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The psychometric properties of the mindful attention awareness scale among Arab parents of children with autism spectrum disorder

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ABSTRACT

Aim: The purpose of this study was to examine the psychometric properties and the theoretical structure of the mindful attention awareness scale (MAAS) with parents of children with autism spectrum disorder (ASD) in Jordan.

Method: A sample of 104 parents of children with ASD in Jordan completed the study. Exploratory and confirmatory factor analyses were conducted to assess the factor structure of MAAS. Internal consistency was assessed using Cronbach's alpha. The convergent validity was assessed using Pearson's product–moment correlations between the MAAS and measures of psychological distress and Quality of life.

Results: A confirmatory factor analysis showed that the modified 13-item MAAS fits the data significantly better than the original 15-item model. However, both the 13-item and the 15-item models showed a single factor structure, with excellent internal consistency and convergent validity.

Conclusion: This preliminary study supports using the MAAS in Arab parents of children with ASD.

Introduction

Parents of children with autism spectrum disorder (ASD) frequently demonstrate relatively high levels of anxiety, stress, and depression, and poor quality of life (QOL) (Bitsika, Sharpley, & Bell, 2013; Dardas & Ahmad, 2014; Falk, Norris, & Quinn, 2014). Sources of stress in parents of children with ASD may include difficulty in interaction with the child, marital conflicts resulting from difficulty meeting the child's needs, lack of professional support services for children with ASD, and stigma in society (Al-Khalaf, & Dempsey, & Dally, K., 2014; Hartley et al., 2010; Zeedyk, Cohen, & Blacher, 2014).

Although the reported prevalence of ASD has increased markedly throughout the world in recent decades, limited statistics are available regarding the prevalence of ASD in the Arab world (Taha & Hussein, 2014). In contrast, in the USA, there is great public interest in ASD, which has become the fastest growing disability, with prevalence rates of one in 88 children (Centers for Disease Control and Prevention, 2012).

There is a need to provide effective psychological support programs for parents of children with ASD (Al-Khalaf, & Dempsey, & Dally, K., 2014; Bitsika et al., 2013; Rayan & Ahmad, 2017). Researchers suggested examining mindfulness-based interventions (MBIs) to support parents of children with ASD and other developmental disabilities (Bazzano et al., 2013; Beer, Ward, & Moar, 2013; Rayan & Ahmad, 2016). Mindfulness is defined as nonjudgmental, moment-to-moment awareness and attention in the present moment, with acceptance and non-reactive responses to current thoughts and emotions (Kabat-Zinn, 2011). The concept of mindfulness is directly inspired by the Buddhist tradition (Desbordes et al., 2014), but it is not constrained to the Buddhist tradition (Grossman, Nieman, Schmidt, & Walach, 2004). All religions have examples of mindfulness in their spiritual practices, such as “rosary” in Christianity, “Tafakkur” in Islam, and the “Kabala” in Judaism, (Manikam, 2014).

Recently, mindfulness has been of great popularity in psychology. Mindfulness is reported to be an effective method to take control over anxiety, stress, and depression, and improve QOL for different populations (Brown & Ryan, 2003; Brown, Ryan, & Creswell, 2007; Eberth & Sedlmeier, 2012). Brown and Ryan (2003) found that those practicing mindfulness reported more feelings of well-being and positive emotional states, with a decrease in tension, anxiety, depression, fatigue, and stress.

Formal mindfulness practice includes practicing structured mindfulness programs regularly, such as practicing mindful breathing daily at a predetermined time and for a predetermined duration. Other formal structured mindfulness-based programs are designed for relieving pain and controlling different psychological symptoms.

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Examples of these programs are Mindfulness-Based Stress Reductions (MBSR), Mindfulness-based Cognitive Therapy (MBCT), Dialectical Behavioral Therapy (DBT), and Acceptance and Commitment Therapy (ACT) (Desbordes et al., 2014). Research found that practicing these formal mindfulness programs may improve psychological well-being and decrease levels of stress, anxiety, and depression (Brown & Ryan, 2003). The act of mindfulness breaks the automatic stress reaction cycle, and allows individuals to cultivate healthier, more adaptive ways of responding (Phang & Oei, 2012). This leads to a more accurate perception of reality, and an enhanced sense of control over reactions to daily life stressors (Grossman et al., 2004).

The MAAS is considered one of the most commonly used measures of mindfulness, and was reported to have sound psychometric properties (Brown & Ryan, 2003). Studies found MAAS to be valid, and having a unidimensional factor structure when used in clinical and non-clinical populations (Brown & Ryan, 2003; Carlson & Brown, 2005). These validation studies found satisfactory convergent and divergent validity of the MAAS, which was negatively correlated with measures of psychological health and well-being. Moreover, mindfulness scores, which are usually assessed using the MAAS have been identified as a target of the intervention in different BMIs.

There is still limited available evidence about effectiveness of MBIs for helping parents of children with ASD worldwide. Such evidence is needed for parents to benefit from safe, cost-efficient, effective, and sustainable interventions to control their high levels of stress. Researchers who wish to implement MBIs for parents of children with ASD may want to find a valid tool to measure mindfulness. However, the psychometric properties of the MAAS among parents of children with ASD have yet to be established, since no study has examined the psychometric properties of any mindfulness measure within parents of children with ASD. This study examines the psychometric properties of the MAAS within parents of children with ASD in Jordan. The present study sought to validate the MAAS in parents of children with ASD considering the cultural aspects of an Arab sample. Specifically, the researchers wanted first to examine the unidimensionality of MAAS in parents of children with ASD. Second, the researchers investigated the internal consistency reliability and the convergent validity of MAAS when used with parents of children with ASD.

Methods

Sample size

The sample size guideline by Nunnally and Bernstein's (1994) recommends five to ten cases per item for running factor analyses. The MAAS includes a total number of 15 items. Thus, the sample size can range from 75 to 150. The total number of participants who were contacted and invited to participate in the study was 187. One hundred and forty six potential participants were contacted directly by telephone, and 41 participants were invited through an invitation letter sent with the child. The total number of parents who completed the consent form and the questionnaires was 104. Data were collected from April 2, 2015, to August 18, 2015.

Participants characteristics

All participants in this study had at least one child with ASD. Participants were recruited from 10 centers serving children with ASD in Jordan. These centers provide speech therapy and behavioral therapy for children. Most of these centers require parents to accompany the child in the morning, and coming again to take the child to home afternoon. Before completing the study measures, parents completed a demographic survey inquiring about age, gender, nationality, income, and religion. The diagnosis of ASD in children was confirmed by a certified professional using the DSM V criteria. Parents age in this study aged ranged between 20 and 57 (M = 36.24; SD = 8.5), 73 (70.2%) of them were females. The median age of the children diagnosed with ASD whose parent completed the study was 5 years. In addition, all parents were Muslim. About 82.7% of the parents reported that their child with ASD was a source of stress for them. The total number of children at home ranged between 1 and 7 children. Fifty-five (53%) participants had a family monthly income of < 705 United States Dollar.

Instrument

The mindful attention awareness scale (MAAS)

The MAAS is a 15-item self-report measure of mindfulness. It is rated on a 6-point Likert scale from 1 to 6, to evaluate the degree of awareness and attention regarding what is occurring in the present moment. Score 1 for each item indicates absence of attention or awareness, while score 6 indicates the greater level of attention or awareness. Thus, higher mean scores on MAAS indicate greater mindlessness. The MAAS has demonstrated convergent and divergent validity, with Cronbach's alpha of 0.80 or above in different populations (Brown & Ryan, 2003). In addition, it has a negative correlation with measures of rumination and anxiety (Brown & Ryan, 2003). The mean score of MAAS in our sample was 3.20 (SD = 1.07), which is lower than other samples of a nonclinical population such as college students (M = 3.86, SD = 0.86; Erisman & Roemer, 2012) and similar to clinical sample of participants having anxiety and depression (M = 3.07, SD = 0.69; Hamilton et al., 2012).

Translation procedure

The researchers first contacted the authors of the instrument, Kirk Warren Brown and Richard Ryan, and had a permission to translate, adapt, and validate the MAAS in Arab parents of children with ASD. For this study, the original 15-item MAAS was translated into Arabic. The purpose of translation was to assure comparability of meaning and conceptual equivalence. A rigorous process of translation and back translation was followed as suggested by Brislin (1970) and Chapman and Carter (1979), to assure the reliability and validity of the Arabic version. The MAAS was first translated from English into Arabic. Then, the back-translation process from Arabic into English was completed by two different professionals who are specialized in English-language editing. After that, all translators involved in the translation and back-translation met and confirmed that the content of both forms was almost the same in terms of conceptual meaning. Two licensed clinical psychologists made the final review for the Arabic version. Parents who involved in pilot testing reported no problem in understanding any item of the Arabic version.

Data analysis

Data screening was first conducted through The Statistical Package for the Social Sciences (SPSS) Version 21 to examine normality, outliers, and missing values. Internal consistency of the MAAS was determined by Cronbach's alpha. Exploratory factor analysis was used to assess if the MAAS provided an evidence for a 1-factor solution and to identify the percentage of common variance obtained. Confirmatory factor analysis (CFA) was subsequently conducted to confirm the unidimensional factor structure of the MAAS in the present sample. Model fit was assessed using a variety of fit indices, including the comparative fit index (CFI), goodness of fit index (GFI), and incremental fit index (IFI). These indices have a range 0–1 and with values > 0.90 indicate a good fit (Wang, Fan, & Willson, 1996). Another model fit index used in the current study was the root mean square error of approximation (RMSEA). A value of 0.05 or less for this index suggests a ‘close fit’, and values > 0.1 suggest rejecting the model (Browne & Cudeck, 1989). To assess the convergent validity of MAAS, Pearson's product–moment correlations were conducted between the MAAS and the DASS21 and the WHOQOL-BREF tools. Negative correlations between MAAS and DASS21, and positive correlations between MAAS and the WHOQOL-BREF suggest adequate convergent validity.

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