Online Assessment of Preschool Anxiety (OAPA): Description and initial validation of a new diagnostic tool

Abstract

Background

The Online Assessment of Preschool Anxiety (OAPA) is a newly developed measure that assesses anxiety disorders in preschool children aged 3-6 years. This study aimed to explore the OAPA’s initial psychometric properties with a particular focus on examining its construct validity, both convergent and discriminant.

Method

The OAPA was completed online by a community sample of 319 Australian parents of temperamentally inhibited preschool children (M 5.3 years). Preliminary diagnoses were automatically generated before assessment reports were reviewed by a psychologist. Construct validity was examined by assessing the degree of agreement between the OAPA and existing valid questionnaire measures that were simultaneously administered online.

Results

Nearly half of participants met criteria for a child anxiety disorder according to the OAPA, most commonly social phobia. Findings supported convergent validity with the Revised Preschool Anxiety Scale (an anxiety symptom measure), the Children's Anxiety Life Interference Scale – Preschool Version (a measure of life interference from anxiety), the Emotional Symptoms scale of the Strengths and Difficulties Questionnaire-Parent Version (a measure of broader internalising symptoms), as well as an over-involved/protective parenting scale. Findings also supported initial discriminant validity with the Conduct Problems scale of the Strengths and Difficulties Questionnaire-Parent Version.

Conclusions
Results of this study provide evidence for the OAPA’s preliminary construct validity. With further research into the OAPA’s reliability (test-retest and interrater) and confirming construct validity, the OAPA may be a useful instrument for use in research settings and clinical practice.

Keywords: child; preschool; anxiety disorder; diagnostic interview; internet

Key Practitioner Message:

- Child anxiety disorders are common and can emerge as early as preschool age
- There is limited evidence of the reliability and validity of existing diagnostic interviews for anxiety disorders in young children
- This paper reports on a new anxiety diagnostic tool for young children (OAPA) which is administered online to parents
- OAPA has potential to provide an alternative or adjunct to in-person parent diagnostic interviews
Anxiety disorders are the most common type of mental health problem in children and can emerge as early as preschool age (Merikangas et al., 2010; Polanczyk et al., 2015). Rates of anxiety disorders as high as 9.4% have been reported in community samples of young children aged 3-6 years (Egger & Angold, 2006). Anxiety disorders in young children tend to persist and are associated with substantial interference in daily family life, peer relationships and social activities (Beyer et al., 2012; Bufferd et al., 2012; Towe-Goodman et al., 2014).

Until relatively recently, it was thought that diagnosing anxiety disorders in young children was not possible or appropriate, due to rapid developmental change at this age and difficulty distinguishing disorder from normative fears (Egger & Angold, 2006). As a consequence, there has been less research conducted to evaluate diagnostic instruments in this age group compared to older children. Diagnostic assessment of anxiety in the preschool period is usually based on parent-report, as young children may lack cognitive, verbal and emotional capacities to describe their anxiety (Angold & Egger, 2004). Today, there are several parent interview schedules that can be used to diagnose psychiatric disorders in young children, with most adapted from existing instruments originally designed for school-aged children. These include the Schedule for Affective Disorders and Schizophrenia for School-Age Children - Present and Lifetime version (K-SADS-PL; Birmaher et al., 2009; Kaufman et al., 1997), the Diagnostic Interview Schedule for Children Version IV, modified for young children (DISC-IV-YC; Lucas et al., 1998), and the Diagnostic Interview for Children and Adolescents for Parents of Preschool and Young Children (DICA-PPYC, Ezpeleta et al., 2011). The Development and Wellbeing Assessment (DAWBA; Goodman et al., 2000) is another instrument that can assign psychiatric diagnoses in the upper range of preschool age, as it is suitable for children aged 5-16 years. While these interviews contain anxiety modules, they cover a wide range of psychiatric disorders, and their validation has included only very small samples of young children with anxiety disorders.
In contrast to the instruments above, the Preschool Age Psychiatric Assessment (PAPA) is a diagnostic interview developed specifically for very young children aged 2-5 years (Egger & Angold, 2004). It assesses a range of emotional and behavioural disorders in early life including anxiety disorders, based on several classification systems (DSM-IV-TR, ICD-10, RDC-Preschool Age (Task Force on Research Diagnostic Criteria: Infancy and Preschool, 2003), and Diagnostic Criteria: Zero to Three (Zero to Three, 2005)). The PAPA’s test-retest reliability has been evaluated with 307 parents of children aged 2-5 years, which found only poor-to-moderate agreement (kappas 0.36-0.60) in relation to anxiety disorders (Egger et al., 2006) and evidence for its construct validity is lacking (Rey et al., 2013).

The most widely used diagnostic interview for anxiety in children is the Anxiety Disorders Interview Schedule for DSM–IV: Child and Parent Versions (ADIS-C/P; Silverman & Albano, 1996). Inter-rater reliability has been shown to be good to excellent (kappas 0.63-1.00), test-retest reliability over 1-2 weeks is also good to excellent (kappas 0.63-0.92), and convergent validity has been demonstrated for diagnoses of separation anxiety disorder and social phobia (but not generalised anxiety disorder) (Rey et al., 2013). Although the ADIS was designed for school-aged children 6-18 years old, the parent interview has been adapted for use in research with preschool-aged children (Bayer et al., 2011; Kennedy et al., 2009; Rapee et al., 2010). A study with 146 children aged 3-5 years old found excellent inter-rater reliability for anxiety disorders using the ADIS-P (kappas = 0.77-0.86) (Rapee et al., 2010). However, test-retest reliability and construct validity have not been investigated in this age-group.

Diagnostic interviews are often used in intervention research with children as a key outcome measure, yet their administration has some challenges. Structured interviews (such as the ADIS-C/P) require delivery by highly trained staff and can take one or two hours to administer (Lynham & Rapee, 2005). In addition, researchers spend extensive time
contacting parents to schedule appointment times for interviews at clinics or universities, and families frequently live some distance away adding travel time and costs. Researchers have therefore begun to develop less resource-intensive options for administering diagnostic interviews in intervention research for childhood anxiety. Administering the diagnostic interview over the telephone to parents rather than face-to-face is one approach that has been tested. Telephone interviews take less time to administer and relieve parents from travelling to interview locations. In a study with 73 parents of children aged between 6 and 12, telephone administration of the ADIS-P showed very good agreement with anxiety diagnoses made via face-to-face administration (kappas 0.69-0.84) (Lyneham & Rapee, 2005).

Online administration of diagnostic interviews has also begun to be explored to diagnose child psychiatric disorders in a less-resource intensive manner than via telephone or face-to-face interviews. Online diagnostic administration also offers greater flexibility for parents, who can complete the assessment independently at a time that best fits into busy family lives. To date, online administration of the DISC-IV and the DAWBA show promise for reliably diagnosing psychiatric disorders in school-aged children (Krebs et al., 2012; Steenhuis et al., 2009). Recently, the Youth Online Diagnostic Assessment (YODA) was also developed specifically for school-age children’s anxiety disorders (ages 7 to 17) (McLellan et al., 2016). This measure shows good inter-rater reliability and acceptable agreement against diagnoses based on the ADIS-IV-C/P.

Most recently, an Online Assessment of Preschool Anxiety (OAPA) was adapted from the YODA to provide a developmentally sensitive online diagnostic tool for younger children (ages 3-6 years). The OAPA was initially piloted for feasibility with 51 families as part of an evaluation of an online parenting program for preschool anxiety (Morgan et al., 2016). However, psychometric properties of the OAPA have yet to be established. The aim of this study was to develop initial psychometric properties for the OAPA, in the context of a
randomised controlled early prevention trial that included this new instrument. The present study aimed to explore construct-related evidence for validity of the OAPA, both convergent and discriminant types, through its relationship with other widely-used child mental health assessment tools that were also administered online. We hypothesised that young children with an anxiety disorder on the OAPA would demonstrate higher scores on measures of child anxiety symptoms, life interference related to child anxiety, broader child internalising (anxious/depressive) symptoms, and over-protective parenting, compared to those without an anxiety disorder on the OAPA. We also expected that children with and without an anxiety disorder on the OAPA would score at similar levels on a measure of child externalising symptoms.

**Methods**

**Participants**
Participants were Australian parents of 319 temperamentally inhibited young children recruited to the ‘Cool Little Kids Online’ early prevention trial who completed the final follow-up questionnaire containing the OAPA (Morgan et al., 2017). These participants were recruited through preschool services and online advertising to take part in an internet-based parenting program to prevent anxiety disorders in young children. Temperamental inhibition was defined as a score >30 on the parent-rated Short Temperament Scale for Children, Approach subscale (Prior et al., 1989). Mean parent age was 36.0 years (SD = 5.1) and the majority were birth mothers (95.0%). At the time of the OAPA assessment, mean age of the target children was 5.3 years (SD = 1.0, range 3.5-7.4) and there was an even gender split (boys 48.3%, girls 51.7%). Most children lived with both parents (93.1%) and 5.3% lived with their birth mother only. Two-thirds of parents had completed a Bachelor degree or
higher qualification (68.0%) and the majority spoke mainly English at home (95.0%). A significant minority reported possessing a welfare card (12.2%).

Measures

*Online Assessment of Preschool Anxiety (OAPA)*

The OAPA is a newly developed measure to assess anxiety disorders in young children aged 3-6 years.¹ The OAPA was directly adapted from the YODA for children aged 7 to 17 (McLellan et al., 2016). The adaptation to preschool age entailed removing the assessment of Obsessive Compulsive Disorder, making changes to some phrasing for greater relevance to the younger age group (e.g. using ‘pre/school’, rather than ‘school’, ‘playdates’ rather than ‘dates’, removing terms such as ‘exams/academic performances’), and removing one question on fear of being left home alone, due to it not being developmentally appropriate for the age range.

Parents complete the OAPA online and are asked screening questions for the four anxiety disorders most relevant to young children: separation anxiety disorder, specific phobia, social phobia, and generalised anxiety disorder. For specific phobia, the following types of fears are screened: fear of animals (e.g. dogs, snakes, sharks); spiders or insects; heights; storms; water; the dark; needles/injections or blood/injuries; cars, planes, buses or other transport; elevators/tunnels/enclosed spaces; doctors/dentists; vomiting/choking; loud noises; particular types of characters (e.g. clowns, Santa, people with beards, costumed characters like Mickey Mouse); and any other specific situation or object. An example screening question for separation anxiety disorder is, ‘Currently, does your child get distressed when he/she needs to separate from particular family members or home?’.

Automated skip rules determine whether the rest of the symptom questions are presented for each disorder or specific fear.
If screening questions are positive, parents then rate the presence and duration of child anxiety symptoms on Likert scales (e.g. ‘Never a problem’ to ‘A lot more than other children his/her age’). The level of interference in the child's life across different domains (social life, pre/school and extra-curricular activities, daily activities, family life, distress at having the problem) is also measured on a 5-point scale (‘Not at all’ to ‘A lot’). In addition to these closed questions, parents provide written descriptions of their child's behaviours and thoughts related to each anxiety disorder (e.g., ‘Briefly describe the current difficulties that your child has when separating from home or family’ and ‘What does your child worry will happen?’), along with examples of how the problem has interfered in their young child’s life during a recent typical week. If more than one anxiety disorder has a positive screen, parents nominate which is currently the most problematic. Initially, custom SPSS statistical syntax determines whether an anxiety disorder is provisionally present or absent based on DSM-IV criteria. The provisional statistical diagnoses then undergo clinical review by a psychologist experienced with child anxiety. Reports are generated that include each parent’s responses and provisional statistical diagnoses. The reports are reviewed by the psychologist to check whether the parent’s written descriptions are consistent with the disorder being assessed, whether the level of impairment described is clinically sufficient to warrant a diagnosis, and which anxiety disorder is the child’s primary problem. Which disorder was judged to be primary was based on the amount of impact on the child’s life and the level of pervasiveness across functioning.

*The Revised Preschool Anxiety Scale (PAS-R)*

The PAS-R is a 28-item parent-report questionnaire that measures anxiety symptoms in preschool-aged children (Edwards et al., 2010). Parents rate how much each anxiety symptom applies to their young child, on a 5-point scale (‘Not at all true’ to ‘Very often true’). The PAS-R has a total score and four subscales: separation anxiety, specific phobia,
social phobia, and generalised anxiety. The PAS-R has good evidence supporting internal consistency (Cronbach’s alpha >.70 for all subscales) and between-parent agreement (correlations .60-.75). Subscales are predictive of DSM-IV anxiety diagnoses assessed by semi-structured interview, and the total score can differentiate between children with an anxiety disorder ($M = 61$) and without ($M = 23$) (Edwards et al., 2010).

*Children’s Anxiety Life Interference Scale – Preschool Version (CALIS-PV)*

Life interference from child anxiety was assessed with the preschool version of the Children’s Anxiety Life Interference Scale (CALIS: Lyneham et al., 2013), adapted by Kennedy et al. (2009). The CALIS has sound psychometric properties with support found for its factor structure, reliability, and convergent and divergent validity (Lyneham et al., 2013). The preschool version is a 20-item parent-report questionnaire with two subscales: child life interference from anxiety (e.g. ‘Ability to participate in activities at preschool/daycare/school’) and family interference due to child anxiety (e.g. ‘Your ability to go out to activities/events without your child’). The CALIS-PV’s total score has excellent internal consistency ($\alpha = .94$) and is sensitive to change with anxiety treatment (Kennedy et al., 2009). The CALIS-PV also differentiates children with and without anxiety disorder (Gilbertson, Morgan, Rapee, Lyneham, & Bayer, 2017).

*Strengths and Difficulties Questionnaire-Parent Version (SDQ-P)*

The SDQ-P (Goodman, 1997) is utilised internationally as a relatively brief screening assessment for emotional and behavioural problems for children ranging in age from four to 10 years. The SDQ-P has 25 items that are divided between five sub-scales of five items each. Parents mark each item as ‘not true’, ‘somewhat true’, or ‘certainly true’ in relation to their child’s behaviour over the last month. This study used the Emotional Symptoms and Conduct Problems subscales. The Emotional Symptoms subscale measures broader internalising symptoms and correlates highly with other measures of internalising symptoms.
The Conduct Problems subscale correlates well with other measures of externalising symptoms (r = .60; Mieloo et al., 2012). Both subscales can discriminate between children with and without psychosocial diagnoses (Stone et al., 2010).

Over-Involved/Protective parenting scale (OI/P)

The OIP (Bayer et al., 2006) is an 8-item measure of overinvolved/protective parenting practices in young children (e.g. ‘I prevent my child getting involved in activities or tasks that he/she finds too difficult and may fail at’). Items are rated on a 4-point response scale and refer to specific behaviours rather than broad parenting statements to minimise social desirability bias. The scale predicts young children’s internalising symptoms (r = .47) and has good internal consistency (α = .81) (Bayer et al., 2009).

Procedure

Parents enrolled in the Cool Little Kids Online randomised trial were invited to complete the OAPA as part of their final assessment at 24 weeks follow up. The PAS-R, CALIS-PV, SDQ-P and OI/P were completed at the same assessment. This assessment was administered online by Qualtrics and could be completed in multiple sittings. OAPA reports were then reviewed by two postgraduate clinical psychology candidates (ET, NG), who underwent training in how to conduct the reviews, which included practice on 10 OAPA reports from the pilot study. They also received ongoing supervision by experienced clinical child psychologists (JB, LM). The study was approved by La Trobe University Human Ethics Committee (UHEC15-010).

Statistical analysis

A series of independent sample t-tests were conducted to evaluate mean differences between the groups of children with and without an OAPA anxiety disorder diagnosis on the other measures. Then within the subsample of children with an OAPA anxiety diagnosis, t-tests
were conducted comparing scores on each PAS-R anxiety subscale between groups with and without each corresponding disorder diagnosed on the OAPA. Cohen’s d effect sizes were calculated with 95% confidence intervals (CIs).

Results

Overview

Most inhibited young children in the prevention study screened positive for at least one anxiety disorder at follow-up (94.7%), with an average of 4.5 ($SD = 3.1$) out of a possible 17 anxiety disorders. Following clinical review, nearly half met criteria for an anxiety disorder according to the OAPA ($n = 151, 47.3\%$) and about a quarter had more than one anxiety diagnosis (26.0%, see Table 1). Diagnosis of social phobia was most common, while generalised anxiety disorder was the least common disorder amongst this sample of young children. There were no significant differences in demographics between children with or without an anxiety disorder.

Across all participants, the OAPA took parents a median of 22 minutes to complete ($IQR: 12-47$ minutes). Time for parents to complete was longer when children received an anxiety diagnosis ($M = 34$ minutes, $IQR = 20-67$) compared to children without ($M = 16$ minutes, $IQR = 9-31$). On average, each clinical review of the OAPA report by a psychologist took 9 minutes to complete.

Convergent validity

Table 2 presents mean scores on each measure for children with and without an OAPA anxiety disorder. Results showed that the group of children with at least one OAPA anxiety diagnosis had significantly higher anxiety symptom scores on the PAS-R total score, $t(317) = 11.57, p < .001$. The OAPA also discriminated between types of anxiety disorder. These were
medium to large differences in scores on each PAS-R anxiety symptom subscale between children with and without each corresponding OAPA disorder type (see Table 3). Children with an OAPA diagnosis of separation anxiety disorder had a significantly higher average PAS-R separation anxiety subscale score than children with another OAPA anxiety diagnosis, \( t(149) = 7.06, p < .001 \). There were similar differences for specific phobia, \( t(149) = 3.57, p < .001 \), social phobia, \( t(149) = 7.17, p < .001 \), and generalised anxiety disorder, \( t(149) = 3.70, p < .001 \).

On the SDQ-P Emotional Symptoms subscale, there was a large difference in internalising symptom scores between children with and without an OAPA anxiety disorder \( t(290.86) = 9.14, p < .001 \). Anxiety-related life interference on the CALIS-PV was also higher in children with an OAPA anxiety disorder, \( t(284.41) = 11.60, p < .001 \), as were over-involved/protective parenting scores, \( t(265.40) = 4.71, p < .001 \).

**Discriminant validity**

Mean scores on the SDQ-P Conduct Problems subscale were slightly higher in children with an OAPA anxiety diagnosis than without, \( t(317) = 3.12, p = .002 \). However, this difference was much smaller in size than differences on the Emotional Symptoms subscale, and the effect size 95% confidence intervals did not overlap (see Table 2).

**Clinical review**

Discrepancies between the provisional OAPA diagnoses generated initially by syntax and final diagnoses following clinical review were noted for a quarter of children (24.5%). There were only 12 children (~4%) however, where the discrepancy resulted in a change from ‘with disorder’ to ‘without disorder’, or vice versa (2% false positive, 2% false negative). That is, most differences occurred in children with multiple diagnoses where one diagnosis was changed. The greatest discrepancy between statistical syntax and clinical review occurred for
specific phobia, where 33% of diagnoses by syntax were removed after clinical review. This was mainly when specific fears were not judged sufficiently impairing by the clinician, or when parents had selected an additional ‘Other’ specific fear which matched a prior endorsed disorder (e.g. fear of sleeping alone encompassed by separation anxiety disorder).

**Discussion**

The aim of this study was to establish initial psychometric properties for the OAPA - the only existing online diagnostic interview for anxiety disorders in children aged 3-6 years. Overall, there was preliminary support for the OAPA’s construct validity, with evidence of convergent validity and discriminant validity. The findings revealed convergence between OAPA separation anxiety, social anxiety, generalised anxiety, and specific phobia diagnoses and PAS-R anxiety symptom subscale scores corresponding to each respective OAPA disorder. The OAPA also converged as expected with well-validated questionnaire measures of constructs theoretically related to anxiety disorder (life interference due to anxiety, internalising symptoms, and over-involved/protective parenting). In terms of discriminant validity, the OAPA showed some divergence on a measure of conduct problems, a construct theoretically less related to anxiety. There was a small difference in externalising symptoms between children with and without an OAPA anxiety disorder, which reflects the fact that children’s internalising and externalising symptoms show modest overlap (Achenbach et al., 2016). The difference in externalising symptoms between children with an anxiety disorder and without was less than one third the effect size compared to the differences for anxiety and internalising symptoms. Overall, these findings support the ability of the OAPA to validly diagnose anxiety disorders in young children in the community.

The construct validity findings for the OAPA in this study were similar to those of other existing instruments used to diagnose anxiety disorders in school age children. To
illustrate, construct validity of the ADIS-P in children aged 8-17 years was demonstrated for diagnoses of separation anxiety disorder and social phobia, which were associated with the most relevant corresponding subscale scores of an independent child anxiety symptom measure (Wood et al., 2002). Construct validity for the DICA-PPYC was where anxiety disorders correlated with the internalising scale of the Child Behaviour Checklist (CBCL), and separation anxiety, social anxiety, and specific phobia diagnoses were significantly associated with the CBCL anxious-depressed subscale (Ezpeleta et al., 2011). However, in these prior studies with other child anxiety diagnostic instruments minimal support was found for the validity of generalised anxiety disorder. In contrast, in the present study the OAPA diagnoses of GAD did differentiate on generalised anxiety symptom severity. Together these comparisons provide support for the OAPA’s ability to assign anxiety diagnoses with validity similar to existing instruments currently applied in the field.

Online administration of the OAPA has both advantages and disadvantages. The OAPA includes open-ended questions where parents describe their child’s problem and its impact in their own words. By allowing a clinical reviewer to judge the appropriateness of a syntax-generated diagnosis rather than solely relying on parent ratings of symptom and impairment severity, the possibility of over-diagnosing and pathologising normal childhood fears may be reduced. A clinical reviewer has understanding of what fear level is developmentally appropriate at the child’s age, more so than parents who may over- or underestimate clinical impact (Goodman et al., 2000). This may be particularly important, as the threshold for anxiety disorder is often not clear-cut in younger children and those who are at greater risk (i.e. temperamentally inhibited). However, a disadvantage of open-ended questions is that they rely on a parent’s written communication skills and comfort in typing. Some parents provided little detail in their online responses, and there is no opportunity for the clinical review of the report to probe for further information when making decisions that
over-ride the syntax-generated provisional diagnosis. In the present study, parents were specifically recruited for an online intervention. The level of comfort of this sample with computers may have been higher than other parents in the community. Another drawback of open-ended questions for parents online is the resources required for a clinical review. The OAPA rates of ‘any anxiety disorder’ false positives and false negatives were low compared to diagnoses based on syntax only. Nevertheless, the clinical review may be particularly important for diagnosing specific phobias and differential diagnosis (determining the appropriate disorder in children with clinical levels of anxiety). Furthermore, online administration meant that clinician time for review of the OAPA reports was notably much lower than that required for a telephone or face-to-face anxiety diagnostic interview (Lyneham & Rapee, 2005).

The findings of initial psychometric validity of the OAPA need to be considered in light of some study limitations. This study did not assess the inter-rater reliability and test-retest reliability of the OAPA. It is difficult to justify evidence of validity unless there is reasonable reliability (Kaplan & Saccuzzo, 2013) and therefore as a priority future research is needed to explore the degree of temporal stability of OAPA disorders and their consistency across different clinical reviewers. A further important question for future research is whether data collected online via the OAPA yield the same diagnostic outcomes as data collected via direct parent interviews (telephone or face-to-face). To investigate this aspect of validity, the OAPA could be administered alongside alternative structured diagnostic interviews (e.g. the PAPA or ADIS-P) to evaluate the extent of disorder agreement. This evidence would provide support for the value of the OAPA as a supplement to more quickly-administered symptom questionnaires. Further comparison of the OAPA against detailed questionnaires would be valuable to determine the extent to which the OAPA provides information over that of questionnaire measures. Another direction for future research is to adjust the OAPA for
DSM-5 criteria (American Psychiatric Association, 2013a). While changes to the diagnostic criteria for anxiety diagnoses in children were only minor (e.g. social phobia to social anxiety disorder), selective mutism now comes under anxiety disorders (American Psychiatric Association, 2013b). The OAPA briefly assesses selective mutism with a single question within the assessment of social phobia, and this could be expanded further.

**Conclusion**

The findings of this study have begun to address the need for less resource-intensive measures of anxiety disorders in young children. To our knowledge, the OAPA is the only online diagnostic tool developed to assess anxiety disorders in preschool-aged children. The study’s strengths were its large sample of young children and families, spanning a range of sociodemographic characteristics and levels of child anxiety. In addition, the measures used to establish initial convergent and divergent construct validity of the OAPA are well-validated and widely used in the field. The study results provide initial support for the ability of the OAPA to validly diagnose anxiety disorders in temperamentally inhibited preschool children. To extend the current findings, further psychometric evaluation of the OAPA is required to determine reliability and concordance with other existing diagnostic interview instruments. This study supports the potential for online diagnostic tools as a resource-efficient alternative to face-to-face and telephone parent interviews that are presently utilised in early childhood research.

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The authors have declared that they have no competing or potential conflicts of interest.

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References


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<thead>
<tr>
<th>Diagnosis</th>
<th>Any</th>
<th>Primary</th>
</tr>
</thead>
<tbody>
<tr>
<td>Separation anxiety disorder</td>
<td>21.9 (70)</td>
<td>27.8 (42)</td>
</tr>
<tr>
<td>Specific phobia</td>
<td>21.0 (67)</td>
<td>11.3 (17)</td>
</tr>
<tr>
<td>Social phobia</td>
<td>32.3 (103)</td>
<td>46.4 (70)</td>
</tr>
<tr>
<td>Generalised anxiety disorder</td>
<td>12.9 (41)</td>
<td>14.6 (22)</td>
</tr>
</tbody>
</table>

Number of disorders, % (n)

<table>
<thead>
<tr>
<th>Number</th>
<th>% (n)</th>
</tr>
</thead>
<tbody>
<tr>
<td>None</td>
<td>52.7 (168)</td>
</tr>
<tr>
<td>1</td>
<td>21.3 (68)</td>
</tr>
<tr>
<td>2</td>
<td>14.4 (46)</td>
</tr>
<tr>
<td>3</td>
<td>8.5 (27)</td>
</tr>
<tr>
<td>4</td>
<td>3.1 (10)</td>
</tr>
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</table>
Table 2. Scores on study measures comparing children with and without OAPA anxiety disorder

<table>
<thead>
<tr>
<th>Questionnaire, M (SD)</th>
<th>OAPA disorder</th>
<th>No OAPA disorder</th>
<th>d (95% CI)</th>
</tr>
</thead>
<tbody>
<tr>
<td>PAS-R</td>
<td>62.52 (15.41)</td>
<td>42.98 (14.75)</td>
<td>1.30 (1.05-1.54)</td>
</tr>
<tr>
<td>CALIS-PV</td>
<td>37.56 (14.86)</td>
<td>20.06 (11.70)</td>
<td>1.30 (1.06-1.54)</td>
</tr>
<tr>
<td>SDQ-P Emotional</td>
<td>5.07 (2.13)</td>
<td>3.05 (1.75)</td>
<td>1.04 (0.80-1.27)</td>
</tr>
<tr>
<td>SDQ-P Conduct</td>
<td>2.38 (1.73)</td>
<td>1.82 (1.49)</td>
<td>0.35 (0.13-0.57)</td>
</tr>
<tr>
<td>OI/P</td>
<td>1.63 (0.41)</td>
<td>1.45 (0.29)</td>
<td>0.54 (0.31-0.76)</td>
</tr>
</tbody>
</table>

PAS-R: Revised Preschool Anxiety Scale; CALIS-PV: Children’s Anxiety Life Interference Scale–Preschool Version; SDQ-P: Strengths and Difficulties Questionnaire-Parent Version; OI/P: Over-Involved/Protective parenting scale
Table 3. Scores on PAS-R anxiety subscales comparing children with an OAPA corresponding anxiety disorder

<table>
<thead>
<tr>
<th>PAS-R subscale, M (SD)</th>
<th>Corresponding disorder</th>
<th>Other anxiety disorder</th>
<th>$d$ (95% CI)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Separation anxiety</td>
<td>12.53 (3.58)</td>
<td>8.20 (3.91)</td>
<td>1.15 (0.81-1.50)</td>
</tr>
<tr>
<td>Specific phobia</td>
<td>18.75 (7.16)</td>
<td>14.73 (6.63)</td>
<td>0.59 (0.26-0.91)</td>
</tr>
<tr>
<td>Social phobia</td>
<td>20.39 (4.02)</td>
<td>14.96 (4.95)</td>
<td>1.25 (0.88-1.62)</td>
</tr>
<tr>
<td>Generalised anxiety</td>
<td>19.24 (4.65)</td>
<td>16.35 (4.11)</td>
<td>0.68 (0.31-1.04)</td>
</tr>
</tbody>
</table>

PAS-R: Revised Preschool Anxiety Scale

1 The OAPA is available from https://www.mq.edu.au/research/research-centres-groups-and-facilities/healthy-people/centres/centre-for-emotional-health-ceh/resources