

Research Article

The Adaptation and Validation of Resilience Scale for HIV Patients

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Abstract

Objectives: The aim of this study was to adapt and validate the Resilience scale for HIV positive adults in Pakistan. The psychometric properties of the scale were also established.

Methods: Cross-sectional research design was used for data collection from HIV patients residing in nine different cities of Punjab during 2019-2020. The Resilience Scale was adapted for HIV positive adults. The psychometric properties and fitness of model in indigenous culture was assessed by performing Exploratory Factor Analysis and Confirmatory Factor Analysis on the adapted scale. Convergent and Discriminant validity of the adapted was also measured by measuring its correlation with General Resilience Scale.

Results: The results of EFA revealed that the adapted version of The Resilience Scale is valid while results of CFA revealed that the scale possessed a good model fit in the indigenous culture. Results of convergent validity showed significant positive correlation between resilience in HIV patients and in normal population measured by adapted scale. Results of discriminant validity also displayed significant negative correlation between depression and resilience in HIV positive patients.

Conclusion: The adapted version of The Resilience Scale was fit for the HIV patients in Pakistan.

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Key Words: Resilience, HIV, Adults, Psychometric properties

Introduction

Resilience can be defined as the pattern of behaviours or ability of the individuals to successfully adapt to the calamities and risks on account of natural, financial, physical or social circumstances. With reference to HIV/AIDS, resilient individual is the one who possesses the ability to cope with the situation as well as trauma of AIDS in well manner and can eventually live a positive life.¹

There are two dimensions of resilience referring to HIV / AIDS; psychological and emotional. HIV / AIDS resilience is basically meant to be the acceptance of one's status of illness, enduring pain yet staying positive and viewing beyond the illness.² According to the financial and factual perspective, HIV / AIDS resilience is meant to be the responses adopted by patients to escape from the disastrous effects of this deadly disease and reorganization of their lives in a better and faster way than the other individuals.³

In the initial 1980s and 1990s, there were no treatment opportunities for the HIV patients and they suffered from mental, physical and social stresses owing to their disease. These conditions led the HIV patients to be considered vulnerable in society.⁴ In the mid of 1990, antiretroviral therapy was introduced for treatment of HIV due to which this disease was relabelled as a chronic and manageable disease.⁵ Taking antiretroviral therapy on regular basis

decreases the morbidity and chances of fatality from the disease. Despite of the advancements in field of HIV diagnosis, treatments and expectancy of life, resilience in HIV population cannot be reliably defined.⁶ Studies conducted on resilience mostly consider the perception of HIV patient on objective level rather than describing the subjective perception and experiences of the patient.⁷ The differences between resilient and non-resilient individuals lie in the perspective and understanding of their physical condition, diligence and sense of self-responsibility.⁸ Resilience also refers to the enhanced quality of life, less psychological distress, more positive beliefs and control on life by HIV patients.⁹

The present study is important due to the bio psychosocial perspective of the HIV / AIDS. Whereas, pure medical researches neglect the psychological factors of medical illness and their impact on medical treatment. First, to the best of researcher's knowledge no psychological measure is available for measuring the resilience of the HIV / AIDS individuals, particularly a brief instrument. Therefore, present study needs to address this issue. Secondly, in order to accurately measure the said factor a reliable and valid instrument is required for the present study. There is a great need for clinicians and researchers to have access to reliable and valid instruments or measures cross-validated among diverse cultural segments of the population and/or in other languages.¹⁰ For the current study, the scale is adapted for HIV positive adults as resilience. It may have an impact on the lives of HIV positive adults, contributes in rebuilding and re-designing their lives faster than non-resilient ones. Therefore, the aim of this study was to adapt and validate the Resilience scale for HIV positive adults in Pakistan.

Methods

The present study utilized the cross-sectional research design. In such design, we use correlation or compare the different groups at a time.

Inclusion criteria: only HIV positive individuals were included. No other medical conditions (no comorbidity).

Exclusion criteria: Age range: less than 18 years, normal individuals, and have other psychological disorders.

Operational definition: the resilience is the level of resistance against any stress/pressure from outside / inside event / stimulus. It particularly measures four domains Emotional Regulation (how to overcome emotional events), Adventurousness (open to challenges), Determination (persistence to outcomes), and Self-Reliance (solve the problem by your own self).¹¹

After getting the formal permission from Advance Studies & Research Board (ASRAB), all ethical guidelines were followed. Formal permissions were obtained from the relevant authorities, which were given by 9 treatment centers including Mayo hospital, Jinnah, Services, Benazir Hospital Gujrat, Jalal pur Jatta, Allied hospital Faisalabad, DHQ Sargodha and DHQ DG khan. Patients who were registered at those treatment centers and taking the anti-retroviral therapy were contacted personally and informed about the visit. Strict measures were taken to ensure the confidentiality and anonymity of the patients.

Before starting study, patients were briefed completely about the study nature, objectives and academic status. Queries of the patients regarding the research study were replied satisfactorily. Those who were not comfortable and did not agree to give informed consent were not sampled. Rest of the participants were asked to sign the written informed consent. Thumb impressions were taken from illiterate participants. After this, patients were requested to share information about their personal history followed by demographics. After this study, measures were administered on them. At the end, participants were thanked for their time, support and participation in the study.

Sample of 169 HIV positive patients was collected for current study from 9 cities of Punjab. Patients who were registered at the HIV treatment centers were the part of this study. These patients were registered in the treatment centers of Lahore, Kasur, Faisalabad, and Sargodha, Gujrat, DG khan, Jalal Purr and Sheikhpura. Age range of 18 to 55 were taken for current study ($M = 40.80$, $SD = 16.3$). Data was collected from all social classes including lower,

middle and upper class. On education, 2 categories were determined; illiterate and literate. Adapted version of the measure consisted of 10 items having same four factors like in original version. For the validity testing of the adapted scale, validity by exploratory factor analysis was constructed and fitness of the model was checked by confirmatory factor analysis.

Convergent validity between the adapted scale and general Resilience scale was evaluated using Pearson product moment correlation. Divergent validity between the adapted scale¹² was checked using Pearson Product moment correlation and it was computed with IBM SPSS version 20. The mean is used as the cut-off score to compare the low and high resilience among the participants.

Results:

The results were based on the analysis performed on the data gathered from HIV positive patients sampled in the study. Exploratory factor analysis was applied on the data for assessing its psychometric properties whereas Confirmatory factor analysis was applied for assessing the fitness of model in the population. Convergent validity and Divergent validity of the scale were also assessed.

Table 1: Factor Loading for Resilience Scale with Varimax Rotation (N = 169)		
Item	Resilience Scale	
1	.79	
2	.85	
3	.90	
4	.94	
5	.95	
6	.96	
7	.96	
8	.96	
9	.96	
10	.95	

Note: Factor Loading > .50, Unidimensional scale. Principal axis method was utilized.

The exploratory factor analysis is used to check the unidimensional model of resilience scale for HIV individuals. Results shows that EFA of resilience scale has satisfactory KMO (.92), $\chi^2 = 3287$, $p = 000$. Moreover, 86.68% variance explained by this model. The alpha reliability of scale was 0.83.

Table 2: Psychometric Properties of the Study Scales		
Scale	M	SD
Resilience (HIV)	32.46	13.27
Depression	18.79	3.86
Resilience (General)	72.38	12.86

Note: Range = score range for the scales. N = 169

Table 3: Convergent and Discriminant Validity of the Scales (N = 169)		
Variable	2	3
Resilience (HIV)	-.21**	.21**
Depression	-	-.22**
Resilience (General)		-

Note: N = 169. ** $p < .001$, * $p < .05$

Pearson product moment correlation is assessed with SPSS, and results indicated that newly developed resilience scale for HIV is significantly correlated with general resilience ($r = .21$, $p = 00$), and depression ($r = -.21$, $p = 00$). Resilience general is significantly correlated with depression ($r = -.22$, $p = 00$).

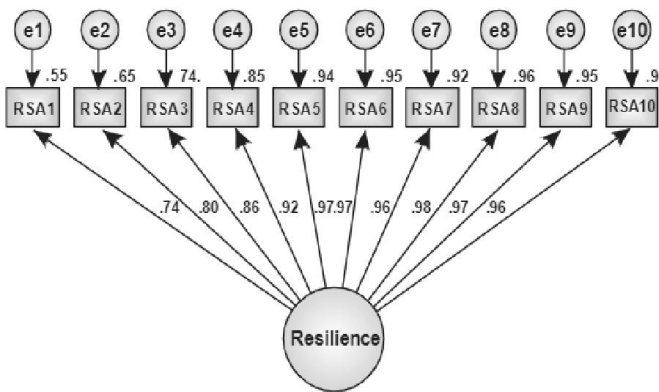


Figure 1: Confirmatory Factor Analysis for Resilience Scale (N = 169)

Table 4: Results of Confirmatory Factor Analysis for Resilience Scale

Model	χ^2	Df	NFI	CFI	RMSEA
Default	472.18*	35	.86	.87	.2
Final	121.05*	27	.96	.97	.1

Note: AMOS standardized solution. NFI = normed fit index, CFI = comparative fit index, RMSEA = root mean square error of approximation.

* $p < .01$

Table 5: Factor Loading of Confirmatory Factor Analysis for Resilience Scale (N = 169)

Item	Resilience Scale
1	.74
2	.80
3	.86
4	.92
5	.97
6	.97
7	.96
8	.98
9	.97
10	.96

Note: Factor Loading $> .50$, Unidimensional scale.

Confirmatory factor analysis was computed to check the validity of unidimensional model of resilience scale for HIV positive individuals. The results indicated that for final model normed fit index (NFI) was .96, root mean square error of approximation (RMSEA) was .1, comparative fit index (CFI) was .97, and χ^2 ($Df = 27, n = 169$) = 121.5, $p = .00$. Overall indices suggest that model is acceptable (see Figure 2).

Discussion:

The present study is highly significant in nature owing to its contribution in measuring resilience in HIV patients. Adaptation of psychological scales is a complex phenomenon which demands cultural fit of the scale along with significant psychometric properties.¹³

Resilience scale (11) was adapted for the current study as this study required the use of validated and standardized research instruments. This signifies the fact that the scale accurately measures what is supposed to be measured. This scale is also effective

in comparing the results at national and international level.¹⁴ A scale which is considered highly validated and reliable in one context, culture and time is not guaranteed of possessing the same levels of validity and reliability in other cultures, context and time.¹⁵

In order to find the construct validity of the scale, exploratory factor analysis was applied on the scale. Results of this study depicted that this resilience measure is a valid and reliable instrument to measure resilience in HIV positive patients. Results showed an excellent internal consistency of the measures by depicting the value of .89 which are in line with the results of original version of resilience scale by showing the value of .84. High Eigen values were obtained by the factor analysis of the scale. Furthermore, validation of inter-item correlation and item total correlation was also demonstrated by the results of study which signified the relationship between items of the scale.

The Resilience scale (11) and Resilience for HIV patients have some distinct features. One of the distinct features was the number of items as the former scale consisted of 19 items with four subscales while the later consisted of only 10 items. Furthermore, the former scale was developed in English language but the later one was made in Urdu language so that it can be self-reported by all patients regardless of their literacy levels.

Model fit indexes which are obtained by using Confirmatory factor analysis depicted the values of normed fit index (NFI) as .96, root mean square error of approximation (RMSEA) as .1, comparative fit index (CFI) as .97, and χ^2 ($Df = 27, n = 169$) = 121.5, $p = .00$. Overall indices suggest that model is acceptable (see Figure 1) as the values are acceptable in range.

The significant values of NFI, CFI and RMSEA indicated the best fit of the hypothesized measurement model. All the parameter estimates of hypothesized model including factor loadings, inter factor association and error variances has significant values which signified the strength of factors. These results validated the psychometric properties of scale and supported the hypothesized model.

Results of convergent validity revealed significant positive relationship between resilience in normal population and HIV patients. These findings are supported by¹⁶ who stated that resilience can be conceptualized as a coping mechanism in different perspectives which may relate to coping with mental and physical health issues.

Results of divergent validity revealed significant negative relationship between resilience and depression in HIV patients. These results are in line with the study conducted on the relationship between resilience and depression in juvenile refugees from South Australia. The results of the study stated that adolescents suffering from depression or other behavioural ailments reported lower level of resilience and vice versa.¹⁷

Findings of the study were supported by the research studies conducted on resilience by HIV patients⁽¹⁸⁾. Stated that HIV / AIDS patients demonstrate resilience when they experience positivity in their lives by having positive goals, role models and social support from their surroundings. HIV patients possess resilience when they cope with their illness in a positive manner and lead a positive life.¹

Conclusion:

Conclusively, it can be stated that the newly adapted HIV resilience scale is a valid and reliable instrument for measuring the resilience in HIV patients in an accurate and precise manner.

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