Psychometric Properties of the Palestinian Version of the Acceptance and Action Questionnaire-Ii (Aaq-Ii) Applied in The Gaza Strip[1]

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Abstract:

In recent years the concept of experiential avoidance has become essential in new-generation therapies such as Acceptance and Commitment Therapy. In order to measure its importance, the Acceptance and Action Questionnaire was developed, followed by a second version which was also translated to various languages and applied in numerous countries. However, since the creation of the questionnaire, very few versions have been adapted to the Arab world, nor has one been applied in the Gaza Strip, a region characterized by its war conflict with Israel that also suffers from the social and psychological consequences of the isolation to which it is subjected. As a result, the present study seeks to obtain the psychometric properties of this instrument in the Gaza Strip. The results obtained reveal a Cronbach´s alpha of .78. Explanatory factor analysis (EFA) extracted one factors accounted for 47.71% of the total variance. This one-dimensional structure was confirmed through confirmatory factor analysis (CFA). The only difference from other versions of this tool is that, in the present case, the results suggest the elimination of Item 7.

Keywords: Avoidance; psychopathology; AAQ-II; Gaza strip.

Introduction

In recent years, one of the trends linked to what has been called the *third wave of behavioral therapy* (Hayes, 2004) has been the increased interest in learning more about psychological processes related to self-awareness and emotion, as well as the effective contextual changes to modify it. For instance, Acceptance and Commitment Therapy (ACT) (Hayes, Strosahl and Wilson, 1999) has demonstrated its usefulness in fields as heterogeneous and diverse as chronic pain, addictions, depression, anxiety, posttraumatic stress disorder, food disorders, psychosis, work stress, and confronting diseases such as cancer (Ruiz, 2010; Ruiz & Callejón, 2014).

Based on this approach, a concept that becomes particularly relevant is *psychological flexibility*. This is understood as the possibility to make contact with private events that occur in the present while we freely choose to abandon or continue an action that is valuable to us, although this may imply unpleasant thoughts and emotions. In contrast, the alternative, which is *experiential avoidance* (herein after, *EA*), consists of repeated and deliberate attempts aimed at avoiding or escaping those private events, and particularly those that threaten what we consider valuable in the evolution of our lives (Hayes, Wilson, Gifford, Follette and Strosahl, 1996).

The first tool developed for measuring EA was the *Acceptance and Action Questionnaire* (AAQ; Hayes et al., 2004), which had a Cronbach's Alpha Reliability Coefficient of .70. Over the years, this 10-item tool, with Likert-type responses, had demonstrated its great usefulness with regard to external validity, however, with the objective of perfecting its psychometric properties related to its factorial structure and internal consistency, a second version was developed, the AAQ-II (Bond, Hayes, Baer, Carpenter, Orcutt, Waltz & Zettle, 2011). This version, which only features 7 items, has been translated and validated in different countries on various continents, such as Spain (Ruiz, Langer, Luciano, Cangas and Beltrán, 2013), Italy (Pennato, Berrocal, Bernini and Rivas, 2013), Portugal (Pinto, Gregório, Dinisy Xavier, 2012), Columbia (Ruiz, Suárez-Falcón, Cárdenas-Sierra, Duran, Guerrero and Riano-Hernández, 2016), China (Zhang, Chung, Si and Liu, 2014), Taiwan (Chang, Chi, Lind and Ye, 2015), Iran (Ghasemi., Kalantari, Asghari and Molavi, 2014), and Turkey (Meunier, Atmaca, Ayrancı, Gökdemir, Uyar, and Baştuğ, 2014).

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In this way, the objective of the present study is to validate the AAQ-II in the Gaza Strip, a region severely affected by its war conflict and total blockade by Israel. For this reason, we believe it is fundamental to have a tool that is widely used in various countries which helps us to learn more about how internal events can be experienced, specifically related to psychopathological problems, in order to determine the relationship this can have with other emotions such as, for example, traumatic experiences.

Method

Participants

The study sample was comprised of a total of 614 students (113 boys and 501 girls) from the universities of Gaza (Al Azhar University-Gaza, University of Palestine, Al Aqsa University-Gaza, Al-Quds Open University). Their ages ranged from 16 to 36 ($M = 20.12$, $S.D = 2.43$). Non-random sampling was utilized (Azorín and Sánchez Crespo, 1986).

Instrument

The AAQ-II (Bond et al., 2011) is a general measure of experiential avoidance and psychological flexibility. It consists of 7 items rated on 7-Point Likert-Type Scale (ranging from 1 = never true, to 7 = always true). All items are related to the lack of contact with unwanted thoughts and emotions, as well as the inability to make contact with the present moment. These conditions thereby allow decisions to be made in accordance with one's own values, even when these imply considerable short-term uneasiness. Recent studies have shown that the AAQ-II has better psychometric properties and clearer factorial structure than its initial version (Bond et al., 2011). In this study, the original English version was used, which was first translated to Arabic and then back to English again, following the recommendations proposed by Muñiz and Hambleton (1996).

Procedure

Students were invited to participate in this study on a voluntary basis, and their participation required that they sign a consent form. Each application of the questionnaire took approximately 15 minutes and was conducted in the presence of the head researcher so an explanation could be provided concerning the objective and structure of the study as well as how to complete the questionnaire.

Data analysis

An initial analysis of the psychometric properties of the AAQ-II scale to measure experiential avoidance and psychological inflexibility using the Palestinian version of the AAQ-II served to determine the validity and reliability of said scale. To this end, calculations were made for bivariate correlations, exploratory factor analysis (EFA) and confirmatory factor analysis (CFA), based on a factor model of the AAQ-II scale and a sex invariance analysis. The statistical analyses were carried out using the software programs SPSS 21 and AMOS 21.

First, in order to evaluate the internal consistency of the scale, a Pearson correlation was conducted between each element and the total score, and Cronbach's alpha was calculated for all the data. Second, the Kaiser-Meyer-Olkin index and Bartlett's sphericity test were calculated to determine whether they were apt for carrying out the factorial analysis. Later, an exploratory analysis was done using key components analysis. Given that Mardia's coefficient was low for AFC (2.157), the maximum likelihood estimation method was utilized to analyze the correlations matrix. The analyses were carried out by means of the AMOS program.

To determine whether to accept or reject the tested model, a combination of various adjustment indexes were applied: χ^2/gl, CFI (*Comparative FitIndex*), TLI (*Tucker Lewis Index*), IFI (*Incremental Fit Index*), RMSEA (*Root Mean Square Error of Approximation*) with a 90% confidence interval and SRMR (*Standardized Root Mean Square Residual*). Given that χ^2 is highly sensitive to sample size (Jöreskog and Sörbom, 1993), χ^2/gl was utilized, which is considered acceptable with a quotient of 4, while values near 2 are considered to have a very good fit (Brooke, Russell and Price, 1988).

Results

Table 1 displays the correlations between each item and the total score of the scale, which was between a general range of .19 (Item 7) and .72 (Item 2). These results make it necessary to consider the possibility of eliminating Item 7, given that item-test correlation is lower than the established cut-off point of .30 (Fayers and Machin, 2000). Consequently, this item was not included in the analysis and the study proceeded with only the remaining 6. The general Cronbach Alpha was .78 after eliminating Item 7, while this number was .69 before being removed.

Table 1. *Correlations between each item and the total score of the scale. Reliability.*

Items	Item-test Correlation	Cronbach Alpha if element is eliminated	Saturation factor of each item with the main factor
1	70**	.62	.73
2	72**	.62	.76
3	64**	.65	.65
4	70**	.62	.74
5	70**	.63	.66
6	58**	.66	.58
7	**19****	**.78**	-

The first step was to conduct an EFA using the main components of the 6 items that ultimately comprised the AAQ-II scale in the Palestinian validation. As for the factorial analysis, the Bartlett sphericity test must be statistically significant to .05 and the Kaiser-Meyer-Olkin (KMO) measure of sampling adequacy must be higher than .6 to confirm the suitability of the statistical tool (Pallant, 2001). The data offer a Bartlett coefficient of 878.04, with a p<.001 and KMO of .808, which confirms the use of factorial analysis. This analysis clearly produced a unifactorial solution, as can also be seen in the screenplot graphic which confirms the existence of one lone factor. This factor explains 47.71% of score variance. Table 1 shows the saturation of each item with each main factor, which vary between .58 and .76.

An initial CFA tested the model structure with one lone factor for six items, revealing adequate fit indexes, precisely as shown in Table 2. In this model, the standardized regression weights were statistically significant (p<.001) in relation to all items. The results of the various modification indexes utilized confirm that the model tested (a factor correlated with 6 items) is that which best fits the data (Figure 1 displays the definitive 6-item model). It can be observed that the incremental indexes (CFI, TLI and IFI) demonstrate good fit, with values of .90 or higher (Schumacher and Lomax, 1996), while the error indexes are considered acceptable at values equal to or lower than .08 for RMSEA and SRMR (Hu & Bentler, 1999). Therefore, this 6-factor unifactorial model displays good fit.

Table 2. *Unifactorial model with 6 items for AAQ-II.*

Model	χ^2	gl	χ^2/gl	p	N	CFI	TLI	IFI	RMSEA (IC 90%)	SRMR
Model 1	32.74	8	4.09	.000	614	.971	.946	.972	.071 (.047-.097)	.033

Model 1: with 6 items.

Sex invariance analysis

Table 3 shows the modification indexes for the four models tested in the multigroup invariance analysis related to sex for the unifactorial model of the AAQ-II scale with 6 items (after eliminating Item 7 from the original scale). It was confirmed that there are no significant differences in the Chi-squared value between the unrestricted model and the measurement weights model, but there *are* significant differences when it is compared to the rest of the models. Nevertheless, given that the χ^2 coefficient is sensitive to sample size, the criterion established by Cheung & Rensvold (2002) was used with respect to ΔCFI. According to these authors, ΔCFI values less than or equal to .01 indicate that the invariance of the null hypothesis should not be rejected. In keeping with this criterion, the results would support the existence of invariance regarding sex for the factorial structure of the AAQ-II scale.

Table 3. *Sex Invariance Analysis*

Models	χ^2	gl	χ^2/gl	$\Delta\chi^2$	Δgl	CFI	TLI	IFI	RMSEA (IC 90%)	SRMR
Model 1	42.191	16	2.63	-	-	.970	.944	.971	.052 (.033-.071)	.052
Model 2	45.960	21	2.18	3.76	4	.972	.959	.972	.044 (.027-.061)	.060
Model 3	68.242	28	2.43	26.05*	10	.964	.951	.964	.048 (.034-.063)	.062
Model 4	78.387	35	2.24	36.19*	10	.961	.958	.960	.045 (.032-.058)	.071

*p<.05; **$p < .01$; ***$p < .001$. Note. Model 1 = unrestrited model; Model 2 = invariant measurement weights model; Model 3 = invariant structural covariance model; Model 4 = invariant measurement residuals model.
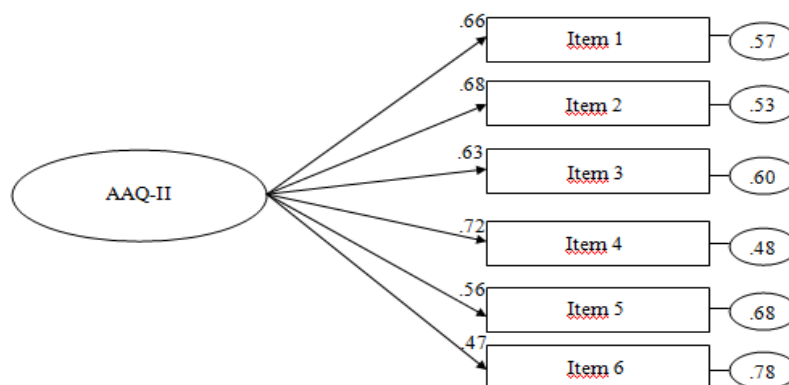

Figure 1. Confirmatory factorial analysis of the AAQ-II scale in Gaza.

The ellipse represents the factor and the rectangles represent the various items, while the residual variances are shown in the small circles.

Discussion

The objective of the present study was to evaluate the factorial structure and reliability of the Arabic version of the Acceptance and Action Questionnaire-II in Gaza. The results obtained reveal the presence of a unifactorial structure, which was confirmed using the confirmatory analysis. These results are similar to other studies that have also analyzed the psychometric properties of this tool (Chang et al., 2015; Ghasemi et al., 2014; Meunier et al., 2014; Pennato et al, 2013; Pinto et al., 2012; Ruiz et al., 2013, 2016; Zhang et al., 2014).

The only difference with respect to the above studies is that, in this case, the results recommend eliminating Item 7 (*Worries get in the way of my success*), due to the fact that it displays a very low correlation with the rest of the items (.19), while the rest reveal high consistency.

It could then be considered that Item 7 is influenced by some idiosyncratic characteristic in the Gaza sampling which could not be related to the rest of the items in the questionnaire. Also, it might be the result of possible methodological limitations of the present study, such as the fact that the specific psychopathological characteristics of the population were not measured, and this may have affected the results. Furthermore, the average age of the participants in the present study (20 years old) is lower than in earlier studies. Nevertheless, it must be taken into account that the Gaza Strip currently has one of the lowest age averages in the world (17 years old according to Index Mundi), with 40% of the population under 14 years of age.

In this way, the unifactorial structure of the questionnaire and the adequate psychometric properties are confirmed. It is recommended, however, that the tool also be validated with other clinical measures that help to understand the psychological characteristics of this population. This is an aspect that the present research group intends to carry out in future works.

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