Exploring Construct Validity of Resilience Scale in Pakistani Youth

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ABSTRACT

Resilience refers as the promotion of positive adaptation under stress and eventually thrive from adversity. The current study aimed to explore construct validity of Connor-Davidson Resilience Scale (Urdu version) (Connor & Davidson, 1993) in young adults of Pakistan. For the purpose data was collected from Army selection centre Rawalpindi. Sample of 620 young male adults (18-22 years) were included from Rawalpindi and Islamabad (capital city of Pakistan). SPSS software (version-20) was applied for data analysis. Descriptive statistics was computed followed by Skewness of the scale (skew = -.69) indicated normal distribution of data. Reliability analysis revealed that scale has high alpha reliability (i.e., .87) and therefore the instrument gives consistent results. Item total correlation was conducted to see the construct validity of the scale (i.e., p < .05; 95% CI). The positive correlation between Connor-Davidson Resilience Scale with its subscales indicated convergent validity of the scale. However the negative correlation between Connor-Davidson Resilience Scale with Stress Appraisal Measure indicated divergent validity of the scale. It can be concluded that Connor-Davidson Resilience Scale was a reliable and valid instrument among young adults of Pakistan.
KEYWORDS: Resilience, Connor-Davidson Resilience Scale, Stress Appraisal Measure, Descriptive, Reliability, Construct Validity

1. INTRODUCTION

To achieve goals in life, people aspired positively even when they are agonised by failures. Positive personality traits like resilience provide them the skill to rebound and recoup from trauma or shock (Oxford, 1989). Wagnild (2003) has defined the resilience as a synonyms of positive adaptation under stress and tough conditions. Volatile situations faced by the youth of Pakistan has more or less empowered them to show resilience that has been considered as the capacity of tackling hardships. Moreover unfriendly situations necessitate to adapt pragmatic approach to sail through. Although adolescent population appears to be susceptible to stress and prone to perceive few events threating as compare to the older population but on the other hand they have the tendency to manifest tenacity to fight back. According to Smokowski, Reynolds and Bezruckzo (1999) resilience can be described as the capability of an individual to cope positively in stressful situations. The studies related to trauma have also emphasized the presence of resilience among children and adult in the form of acute and chronic classification. (Bonanno, 2004; Meredith, et al. 2011). According to Masten, Best, & Garmezy, (1990) resilience is a protective factor between positive outcomes and psychological distress. Numerous resilience scales have been developed for comprehending the construct that eventually help to explore the new intervention methods to boost resilience for an individual's life situations (Yu and Zhang 2005; Rak and Patterson 1996; Bosworth and Earthman 2002). Among all scales of resilience prominent place is captured by Connor-Davidson Resilience Scale (CD-RISC; Connor and Davidson 2003) that has not only attracted the investigators but has also deemed good psychometric features. Connor and Davidson's (2003) scale is considered valid and reliable in different conditions for example patients with posttraumatic stress disorder (PTSD) has shown lot of improvement after getting treatment (Davidson Baldwin et al. 2006) and despite being exposed to violent trauma more resilient survivors manifested better physical wellbeing and revealed lesser symptoms of PTSD as compare to less resilient (Connor, Davidson and Lee 2003).

The CD-RISC is comprised of 25 items which encompassing multifarious features like; personal competence, acknowledging the changes, tolerance of negative affect, confidence on innate potentials, social support, pragmatic approach towards problem solving and spiritual faith. The five factor combination can be used in psychological and psychiatric interventions, and even in pedagogical settings to develop resilience in children. CD-RISC, scale seems to be a promising measure to use with adult normal as well as psychiatric population (Connor et al. 2003; Connor and Davidson 2003). The psychometric properties of CD-RISC appears to be reliable and valid both in the West and the East, but factor arrangement has been varied with situation. In a study conducted on Australian nurses the original five factors have been supported (Gillespie et

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al. 2007). However, four factor solution was noticed in US cohort of older women, (Lamond et al. 2008). On the other hand, study on Chinese population the CD-RISC fails to verify the confirmatory factor analysis and stated three factors: Optimism, Tenacity and Strength, (Yu and Zhang 2007). Whereas four factors on the basis of explanatory factor analysis has been evaluated by Campbell-Sills and Stein (2007) in a study of two various samples; hardiness, social support/purpose, faith, and persistence.

In addition to resilience scale, the Stress appraisal measures (SAM) has also been used in the present study as validity indicator and to determine divergent validity. Since studies supported the notion that resilience is negatively correlated with stress (Brown et al. 1998; Bienvenu and Stein 2003; Costa and McCrae 1992; Jacelon 1997; Campbell-Sills et al. 2006; Werner 1995).Various studied have suggested adequate convergent validity of the CD- RISC with hardiness, social support, life - satisfactions, self - esteem and stress coping ability. In a study on Chinese population (Yu & Zhang, 2007) the CD – RISC correlated with the Rosenberg Self – esteem scale (r= 0.49, P < 0.01), all five factors of the NEO-EFI and the life satisfaction index A (r = 0.48, p < 0.01). Gabriel, et al. (2011) implied that high resilience was associated with positive effect among nurses enabled them to manifest positive effect in adversities. Positive correlations was observed with the Sheehan Social Support scale (r = 0.36, p < 0.01) and Kobasa Hardiness Scale (r = 0.83, p < 0.01). Negative correlations were observed for Sheehan Disability Scale (r = - 0.62 p < 0.01) and the Perceived Stress Scale (r = 0.32, p < 0.01) (Connor& Davidson, 2003). Although different factor structures have been studied in variety of ways, but current study has one of the prime objective is to evaluate psychometric properties of Resilience Scale developed by Connor-Davidson in a sample of Pakistani youth. While the second purpose is to investigate the divergent validity of the CD-RISC by evaluating the relationship with the Stress Appraisal Measure (SAM).

2. METHOD

2.1. **Participants:** The sample consisted of 620 (male) volunteer students of age range 18 – 22 years studying intermediate from various colleges of Rawalpindi and Islamabad regions of Pakistan. All Students were approached in the army selection centre where they were taking initial test for becoming commissioned officer. Students were sought thirty minutes before the commencement of their test for army. Informed consent was given to them and asked to complete questionnaires and then proceed for their initial test for army. Out of 641, 620 students' had filled the entire included in the questionnaires.

2.2. **Measures:** A demographic sheet, two scales Connor–Davidson Resilience Scale (CD-RISC) and stress appraisal measure (SAM) were used in this study.

2.3. **Connor–Davidson Resilience Scale (CD-RISC)**: A 25-item scale, CD-RISC measures the capability to deal with adversity and stress. Respondents were to rate each item from 0 (''not true at all'') to 4 (''true nearly all the time''). The subjects' response range from 0-100 that signifies with high scores lead to higher resilience. The observed alpha reliability of the present study of each factor as; 1, α=0.48, factor 2, α= 0.68, factor 3, α = 0.53, factor 4, α=0.62, and overall α=0.87.

2.4. **Stress Appraisal Measure (SAM):** The stress appraisal measure was developed by Peacock and Wong (1990). A Valid and reliable measurement scale that has been used by the various organizations and settings to measure level of stress, for example screening of general population who are at risk of developing stress – induced psychopathologies and in recruiting personnel for jobs that associated with higher risk (Peacock & Wong, 1990).

The scale comprises of 28 items, ranging from not at all (1) to extremely (5) in the course of rating. Scoring of the scale through seven subscales: threat, challenge, centrality, control-self, control-others, uncontrollable and stressfulness. The observed alpha reliability in present study has been described as; for threat α=0.73; challenge α=0. 82; centrality α=0. 62; control-self α=0. 67; control-others α =0. 72; uncontrollable α =0.43 and stressfulness α = 0.46.

3. RESULTS

Data was assessed by using SPSS version 20.0 (SPSS Inc. Chicago, USA)

3.1. **Table 1**: *Descriptive Statistics, Skewness and Kurtosis of Resilience scale, stress appraisal measure and Demographic Variables among young adults (N = 620)*

Variables			Range			
	M	*SD*	Minimum	Maximum	Skewness	Kurtosis
Resilience	80.67	10.96	23	127	-.69	2.01
Stress appraisal	77.26	10.82	48	119	.52	.85
Family background	1.47	.51	0	2	.06	-1.90
Siblings	4.78	2.02	0	13	.87	1.02
Family type	1.71	.53	1	3	-.10	-.54

Table 1 shows descriptive statistics, Skewness and kurtosis of resilience scale and demographic variables among young adults. Results show that there is no issue of normality in the data as Skewness and kurtosis values are well within the acceptable range.

3.2. **Table 2**: *Item Total Correlation of the Resilience Scale (CD-RISC)*

Items No.	R	Items No.	R
Item 1	.30**	Item 14	.19*
Item 2	.10	Item 15	.34**
Item 3	.41**	Item 16	.35**
Item 4	.22**	Item 17	.19*
Item 5	.45**	Item 18	.34**
Item 6	.35**	Item 19	.32**
Item 7	.19*	Item 20	.17*
Item 8	.18*	Item 21	.35**
Item 9	.30**	Item 22	.16*
Item 10	.27**	Item 23	.15
Item 11	.27**	Item 24	.25**
Item 12	.31**	Item 25	.32**
Item 13	.35**		

*P < .05, **P < .01

Table 2 shows item total correlation of the Resilience Scale (CD-RISC). Results show that most of the items were positively correlated with the total Resilience Scale. This indicated the construct validity of the scale used in study.

3.3. **Table 3**: *Reliability Analysis of the Resilience Scale and Stress Appraisal Scale with their Subscales*

Scales/Subscales	Items	A
Resilience	25	.87
Hardiness	7	.48
Optimism	7	.68
Resourcefulness	6	.53
Purpose	5	.62
Stress appraisal Scale	28	.67
Threat Subscale	4	.73
Challenge Subscale	4	.82
Centrality Subscale	4	.62
Control-self Subscale	4	.67
Control-others Subscale	4	.72
Uncontrollable Subscale	4	.43
Stressfulness Subscale	4	.46

Table 3 shows reliability analysis of all the scales and subscales used in the study. Results indicate that the reliability of all the scales are satisfactory except four subscales (i.e. hardiness, resourcefulness, uncontrollable and stressfulness).

3.4. **Table 4**: *Correlation between Resilience Scale and Stress Appraisal Measure with their Subscales*

Scales/Subscales	1	2	3	4	5	6	7	8	9	10	11	12	13
1. Resilience	1	.835**	.832**	.714**	.749**	-.109**	-.042	-.146**	-.053	-.234**	-.096*	-.108**	-.024
2. Hardiness		1	.584**	.412**	.477**	-.068	-.059	-.136**	-.049	-.190**	-.043	-.092*	-.033
3. Optimism			1	.455**	.573**	-.116**	-.012	-.160**	-.058	-.199**	.065	-.076	-.007
4. Resourcefulness				1	.425**	-.083*	-.045	-.046	-.011	-.179**	.149**	-.085*	-.023
5. Purpose					1	-.087*	.001	-.106**	-.048	-.161**	-.060	-.082*	-.006
6. Stress appraisal						1	-.640**	-.489**	-.547**	.270**	-.532**	-.502**	-.661**
7. Threat							1	.053	.254**	-.204**	-.244**	-.479**	-.538**
8. Challenge								1	.330**	.181**	-.110**	-.083*	-.230**
9. Centrality								81	1	.031	.084*	-.156**	-.306**
10. Control self										1	-.005	-.120**	-.070
11. Control others											1	.028	.201**
12. Uncontrollable												1	.358**
13. Stressfulness													1

*P < .05, **P < .01

Table 4 shows correlation between resilience scale and stress appraisal measure. Results also showed that subscale of resilience scale is significantly related to each other and total of resilience scale ($p < .01$). Resilience scale is significantly negatively related to stress appraisal scale ($p < .01$) which indicates the validity of the scale. Resilience scale is also significantly negatively related to subscales of scale including

challenge, control self, control others and uncontrollable. However resilience scale has no association with threat, centrality and stressfulness.

3.5. **Reliability Coefficient:** The resilience scale seems reliable to use in Pakistani context as reliability coefficient of the scale was 0.87, whereas the Alpha reliability of factor wise observed as; 1, α=0.48, factor 2, α=
0.68, factor 3, α = 0.53 and factor 4, α=0.62, respectively in the present study. The factor 1 was showing low reliability coefficient as compare to rest of three factors. This factor require further analysis about its less yielding value of reliability and one reason could be the test developed in the West and this factor must be studied with Pakistani culture in subsequent research. Moreover all factors are significantly correlated (see table 3) with each other as well as with total resilience score.

3.6. **Divergent Validity:** Table 4 indicates the correlational trends regarding all the factors of the C D-RISC and the stress appraisal measure. It is evident from the table that the total score of resilience and its factors were significantly negatively related to subscales of stress appraisal scale including challenge, control self, control others and uncontrollable. However resilience scale does not show significant association with threat, centrality and stressfulness. The correlational pattern support the hypotheses of the present study and offers evidence for the validity of the resilience scale and reiterated by divergent validity among Pakistani youth.

4. DISCUSSION

The present study analysed psychometric properties (construct validity) of CD-RISC among Pakistani youth and also evaluated the inverse relationship with stress appraisal measure (divergent validity). Variety of studies have been conducted in different countries, including China (Yu and Zhang 2007) Iran, Australia, South Africa (Jorgensen and Seedat, 2008) to populations included youth, elder citizens and university students (Campbell-Sills and Stein 2007), caregivers, nurses, professionals and general population (Gillespie et al. 2007, Connor and Davidson 2003). All studies have substantiated strongly the psychometric properties of the CD-RISC scale with minor variations of factor structuring due to cultural changes, ethnicity and age group. Current study has opened an avenue to evaluate the importance of cross cultural comparison of this construct of resilience. Resilience needs to be understood through indigenous way.

The present study has few limitations firstly sample representing youth from intermediate education level, only male which age ranges from 18-22 years so findings cannot be generalized to older adults or on to youth with higher or lower education level. Secondly resilience is a multifarious construct requires to be explored for biological, demographic and contextual aspects that can significant source in increase or decrease the resilience. Although the findings of this study cannot be implemented on girls of same age group, but it is pertinent to mention that no study has never been conducted ever to explore the construct validity of resilience scale in Pakistani context among youth. This study will be addition to the literature on this scale by exploring its validity and strengthen the psychometric properties of the resilience scale.

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