of missing out among young adults, leading to anxiety and dissatisfaction (Carone et al., 2023).

According to Hoppenbrouwers et al. (2016), psychopathy is a severe form of behavioural aberration marked by callousness, an entitled manner of relating to others, and impulsive, reckless behaviour that can be harmful to the individual as well as those around them. Phillippe Pinel first referred to it as "manie sans délire," but Koch later developed the word "psychopathy" to refer to atypical behaviours brought on by heredity (Arrigo & Shipley, 2001). Robert Hare's Psychopathy Checklist-Revised (PCL-R) has been an essential resource for comprehending neurobiology and psychopathic behaviour in criminal and psychiatric instances since 1980 (Buzina, 2012). Research indicates that men are more likely than women to score highly on psychopathy (Spormann et al., 2023) and that men are more likely than women to experience attachment anxiety and avoidance because of the primary psychopathic traits (Savard et al., 2015). Psychopathy is prevalent in the corporate world as well as in criminal situations. Studies show that high-ranking executive posts are frequently held by individuals with high psychopathy scores (Babiak et al., 2010). According to Sanecka (2013), working with or under organizational psychopaths can result in negative work attitudes, a decreased commitment to the organization, and a decreased level of job and supervisor satisfaction.

Sadism is a psychological attribute in which one finds gratification in the suffering of others, whether physical or mental (Foulkes, 2019). The word "sadism" was initially used by Richard von Krafft-Ebing (1912) in his groundbreaking study *Psychopathia Sexualis*, which examined sadistic sexual conduct (Nitschke et al., 2012). Sexual sadism is a characteristic in which one finds sexual satisfaction by witnessing bodily harm to other people. According to Foulkes (2019), sexual sadism is a primary factor contributing to the commission of sexual crimes. Since most forensic literature deals with sexual sadism, individuals are often ignorant of its companion, everyday sadism. Everyday

sadism is defined as apathy towards the physical, sexual, or psychological anguish of others, frequently motivated by an openly declared desire for cruelty (Buckels, 2012). Furthermore, Thomas & Egan (2022) found a strong correlation between sadism and the aggressive behaviour shown online, suggesting that anonymity may intensify a person's negative attributes. Moreover, Sassenrath et al. (2023) have demonstrated that victim accusing is a practice that individuals with everyday sadism often display since it produces a greater sense of sadistic gratification and a decreased level of empathetic concern.

Four undesirable characteristics make up the dark tetrad, a personality bunch: Machiavellianism, narcissism, psychopathy, and sadism. The Dark Tetrad intends to evaluate sub-clinical features of personality rather than clinical diagnosis. According to studies, these characteristics are predictive of political extremism, short-term romantic orientations, intimate partner cyberstalking, and cyberbullying. Aggression is also predicted by the Dark Tetrad, with women being more vocally aggressive and men being more physically violent. The dark tetrad is a comprehensive indicator of hostile personality traits in non-forensic samples in daily life.

### Purpose of the study

In this present study, we standardize the Short Dark Tetrad (SD4) in Indian college-going students and simultaneously investigate the correlational patterns among the four dark tetrad traits.

### Literature Review

Gruda et al. (2023) discovered a strong correlation between the choice of educational major and Machiavellianism. Students who score highly on Machiavellianism are more likely to major in areas that will help them enhance their status and obtain personal authority—35,025 people from 50 majors participated in the study. Moreover, the study's conclusions show that gender stereotypes have a substantial role in the gender differences in Machiavellianism across majors. Female students scored lower on Machiavellianism, while certain majors appear to draw a higher proportion of female students.

Gong et al. (2022) looked at the neuroanatomical mechanisms that underlie social aggression and Machiavellianism. Using voxel-based morphometry (VBM) on 176 undergraduate students, they discovered a relationship between social aggression and Machiavellianism and the regional grey matter volume (rGMV) in the left superior frontal gyrus (SFG). This study reveals the fundamental brain-personality



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mechanism that underlies the emergence of social violence and offers the first anatomical support for it.

Blötner & Bergold (2022) examined the relationship between the sensitivity to bullshit and Machiavellianism, in 525 participants (72% women). Bullshitting is a purposeful activity used to accomplish goals. According to the study's findings, convincing bullshitting is used by manipulative Machiavellians, but evasive bullshitting is used by mistrustful Machiavellians (Machiavellian avoidance). Further more, those who exhibit a high degree of Machiavellian avoidance can discriminate between true and false information.

McHoskey (1995) used the Mach-IV and Narcissistic Personality Inventory to investigate the relationship between narcissism and Machiavellianism in two groups (Ns = 214 and 205). The findings demonstrated an inverse relationship between Machiavellianism scores and adaptive narcissistic tendencies, and a positive correlation with traits of narcissism that indicate maladjustment, entitlement, and exploitativeness.

Ash et al. (2023) examined the neuroscience of narcissism to understand whether brain regions and networks are altered when non-narcissistic people are compared to people with both grandiose and susceptible narcissism. This study discusses data that shows that grandiose narcissism is related to an increase in fixation with fame, whereas vulnerable narcissism is associated with celebrity worship.

Blinkhorn et al. (2016), examine the connection between narcissism and views towards violence in a group of non-offenders (N=329). According to the results, men are more narcissistic overall and have more violent views, although both men and women who are narcissistic find violence acceptable. When it comes to violence, men's views are more adapted, while women's attitudes can be both maladaptive and adaptive. The comprehension of narcissism and attitudes towards violence is aided by these findings.

Wetzel et al. (2017) investigate whether current college students exhibit higher levels of narcissism than their forebears. The question of whether narcissism has increased across generations was tested using data from three cohorts (1990s: N = 1,166; 2000s: N = 33,647; 2010s: N = 25,412). The findings indicated a slight drop in narcissism overall between the 1990s and 2010s, along with facet-level drops in leadership, vanity, and entitlement. The idea that today's college students are

more egotistical than previous generations is refuted by this.

Fox & DeLisi (2019) discovered a substantial connection between psychopathy and homicide after analysing data from 22 research involving 2603 homicide offenders. A homicide offender's mean PCL-R psychopathy score was 21.2, which is considered to be moderate psychopathy. The effect size was substantial, and in research examining more extreme homicide manifestations, the effect sizes increased. The study emphasises how dangerous psychopathy and psychopathic personality traits are as indicators of deadly violence in a variety of ways.

According to Bouffard & Miller (2023), the chance of utilising sexual coercion is influenced by psychopathy, sexual desire, and cognitive distortions such as acceptance of the rape myth and misinterpretation of sexual intent. Psychopathy is directly associated with coercive intents and functions indirectly through acceptance of rape myths, according to a study conducted on 218 college males between the ages of 18 and 69.

Smith et al. (2022) looked at the connection between emotional awareness (EA) and psychopathic tendencies among 177 college students, 40 of whom were male. The results of the study showed that the only individuals whose lower EA was associated with greater psychopathy and worse empathy scores were individuals who had suffered early adversity and strong negative affect. This implies that while those with lower EA may be more prone to secondary psychopathy, those with higher degrees of primary psychopathy nonetheless might have higher EA.

Murphy & Vass (2003), at the forensic hospital Atascadero State Hospital (ASH), recognised four potential psychopath categories. These people have a lot of behavioural variety even though they have similar underlying personality features. Staff safety, management, patient care, and the communities they return to may all be impacted by this classification. Borderline, sadistic, antisocial, and narcissistic are the four subtypes.

Sest & March (2017) examine the personality traits of online trolls, by focusing on psychopathy, sadism, and empathy. An online survey was completed by 415 participants, of whom 36% were men and 63% were women. The findings indicated that men were more likely to engage in trolling and that the behaviour was predicted by higher levels of sadism and trait psychopathy. The act of trolling was predicted by lower



levels of affective empathy, while the relationship between cognitive empathy and trolling was tempered by trait psychopathy. High-trait psychopathy trolls use an empathic tactic, anticipating and identifying the emotional distress of their victims while suppressing their negative feelings.

Greitemeyer & Sagioglou (2017) stated that the socialisation hypothesis claims that frequent exposure to violent games enhances sadism, whereas the selection hypothesis asserts that everyday sadists are drawn to games with increased violence. According to a longitudinal study (N = 743), sadists are more likely to play violent video games, and over time, playing violent games repeatedly is a predictor of sadism. Consequently, violent video games and everyday sadistic impulses feed off one another.

Themelidis & Davies (2021) investigate the degree to which 323 participants may be stimulated to experience sadistic interest by a specially designed, quick mood induction process. Based on analysis, individuals in the experimental condition with greater baseline levels of sadism reported feeling more inclined to engage in sadistic things. The results show that pre-existing sadistic desire may be enhanced with a quick and easy procedure.

Everyday sadism's inclusion in the Dark Triad was assessed by Buckels et al. (2013). Sadism was found to be able to predict seemingly cruel actions in two investigations. Fewer people offered to kill bugs in the bug-killing paradigm than sadists did. Sadism anticipated unprovoked hostility and a propensity to harm innocent victims. The inclusion of common sadism in the "Dark Tetrad" of personality and its construct validity is supported by these findings.

Bonfá-Araujo et al. (2022) conducted this meta-analytic review to describe studies on the Dark Triad qualities and evaluate the association between these features and a sadistic personality. Psychopathy, Machiavellianism, and narcissism were found to be linked with sadism in the trial. Aspects of the Dark Tetrad's structure, online conduct, aggression, moral convictions, video games, sexual behaviour, and emotional functioning were all common features in the investigations. Bad conduct and socially maladaptive results have been connected to the Dark Tetrad characteristics. It was shown that sadism and psychopathy were more alike than narcissism and Machiavellianism.

Paulhus & Williams (2002) assessed 'Dark Triad' personalities in a sample of 245 students. Measures were found to be somewhat intercorrelated but not identical.

Disagreeableness was the only Big Five correlation that was shared. Subclinical psychopaths exhibited low neuroticism; psychopaths and Machiavellians demonstrated low conscientiousness; and a marginally favourable correlation between narcissism and cognitive capacity. Findings revealed that the personalities that make up the Dark Triad are different but overlapping creations.

Buckels et al. (2023) investigated the magnitude of the startle reaction in dark tetrad personalities. Results showed that general startle reactivity and sadistic inclinations were negatively correlated. Measures of psychopathy and sadism had a negative correlation with ASP, which is measured by increased response while seeing negatively valenced images. According to these results, individuals who exhibit high degrees of callousness and hostility show physiological signs of non-reactivity, while sadism and psychopathy are more strongly linked to decreased ASP.

Forsyth et al. (2021) looked at the association between Dark Tetrad traits and the propensity to lie in a range of contexts, including relationships, employment, and educational settings (N = 615). For individuals higher in the Dark Tetrad, lower cognitive load, less negative affect, and more positive affect were linked to a higher propensity to lie. Machiavellianism was the most effective domain-specific setting for predicting the four traits. Narcissism and sadism were discovered to be significant and strikingly comparable indicators of dishonest behaviour.

Hughes & Samuels (2021) examined connections between various types of desired control in romantic relationships and the Dark Tetrad personality characteristics. A study on personality and romantic relationships was conducted online with 318 participants (172 females and 146 males). All types of desired control were positively correlated with psychopathy and sadism. Even though the effects were less pronounced, narcissism also positively predicted all types of sought control. Additionally, all relationship control factors demonstrate that the Dark Tetrad characteristics were functioning identically in men and women.

Paulhus et al. (2021) studied how dark Tetrad personalities and schizotypy affect aggression (N=997). In undergraduates, Dark Tetrad characteristics were found to have a somewhat positive correlation with schizotypy in the first study, whereas in an online community, the second study found strong predictors of self-report aggression. Sadism and psychopathy were both highly significant indicators of self-reported



aggression. The Dark Tetrad's capacity to predict violence in self-report and behavioural measures was enhanced by schizotypy.

**Method**

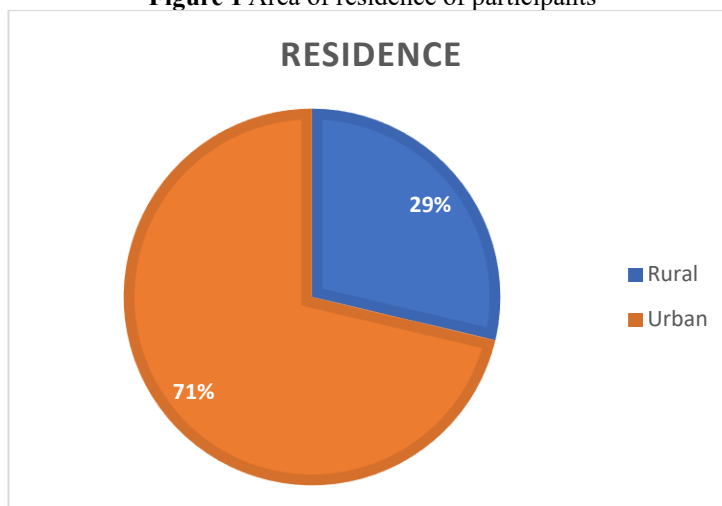
**Sample**

The present study employed a random purposive sampling method to select the sample. College students were approached and 1011 participants were ultimately selected. Inclusion criteria required individuals to be

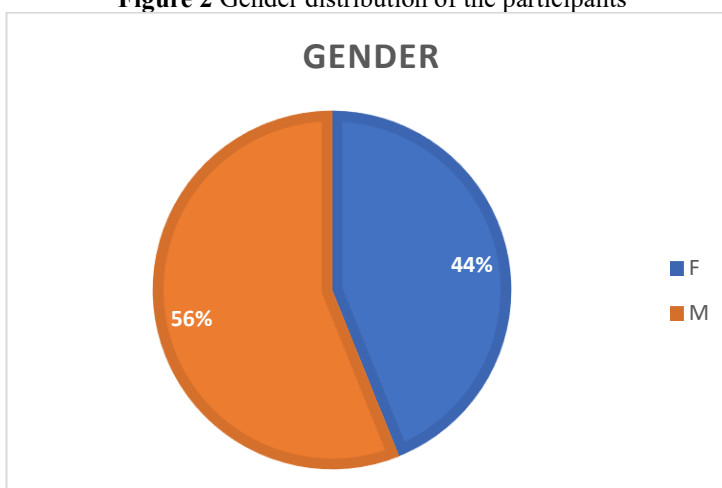
actively enrolled in a college or university degree program, while individuals not currently enrolled in any educational institution were excluded. The selected participants completed self-report questionnaires on Dark Tetrad offline, with due anonymity ensured. Participants were made aware that their participation was voluntary and that their identities would be kept confidential.

**Socio-demographic details**

**Figure 1** Area of residence of participants



**Figure 2** Gender distribution of the participants



**Figure 3** Age distribution of participants

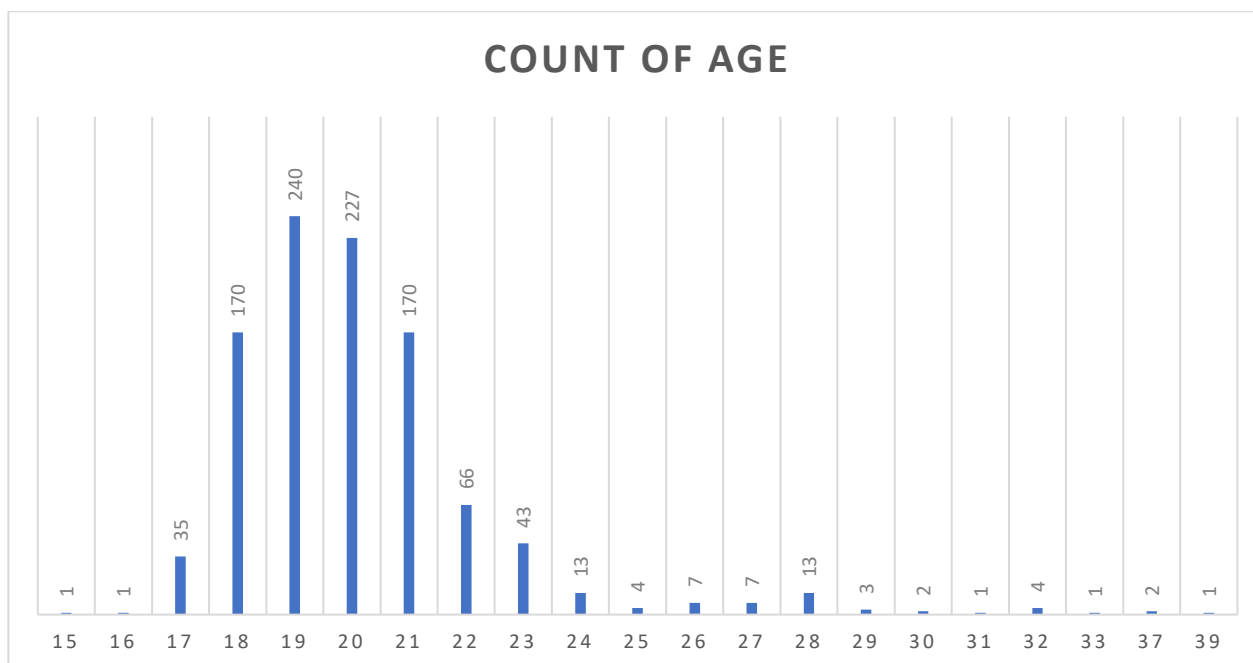


Figure 1 depicts the permanent area of residence of the participants; 71% of those surveyed inhabit urban areas, while 29% live in rural regions. Figure 2 demonstrates the gender breakdown of our sampled population: 44% are females, 56% are men and 0.4% others. Figure 3 represents the age distribution of our sampled population which shows that the population's age ranges from 15 to 39, with the maximum being between 17 to 24.

## Materials

### Short Dark Tetrad (SD4)

The Short Dark Tetrad (SD4) was developed by Paulhus et al. (2020). It is a self-administered questionnaire designed as a five-point Likert-type additive scale ranging from 1 point (strongly disagree) to 7 points (strongly agree). This scale measures the personality traits of the Dark Tetrad in 28 items consisting of four dimensions: Machiavellianism, narcissism, psychopathy, and sadism. 28 items of this scale are divided into 7 items for each dimension. A higher score corresponds to a higher level of dark personality traits.

### Statistical Analysis

The following are the statistical methods that were used: *Descriptive Analysis* - The level of demographic data was analysed with the help of the mean and standard deviation.

*Inferential Analysis* - Exploratory analysis, confirmatory analysis, and correlational analysis were established with the assistance of SPSS, Version 29.

## Results

### Descriptive Analysis

**Table 1** Descriptive analysis for the data collected

Mean	Variance	Std. Deviation	No. of Items
84.68	192.54	13.87	28

**Table 2** Item Statistics

	Mean	Std. Deviation	N
q1	3.9614	1.17292	1011
q2	3.7151	1.11069	1011
q3	3.4352	1.16827	1011
q4	3.2878	1.21102	1011
q5	3.4758	1.10362	1011
q6	2.8348	1.17035	1011





q7	3.9248	1.12059	1011
q8	3.3136	1.12029	1011
q9	3.3709	1.10081	1011
q10	3.0801	1.12862	1011
q11	3.0534	1.18619	1011
q12	3.6568	1.04735	1011
q13	3.4322	1.20318	1011
q14	2.0475	1.15687	1011
q15	2.5549	1.29037	1011
q16	2.6518	1.24338	1011
q17	2.2601	1.29912	1011
q18	2.9446	1.13752	1011
q19	2.3521	1.21974	1011
q20	3.1474	1.24082	1011
q21	3.2047	1.22216	1011
q22	2.7428	1.31222	1011
q23	2.8912	1.43300	1011
q24	2.6983	1.25192	1011
q25	2.6489	1.41363	1011
q26	2.8477	1.34405	1011
q27	2.0940	1.21054	1011
q28	3.0544	1.41071	1011

**Inferential Analysis**

**Table 3** The reliability statistics

Cronbach's Alpha	Cronbach's Alpha Based on Standardized Items	N of Items
.813	.808	28

**Table 4** KMO and Bartlett's Test

Kaiser-Meyer-Olkin Measure of Sampling Adequacy.		.846
Bartlett's Test of Sphericity	Approx. Chi-Square	5720.713
	df	378
	Sig.	<.001

**Table 5** Communalities

	Initial	Extraction
M1	1.000	.572
M2	1.000	.566
M3	1.000	.482
M4	1.000	.396
M5	1.000	.570
M6	1.000	.510
M7	1.000	.534
N8	1.000	.491
N9	1.000	.557
N10	1.000	.472
N11	1.000	.559
N12	1.000	.603
N13	1.000	.642



N14	1.000	.550
P15	1.000	.445
P16	1.000	.496
P17	1.000	.629
P18	1.000	.337
P19	1.000	.506
P20	1.000	.581
P21	1.000	.555
S22	1.000	.554
S23	1.000	.709
S24	1.000	.537
S25	1.000	.718
S26	1.000	.563
S27	1.000	.555
S28	1.000	.580

Note. Extraction Method: Principal Component Analysis.

**Table 6** Total variance explained

Component	Initial Eigenvalues			Extraction Sums of Squared Loadings			Rotation Sums of Squared Loadings
	Total	% of Variance	Cumulative %	Total	% of Variance	Cumulative %	Total
1	4.985	17.802	17.802	4.985	17.802	17.802	2.801
2	2.645	9.446	27.248	2.645	9.446	27.248	2.303
3	1.803	6.438	33.686	1.803	6.438	33.686	2.170
4	1.313	4.690	38.377	1.313	4.690	38.377	1.788
5	1.302	4.651	43.027	1.302	4.651	43.027	1.751
6	1.149	4.105	47.132	1.149	4.105	47.132	1.544
7	1.061	3.789	50.921	1.061	3.789	50.921	1.534
8	1.010	3.607	54.528	1.010	3.607	54.528	1.378
9	.941	3.362	57.890				
10	.872	3.115	61.005				
11	.841	3.004	64.008				
12	.822	2.935	66.943				
13	.769	2.747	69.690				
14	.717	2.561	72.250				
15	.702	2.507	74.758				
16	.682	2.436	77.194				
17	.645	2.302	79.496				
18	.631	2.253	81.749				
19	.609	2.175	83.924				
20	.605	2.162	86.085				
21	.586	2.092	88.177				
22	.546	1.950	90.127				
23	.513	1.832	91.959				
24	.506	1.808	93.767				
25	.492	1.757	95.523				
26	.475	1.697	97.221				
27	.425	1.518	98.738				
28	.353	1.262	100.000				





**Table 7** Total variance explained

Component	Rotation Sums of Squared Loadings	
	% of Variance	Cumulative %
1	10.005	10.005
2	8.224	18.229
3	7.749	25.978
4	6.385	32.363
5	6.253	38.616
6	5.513	44.129
7	5.479	49.608
8	4.920	54.528

Note. Extraction method: Principal Component Analysis

**Table 8** Component Matrix

	Component							
	1	2	3	4	5	6	7	8
N8		.559						
N9		.519						
N10		.501						
N11		.594						
N12		.577						
N13		.552						
N14					-.515			
P15	.503							
P16	.570							
P17	.605							
P19	.509							
S22	.606							
S23	.575							
S24	.536							
S25	.594							
S27	.576							
S28	.523							

Note. Extraction Method: Principal Component Analysis. a. 8 components extracted

**Table 9** Rotated component matrix

	Component							
	1	2	3	4	5	6	7	8
M1						.649		
M2						.647		
M3						.624		
M4								
M5								.730
M6								.536
M7								.544
N8			.672					
N9			.733					
N10			.637					
N11			.528					
N12					.711			
N13					.761			
N14							.669	
P15	.631							
P16	.601							
P17	.712							
P18								



P19	.638							
P20	.663							
P21								
S22	.632							
S23	.815							
S24				.545				
S25	.809							
S26				.697				
S27						.552		
S28				.710				

Note. Extraction Method: Principal Component Analysis. Rotation Method: Varimax with Kaiser Normalization. a. Rotation converged in 9 iterations

**Table 10** Component transformation matrix

Component	1	2	3	4	5	6	7	8
1	.592	.504	.281	.413	.216	.124	.253	.141
2	-.281	-.261	.679	-.132	.520	.284	-.029	.152
3	-.459	.309	-.239	.267	-.163	.565	-.107	.457
4	.442	-.535	-.074	-.205	-.295	.424	.310	.328
5	.388	-.108	-.088	.021	.142	.055	-.879	.182
6	.047	-.133	-.543	.085	.615	.360	.135	-.390
7	.072	.200	.274	-.165	-.368	.521	-.184	-.642
8	.085	.476	-.141	-.815	.189	.029	.049	.208

Note. Extraction Method: Principal Component Analysis. Rotation Method: Varimax with Kaiser Normalization

**Table 11** The correlation between the four traits of Dark Tetrad

Variable	N	Machiavellianism	Narcissism	Psychopathy	Sadism
Machiavellianism	1011	-	-	-	-
Narcissism	1011	.252**	-	-	-
Psychopathy	1011	.097**	.251**	-	-
Sadism	1011	.229**	.192**	.509**	-

\*\* Correlation is significant at the 0.01 level (2-tailed).

## Discussion

The objective of this study was to standardise the Short Dark Scale (SD4) on the Indian college-going population and establish a relationship between the traits of dark tetrad in the Indian college-going population.

Table 1 depicts the descriptive analysis of the sample. The sample exhibits moderately high levels of dark personality traits of dark tetrad ( $M=84.68$ ,  $SD = 13.87$ ). This indicates that the Indian college-going population has moderate levels of dark traits, with an average score of 84.68 ( $SD = 13.87$ ).

Table 2 displays the item statistics of all the 28 items. As a 5-point Likert scale was used, a mean of 2.5 is considered optimal. Table 2 shows that all 28 items have very small deviations from the desired mean, both positively and negatively.

Table 3 presents the reliability statistics of the SD4 tool administered to college-going individuals in India. To gauge the reliability of this tool on the Indian college-going population, Cronbach's Alpha was employed as a measure of internal consistency. The results, as

displayed in Table 3, indicate a high reliability of .813 (Cronbach's Alpha), which surpasses the acceptable reliability threshold of 0.8 (Nunnally, 1978). Consequently, the study concludes that the SD4 is a reliable tool for evaluating four negative personality traits in the non-forensic population.

Table 4 displays the KMO and Bartlett's test results. When the KMO value is greater than 0.5, it indicates that there is a significant correlation in the data. According to Table 4, the KMO value is .846, which is significant at the .001 level, indicating a high degree of correlation in the data.

Table 11 displays weak, yet positive associations between the dark tetrad traits, ranging from 0.09 to 0.50, which are significant at 0.01 level.

The Pearson product correlation between Machiavellianism and Narcissism was found to be positive, but small and statistically significant ( $r=.252$ ,  $p < .001$ ). Both traits are mutually beneficial as their behavioural exhibitions often involve power control, manipulation, and deceit. This indicates that two characteristics can exist simultaneously in a person, as also confirmed by McHoskey (1995).



Additionally, Pearson's correlation between Machiavellianism and psychopathy was almost negligible ( $r=.192$ ,  $p < .001$ ) indicating a weak association between the two traits. The former is associated with being deceptive and opportunistic, while the latter is identified through behaviour that is insensitive and impulsive. Although both attributes are dark personality traits, their manifestation is unique and different, and thus cannot be quantified about each other.

Pearson's coefficient ( $r=.229$ ,  $p < .001$ ) indicated that Machiavellianism and everyday sadism have a trivial, yet positive correlation, as Bonfá-Araujo et al. (2022) have reinforced. Both traits are malicious and violent, but Machiavellians may be more calculated and deceitful in their intentions, while sadists may be more open in their pursuit of pleasure.

The association between psychopathy and sadism is positive ( $r = .509$ ,  $p < .001$ ) and significant. This correlation can be explained by the fact that psychopathy is characterized by the absence of empathy and remorse for others (Buckels et al., 2013), while sadism is the enjoyment of causing harm to others (Fox & DeLisi, 2019). Therefore, the positive relationship between these two traits is widely accepted within the scientific community (Sest & March, 2017).

Our findings indicate a weak but positive correlation ( $r = .251$ ,  $p < .001$ ) between trait narcissism and psychopathy, which is in line with previous studies (Paulhus & Williams, 2002). The description of sadists as aggressive or malignant narcissists, who derive their pleasure from the detriment of others without seeming to care if others are harmed in the process, further supports our findings of a positive alignment ( $r = .251$ ,  $0 < .001$ ) between narcissism and sadism (Murphy & Vess, 2003).

### Conclusion

The primary objective of this study was to standardize the Short Dark Scale (SD4) on the Indian college-going population and establish a relationship among the traits of the dark tetrad. The dark tetrad is a relatively new psychological construct that considers four negative personality traits: Machiavellianism, Narcissism, Psychopathy, and Sadism. Previous Indian researchers have attempted to establish the Dark Triad as a valid and reliable measure, but no work has been done on the Dark Tetrad. The study found that the Dark Tetrad is a dependable and sound instrument for evaluating four negative personality traits in non-forensic populations. The reliability of the scale is demonstrated by Cronbach's Alpha, while the validity is confirmed by reproduced correlations. Furthermore, the study depicted positive albeit small yet statistically significant associations between the traits of the dark tetrad.

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