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The Youth Anxiety Measure for DSM-5 (YAM-5): Correlations with anxiety, fear, and depression scales in non-clinical children

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ABSTRACT

The Youth Anxiety Measure for DSM-5 (YAM-5) is a newly developed rating scale for assessing anxiety disorder symptoms of children and adolescents in terms of the contemporary classification system. In the present study, 187 children aged 8–12 years completed the new measure as well as the trait version of the State-Trait Anxiety Inventory for Children (STAIC), the Short Form of the Fear Survey Schedule for Children-Revised (FSSC-R-SF), the Spence Children's Anxiety Scale (SCAS), the Selective Mutism Questionnaire (SMQ), and the Children's Depression Inventory (CDI). Results indicated that part one of the YAM-5, which measures symptoms of the major anxiety disorders, was most substantially linked with the trait anxiety scale of the STAIC, whereas part two, which measures phobic symptoms, was most clearly associated with the FSSC-R-SF. The correlation between the YAM-5 and the SCAS was also robust, and particularly strong correlations were found between subscales of both questionnaires that assessed similar symptoms. Further, the selective mutism subscale of the YAM-5 was most clearly linked to the SMQ. Finally, the YAM-5 was also significantly correlated with depression symptoms as indexed by the CDI. These findings provide further support for the concurrent validity of the YAM-5.

1. Introduction

Anxiety disorders are common among children and adolescents. Large-scale epidemiological studies indicate that approximately 10% of the young people in the general population suffer from one or more anxiety disorders before the age of 16 (Costello, Mustillo, Erkanli, Keeler, & Angold, 2003), whereas in clinically-referred youths prevalence rates have been documented of up to 50% (Hammerness et al., 2008). Anxiety rating scales are highly valuable assessment instruments that can be employed for research purposes as well as for practical reasons, for example in non-clinical samples to identify children and adolescents at risk for this type of psychiatric problem, or in clinical populations to measure symptom levels and to evaluate the progress that has been made with treatment (Silverman & Ollendick, 2005).

In the past, scales such as the State-Trait Anxiety Inventory for Children (STAIC; Spielberger, 1973) – in particular the trait version – and the Fear Survey Schedule for Children-Revised (FSSC-R; Ollendick, 1983) have been widely used, but in the late 1990s questionnaires like the Screen for Child Anxiety Related Emotional Disorders (SCARED; Birmaher et al., 1997) and the Spence Children's Anxiety Scale (SCAS; Spence, 1998) were developed, measuring youths' anxiety symptoms in terms of the Diagnostic and Statistical Manual of Mental Disorders (DSM; American Psychiatric Association, 1994). Since the DSM has become the dominant psychiatric classification system, these 'modern' scales have gained considerable popularity as they facilitate communication about youth's anxiety problems among clinicians and between clinicians and researchers. Moreover, there are indications that the modern scales are superior in some regards (e.g., sensitivity to measure treatment effects) as compared to the more traditional childhood anxiety questionnaires (Muris, Mayer, Bartelds, Tierney, & Bogie, 2001).

With the introduction of DSM-5 (American Psychiatric Association, 2013), various changes have been made in the classification of anxiety disorders. To begin with, obsessive-compulsive disorder and posttraumatic or acute stress disorder are no longer considered as pure anxiety disorders (Friedman et al., 2011; Stein et al., 2010) and have been moved to distinct sections in the DSM, which implies that these symptoms no longer need to be addressed by childhood anxiety questionnaires. Further, agoraphobia is now regarded as separate from panic disorder (Wittchen, Gloster, Beesdo-Baum, Fava, & Craske, 2010), and as such may require additional items in order to strengthen the

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measurement of this anxiety problem. Finally, as there is accumulating evidence showing that anxiety is a prominent feature of selective mutism (Muris & Ollendick, 2015), this type of childhood psychopathology is now categorized as an anxiety disorder and so standardized assessment should aim to assess for this presentation.

The Youth Anxiety Measure for DSM-5 (YAM-5) was recently developed as a questionnaire for assessing anxiety disorder symptoms of children and adolescents aged 8–18 years in terms of the current classification system. The YAM-5 consists of two parts: YAM-5-I contains 28 items and measures symptoms of the major anxiety disorders including separation anxiety disorder, selective mutism, social anxiety, panic disorder, and generalized anxiety disorder, whereas YAM-5-II is composed of 22 items that focus on symptoms of specific phobias and (given its overlap with situational phobias) agoraphobia. So far, two studies have investigated the psychometric qualities of this new questionnaire. In a first study, which described the development of the scale, Muris et al. (2017) demonstrated that the YAM-5 has good face validity. That is, research experts and clinicians were generally successful in linking the vast majority of its items to the intended anxiety disorders. In addition, a test of the scale in two samples of non-clinical adolescents ($N = 132$) and clinically referred youths ($N = 64$, of which $n = 21$ had an anxiety disorder diagnosis) revealed that (a) the internal consistency was good for both parts as well as for most subscales, (b) the parent-child agreement was satisfactory, and (c) there was also evidence for the validity of the scale: that is, child- and parent-reported YAM-5 scores correlated positively with the number of anxiety symptoms as reported by children and parents during a clinical assessment (i.e., the Structured Clinical Interview for DSM-5–Junior version; Roelofs, Muris, Braet, Arntz, & Beelen, 2015) and the internalizing (but not the externalizing) scale of the Achenbach checklist (Achenbach & Rescorla, 2001). In addition, YAM-5-I anxiety disorders scores were higher in clinically referred children and adolescents with an anxiety disorder diagnosis as compared to clinical and non-clinical control youths, which provided tentative support for the discriminant validity of the scale.

A second study was conducted by Simon, Bos, Verboon, Smeekens, and Muris (2017) who administered the YAM-5 in 424 primary school children. The total sample was employed to investigate the construct validity (i.e., factor structure) of the measure, whereas subsamples were used to examine the test-retest reliability and concurrent validity through its relations with an alternative scale of anxiety disorder symptoms (i.e., the SCARED) and an index of anxiety proneness (i.e., the Behavioral Inhibition Questionnaire or BIQ; Bishop, Spence, & McDonald, 2003). Confirmatory factor analysis indicated that the hypothesized multi-factor models for anxiety disorder symptoms (YAM-5-I) and the phobia symptoms (YAM-5-II) provided a reasonable fit for the data, providing at least some support for the construct validity of the measure. Further, the 4-weeks test-retest reliability appeared to be satisfactory, with the vast majority of the correlations falling in the .70 to .90 range. Finally, the YAM-5 showed the to-be-expected correlations with the SCARED and the BIQ. That is, substantial and positive correlation coefficients were found between the YAM-5 total scores and the SCARED and BIQ total scores.

Altogether, available evidence indicates that the YAM-5 is a promising measure for assessing DSM-5 anxiety disorder symptoms in a reliable and valid way. The present study was conducted to strengthen the support for this new scale and to further investigate its psychometric qualities. For this purpose, non-clinical children aged 8–12 years completed the YAM-5 together with a number of other questionnaires. As noted earlier, the FSSC-R and the trait anxiety version of the STAIC are traditional measures of childhood fear and anxiety that have been employed in numerous studies (e.g., Silverman & Ollendick, 2005) and so it is important to establish their links with the YAM-5. Because the STAIC trait anxiety scale is a more general anxiety measure particularly strong associations were expected with YAM-5-I (major anxiety disorder symptoms), whereas the FSSC-R – being an index of fear and fearfulness – was anticipated to correlate more convincingly with YAM-5-II (phobia symptoms). The study also included the SCAS (Spence, 1998) as an alternative, widely used DSM-based scale (see Orgiles, Fernandez-Martinez, Guillen-Riquelme, Espada, & Essau, 2016). As various anxiety disorder categories did not change with the transition from DSM-IV to DSM-5, we anticipated especially strong links between corresponding subscales reflecting separation anxiety, social anxiety, panic, generalized anxiety, and fears (cf. YAM-5-II, phobias). We also investigated the discriminant validity of the new measure by comparing children scoring in the clinical range on the SCAS and children scoring in the normal range, with the expectation that the former group would exhibit higher symptom scores on the YAM-5 than the latter group. Further, because DSM-5 considers selective mutism as an anxiety problem and the YAM-5 thus includes items to assess symptoms of this disorder, our survey also contained the Selective Mutism Questionnaire (SMQ; Bergman, Keller, Piacentini, & Bergman, 2008) to explore the validity of this specific subscale. Finally, given the high comorbidity rates between anxiety disorders and depression – even at a symptom level (Cummings, Caporino, & Kendall, 2014), we also administered the Children's Depression Inventory (CDI; Kovacs, 1985). We expected substantial associations between this depression measure and the YAM-5, with correlations being stronger for YAM-5-I (major anxiety disorder symptoms) than for YAM-5-II (phobia symptoms) since the former anxiety problems are generally regarded as more severe and invalidating as compared to the latter (Muris, 2007).

2. Method

2.1. Participants and procedure

One-hundred-and-eighty-seven children (103 girls, 84 boys) aged between 8 and 12 years ($M = 10.5$ years, $SD = 1.0$) were recruited from seven regular primary schools located in the vicinity of Venlo, Limburg, The Netherlands. Most participants were from original Dutch descent (i.e., > 95%) and all of them had a good mastery of the Dutch language. Due to constraints set by the schools, no exact information on the socio-economic status of the participants was available.

The study was officially approved by the Ethical Committee of Psychology (ECP) at Maastricht University. After the school boards agreed in taking part in the study, information letters and consent forms were disseminated via the children in the classrooms in order to inform parents or caregivers about the purpose of the study and to ask permission for their children to participate. In this way, the parents of 398 children were approached and almost half of them (i.e., 47.0%) responded positively by signing the consent form thereby granting their child to participate. The participating children completed the set of questionnaires during regular classes at school. Two research assistants were always present during the test session in order to provide clarification if necessary and to ensure confidential and independent responding. The YAM-5 was always filled in first, whereas the other scales were subsequently administered in a counterbalanced order. The session lasted for approximately 30–60 min, depending on the individual working speed of the children. After completion of the questionnaires, the researchers controlled the survey for missing data, after which children were thanked and received an incentive (a small present) in return for their participation.

2.2. Assessment

As noted in the introduction, the *YAM-5* (Muris et al., 2017) is a questionnaire for assessing symptoms of the anxiety disorders as listed in DSM-5. The scale consists of 50 items that are divided into two parts. YAM-5-I contains 28 items which assess symptoms of the major anxiety disorders, including separation anxiety disorder (e.g., "I get frightened if my parents leave the house without me"), selective mutism (e.g., "At school I don't speak to the teacher at all"), social anxiety disorder (e.g.,