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Translation and Validation of Conner Davidson Resilience (25) Scale Among Diverse Population: Pakistan

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ABSTRACT

The phenomena of resilience are the presence of protective factors (individual, societal, family, and official protection nettings) which empower individuals towards struggle of life stress. However, the precarious, adverse and life-threatening conditions contributing to human vulnerability are an essential aspect of resilience. The objectives of the study include translation and adaption of Conner Davidson resilience scale -25(2003) into Urdu language and an association between a concurrent validity of the original Conner Davidson resilience scale of with Urdu –translated version. The study included two phases, phase I contain translation and adaptation of CDR-25 into Urdu, phase II contains cross-language validation with psychometric properties exploration was carried out. the sample comprised 204 participants out of which 105 were male (51.5%) and 99 were female (48.5%). Their age ranged between 14 to 60 years (M = 22.75, SD = 7.6), belonged to a diverse population of KPK students, teachers, doctors, and nurses. the translated version of UCDR-25 shows the acceptable α reliability with the comparison of ECDR-25. The correlation coefficient of UCDR-25 with the ECDR-25 has a highly significant correlation from 1.00 to .99. Findings revealed that Kaiser-Meyer-Olkin Measure of Sampling Adequacy is .83 showing that sampling is adequate and factor analysis can be performed and interpreted satisfactorily. The significant value (p < .01) of Bartlett's test of sphericity (1205.03) shows the relatedness of variables in different factors that ensure the suitability of factor analysis. The emerging of three factors structure, the positive correlation of translated Urdu and English version scale with high Cronbach Alpha showed the psychometric properties of reliability and a concurrent validity of the scale.

Keywords: Conner Davidson, resilience, translation, psychometric properties, cross-culture validation

Introduction

Resilience is the capability to retain proficient outcome in the surface of foremost lifetime stressors. (Kaplan, Turner, Norman, & Stillson, 1996). George Vaillant (1993) defines resilience as the "self-righting propensities" of an individual, "both the capability to be focused without deprived of infringement the capacity, once bent, towards spring back". (Goldstein, 1997, p. 30)

The phenomena of resilience are the presence of protective factors (individual, societal, family, and official protection nettings) which empower individuals towards struggle of life stress. (Kaplan et al., 1996, p. 158). However, the precarious, adverse and life-threatening conditions contributing to human vulnerability are an essential aspect of resilience. An individual resilience by the side of any moment be situated and calculated through the ratio among the occurrence of protecting factors and the occurrence of precarious situations.

A diverse population like students, teachers, doctors, and nurses rather facing challenging and stressful situation, encouraging resilience as an attempt to counteract those detrimental consequences whilst delivering beneficial organizational results such as higher output at work will be extremely useful.

Teaching, the backbone is the first point of touch for students, considered one of the oldest occupations in the world. That is the majority of the human workforce. (Rolewicz. & Palmer, 2019). Different stressors such as time constraint,

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workload and complex positions are continuously correlated with their activities by making better-civilized individuals given to the society. (McCann et al., 2013).

This work environment is very conducive and reflects poor nursing performance for doctors and nurses. The poor health of healthcare providers is a huge burden. Efficiency in patient care and financial healthcare (Wie et al., 2019). The platform is considered to improve the sound effects of prolonged stress amongst nurses (Henry, 2014; Nowrouzi et al., 2015). Personal resilience, or a individual's capability to 'bounce back' or recuperate rapidly after a stressful event (Hart, Brannan, & De Chesnay, 2014).

The rationale of the study

It is currently underlined that the reliability and validity of that tool should be identified before drawing any conclusions from it when using foreign developed instruments in Pakistan. This part of the concept was not previously discussed by researchers, but Foxcroft, Roodt, and Abrahams (2001) It underlined that the researcher should examine the psychometric properties of such instruments before using the import measures (those produced in a foreign country).

Resilience is characterized as the stable and positive adaptation of individuals after extreme, distressing or tragic events. Researches on the resilience was stirred via the development of positive psychology. Used for research perspective, resilience is commonly reflected from three views: personality, progression, and consequence. These three elements are separate facades of basic uniform structure. A number of resilience scales had been constructed by Western researchers, such as the Resilience Scale (RS), Resilience Scale for Adults (RSA), and Connor-Davidson Resilience Scale (CD-RISC). Therefore, the present study aims to develop a localized Conner Davidson resilience 25 Urdu version of the resilience scale specially for the Pakistani general population.

Based on the opinions and study rationale highlighted previously, the importance of the resilience scale of the general population during the Covid -19 situation, and the lack of a suitable instrument for the measurement of the resilience during this critical situation in the Pakistani population. This study undertaking to translated and adapted the CD-RISC-25 into an Urdu version, the reliable and a valid instrument for the measuring of resilience among Pakistani diverse population.

Objectives

Therefore, the objectives of the study include:

1.Translation and adaption of resilience scale into the Urdu language.

2.Assocaition between a concurrent validity of the original Conner Davidson resilience scale with the Urdu –translated version.

Method

The translation and adaptation of CDR-25 were carried out in the following steps after getting permission from the original author. To fulfill the overhead mentioned objective, the present study was divided into two phases:

Phase I: Translation and adaptation of CDR-25

Phase II: Cross-language validation

Phase I: Translation and Adaptation of CDR-25

Step 1:

CDR-25 Scale English version was translated into the Urdu language, by the approval of the author, via following the World Health Organization (WHO) guidelines. two female translators were bilingual (English, Urdu) having an MPhil degree in Urdu. The translators have explained the purpose and nature of the instrument for maintaining the quality of the translation and were asked to translate the scale conceptually in simple language keeping the cultural context while avoiding any jargon. The two independent translations were obtained.

Step 2: Committee Approach

The committee approach comprised of six members, five of them were students of the Ph.D. scholar of psychology, and the six one was the faculty of Psychology with experience in psychometrics. The Ph.D. students were approached based on their experience in research that is, on average 2 to 3 years. The committee panel reviewed the two Urdu translations of the Conner Davidson resilience scale and a final translated version was finalized. Those items and phrases were selected, which were conceptually closer to the item in English, were simple, and culturally relevant.

Step 3: Pretesting and Cognitive Interview

The version approved in the previous step was then pretested.

***Sample*:** For this purpose, 20 young adults (10 men, 10 women) were taken from a nursing college

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of Pak International medical college Peshawar. Their age ranged from 19 to 25 years (*M* = 23.31, *SD* = 1.70). Participants had a minimum education of bachelors and maximum masters and they are in the 3rd semester of nursing course.

Procedure. The participants who agreed to take part in the study have explained the objective of the study s' and were asked to fill the questionnaire leaving no item unanswered, as there was no time limit for them. Moreover, they were requested to write or share their thoughts about a question being asked, whether they can ask the same question using their own words, also when they hear a specific item or a term that came to their mind. Every respondent was asked to report any word or phrase that seem difficult to them, a word or a phrase they did not comprehend or expression they find inappropriate.

Phase II: Cross-Language Validation

Cross-language validation was accompanied to statistically conclude the similarity amongst the original English language version and the Urdu-translated version of CDR-25.

***Step 1:* Final version of CDR-25**.

The cognitive interviewing informed that none of the items was difficult to read or comprehend for the participants. Hence, the CDR-25 was considered ready to be used in the main study.

***Step 2:* Psychometric Properties of CDR-25 (Urdu)**

The main purpose of that step was to determine the psychometric properties, the correlation and the factor structure of CDR-25.

Sample

A total of 250 questionnaire booklets were distributed out of which 204 were returned. The response rate was 95.6%. As a result, the sample comprised 204 participants out of which 105 were male (51.5%) and 99 were female (48.5%). Their age ranged between 14 to 60 years (*M* = 22.75, *SD* = 7.6), belonged to a diverse population of KPK students, teachers, doctors, and nurses.

Results

Results of phase II included the demographic profile of the diverse population, the correlation of CDR-25 Urdu version with the CDR-25 English version, and factor loadings.

Table 1

Sociodemographic Characteristics of the Participants

Characteristics of The Participants	N	%
Gender		
Male	105	51
Female	99	48
Age		
11-20	109	53
21-30	79	38
31-40	8	3.9
41-50	4	1.9
51-60	4	1.9
Group of Sample S' Population		
Students	124	60
Teacher	16	7.8
Doctor	33	16.2
Nurse	31	15

The above table represented the sociodemographic characteristics of the sample population and their percentages.

Table 2

Reliability of Conner Davidson resilience -25 Urdu version and English version (N-204)

Variables	N	Cronbach s' Alpha
UCDR-25[a]	204	.84
ECDR-25[b]	204	.86

Note: [an] Urdu version of Conner Davidson resilience 25 scale, [b] English version of Conner Davidson resilience scale

According to the table no 2, the translated version of UCDR-25 shows the acceptable α reliability with the comparison of ECDR-25.

Table 3

A correlation coefficient of UCDR-25 with EUCDR-25 (N-25)

Item No.	R
1	1.00**
2	1.00**
3	1.00**

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4	1.00**
5	1.00**
6	1.00**
7	0.99**
8	1.00**
9	1.00**
10	1.00**
11	1.00**
12	0.99**
13	1.00**
14	1.00**
15	1.00**
16	1.00**
17	1.00**
18	1.00**
19	0.99**
20	1.00**
21	1.00**
22	0.99**
23	0.52**
24	0.98**
25	1.00**

**P<0.01

As shown in the table no 3 the correlation coefficient of UCDR-25 with the ECDR-25 has a highly significant correlation from 1.00 to .99, which showed cross-language validation.

Table 4

Item total correlation of Conner Davidson Resilience scale –Urdu

Items	Item Total Correlation
Ucdr 1	0.306
Ucdr 2	0.217
Ucdr 3	0.370
Ucdr 4	0.525
Ucdr 5	0.475
Ucdr 6	0.241
Ucdr 7	0.543
Ucdr 8	0.272
Ucdr 9	0.308
Ucdr 10	0.438
Ucdr 11	0.529
Ucdr 12	0.848
Ucdr 13	0.490
Ucdr 14	0.327
Ucdr 15	0.519
Ucdr 16	0.503
Ucdr 17	0.431
Ucdr 18	0.362
Ucdr 19	0.362
Ucdr 20	0.364
Ucdr 21	0.579
Ucdr 22	0.492
Ucdr 23	0.253
Ucdr 24	0.564
Ucdr 25	0.391

The table no 4 showed the item-total correlation of individual items with scale total score. All the items were positively correlated with the scale.

Factor analysis

Findings revealed that Kaiser-Meyer-Olkin Measure of Sampling Adequacy is .83 showing that sampling is adequate and factor analysis can be performed and interpreted satisfactorily (Field, 2013). The significant value ($p < .01$) of Bartlett's test of sphericity (1205.03) shows the relatedness of variables in different factors that ensure the suitability of factor analysis. Factor analysis of principal component used Direct oblimin rotation for factor extraction as it is a preferable method for initial factor extraction (Field, 2013). The number of factors is decided using the Screen plot. The results of factor analysis have been presented in Table.

Table 5 depicted the rotated factors loading on 3 factors solution. The first factor named Emotional and cognitive control of resilience which consists of 18 items,1, 4, 5, 6, 7, 10, 11, 12, 15, 16, 17, 19, 20, 21, 22, 23, 24, and 25. This factor account for a 25 % of variance. The second factor has named the capacity to rebounded back which consists of 2 items,2 and 18. This factor account for a 6% of variance. While the third factor named interpretation of life which consists of 5 items, 3, 8, 9, 13, and 14. This factor account for a 5% of variance.

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Table 5

Factor analysis using principal component analysis (N=204)

Items No.	Statement	Factors		
		F 1	F 2	F 3
1	I am able to adapt when changes occur.	0.39		
2	I have at least one close and secure relationship that helps me when I am stressed.		0.69	
3	When there are no clear solutions to my problems, sometimes fate or God can help.			0.03
4	I can deal with whatever comes my way.		0.66	
5	Past successes give me confidence in dealing with new challenges and difficulties.	0.22		
6	I try to see the humorous side of things when I am faced with problems.	.51		
7	Having to cope with stress can make me stronger.	0.23		
8	I tend to bounce back after illness, injury, or other hardships.			0.50
9	Good or bad, I believe that most things happen for a reason.			0.10
10	I give my best effort no matter what the outcome maybe.	0.41		
11	I believe I can achieve my goals, even if there are obstacles.	0.42		
12	Even when things look hopeless, I don't give up.	0.51		
13	During times of stress/crisis, I know where to turn for help.			0.34
14	Under pressure, I stay focused and think clearly.			0.62
15	I prefer to take the lead in solving problems rather than letting others make all the decisions.	0.37		
16	I am not easily discouraged by failure.	0.58		
17	I think of myself as a strong person when dealing with life's challenges and difficulties.	0.37		
18	I can make unpopular or difficult decisions that affect other people, if it is necessary.		0.53	
19	I am able to handle unpleasant or painful feelings like sadness, fear, and anger.	0.42		
20	In dealing with life's problems, sometimes you have to act on a hunch without knowing why.	0.41		
21	I have a strong sense of purpose in life.	0.67		
22	I feel in control of my life.	0.55		
23	I like challenges.	.30		
24	I work to attain my goals no matter what roadblocks I encounter along the way.	0.65		
25	I take pride in my achievements.	0.44		

*Note***:** F1= Emotional and cognitive control, F2= capacity to rebounded back, F3=interpretation of life

Discussion

Often, researchers decide to translate and adapt an existing scale to make it usable on a new population sample, as this process is faster and more economical in comparison to the process of developing a new instrument from scratch. However, since many psychological variables are culturally complex, it was important to determine the validity of the translated instrument. Therefore, the objectives of the study include translation and adaption of the resilience scale into Urdu language, and an association between a concurrent validity of the original Conner Davidson resilience scale with Urdu –translated version. The translation method was accompanied by studies testing the validation of the translated version and agreeing with the Brislin guidelines in 1970. Exploratory factor

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analysis is a methodology based on data-driven that is suggested because when there is little or no fixed idea about how the items in scale will factor (Levine, 2005). Baek, et all, (2010) the Conner Davidson of Korean translated version Cronbach alpha and test-retest reliability were 0.93 and 0.93, respectively, while a current study Cronbach's .84 which showed Urdu translated version of 25 items Conner Davidson resilience has high-reliability analysis.

Yu X, zhang (2007) Connor and Davidson's initial analysis culminated in a five-actor solution while a three-aided structure in the Chinese version (tenacity, strength, optimism) explained 45% of the variance. While the present study has a three-factor structure (F1= Emotional and cognitive control, F2=Capacity to rebounded back, F3=Interpretation of life) explained 36% of the variance.

Notario-Pacheco et al,2011 study states that the factor solution was adequate. The result of the KMO test was 0.90 and the Barlett sphericity was significant (χ^2 = 2074.7; gl = 45; p = 0.001). Only one factor showed an eigenvalue greater than 1. This factor explained 44.1% of the variance. The present study findings revealed that the Kaiser-Meyer-Olkin Measure of Sampling Adequacy is .83 and The significant value ($p < .01$) of Bartlett's test of sphericity (1205.03) shows the relatedness of variables in different factors that ensure the suitability of factor analysis. The factor structure was loading on a three factors and 36 % total variance explained.

Limitation and suggestion

The sample of the present study comprises a diverse population of Pakistan. The factor structure of individual age parameters cannot be presumed. The present study was conducted on the non – clinical population, this limits the generalizability of a study. Future studies will be effective to explore the traumatic life experiences and resilience ability both physical and psychological. Besides, the present study did not explore the confirmatory factor analysis of the UCD-25, it is recommended that upcoming researches would be piloted to compare the factor structure of both exploratory and confirmatory analysis.

Implication

The outcomes of that study revealed this translated form of the Conner Davidson scale can be used in different like educational, clinical, and research. Also, this scale can be used in intervention and prevention studies for pre-post assessment, and in correlational studies to measure coping with various psychological phenomena.

Conclusion

This study was an effort to translate and validate the Conner Davidson resilience-25 in Pakistan's diverse population to better applicability of scale into a cross-culture. The emerging of three factors structure, a positive correlation of translated Urdu and English version scale with high Cronbach Alpha showed the psychometric properties of reliability and a concurrent validity of the scale.

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