FACTOR STRUCTURE OF LEVENSON'S SELF-REPORT PSYCHOPATHY SCALE-REVISED URDU VERSION AMONG UNDERGRADUATE STUDENTS

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ABSTRACT

Objective: To find out the construct of psychopathy among undergraduate students whether they exhibit same pattern of psychopathic personality features or behavioural characteristics as seen among incarcerated population.

Methodology: A cross sectional study was conducted between March 2017 to March 2018 on undergraduate students of Peshawar. Convenient sampling technique was used to recruit 500 participants in order to examine the construct of psychopathy in adolescents having not been involved in criminal justice system. Further, the study explored whether they exhibit same pattern of psychopathic personality features and behavioural characteristics seen in incarcerated population. The construct of psychopathy was measured by the Urdu Version of the Levenson's Self-Report Psychopathy Scale-Revised Urdu Version (LSRPS-RUV). Nineteen out of 26 items were used in the current study as used by previous researchers. Confirmatory Factor Analyses were conducted to analyze the data.

Results: Results revealed that the undergraduate students showed moderate level of egocentricity and antisocial behaviour and low level of callousness. The values for CFI = 0.91, TLI = 0.90, RMSEA = 0.06, and RSMR = 0.04 indicate that the three-dimensional model of LSRPS adequately fits the data.

Conclusion: Findings from confirmatory factor analysis provide evidence that the three-dimensional model of LSRPS-RUV fits the data adequately as compared to the two-factor and one-factor models.

Keywords: Factor Structure; Psychopathy; Confirmatory Factor Analysis.

INTRODUCTION

Psychopathy can be explained by three components: interpersonal, behavioural, and affective.[1] Examples of the interpersonal traits include grandiose, arrogance, superficiality, manipulativeness whiles; characteristics of affective component include traits such as lacking empathy, remorse, guilt, and lack of ability to develop long lasting bonds with others. Behavioural traits include impulsiveness, recklessness, sensation seeking, and antisocial behaviour. In order to understand the core concept of psychopathy Levenson's and his colleagues developed the Levenson's Self-Report Psychopathy Scale (LSRPS).[2] The Exploratory Factor Analysis (EFA) used to assess the primary and secondary scale of the LSRPS by using a large sample of undergraduate students found that their initial model could not fit the data adequately but then after modification, the data fitted the model very well. The construct validity of the LSRPS was exhibited by its relationship with other variables like thrill seeking, poor academic performance, substance abuse, and anti-social traits that are theoretically relevant to the construct of psychopathy.

To understand the core concept of psychopathy, a study was conducted on 1154 college students using the LSRPS and found two-factor structure is an adequate model for psychopathy.[3] Primary factor exhibited associations with agreeableness and empathy while the secondary factor showed associations with neuroticism and conscientiousness.

To validate the LSRPS, another study used two different prison samples consisting of Caucasian (n = 270) and African American (n = 279).[1] Confirmatory Factor Analysis (CFA) provided modest support for the two-dimensional model of the scale. Result revealed that the Psychopathy Checklist-Revised and the LSRPS both were significantly correlated to the variables of criminal versatility and substance abuse and both scales predicted performance on the passive avoidance task. Factor structure of the LSRPS was assessed in a sample of 430 female offenders.[4] Initially they used

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the EFA and then applied CFA to assess the factor structure of the LSRPS. Their results revealed that the three-dimensional model of the LSRPS fits the data well by excluding seven items out of 26. The rest of 19 items were comprised into three factors, namely, Callous (4 items), Egocentricity (10 items), and Antisocial (5 items). They also found that the three factors structure was differently associated with external variables like antisocial behaviour, hostility, egocentricity, sensation seeking, and aggression. The three-factor model of the LSRPS was found to be reliable in female inmates. However, they suggested further research to validate the scale by using different sample in different settings. Sellbom observed two-factor and three-factor model of the LSRPS among three different samples including inmate's male and female students. Results demonstrated that three-factor model consisting of 19 items of the LSRPS was the best fitted model to the data. The total scores of the LSRPS and scores on three subscales revealed good convergent and discriminatory validity.[1]

The Levenson's Self Report Psychopathy Scale was translated in Urdu and CFA was applied to assess factor structure of the Urdu Version of the LSRPS in a sample of adult male offenders (n = 342) incarcerated in different prisons of Khyber Pakhtunkhwa. [5] Results indicated that three factors model fitted to the data very well.

Previous research has shown that psychopathy is evident in early childhood and adolescence and found a relationship between psychopathy and antisocial behaviour in both delinquent and non-delinquent adolescents. Research suggests that it may not be possible to accurately assess psychopathy during adolescence but identification of psychopathic traits during early life is important to avoid negative outcomes in later life.[6] Earlier research revealed psychopathy both in male and female offenders but absolute ratio of the psychopathic symptoms and severity was lower among female than male.[7] Therefore, further research should be warranted to investigate the true construct of psychopathy across gender.[8] Additionally, it was suggested that psychopathy construct exists both in male and female adults but its prevalence and mean is lower among incarcerated female than male offenders. In male psychopathy has been considered as a significant predictor of recidivism and violent offending, however, among female prisoners it moderately predicts violent offending.[6]

According to Neumann and Hare et al, in general population the rate of psychopathy is about two percent. [9] Although low but still it is considered as dangerous both for the society and for the psychopaths because psychopaths having certain characteristics such as lack of empathy, guilt, remorse, callousness, superficial charm and lack of long terms relations are harmful not only for themselves but for the community as well. An estimate indicates that one percent of all non-institutionalized adults meet the criteria of psychopathy.[10] Taking into account the important role of psychopathic features among general population, it is important to explore factor structure of the LSRPS in adolescence to accurately assess the psychopathic traits that are responsible for the development of psychopathic behaviour among adulthood.

A wealth of researches has been conducted to assess factor structure of the LSRPS among normal, clinical, and incarcerated samples in Western counties. In Pakistan, Shagufta in 2018 translated and validated the above-mentioned scale in prison population. [5] Taking into account the importance and implication of the scale in various settings especially in clinical, it seems essential to assess its factor structure across diverse sample in different settings. The present study was thus, designed to assess factor structure of the LSRPS-RUV among student's sample. The information provided by this research will be helpful for assessing psychopathic traits in student population that might be risky in developing further psychological problems which leads to criminal and antisocial behaviour. In current study it was hypothesized that the three-factor structure of the LSRPS-RUV would adequately fit the data as compared to the two-dimensional and one- dimensional model.

METHODOLOGY

A cross-sectional study was conducted between March 2017 to March 2018 on undergraduate students of Peshawar. The sample consisted of (n = 500) undergraduate students [n = 250 males and n = 250 were female]. The sample was selected from different colleges and universities of Peshawar. The age range of the sample was between 18 to 25 years (M = 42.6, SD = 12.1). This project was approved by the Advanced Studies Review Board of Shaheed Benazir Bhutto Women University, Peshawar -Pakistan. All those students who were having existing psychological problems, disabilities, physical or mental illnesses were excluded from the current study.

A booklet consisting of the LSRPS-RUV along with a single question that was asked to measure antisocial behaviour were administered to each participant individually.

A convenient sampling technique was used to recruit the participants. Permission was taken from the competent authority of the concerned colleges and universities for data collection. The participants' written consent was obtained. They were informed by the researcher that all information collected from them would be kept anonymous and secure and that the data would only be used for research reasons. The subjects' participation was entirely voluntary, and they

were free to leave at any time.

LSRPS, used in the present study was translated into the Urdu language, using three language experts employing forward-backward method, by the principal investigator using 19 out of 26 items as used in other studies.[1,5,11]

Each item was scored using a 5-point Likert Scale, with 1 being strongly disagreed and 5 strongly agreeing. Six of the nineteen items were scored backward. Participants who scored 58 or more were considered psychopathic; those scoring in the lowest third of the distribution were considered non-psychopathic (scores 48 and below), and those scoring in the middle were considered a mixed group (scores of 49-57). Demographic information includes age, location, socio-economic status, and smoking behaviour. Additionally Self-report Antisocial Behaviour additionally one question "Have you ever been reprimanded for breaking a school rule?" was included to measure antisocial behaviour. In addition to using person correlation and Structural Equation Modeling (SEM) technique using Confirmatory Factor Analysis techniques were applied to assess the data.

RESULTS

Results revealed in table no 1 show mean standard deviation and Cronbach's Alpha of the scale as a whole as well as of the single scales. The results show that means and alphas of the individual scales are high as compared to the alpha of the scale as a whole. The mean of the students on the total scale is 42.62$\pm$12.17, on the Egocentricity 19.77$\pm$7.83, on Callous, 11.77$\pm$4.36, while on Antisocial it is 10.55$\pm$4.17 respectively. Reliability of total score (a=0.77) and three subscales i.e. Egocentricity (a=0.86) and for Antisocial Traits (a=0.84) is high. However, the reliability of the callous subscale is comparatively low (a=0.64) consistent with the previous study.[5]

Three Alternative Models of LSRPS

Confirmatory Factor Analysis were applied to find the factor loading and factor structure of LSRPS-RUV. Results revealed that the three-dimensional model fit the data adequately. One-factor model of LSRPS-RUV consisted of all 19-items of the scale. Two-factor model LSRPS-RUV consisted of two factors i.e. Primary and secondary factors. Total 13 items (2,4,7,9,11, 13,17,21,22,23,24,25, and 26) were loaded on first factor whereas 6 items (1,3,5,10,15, and 16) were loaded on second factor. The three-factor model of LSRPS-RUV consisted of three dimensions. Egocentric that comprised of 10 items (1,3,5,7,9,11,13,17,21, and 23), Callous factor underpinned by 4 items (22, 24,25, and 26), and Antisocial factor is composed of 5 items (2,4,10,16, and 18).

Table 1: Descriptive statistics and reliability for Levenson's Self-Report Psychopathy Scale – Revised Urdu Version (LSRPS-RUV) (total) and three subscales (n=500)

Variable	Mean	SD	Cronbach's Alpha (α)
LSRPS-RUV (Total)	42.62	12.17	0.77
Egocentricity (EC)	19.77	7.83	0.86
Callous (CA)	11.77	4.36	0.64
Antisocial Factor (AS)	10.55	4.17	0.84

Table 2: Fit indices for the three alternative models of Levenson's Self-Report Psychopathy Scale – Revised Urdu Version (LSRPS-RUV).

Models	χ^2	Df	CFI	TLI	(90%CI)	RMSEA	SRMR	AIC
1 Factor Model	1641.290***	153	0.55	0.53	(0.10/0.11)	0.10	0.13	2137.003
2 Factor Model	2593.935***	298	0.55	0.51	(0.10/0.11)	0.10	0.11	2065.684
3 Factor Model	442.2811***	152	0.91	0.90	(0.05/0.06)	0.06	0.04	518.281

Note: χ^2=chi-squared goodness of fit statistic; df=degrees of freedom; CFI=Comparative Fit Index; CI=Confidence Interval; TLI=Tucker Lewis Index; RMSEA=Root-Mean-Square Error of Approximation; SRMR=Standardized Square Root Mean Residual; AIC=Akaike Information Criterion
*** Indicates χ^2 results are statistically significant (p< .001)

Table 3: Correlation between Three Latent Factors of Levenson's Self-Report Psychopathy Scale – Revised Urdu Version (LSRPS-RUV)

Latent Factors	EC	CA	AS
Egocentric (EC)	---		
Callous (CA)	0.22***	---	
Antisocial (AS)	0.21***	0.23***	---

Note: All correlations are significant at p < .001

Table 4: Standardized and unstandardized regression paths (with standard errors) for the specified structural model

Item		B	B	SE
Factor 1 (Egocentric)	Success is based on survival of the fittest; I am not concerned about the losers.	1.00	0.63***	0.01
	For me, what's right is whatever I can get away with.	1.04	0.66***	0.00
	In today's world, I feel justified in doing anything I can get away with to succeed.	1.12	0.54***	0.10
	My main purpose in life is getting as many goodies as I can.	1 0.99	0.70***	0.05
	Making a lot of money is my most important goal.	1.09	0.74***	0.06
	I let others worry about higher values; my main concern is with the bottom line.	1.08	0.70***	0.06
	People who are stupid enough to get ripped off usually deserve it.	0.99	0.73***	0.05
	I tell other people what they want to hear so that they will do what I want them to do.	1.09	0.73***	0.06
	I often admire a really clever scam.	1.14	0.47***	0.11
	I enjoy manipulating other people's feelings.	1.00	0.74***	0.01
Factor 2 (Callous)	I make a point of trying not to hurt others in pursuit of my goals.	1.00	0.80***	0.00
	I feel bad if my words or actions cause someone else to feel emotional pain.	0.98	0.55***	0.09
	Even if I were trying very hard to sell something, I wouldn't lie about it.	1.04	0.56***	0.11
	Cheating is not justified because it is unfair to others.	1.00	0.51***	0.00
Factor 3 (Antisocial)	I find myself in the same kind of trouble, time after time.	1.00	0.74***	0.05
	I am often bored.	1.07	0.78***	0.06
	I quickly lose interest in tasks I start.	0.97	0.66***	0.06
	I have been in a lot of shouting matches with other people.	0.99	0.71***	0.06
	When I get frustrated, I often "let off steam" by blowing my top.	1.00	0.71***	0.03

Table 5: Correlation between Total and Three Factors of LSRPS-RUV and other Demographic Variables

	LSRPS	EC	CA	AS	Age	ASB	SB
LSRPS	-						
EC	0.80**	-					
CA	0.59**	0.18**	-				
AS	0.52**	0.18**	0.20**	-			
AGE	0.08	0.11*	0.01	0.09*	-		
ASB	0.25**	0.08	0.09	0.52**	0.19**	-	
SB	0.14**	-0.01	0.14**	0.31**	0.09*	0.23**	-
SES	-0.10*	-0.01	-0.11*	-0.16**	0.01	-0.13**	-0.10*

Note: EC= Egocentricity, CA= Callous, AS= Antisocial, ASB=Antisocial Behaviour, SB= Smoking Behaviour, SES= Socioeconomic Status.
*p < .05, **p < .01"

The results presented in the figures (models) demonstrate that the three-dimensional model fits the data adequately compared to one and two-dimensional. One-factor model of the LSRPS- RUV is consisted of all 19-items of the scale; two-factor model consists of two factors: primary and secondary factors. Total 13 items (2, 4, 7, 9, 11, 13, 17, 21,22, 23, 24, 25, & 26) were loaded on first factor while six items (1, 3, 5, 10, 15, & 16) were loaded on second factor. The three-factor model of the LSRPS-RUV is consisted of three dimensions: Egocentricity comprising of 10 items (1, 3, 5, 7, 9, 11, 13, 17, 21, & 23), Callous underpinned 4 items (22, 24, 25, & 26), and Antisocial which is composed of 5 items (2, 4, 10, 16, & 18).

Table 2 showed both comparative and absolute fit indices for all the alternative models of LSRPS-RUV and indicated that all indices showed improvement in the three-dimensional model of psychopathy in LSRPS-RUV above the single-dimensional and two-dimensional model. Although, the value of chi-square is statistically significant but it has been suggested that on the base of statistically significant Chi-Square the model could not be rejected, since the large sample size amplifies the power of this test. Moreover, values for CFI = 0.91, TLI = 0.90, RMSEA = 0.06, and RSMR = 0.04 indicate that the three-dimensional model of LSRPS adequately fits the data of the student population. The value of AIC (518.281) further indicates the adequacy of three-factor model of LSRPS-RUV.

Standardized factor loading for items should be 0.6 which suggests that half of variance of latent variable is described by observed variable. However, 0.4 is accept-

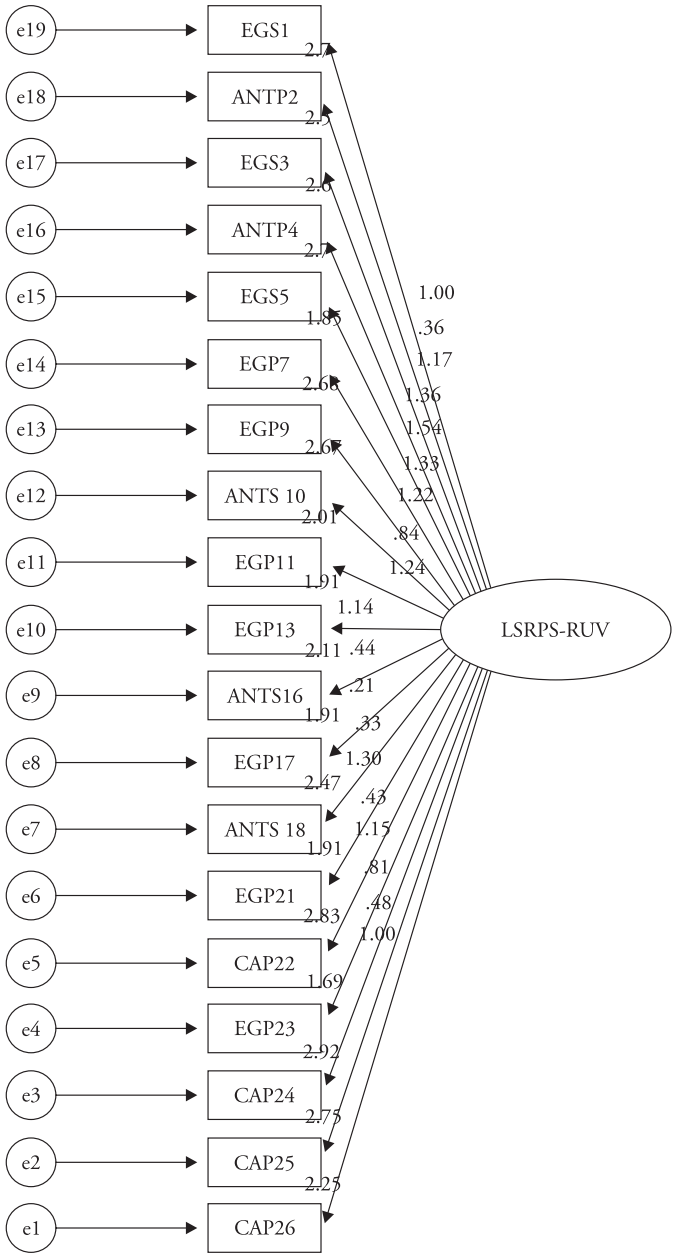

Figure 1: One-Factor Model
Note: χ^2 (153) =1641.2 p < 0.001; CFI = 0.58; TLI = 0.53; RMSEA = 0.14; RSMRS = 0.13

able. All factors loading were found in the expected direction and are significant at 0.001.

Table 3 shows that three latent factors of the LSRPS-RUV are moderately significantly correlated. Egocentricity significantly (moderately) correlated with callous (r = 0.15, p > 0.001) and antisocial behaviour (r = 0.11, p > 0.001). Correlation between antisocial traits and callous factor is comparatively higher (r = 0.17, p > 0.001).

Standardized and un-standardized factor loading with standard errors for three factor model of LSRPS-RUV is presented in Table 4.

Table 5 describes the bivariate correlations among factors scores, self-reported antisocial behaviour, and demographic variables. Initial correlation showed that the total score of LSRPS-RUV significantly related to the three sub-scales: Egocentric, Callous, and Antisocial factor. LSRPS-RUV total scores also significantly positively correlated with self-reported antisocial behaviour and smoking behaviour. However, socioeconomic status was negatively correlated with LSPRS-RUV total scores which suggested that those students who were belonging to lower middle class scored higher on the LSRPS-RUV.

Of the three sub-factors only, egocentricity was significantly positively correlated with age which suggested that egocentricity would increase with the age. Callous factor was significantly positively correlated with smoking behaviour which suggested that those students who scored high on Callous scale were more involved in smoking behaviour. Whereas, callous factor was significantly negatively correlated with socioeconomic status suggested that students with low socioeconomic background were more callous.

In addition, the antisocial factor significantly correlated with antisocial behaviour and weakly correlated with age. However, the correlation between antisocial factor of LSPRS-RUV and self-reported antisocial behaviour was very strong which suggested that those students who scored high on antisocial factor of psychopathy were also high on self-reported antisocial behaviour. Antisocial factor was also positively linked to smoking behaviour.

DISCUSSION

The present study was focused to assess the factor structure of LSRPS-RUV among undergraduate students. Results indicated that LSRPS-RUV can be best conceptualized and measured by three dimensions: Egocentricity, Callous and Antisocial factor.

In the current study, CFA was used to assess the dimensionality of the scale. Consistent with the previous researches, three-factor model of LSRPS-RUV adequately fit the data.[1,5,11] Additional support for three factor

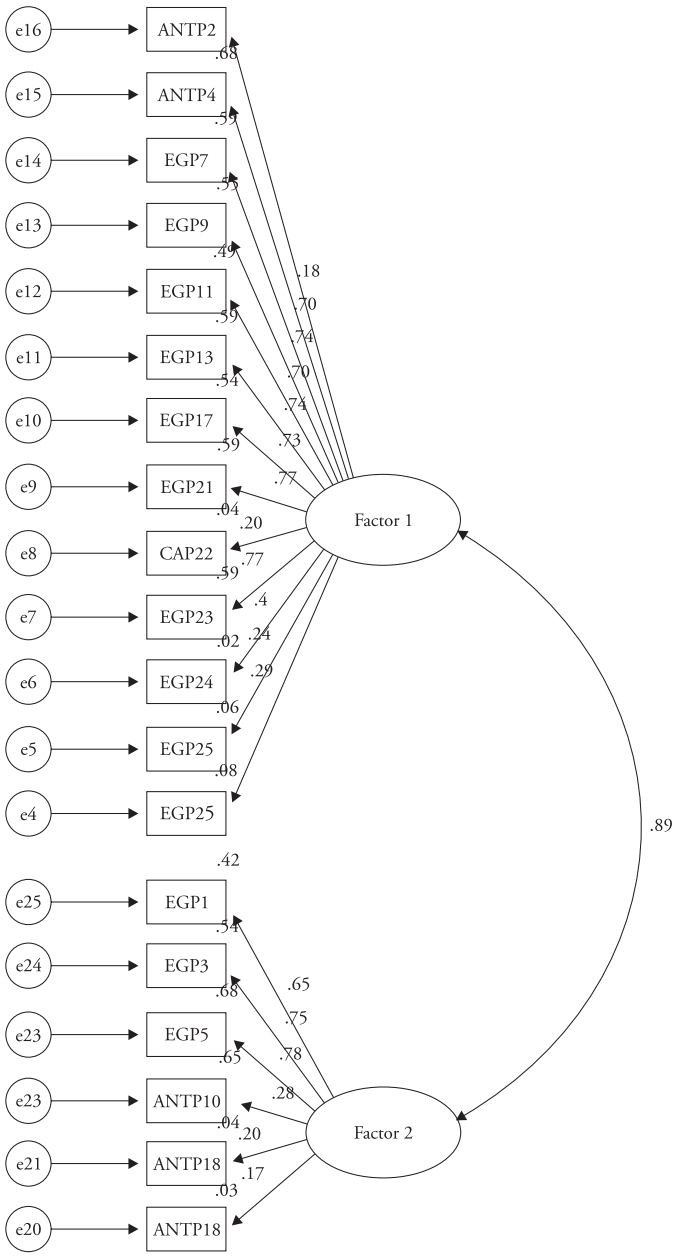

Figure 2: Two-Factor Model
Note: χ^2 (152) = 2593.9 p < 0.001; CFI = 0.51; TLI = 0.45; RMSEA = 0.18; RSMRS = 0.16

model of LSRPS-RUV was provided by factor loadings as explained by Hair colleagues [12] who suggested that it should be not less than .60 however, .40 is acceptable. In the present study the factor loadings for some items were not strong that is contrary to the previous study conducted by Shagufta.[5] Results can be attributed to the sample differences because previous study was conducted on incarcerated adult offenders whiles current study utilized undergraduate student sample. In the current study, we examined the relation between LSRPS-RUV and theoretically relevant variables. These measures include age, self-reported antisocial behaviour, smoking behaviour, and socioeconomic status.

Consistent with the literature, the three factors of LSRPS-RUV were correlated with age, self-reported antisocial behaviour, smoking behaviour and socioeconomic status. Egocentric and antisocial factors of LSRPS-RUV were significantly positively correlated with the age consistent with the previous study who found the inmate psychopathy increased with age.[13]

Callous factor was significantly positively correlated with smoking behaviour which is contrary to the previous study[1] that remained failed to found any relationship between callous factor and substance abuse. There are possible explanations for this discrepancy. LSRPS-RUV was initially validated on prisons adults' sample and present study utilized undergraduate students. Previous study was focused on substance abuse whiles current study assessed only smoking behaviour. Consistent with the previous study[1] Callousness was significantly negatively correlated with socioeconomic background which suggested that students from low socio-economic status were more callous.

Results indicate that antisocial factor significantly correlated with self-reported antisocial behaviour which is also consistent with the previous studies.[1,8,14-16] In line with previous researches, a negative correlation between antisocial factor and socioeconomic status has been found.[14,15,17-19] The relationship between this variable is week which is also in line with the study who found slightly weak relationship between psychopathy and socioeconomic status.[20]

Present study also provides a robust assessment of the internal consistency of the LSRPS-RUV. Cronbach's alpha reliability was performed to assess the reliability of total LSRPS-RUV and three dimensions egocentricity, callous and antisocial factor. The egocentricity and antisocial subscales showed good reliability however; the internal consistency for callous items were lower which is consistent with previous studies.[1,5,11]

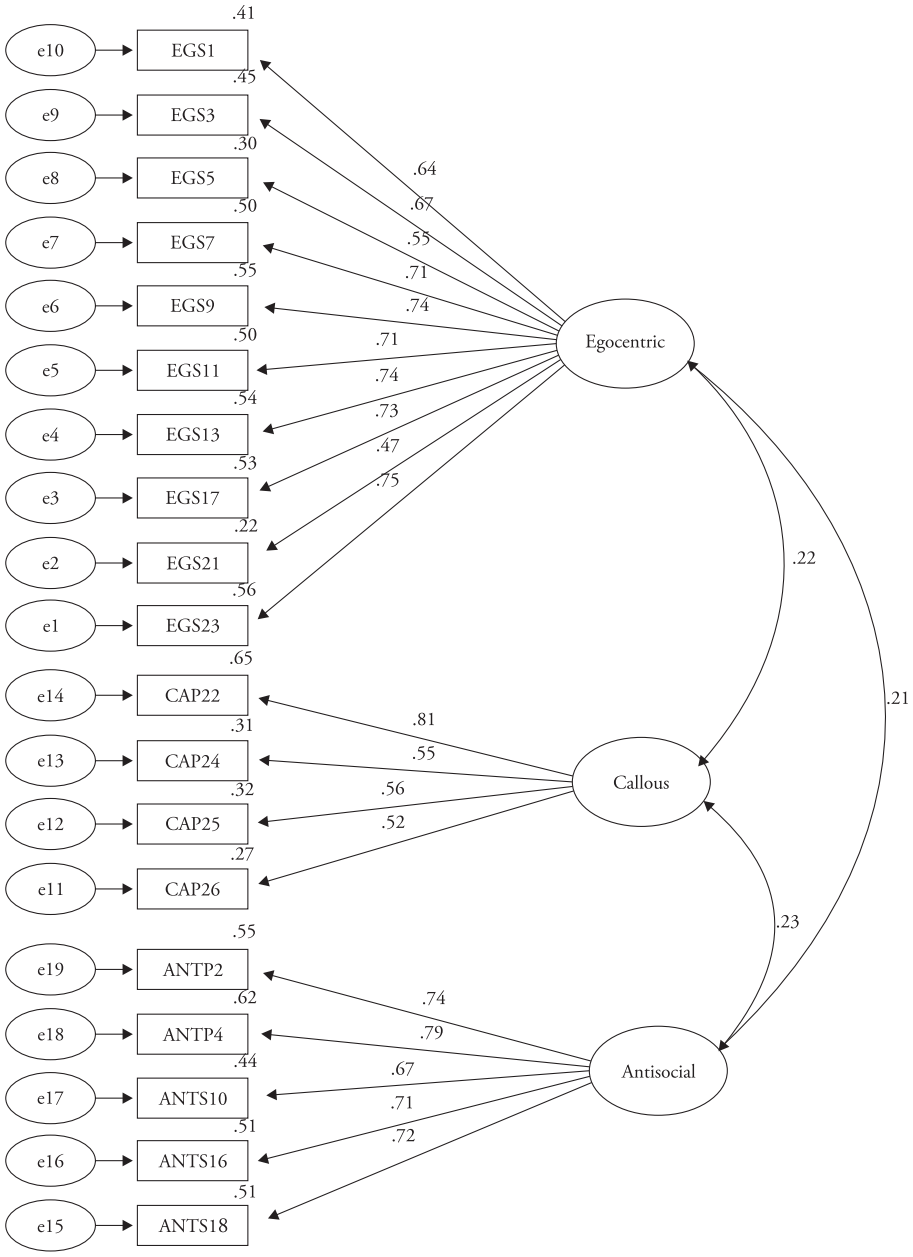

Figure 3: Three-Factor Model
Note: χ^2 (152) =442.2 p < 0.001; CFI = 0.91; TLI = 0.90; RMSEA = 0.06; RSMRS = 0.04

LIMITATIONS

The current study, despite its valuable contribution, has few limitations as well. First limitation is the use of self-report method which has been used to collect the data because it can under or overestimate the responses. Secondly, a proportion of students were excluded due to the unwillingness of the subjects' participation. Therefore, this limitation was unavoidable. Third limitation is related to assessing self-reported antisocial behaviour by using only one question. For further study, a validated scale should be used for assessing antisocial behaviour. LSRPS-RUV is validated on criminal and student population in Khyber Pakhtunkhwa, therefore, in future the study should be replicated by using other samples such as incarcerated females, clinical and adult normal population and should involve other areas of the country.

CONCLUSION

The results of this study, based on confirmatory factor analysis, provide evidence that the three-dimensional model of LSRPS-RUV fits the data adequately as compared to the two-factor and one-factor models.

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Author's Contribution

SS conceived the idea, designed the study, performed the statistical analysis, and wrote the paper. HS contributed in the data collection, wrote and revised the manuscript. Authors agree to be accountable for all aspects of the work in ensuring that questions related to the accuracy or integrity of any part of the work are appropriately investigated and resolved.

Conflict of Interest

Authors declared no conflict of interest

Grant Support and Financial Disclosure

None

Data Sharing Statement

The data that support the findings of this study are available from the corresponding author upon reasonable request.