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RESEARCH PAPER

Psychometric Properties of Urdu Version of Automatic Thought Questionnaire-Negative (ATQ-30)

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ABSTRACT

The present study was carried out to determine the psychometric properties of Urdu version of Automatic Thought Questionnaire-Negative (ATQ-30) for research and clinical purposes. In this regard, first English version was translated into Urdu and then adapted by computing different statistical tests. Analysis through Pearson Correlation Coefficient depicted the significant strong correlation between Urdu and English version of the questionnaire and its strong one week test-retest reliability as well. Computation of Cronbach's alpha has shown good internal consistency among items of Urdu version of Automatic Though Questionnaire. Confirmatory Factor Analysis proved its Urdu version with all four factors significantly fit within theoretical constructs. Moreover, independent samples t-test revealed a significant difference among adults with and without neurotic disorders (normal/healthy adults) within clinical setting. The overall present findings confirmed the Urdu Version of Automatic Thought Questionnaire-Negative (ATQ-30) as a reliable and valid instrument for research and clinical practice as well.

| **KEYWORDS** | Automatic Thoughts, Negative, Questionnaire, Reliability, Validity |

Introduction

Cognitions or thoughts are pivotal in probing the etiology, origin, development and treatment of the mental health problems (Beck, 2011). Cognitions encompass beliefs, perception and thoughts which may lay the ground of mild to chronic mental illnesses. Thoughts may come automatically in our mind causing numerous psychological upheavals. In fact, automatic thoughts are inner dialogues and self-statements an individual frequently says to own self (Beck et al., 2004). Although, cognitive processes emphasize on unconscious rather than conscious but automatic thoughts are possibly to be initiated automatically by both unconscious and conscious thoughts as well (Ingram et al., 1995). Automatic thoughts occur swiftly and unconsciously with less effort (Ferguson et al., 2008) and are formed in person's own mind in both positive and negative forms.

The association of health and pathology may be determined by exploring both positive and negative thoughts (Hollon & Kendall, 1980). Automatic thoughts pave the way for intergenerational transmission of psychological functions (Donnelly et al., 2011). Firm beliefs of people strengthen their negative automatic thoughts related to self and others (Clark & Beck, 2011). Cognitive functions are deemed as important in resilience process (Parsons et al., 2016) as well. Influence of positive affect on negative affect depends on the absence or presence of automatic thoughts (Kopala-Sibley & Santor, 2008). More automatic negative thoughts, more chances of being affected by negative life events are there (Wange et al., 2016).

Automatic thoughts, due to its key role in developing psychopathologies, also drew much attention of scientists under the umbrella of cognitive approaches (Ingram etal., 1995; Beck et al., 2004). Automatic thoughts have momentous influence on the mental health

symptoms (Hicdurmaz et al., 2017). In so far previous studies, a potent association of automatic negative thoughts was noted with anxiety and unconditional self-acceptance (Palos & Viscu, 2014), depression (Vatanasin et al., 2012; Yavuzer & Karatas, 2017), aggression (Yavuzer et al., 2014).), and with life satisfaction and anxiety as well (Serin & Aydmoglu, 2011).

Automatic negative thoughts still are chief important in examining the nature of abnormal behavior and mental health problems. But researchers encounter problems in exploring the automatic thoughts due to language barriers as not every patient or person can answer the statement written in second language (English). For this reason, the present study aims to translate and validate the translated version of Automatic Thoughts Questionnaire (ATQ-30) in order to increase its cross-cultural application for research and clinical purpose.

Literature Review

Cognitive distortions in forms of negative sense of self, self-blaming, fear or despair increase hopelessness (Ağır, 2007, as cited in Cakar, 2014). Automatic thoughts mediated the relationship between childhood abuse/neglect experiences, behavioral problems and resilience among adolescents (Kaya & Erogul, 2016) and between irrational beliefs and public speaking anxiety as well (Visla et al., 2013). In a study, negative automatic thoughts of having fear of disappointing parents emerged as best predictor of students' satisfaction, success and efficiency. Conversely, negative automatic thoughts of having negative attitude towards courses were worst predictor of student's satisfaction, success and efficiency (Zivèiæ-Beæirevi & Anic, 2001).

`Owing to underlying working schemas, people with negative automatic thoughts interpret the events and situations in negative way leading to maladaptive coping strategies (Beck, 2011). One may prone to emotional and behavioral problems as his or her life stress is intensified due to negative automatic thoughts (Flouri & Panourgia, 2014). Distorted cognitions resulted in maladaptive functions, conversely logical and pragmatic cognitions were responsible for adaptive functioning (Clark & Beck, 2011). Automatic negative thoughts impede the ability to function adequately as shown by its connection with somatic symptomatology, general fatigue and cognitive difficulties (Arpin-Cribbie & Cribbie, 2007).

Automatic thoughts occurring in stressful situation are vulnerable for depression (Moorey, 2010). Patients with social anxiety disorders reported less positive but more negative automatic thoughts (Iancu et al., 2015). Likewise, more negative automatic thoughts were reported by patients diagnosed with conversion disorders as compared to normal adults (Tahir, 2017). Automatic thoughts are significant predictors of negative mood states (McHugh & Wierzbicki, 1998), negative emotions (Schniering & Rapee, 2004), depression (Kwon & Oei, 2003) and hopelessness (Cakar, 2014) because people have some expectations from external environment and evaluate their future accordingly (Beck, 2005).Negative automatic thoughts contributed to conversion disorders diagnosed in adults (Tahir & Sadiq, 2022). Negative automatic thoughts also predicted motivation, energy and psychosocial symptoms among schizophrenic groups (Takeda et al., 2018). These thoughts significantly constitute the avoidance in daily activities (Rector et al., 2005).

As automatic thoughts have integral role in individual's health, Hollon and Kendal (1980) rigorously worked to develop a questionnaire that could measure the automatic thoughts. The Automatic Thoughts Questionnaire was specifically developed to assess the negative thoughts having direct relation with depression (Pereira, 2013; Alsaleh et al., 2016). Later on, ATQ-30 was used to assess automatic thoughts in clinical and non-clinical sample as well (Tahir, 2017; Zettle et al., 2013). The psychometric properties of ATQ-30 were developed while collecting data from factory employees. The results indicated good

split-half reliability and as well as internal consistency that proved its utilization for research purposes (Deardorff et al., 1984).

Scientific endeavors further shed lights on the automatic thoughts via cross-cultural lenses and noticed similar nature of automatic thoughts across western cultures (Calvete & Connor-Smith, 2005). Because of that similarity, the Automatic Thought Questionnaire (Hollon & Kendler, 1980) was translated and adapted in different language to ensure its cultural application. Danish version of ATQ (Lichtenstein et al., 2019) showed good reliability coefficient (α = 0.97) and strong construct validity (r = 0.88). Turkish version of Automatic Thoughts also indicated good reliability and validity (Şahin & Şahin, 1992).

Material and Methods

The method of carrying out the present study comprised of three different phases as elucidated below:

Measure

In the present study, Automatic Thoughts Questionnaire (Hollon & Kendall, 1980) was adapted to Pakistani culture. It comprised of 30 items to assess the negative thoughts automatically come in the mind. All items of this questionnaire are scored on five point likert scale [Not at all =1, Sometimes = 2, Moderately often= 3, Often = 4, All the time =5] which are added up to have full score that is 150. Obtaining higher scores indicates the more and frequent negative automatic thoughts or cognitions. Its English version has good psychometric properties as revealed by its reliability (r = .97).

Phase I : Translation of Automatic Thought Questionnaire (ATQ-30)

The translation process was done in the following ways:

Step 1: Translation and Back Translation of the Questionnaire

With the aim of adapting automatic thoughts questionnaire, the original version, available in English, was given to three different experts from the field of psychology to translate it into Urdu. Then, obtained three copies of translated version were given to other three different bilingual experts to translate the questionnaire back into English. Back translation was done to examine the similarity of statements with the original version.

Afterwards, seventh expert thoroughly reviewed both translated versions of the questionnaire and selected the best translated items from three different translations to make a final draft of ATQ-30. Then, that final and approved draft of the questionnaire was tested on a group of people to use it for further process of adaptation.

Step 2: Testation of Final Urdu Draft of the Questionnaire ,ATQ-30

Final Urdu draft of ATQ-30 was administered on a group of participants (n =40) including 17 males and 23 females. They were falling in the age range of 21 to 40 years with mean age (M = 29.80; SD =5.33). Data obtained from the participants were scored on available 5 point likert scale and then statistically analyzed to estimate its reliability.

Results and Discussion

Crobach's alpha was computed to determine the internal consistency among items of ATQ-30. The value of Cronbach's alpha (α = .84) with (*M* = 58.41; *SD* = 13.93) indicated translated (Urdu) version as reliable measure to be tested further.

Table 1
Summary of Cronbach's Alpha (n= 40)

Measure	k	a	M	SD
Automatic Thought Questionnaire (ATQ-30)	30	.84	58.41	13.93

Phase II: Establishing Reliability and Validity of Urdu Version of ATQ-30

Samples

Three different samples were drawn for the second phase of the study. In order to determine the correlation between English and Urdu Versions of Automatic Thought Questionnaire (ATQ-30), sample comprised of fifty (*n*=50) participants including twenty five (n=25) males and twenty five (n=25) females were conveniently recruited from Universities. Their ages ranged from 23 to 38 years with mean age (*M* = 29.87; *SD* = 4.64). They were enrolled in MS/M. Phil and Ph. D degree programs in universities.

Second sample was drawn to establish the test-retest reliability that comprised of fifty participants (*n*=50) who were employed in public sector universities of Faisalabad. Their ages ranged from 25 to 41 years with mean age (*M*= 32.30; *SD*= 5.51).

The third sample was drawn to compute the confirmatory factor analysis. That sample comprised of three hundred participants (*n* =300) including one hundred and sixty three (*n*=163) males and one hundred and thirty seven (*n*=137) females university students. Their ages ranged from 18 to 25 years with mean age (*M*= 22.07; *SD*= 2.07). They were enrolled in BS and master degree programs in various disciplines.

Procedure

For above mentioned different purposes, first permission from the heads of administrative and academic departments was taken. Then, consent from participants of the study was taken using informed consent form. At that point, all participants were also briefed the purpose and procedure of the study besides ensuring the confidentiality of personal identifying information and individual results as well. Then, questionnaires were administered on different groups in different setting and time while keeping in view the different purposes and objectives of the study.

To determine the correlation between English and Urdu Version of questionnaire, first English version of the Automatic Thoughts Questionnaire (ATQ-30) was administered on a group of 50 participants. Then, with 4 days of interval, Urdu version of the same questionnaire was administered on the same group. Data obtained from both versions were statistically analyzed by computing Pearson Correlation Coefficient with SPSS Version, 25.0.

In order to establish the test- retest reliability, the Urdu version of Automatic Thoughts Questionnaire (ATQ-30) was administered on a group of 50 participants. With one week of interval, same Urdu version was again administered on the same group of people. Pearson Correlation Coefficient was employed to determine the test-retest reliability of the questionnaire.

Another objective of the study was to do confirmatory factor analysis of the questionnaire. For that purpose, Urdu version was administered on 300 participants and then their responses were scored as per instruction to be statistically analyzed. Confirmatory analysis was done using SPSS, Version, 25.0.

Having determined the psychometric properties of ATQ-30 Urdu version, the questionnaire was administered on a group of neurotic patients (n=40) in comparison to

normal adults (n=40) to examine its application in clinical setting. Independent samples t-test was computed to see the difference among both groups using SPSS, Version 25.0.

Data Analysis

Table 2
Correlation with English and Urdu Versions of ATQ-30

Measure	*r*	*p*
Automatic Thought Questionnaire (ATQ-30)	.76	.000

Statistical analysis (**Table 2**) revealed the significant correlation (*r*= 0.76, *n* = 50, *p* = .000) between English and Urdu Versions of Automatic Thought Questionnaire ATQ-30.

Table 3
Test-retest Reliability

Measure	*r*	*P*
Automatic Thought Questionnaire (ATQ-30)	.80	.01

Results (**Table 3**) evinced the significant correlation between scores obtained at two different points in time using same questionnaire on same group of participants (*r* = .80, *n* =50, *p* = .01). It established the fact that ATQ-30 has strong one week test-retest reliability.

Table 4
Confirmatory Factor Analysis for Urdu Version of ATQ-30

Item No.	Factor 1	Factor 2	Factor 3	Factor 4	Neutral Items
10	.669				
26	.658				
20	.554				
14	.547				
7	.511				
23		.718			
21		.674			
9		.618			
24		.569			
3		.591			
28		.497			
2		.463			
18			.787		
17			.659		
29				.511	
30				.392	
8					.655
11					.618
27					.611
5					.568
12					.555
15					.523
22					.511
6					.499
16					.474
4					.440
25					.422
1					.411
19					.407
13					.400
Eigen Values	8.28	1.96	1.57	1.45	
% of Variance	27.63	6.53	5.26	4.85	

| Cumulative Variance | 27.63 | 34.16 | 39.42 | 44.28 |

Note: Factor 1 = Personal maladjustment/Desire for change   **Factor 2 =** Negative self-concept/negative expectations **Factor 3 =** Low self-esteem **Factor= 4** Giving up/helplessness

Confirmatory factor analysis (**Table: 4)** for Factor 1 (Personal maladjustment/Desire for change) indicated Eigen value of 8.28 and 27.63 % of variance, while the range of factor loading is .511 to .669. For Factor 2 (Negative self-concept/negative expectations)**,** the obtained Eigen value is 1.96 with 6.53 % of variance and ranges of factor loading .463 to .718. For Factor 3, the Eigen value is 1.57 with 5.26 % of variance and factor loading ranges of .659 to .787. For Factor 4, the Eigen value is 1.45 with 4.85 % of variance and factor loading ranges of .392 to .511.

However, 14 items of ATQ-30 were not included in any one of the above mentioned factors and were referred as the neutral items. CFA was also done considering the significance of these neutral items and obtained factor loading ranges are .400 to .655.

Table 5
Summary of independent samples t-test showing difference among adults with and without neurotic disorders on ATQ-30 scale

Measure	Adults with Neurotic Disorders (n=40)		Adults without Neurotic Disorders (n=40)				
	M	SD	M	SD	df	t	p
Automatic Thought Questionnaire	86.32	24.79	50.92	18.55	78	7.22	.000

Application of Urdu version of ATQ-30 in clinical setting was tested using independent samples t-test (Table: 5). A significant difference (*t* = 7.22, *df* =78, *p* =.000) was noted among adults with neurotic disorders and without neurotic disorders (normal/healthy adults) on the scale of Automatic Thought Questionnaire (ATQ-3) indicating the clinical significance of its translated version.

Discussions

The present endeavor was related to determining the psychometric properties of Urdu version of Automatic Thought Questionnaire (ATQ-3) that was originally developed by Hollon and Kendall (1980). All of its items were translated into Urdu and later on tested using different statistical tests in order to make it reliable and valid tool for research and clinical purpose in Pakistan. During phase I, translation and testation of the ATQ-30 was done. Cronbach alpha showed greater internal consistency among items. In previous studies, Lichtensein et al (2019) reported greater alpha value (α = 0.97) for Danish version, while Ghassemzadeh et al (2006) has documented good internal consistency (α =0.96) of Persian Version of ATQ-30.

In the same line, the present study also confirmed the accurate translation and suitability of ATQ-30 as shown by the alpha value (**Table: 1**). Urdu version seemed fit as alpha value indicates the quality of an instrument. Cronbach's alpha is significant and pervasive statistics in research when aim to construction and use of test (Cortina, 1993). The present study also estimated the relationship between English and Urdu Version of ATQ-30 and test-retest reliability found out a strong association between both versions. Test-retest is very important statistical analysis for determining psychometric status of the tools (Aldridge et al., 2017). Test-retest reliability of Persian Version is r = 0.84 (Ghassemzadeh et al., 2006) and split half reliability for Turkish version is r= 0.91 (Sahin, 1992).

Confirmatory factor analysis (CFA) was done to confirm whether measurement model is fit or not. It helps in identifying how the obtained data are in the line of factor structure and in the present study, four factors model with neutral items of ATQ-30 were confirmed as the model fit (**Table: 4**). General items, although were not included in four factors but were the part of ATQ-30. These items also represented the thoughts come automatically in mind. Along with four factors, general items seemed to be good fit model. Finally, application of Urdu version of ATQ-30 in clinical setting was examined (**Table: 5**) and it was also found as a reliable and valid tool to explore the automatic thoughts in neurotic patients. Previous researches also indicated significant role of automatic negative thoughts in developing depressive and anxiety symptoms (Hjemdal, Stiles & Well, 2013), in major depressive disorder, generalized anxiety disorder and social phobia (AlGul et al., 2015).

Conclusion

The present study concludes that the Urdu version of Automatic Thoughts Questionnaire (ATQ-30) has good psychometric properties which enhance its application in both general and clinical setting. CFA confirmed the four factors namely: personal maladjustment/desire for change (5-items), negative self-concept/negative expectations (7-items), low self-esteem (2-items) and giving up/helplessness (2-items) as theoretical domains of ATQ-30. Whereas, its 14 items (not included in any one of 4 factors) were confirmed as neutral items which also seemed good fit model indices to be explored as automatic thoughts within research and clinical practice as well.

As mentioned earlier that cognitions and thoughts have key role in developing psychopathologies, therefore, ATQ-30, in clinical setting, can help mental health professionals in identifying the automatic thoughts to be amended through effective interventions. Urdu Version can also be used for research purpose to identify automatic negative thoughts in the connection of causes and consequences whether sample is drawn from general or specific population.

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