



## Asian pearls

## Translation and validation of “Adolescent Resilience Questionnaire” for Iranian adolescents



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## ARTICLE INFO

## Article history:

Received 13 November 2016

Accepted 4 December 2016

## Keywords:

Translation

Validation

Adolescent

Resilience

## ABSTRACT

**Background and aim:** Resilience is the process by which adolescents are able to maintain or regain positive outcomes despite stress and negative emotional experiences. Assessing resilience is important to identify adolescents' strengths and vulnerabilities. There are currently no resilience instruments available for Iranian adolescents. This paper describes the translation and validation of Adolescent Resilience Questionnaire (ARQ) for use with Iranian adolescents.

**Method:** The ARQ was translated into Persian and back-translated. Proportional stratified sampling was used to recruit a representative sample of 523 adolescents aged 11–19 years from 38 public and private high schools in Tehran. Total scale and subscale reliability were examined using Cronbach alpha. Test-retest reliability was conducted with 38 adolescents who completed the ARQ twice with a two week interval in between and assessed using intra-class correlation coefficients (ICC).

**Findings:** Cronbach alpha coefficients were equal to or greater than 0.70 for all scales, after the removal of one item in the Community scale. Test-retest reliability for the overall ARQ score was excellent (ICC = 0.83, 95%CI, 0.76–0.93) and very good for individual subscales (ICC = 0.70–0.79).

**Conclusion:** The present study provides evidence of good validity, reliability and test-retest reliability of the Persian ARQ for Iranian adolescents. Further testing, including construct validity, and testing across different contexts will strengthen the evidence. The instrument will have applications in resilience research, educational and clinic settings and could facilitate the development and evaluation of intervention programs to build resilience in Iranian adolescents.

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## 1. Introduction

Resilience as a construct (Béné et al., 2016; Nelson et al., 2016) has been defined as the ability to positively adapt or overcome adversity or stress (Garmezy, 1991; Masten, 2001). It is considered as a continuum of adaptation or success (Hunter and Chandler, 1999). Resilient individuals are more resistant to psychological risk experiences in comparison with non-resilient people (Rutter, 1999) and have the capacity to recover from psychological trauma (Holaday and McPhearson, 1997). Despite many studies focusing on the individual's capacities (Wagnild, 2009; Wagnild and Collins,

2009), resilience is also a feature of the individual's surrounding environment such as family, school and community (Libório and Ungar, 2010). Recent studies have demonstrated that resilience is also influenced by interactions between genetic and environmental factors (Amstadter et al., 2016; Gillespie et al., 2009). Therefore resilience is defined as a dynamic process (Masten, 2001) encompassing positive adaptation in the face of adversity (Luthar et al., 2000).

Adolescence can be a time of increased engagement in risk behaviors that can affect adolescents' health and well-being (Rew and Horner, 2003). As adolescents seek greater independence, grapple with their self-identity and focus on their peer group, and it is also a time when mental health and eating disorders commonly begin (Hockenberry et al., 2012). Resilience becomes very important during this significant transition towards adulthood. According to the Youth Resilience

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Framework (Rew and Horner, 2003), risk factors and protective resources are the inseparable fabric of individuals' lives and resilience represents the interaction between these two elements (Rew and Horner, 2003). Adolescent resilience is defined as "the process of adaptation to risk that incorporates personal characteristics, family, social support, and community resources" (Ahern, 2006).

A range of resilience measurement tools have been developed in different populations. A number of these questionnaires have focused on individual characteristics alone (Connor and Davidson, 2003; Jew et al., 1999; Wagnild and Young, 1993). Other tools have included environmental factors (Friborg et al., 2003) but are limited in scope and detail (Gartland et al., 2011). Moreover, the majority of the available measures was developed to measure adult resilience, and may not be applicable to the specific developmental phase of adolescence. Ahern et al. (2006) in a review of resilience measures, found that there are few specific questionnaire focusing on resilience in adolescents (Ahern et al., 2006).

Gartland et al. (2011) developed a measure of resilience for adolescents based on the multi-dimensional nature of resilience (Harvey et al., 2003; Luthar et al., 2000; Masten and Obradović, 2006; Ungar, 2004, 2015). The Adolescent Resilience Questionnaire (ARQ) comprises 88 items and 12 scales measuring resilience factors in the five domains of *Self, Family, Peers, School, and Community* (Gartland et al., 2011). The ARQ was developed based on an ecological-transactional model (Gartland et al., 2011). The ecological-transactional model provides a conceptual framework for the integration of individual and environmental factors underlying resilience (Jaffee et al., 2007; Lynch and Cicchetti, 1998). The ARQ scales and items were developed through an extensive literature review and focus groups, and underwent multiple cycles of psychometric testing and revision. The measure assesses personal characteristics including *Confidence, Emotional Insight, Negative Cognition, Social Skills, and Empathy & Tolerance* and relevant ecological domains including family, peer, school and community (Gartland et al., 2011). The ARQ is described in Table 1. The ARQ scales were reported to have good factor structure and acceptable alpha coefficients (Gartland et al., 2011) and it the most comprehensive measure available for use with adolescents.

There have been adaptations of the ARQ in other settings. Marici (2015) looked at the factorial structure of the family domain of the ARQ in the Romanian context and reported that the findings support the original factor structure of ARQ for family domain and the coefficients obtained showed acceptable reliability. The reported Cronbach's alpha coefficients for family connectedness

and family availability scales were 0.76 and 0.88 respectively, and test-retest reliability was 0.71 and 0.75 (Marici, 2015). Guilera Ferré et al. (2015) have analyzed the psychometric properties of a Spanish translation of the ARQ with Spanish adolescents. The results confirmed the factor structure based on 12 scales and internal consistency ranged from adequate to excellent (Cronbach's alpha coefficients 0.6–0.84) (Guilera Ferré et al., 2015). No studies have been published using the ARQ with Iranian adolescents. The aim of the present study is to create the first Persian translation of the ARQ, and conduct psychometric testing of the validity and reliability in an Iranian context.

## 2. Method

### 2.1. Development and pilot testing of the Persian language ARQ

With permission from the ARQ lead author (DG), two bilingual translators, whose first language was Persian, translated the original questionnaire independently. One translator was a psychologist who was familiar with the concept of resilience and the published resilience literature; the second translator was a post graduate in English translation who was not familiar with resilience research. After translation, all the items and text were evaluated by the research team and the translators to choose the best statement for each item. The statements were selected based on consensus.

A back-translation was then independently completed by two bilingual translators, whose first language was Persian, but had lived in UK for 10 and 8 years respectively. One was nursing student and the other was an engineer. The back translation process was blind to the original questionnaire. The two back translated questionnaires were evaluated by the translators and the research team and the best statements were selected for each item based on consensus. The original author (DG) then provided feedback on the back-translated (English) version to check the accuracy and equivalence between the back-translated version and the original ARQ items.

An expert committee comprised from one methodologist, one adolescent psychologist, two pediatric nurses, two English translators, and two members of "Academy of Persian Language and Literature" then reviewed the Persian version of the questionnaire to assess the cross-cultural equivalence and appropriateness of the ARQ to the Iranian adolescent's population. Semantic equivalence of the items was reviewed by assessing the meaning of each word to ensure the accuracy of translation. Idiomatic equivalence was

**Table 1**

Scales and scale reliabilities in the original Adolescent Resilience Questionnaire (Gartland et al., 2011).

Domain Scale	Items	Example Items	Cronbach Alpha
Individual	40		
Confidence (self and future)	8	I am confident that I can achieve what I set out to do	0.81
Emotional insight	8	I can change my feelings by changing the way I see things	0.71
Negative cognition	8	I just can't let go of bad feelings	0.83
Social skills	8	I can share my personal thoughts with others	0.68
Empathy/Tolerance	8	I am easily frustrated with people	0.66
Family	11		
Connectedness	8	My family understands my needs	0.87
Availability	3	There is someone in my family I can talk to about anything	0.79
Peers	15		
Connectedness	7	I have friends who make me laugh	0.81
Availability	8	I find it hard making friends	0.64
School	16		
School supportive environment	8	My teachers provide me with extra help if I need it	0.81
School connectedness	8	I try hard in school	0.65
Community	6		
Community connectedness	6	People in my neighbourhood are caring	0.88

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