

Construction of Scales on Depression, Anxiety and Conduct Disturbance of Adjustment for Adults: Developing a Reliable Measure

Iram Naz¹, Zaqia Bano², Naeem Ullah Leghari³

ABSTRACT

OBJECTIVE: To develop a reliable scale on the depression, anxiety and conduct disturbance of adjustment for adults.

STUDY DESIGN: Cross sectional analytical study.

PLACE AND DURATION: Study was conducted at Department of Psychology, University of Gujrat from June 5th to 30th October 2017.

METHODOLOGY: The data was collected from adults of Gujrat city using convenient sampling technique. Initially, a pool of 120 items was generated through literature search and after pilot study 84 items were selected which include variables of adjustment scale for adults including depression, anxiety and conduct disturbance. Further, field administration of these items was done over 416 adults using face to face interviews and self-administered questionnaire. The data was analyzed with exploratory and confirmatory factor analysis and reliability test.

RESULTS: The 84 items were administered on 416 respondents. The model fit summary showed a p-value of .00 that is less than .05 so, it confirmed the structure of the questions and its relation to the subscales. Among 84 items 48 were found reliable at the end of analysis. The reliability of the sub-scales was also in the range of .886 of .711.

CONCLUSION: A reliable scale of adjustments for adult is successfully developed with 48 items which is reliable with eight sub-scales.

KEYWORDS: Depression, Anxiety, Conduct, Adjustment, Adults, Reliable Scale, Sub-Scales

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INTRODUCTION

The adjustment of an individual can be measured on how well they adapted to their personal, social, academic, occupational and emotional domains of life. The term adjustment may include the behavioral processes which help humans to sustain balance in their numerous needs. It also established an equilibrium between the individual necessities and the hurdles in adjusting to the environment.¹ The Diagnostic and Statistical Manual of Mental Disorders² introduced a category of adjustment disorder characterized by the change in the emotive and behavior related symptoms and a feeling of inability to cope in reaction of any recognizable stressor or stressors that occur in the time period of 3 months from the commencement of the stressors. The adjustment issue explained in the term of depression, anxiety and conduct disturbance. Hence, the term depression is an individual's state in which he/she accompanies a feeling of stable sadness along with decreased concentration in activities which was previously enjoyed. Depressed person is unable to carry out his/her daily living actions. Further, have low energy, eating and sleeping disturbances, restlessness, hopelessness and feeling of insignificance.³ Moreover, anxiety is an emotional state that highlighted strained feeling in the victim along with apprehensive thoughts. Furthermore, it is also linked with physical signs like perspiration, shakiness in body or an increased heartbeat.⁴ Peterson described that conduct problems

1. Lecture
2. Assistant Professor

Department of Psychology,
University of Gujrat, Hafiz Hayyat Campus, Gujrat

3. Associate Professor of Psychiatry
Nishter Medical University, Multan

Correspondence to:

Zaqia Bano

A.107. Alfarabi Block. Department of Psychology,
University of Gujrat, Hafiz Hayyat Campus

Email: Zaqia.bano@uog.edu.pk

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manifested in the form of society norms violation, abusing the rights of others, anger, aggression or hostility, taking revenge from others and taking drugs which were basically raised due to lack of adjustment to the environment.⁵

The psychological issues are alarming phenomenon in every society. For addressing and determining the problems assessment tools is obligatory. Compared to other psychiatric conditions, there has been little assessment tools available for adults to measure the adjustment problems. As Psychological issues are heavily influenced by cultural and social factors. The current scale was developed to overcome the shortage of reliable and culturally appropriate indigenous scale on depression, anxiety and conduct disturbance of adjustment for adults in Pakistan. Although, previously some scales were available in various domains of adjustment. For instance, Marital Adjustment⁶ and Dyadic adjustment scale,⁷ Social Re-adjustment Rating Scale,⁸ College Adjustment Scale,⁹ Reynolds Adolescent Adjustment Screening Inventory,¹⁰ Work and Social Adjustment scale,¹¹ were developed in USA. Beside others, the Goal Adjustment Scale¹² developed in Canada. Furthermore, Academic Adjustment Questionnaire¹³ developed in Romania. Whereas in Pakistan Dawood and Farooqi developed a Marital Adjustment Questionnaire.¹⁴ Additionally, Dyadic Adjustment Scale was translated into Urdu.¹⁵ Further, Adjustment Problems Scale measures the interactional and educational problems, fear of being ridiculed and psychological/personal problems.¹⁶ Due to limited scales available in native language so there was a dire need to develop the measure of the most evident problems of adjustment which can be used in the indigenous Pakistani settings. To develop a scale which can be effective in our setup we conducted this research with an objective to develop a reliable scale on depression, anxiety and conduct disturbance of adjustment for adults.

METHODOLOGY

This cross sectional analytical study was conducted at Department of Psychology, University of Gujrat from June 5th to 30th October 2017. The data was collected from the residents of city of Gujrat. The sample was adults that aged 19 years and above. The item generated according to the criteria of Adjustment Disorder with specifiers of depression, anxiety and conduct disturbance¹ and Aaron Beck model that includes cognitive, behavioral and physiological reactions of individuals.¹⁷ Initially, an item pool of 120 items were developed by the researchers after extensive literature search. These 120 items were thoroughly evaluated by experts who has short listed 109 items after discarding 11 items and modifying 13 items. The pilot study was done initially with 109 items, and after

analysis 84 items were found reliable which can be used for filed administration in final phase. Furthermore; the filed administration was put forth on 416 adults. These 84 items were covering to measure adult adjustment scale in eight subscales i.e. Anxiety Cognitive (AC), Anxiety Physiological (AP), Anxiety Behavior (AB), Depression Cognitive (DC), Depression Physiological (DP), Depression Behavior (DB), Conduct Cognitive (CC) and Conduct Behavior (CB). Before data collection the permission was taken from the ethical committee of the institution where this study was conducted. The respondents were reached out at their homes by researchers using convenient sampling technique. After taking consent from the respondents they were explained about the purpose of the study. Furthermore, the data was gathered with face to face interviews and self-administered questionnaire. The participants were tempted to read out the items cautiously and choose the appropriate responses that outfits his or her mind state and the responses of the respondents were recorded on questionnaire. The respondent identity was kept anonymous and ensured the ethical consideration and confidentiality of the respondents.

Data Analysis: The data was analyzed using Exploratory Factor Analysis (EFA), Confirmatory Factor Analysis (CFA), and reliability test by using SPSS-21 and AMOS-21 for windows.

RESULT

After pilot study the 84 items were reliable that were further administered on 416 adults. Among the 84 items, 57 were confirmed after analysis by discarding non-significant items.

The question numbers 41-45, 47-54, 57 & 61 were reliable for Anxiety Cognitive (AC). For Depression Cognitive (DC) question numbers 2, 7, 12-15 and 17-21 were reliable. 73-79 and 82-84 question numbers were reliable for Conduct Behavior (CB). The Anxiety Physiological (AP) had reliable question numbers of 63-70. The question numbers 4, 33-36 and 38 were reliable for Depression Physiological (DP). The question numbers 23 and 29 was reliable for Depression Behavior (DB). However, for Conduct Cognitive (CC) question numbers 8 and 59 were reliable. Finally, question numbers 27, 28 and 60 was reliable for Anxiety Behavior (AB).

The Confirmatory Factor Analysis (CFA) on the first run had given the Comparative Fit Index (CFI) value of .848 that was below the acceptable limit of .90. To enhance the value of CFI the problematic question numbers 45, 47, 04, 19, 20, 48, 68, 79 and 69 were deleted and the CFA was run again. On the second run the CFI value was .90 with the p-value of .00 that is less than .05. The results indicated significant model fit.

Table-I: Factor Loading or Factor Structure of Scale of Adjustment Problems in Adults (N=84)

Questi ons	AC	Questi ons	DC	Questi ons	CB	Questi ons	AP	Questi ons	DP	Questi ons	DB	Questi ons	CC	Questi ons	AB
41	.490	02	.499	73	.613	63	.480	04	.559	32	.455	08	.409	27	.549
42	.519	07	.482	74	.625	64	.638	33	.486	29	.523	59	.424	28	.415
43	.547	12	.635	75	.642	65	.580	34	.606					60	.459
44	.627	13	.412	76	.540	66	.420	35	.526						
45	.482	14	.542	77	.654	67	.588	36	.497						
47	.519	15	.538	78	.619	68	.434	38	.504						
48	.593	17	.490	79	.463	69	.576								
49	.638	18	.510	82	.476	70	.513								
50	.521	19	.450	83	.537										
51	.423	20	.666	84	.651										
52	.474	21	.577												
53	.554														
54	.477														
57	.438														
61	.492														

Note: AC=Anxiety Cognitive, DC= Depression Cognitive, CB=Conduct Behavior, AP= Anxiety Physiological, DP=Depression Physiological, DB= Depression Behavior, CC=Conduct Cognitive, AB=Anxiety Behaviors

Table-II: Before and after Model Fit Summary of all 57 Items among 84 (N=84)

	Model summary						
	P- Value	Chi Square	Goodness Of Fit Index	Adjusted Goodness Of Fit Index	Comparative Fit Index	Root Mean Square Error of Approximation	Root Mean Square Residual
Before	.000	1.831	.804	.785	.848	.045	.021
After	.000	1.625	.854	.837	.900	.039	.019

Table-III: Reliabilities of the Subscales (N=48)

Subscales	Total Items	Percentage	Cronbach Alpha r
Anxiety Cognitive (AC)	12	25.00	.886
Depression Cognitive (DC)	09	18.75	.829
Conduct Behavior (CB)	09	18.75	.839
Anxiety Physiological (AP)	06	12.50	.785
Depression Physiological (DP)	05	10.41	.744
Depression Behavior (DB)	02	4.17	.711
Conduct Cognitive (CC)	02	4.17	.799
Anxiety Behavior (AB).	03	6.25	.714
Total	48	100	

Note: ** P<.01

The full scale reliability was .938. The reliability of the subscales was in the range of .711 and .886. The acceptable limit of reliability is above .70 in case of current research all the values were above the limit.

DISCUSSION

In context of Pakistan the construct of dimensions of adjustment was not well developed. The available assessment tools are in English language and developed by emphasizing the western cultures and when those instruments used in different cultures possible biased result can be obvious. So, in this framework cultural difference mostly ignored when test administered on a population on which it is not originally developed.¹⁸ Due to this dearth of standardized measures the need of culturally reliable tool was essential in the local language for easy comprehension for the concerned population. Furthermore, cultural variances might play a role in contaminating the responses on different items leading to false results. For filling this gap, the main purpose of the study was to develop the tool on depression, anxiety and conduct disturbance of adjustment for adults.

First of all, after pilot study 84 items were used in field administration. Further, the field administration reduced items to 57 after exploratory factor analysis. There were 9 problematic items identified by confirmatory factor analysis that were deleted. Hence, at the end 48 items were reliable to use. Furthermore, this scale can be used to measure the Anxiety Cognitive (AC), Anxiety Physiological (AP), Anxiety Behavior (AB), Depression Cognitive (DC), Depression Physiological (DP), Depression Behavior (DB), Conduct Cognitive (CC) and Conduct Behavior (CB) domains of adjustment.

The variable of depression was comprised of three subscales. The depression cognitive subscale contained 09 questions

whereas, previous literature also in line that appropriate number of items at least 4 to 6 were required for a conceptual dimensions.¹⁹ The reliability value of the cognitive symptoms of depression subscale was .829. The subscales of behavioral symptoms of depression consisted on 2 questions with reliability of .711 and the physiological symptoms of depression subscale questions were 05 with the reliability of .744. It is important to note that the subscale of depression behavior consisted on 2 items; research also supported that even a single item may be sufficient to measure a construct.²⁰

The variable of anxiety also contained three subscales. The anxiety cognitive subscale was comprised of 15 questions whereas the reliability value of the subscale was .886. Further, anxiety behavior subscale included 3 questions with .714 values of reliability. Finally, in the anxiety physiological there were 06 questions with reliability of .785 .

The variable of conduct disturbance included 2 subscales. The subscale of conduct cognitive had 2 questions with reliability of .799. The conduct behavior included 09 items with the reliability of .839. The number of questions in a subscale was in the prescribed literature limit. Whereas, in case of reliability values, previous research supported the results of current indications that the reliability value of .70 or greater is considered as statistically appropriate.²¹

We compared the CFI and reliability values of this scale with the CFI and reliability of the previously developed Scales of Adjustment Disorders: Short Form²² and Emotional labor scale²³ developed in Pakistan. Value of CFI of indigenous scale is .90 with p-value less than .05, and reliability was .938. The CFI value of Scale for Adjustment Disorders: Short Form was .97, and test retest reliability was .82 and Emotional labor scale CFI was .935 and reliability of subscale of this measure was in between .73 to .85. The model is said to be best fitted if the value of CFI is greater than .90 with p-value less than .05.²⁴ Further, as mentioned earlier, reliability values of .70 or greater is considered as statistically significant. According to the statistically acceptable limits the values of newly developed scale of Depression, Anxiety and Conduct Disturbance of Adjustment for Adults were in significant ranges.

CONCLUSION

A reliable scale on adjustments for adult is successfully developed with 48 items reliable with eight sub-scales.

CONTRIBUTION OF AUTHORS

Naz I: Conceived idea, Data collection, Data analysis, Manuscript writing

Bano Z: Data interpretation, Designed research methodology, Manuscript final reading and approval, Manuscript writing

Leghari NU: Literature search, Statistical analysis, Manuscript final reading and approval

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