

## DEVELOPMENT OF EMOTIONAL DISTRESS SCALE FOR ADOLESCENTS

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### ABSTRACT

**Objective:** Development of emotional distress scale for adolescents in Urdu language.

**Study Design:** Cross sectional survey.

**Place and Duration of Study:** Department of Psychology, University of Gujrat, Gujrat, from Feb to Nov 2020.

**Methodology:** Scale was based on Beck Cognitive Theory with 3 main factors of Depression, Anxiety and stress and 9 sub factors of it. Initial item pool was developed of 180 items with the help of DSM-5, four focus group and literature review was carried out. One hundred and seventy four out of 180 items were selected after expert evaluation. 162 items were retained after pilot study. Moreover data was collected by using self-reported questionnaire on 900 adolescents from the community of district Gujrat and district Sargodha. For the analysis of data reliability, exploratory factor analysis (EFA) and confirmatory factor analysis (CFA) was used.

**Results:** After final administration of 162 items 49 items were retained. The final administration of 49 items with written informed consent was handed over to 900 participants. The model fit showed a *p*-value of 0.000 that established the structure validity and significance of the items to its subscales. Kaiser-Meyer-Olkin Measure of Sampling Adequacy (KMO) Bartlett's Test of Sphericity Pallant showed the acceptable value above 0.6 that showed the sampling adequacy of Emotional Distress Scale. After all analysis 49 items were selected.

**Conclusion:** Emotional distress scale is reliable indigenous scale for measuring emotional distress of adolescents with 3 main and 9 sub factors.

**Keywords:** Anxiety, Adolescents, Depression, Emotional distress, Reliability, Stress.

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### INTRODUCTION

Mental health is a global health issue and especially in adolescents era mental abnormalities effect negatively on individual life in many ways such as home, peer and school<sup>1</sup>. As adolescent period starts with rapid changes in cognitive, social and biological. Furthermore these changes lead toward some mental health issues and emotional problems. Emotions are as strong reaction of humans directed toward a particular object and specially exhibited by behavioral and physiological changes in the body<sup>2</sup>. In adolescents age these emotional problems take place in the form of anxiety, depression and stress<sup>3</sup>.

According to Statistical Manual of Mental Disorders (DSM-5) anxiety disorder includes the symptoms of excessive fear and disturbance related to anxiety behavior. Fear is reaction to perceived or real forthcoming threat, on other hand

anticipation of future threat is anxiety. The prevalence of anxiety is high in adolescents and it can be increased if there are cognitive symptoms such as fear without reason, excessive worry, panic states, physiological symptoms like dry mouth, tachycardia, shaking hands, breathing difficulties, and behavioral symptoms like escape behaviors present<sup>4</sup>. So anxiety can negatively influence the adolescent's life functioning such as family, peer and academic life. Negative emotional arousal state also linked with anxiety along with distress resulting potential future threat<sup>5</sup>.

In adolescents prevalence of anxiety is 15 to 20% and female two to three times more vulnerable for anxiety<sup>6</sup>. In study of Somers *et al* describe lifetime prevalence of anxiety 16.6%<sup>7</sup>.

In an other study of Quebec community on 12000 adolescents found 22% anxiety disorder<sup>8</sup>. In another study results indicated prevalence of anxiety 18% in Ontario school<sup>9</sup>. Anxiety and depression share important features but both are distinguishable phenomena. Depression included

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the presence of irritable mood, sad, empty, followed by cognitive and somatic changes that effects the individual functioning. Further, in depression cognitive symptoms included negative thoughts, loss of interest, suicidal ideation, Physiological signs may have sleep and appetite issues, loss of libido and Behavioral manifestation like aggression, crying, loneliness<sup>4</sup>. Further, depression is a major risk factor for suicide in adolescents and before death half of suicide victims reported depressive<sup>10</sup>. Meta-analysis of previous studies showed depression increases 5% in early adolescents and 20% at late adolescents<sup>11</sup> and the lifetime prevalence of depression in adolescents is 11%<sup>12</sup>.

Stress is a response to strain which characterized by tension and unevenness and a person have difficulty to cope with it. It can also be defined as physical tension or emotional feelings related with any thought or event that cause nervousness, aggression and frustration<sup>13</sup>. As like anxiety and depression stress has also three domains cognitive stress included stressful thoughts, flashbacks, stress physiological contain body pain, muscles stretched, stress behavioral may have nail biting, stubbornness, negligence behavior<sup>4</sup>.

In adolescents stress is significantly related to anxiety, depression, and suicide<sup>14</sup> and females are more prone to stress<sup>15</sup> About 10-20% is global prevalence of mental health issues in youth that further linked with physical health issues, conduct problems, substance misuse and poor educational achievement<sup>16</sup>. It also has significantly negative impact on global economy. Adolescence experienced most commonly depression anxiety and stress<sup>17</sup>.

For the assessment of these mental health issues of adolescents needed the development of advance tool in Urdu language which covers all domains of emotional distress such as depression, anxiety and stress. Present scale of emotional distress bases on Beck model on the bases of model scale has 3 main factors depression, anxiety and stress which has further 9 factors such as sub factors for depression included depression cogni-

tive, depression physiological and depression behavior, for anxiety it included anxiety cognitive, physiological and behavioral symptoms and for stress it included stress cognitive, stress physiological and stress behavior<sup>4</sup>. That covers all necessities of an advance scale. Furthermore all of symptoms were based on the criteria of DSM-5, literature and interviews from affected population which enhance the validity of a good measure.

## METHODOLOGY

Emotional distress scale for adolescents based on Beck model of cognitive theory which comprises of 3 main factors such as anxiety, depression and stress and their 9 sub factors (fig-1).

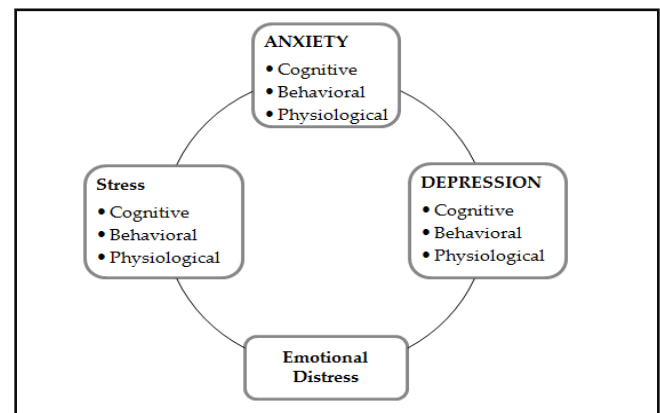


Figure-1: Model showing the bifurcation of subscales.

Study was conducted under the department of Psychology, University of Gujrat, Gujrat, from February 2020 to November 2020. Cross sectional survey research design and convenient sampling technique was used. Data was collected from 900 adolescents of district Sargodha and district Gujrat. Both male and female with age ranged 12-19 years were included in the study. Moreover data was collected by using self-reported questionnaire on 900 adolescents both from male and female, from the community and medical centers of district Sargodha and district Gujrat. Initially item pool was developed of 180 items with the help of DSM-5, four focus group and literature review was carried out. Pilot study was conducted on 100 and final study was on 900 adolescents of district Sargodha and district Gujrat. Scale was based 174 out of 180 items were selected after

expert evaluation. One hundred and sixty two items were retained after pilot study. Before data collection procedure were followed. Present study was permitted and approved from ethical committee of the respective department. After permission from higher authorities of institutions data was collected written informed consent and questionnaire was handed over to participants. Researcher briefly explain the need, significance of study and its response format to participants. Confidentiality of participant's was assured. Participants were thanked at the end of data collec-

Anxiety Physiological 8, Anxiety Behavior 4, Depression Cognitive 5, Depression Physiological 3, Depression Behavioral 7, Stress Cognitive 6, Stress Physiological 7 and Stress Behavioral respectively retained 5 items.

**Table-I: Kaiser-meyerolkin measure of sampling adequacy and bartlett's test of sphericity for emotional distress scale (n=900).**

Measure	KMO	Bartlett's Test of Sphericity
Emotional Distress Scale	49	0.934

**Table-II: Factor loading of emotional distress scale for adolescents (n=900).**

Item No.	AC	Item No.	AP	Item No.	AB	Item No.	DC	Item No.	DP	Item No.	DB	Item No.	SC	Item No.	SP	Item No.	SB
2	.506	36	.625	74	.612	85	.694	104	.714	119	.575	129	.589	139	.594	150	.560
12	.749	37	.581	75	.466	86	.684	111	.808	120	.585	130	.706	140	.686	151	.575
13	.712	38	.582	76	.603	87	.664	112	.773	121	.566	133	.680	141	.630	153	.591
17	.545	39	.634	77	.651	91	.529			122	.664	134	.657	142	.622	155	.413
		40	.655			92	.555			124	.651	135	.761	143	.732	157	.438
		41	.527							125	.557	136	.533	144	.664		
		42	.587							128	.539			145	.671		
		43	.580														

AC=Anxiety Cognitive, AP=Anxiety Physiological, AB=Anxiety Behavioral, DC=Depression Cognitive, DP=Depression Physiological, DB=Depression Behavioral, SC=Stress Cognitive, SB= Stress Behavioral, and SP=Stress Physiological.

tion activity.

Data analysis for the analysis of data statistical package for social sciences (SPSS-22) and analysis of a moment structures (AMOS-22) for windows was used. Reliability analysis, confirmatory factor analysis and exploratory factor analysis was carryout on data. Confirmatory factor analysis (CFA) on 12 items all items appeared significant for three sub-scales. The value of comparative fit index (CFI) was 0.910 that was in the acceptable range with the *p*-value of 0.000 <0.05. The results confirmed the model fit of the emotional distress scale and its subscales.

**RESULTS**

The adequacy of data was measured by using KMO and bartlett's test of sphericity. KMO value 0.934 and Bartlett's test of sphericity 0.000 showed that data is suitable for further exploratory factor analysis (table-I).

Table-II showing 9 factors of emotional distress scale. Anxiety Cognitive contain 4 items,

Cronbach alpha was computed to check the realibility of scale and its subscale (table-III).

**Table-III: Reliabilities of the subscales (n=900).**

Sub Scales	Total items	Cronbach alpha r
Anxiety Cognitive (AC)	04	0.630
Anxiety Physiological (AP)	08	0.771
Anxiety Behavior (AB)	04	0.839
Depression Cognitive (DC)	05	0.851
Depression Physiological (DP)	03	0.750
Depression Behavior (DB)	07	0.741
Stress Cognitive (SC)	06	0.816
Stress Physiological (SP)	07	0.848
Stress Behavior (SB)	05	0.716
Total	49	0.934

Cronbach alpha reliability of all subscales was above 0.5 which is acceptable. Cronbach alpha reliability of total scale was 0.934 which was significantly high and above from acceptable reliability value 0.70.

**DISCUSSION**

The principal objective of current study was to develop and validate the emotional distress scale in native language Urdu. Initially 180 state-

ments were written which were present in front of 4 expert panel. Out of 180 items 6 items were discarded and modified according to construct. Items statements and response format was selected for scale. After pilot study 162 items retained. Furthermore final study was carried out on 900

Studies showed that value >0.7 considered suitable<sup>18,19</sup>.

Goodness of model fit of emotional distress values as GFI=0.889, CFI=0.901, RMSEA = 0.038 and RMSR=0.036, correspondingly (table-IV). Results of existing study supported by previous studies such as acceptable value of RMSEA should be >0. value of CFI and GFI should be near to 0.9<sup>20,21</sup>.

The alpha reliability for emotional distress scale shows high value above 0.7 which considered appropriate. Current scale shows alpha reliability 0.934 which is significantly high and appropriate.

The values of newly developed scale of emotional distress were highly in acceptable ranges as these are according to the statistically adequate range.

**CONCLUSION**

Emotional distress scale completely established in Urdu language with 49 items and 9 sub scales. Scale can be used in further research.

**CONFLICT OF INTEREST**

This study has no conflict of interest to be declared by any author.

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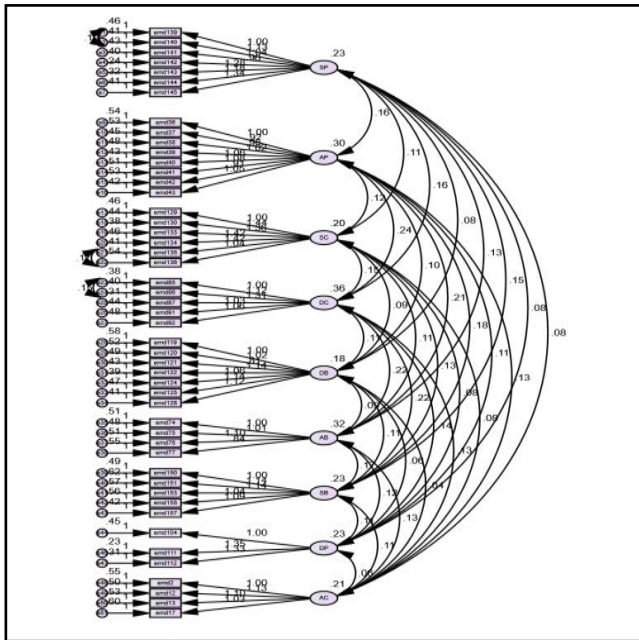


Figure-2: Confirmatory factor analysis 49 items (n=900).

participants. After exploratory factor analysis, confirmatory factor analysis and reliability, 49 items were finalized for final scale. Data is suitable for further exploratory factor analysis because. KMO value 0.934 and Bartlett’s test of sphericity 0.000 showed that data is suitable for further explora-

Table-IV: Model fit summary of 49 items (n=900).

Model Fit Summary					
p-value	Chi Square	GFI	CFI	RMSEA	RMR
0.000	16397.262	0.889	0.901	0.038	0.36

GFI= Goodness of Fit Index CFI= Comparative Fit Index, RMSEA= Root Mean Square Error of Approximation, RMR= Root Mean Square Residual.

tory factor analysis. Values of KMO and Bartlett’s test of sphericity depict that there is no identity matrix in the data. So it is considered that data is normal, multivariate and accepted for further analysis. KMO value for 0.8 to 0.9 considered excellent, value between 0.7 to 0.8 considered good,

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