



Brief report

Daily living skills in school-age children with and without anxiety disorders

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Objective. Anxiety may interfere with school-age children's independent behaviour and hence, their daily living skills (DLS). Nonetheless, this has not been tested in previous studies of children with clinical anxiety.

Method. This study compared two groups of age-, gender-, and ethnicity-matched children with and without anxiety disorders ($N = 60$), testing the association of anxiety disorders with a lack of independence in DLS.

Results. Anxiety disorders are significantly associated with less mastery of DLS. Age moderated this effect for children with anxiety disorders; older children were more negatively impacted by anxiety disorders than younger children.

Conclusions. Anxiety disorders may negatively impact children's independence in DLS. As children transition from mid- to late childhood – a period normally marked by increasing independence – this effect may grow in magnitude.

Practitioner Points

- A relation exists between the presence of anxiety disorders and reduced independence in daily living skills (DLS).
- Older school-age children with an anxiety disorder experienced particularly pronounced DLS deficits when compared with matched peers without an anxiety disorder. Early detection and intervention of anxiety may be the key to preventing negative impact in DLS.

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- Parents provided information about DLS, which is a limitation of the current study. Involving multiple informants or observational methods may provide a broader assessment of children's DLS.
- Due to the cross-sectional design of the study, causation should not be inferred.

Daily living skills (DLS) are practical skills necessary to care for oneself independently and to meet daily challenges, including personal (e.g., dressing), home or school (e.g., putting things away), and community skills (e.g., asking a trusted neighbour for help). DLS foster a sense of responsibility in children, facilitate development into independent functioning, and thus are essential for successful transition into adulthood (e.g., Liss *et al.*, 2001). Anxiety disorders may impair children's development of independent DLS and act as a psychological barrier that interferes with quality of life.

Independent DLS may enhance school-age children's sense of competence and self-efficacy, leading to positive trajectories. For example, Clark, Dogan, and Akbar (2003) found adolescents' adaptive functioning, including DLS, was associated with perceptions of academic competence. It has been posited that acquiring age-appropriate DLS may contribute to a trajectory towards better mental health, perhaps mediated by feelings of self-efficacy (Drahota, Wood, Sze, & Van Dyke, 2011). Furthermore, specific DLS have implications for engaging in self-sufficient behaviour required in contexts that bring children into the broader social world as they develop, such as playdates, sleepovers, and overnight camps. For example, children's ability to independently toilet and bathe facilitates engagement in such settings.

Anxiety may interfere with developing independent DLS. Wood, Kiff, Jacobs, Ifekwunigwe, and Piacentini (2007) found that children exhibiting high anxiety acted more dependently with caregivers at home and school. In addition, impairments in DLS have been uniquely associated with a diagnosis of obsessive-compulsive disorder in school-age children, but not with attention deficit hyperactivity disorder (Sukhodolsky *et al.*, 2005).

At present, the association between other child anxiety disorders (e.g., separation anxiety disorder, social phobia, and generalized anxiety disorder) and DLS has not been examined. This study compared children with and without these three anxiety disorders in terms of their independence in DLS. It was hypothesized that children with an anxiety disorder would engage in less independent DLS than children without an anxiety disorder, and that this pattern might become accentuated as childhood progresses and expectations – and opportunities – for independence increase.

Method

Participants

Participants included two matched groups of children ('Clinical' and 'Typical') ($N = 60$) and their primary parent. See Table 1 for sample description.

Typical sample

The Typical sample included participants from a school-based study exploring anxiety symptoms and adaptive functioning (Wood *et al.*, 2007). Participants were families of children attending a public elementary school in a major metropolitan area of the western United States. The Multidimensional Anxiety Scale for Children (MASC; March, 1998) was

Table 1. Participant descriptives and group comparisons

	Typical sample (n = 30)	Clinical sample (n = 30)	t-value/chi-square/F-value
Child age			-0.90, $p = 0.37$
Range (years)	6–11	6–12	
Mean (SD)	8.9 (1.81)	9.2 (1.97)	
Child gender			0.00, $p = 1.00$
Female	11	11	
Male	19	19	
Race/ethnicity			4.00, $p = 0.41$
Caucasian	18	18	
Asian	6	2	
Latino/a	2	6	
African American	2	2	
Other/multiracial	2	2	
SDLC mean (SD)	28.55 (6.70)	52.03 (8.93)	10.27*** ^a

Note. *** $p < .001$.

^aLarge ES (Cohen's $d > 0.80$).

administered and children who met/exceeded MASC clinical cut-off scores for anxiety were excluded for the present study.

Clinical sample

The Clinical sample received evaluations following referral to a university-based anxiety clinic (see Wood, 2006). All participants met criteria for a *DSM-IV* (American Psychiatric Association, 2000) child anxiety disorder diagnosed by an independent evaluator using the Anxiety Disorders Interview Schedule: Parent and Child Versions (Silverman & Albano, 1996; see Wood, 2006, for sample details).

Measures

Skills of Daily Living Checklist (SDLC)

The SDLC is a 11-item parent-report questionnaire adapted from a checklist (Baker & Brightman, 1997) measuring children's DLS use (Wood, 2006). Each item describes a single skill (e.g., 'puts on pullover shirt/sweater', 'washes his/her hands'). The 3-point response scale includes 3 (*child needs 'help' with this skill*), 2 (*child needs 'supervision' with this skill*), and 1 (*child does this skill without help or supervision*). 'Help' is defined as caregivers providing assistance with performing the skill. 'Supervision' includes caregivers staying with child, providing reminders/feedback, but not actually helping the child. Previously, the SDLC has demonstrated good internal consistency and concurrent validity (Wood, 2006). In this study, Cronbach's alpha was 0.88.

Procedure

Institutional Review Board approval was obtained prior to conducting any study procedures. Child participants from each sample were matched on gender, age, and race/

ethnicity. Details about specific procedures and full sample descriptions for the Typical sample can be found in Wood *et al.* (2007) and for the Clinical sample in Wood (2006). Once matched, the datasets were merged for analyses.

Results

Children were clustered into age-, gender-, and race/ethnicity-matched pairs. Regression with robust, clustered standard errors using STATA was conducted testing whether group status was associated with differences in SDLC scores. This analytic technique provides conservative standard errors when matched samples are compared. Cohen's *d* effect sizes (ES) (Cohen, 1988) were calculated to estimate the extent of differences between groups. To test for a moderating effect of age, a two (age group: ≤ 7 years vs. ≥ 8 years) by two (anxiety group: Clinical vs. Typical) *post-hoc* ANCOVA was conducted, with SDLC scores as the DV. Using the Bonferroni correction, the age by anxiety group interaction term was examined to determine if age group moderated the association between anxiety disorder status and SDLC scores.

Means and standard deviations and the *F* ratio for the comparison of the matched groups are presented in Table 1. The Clinical group had statistically significantly greater impairment in independent DLS than the Typical group. In addition, this group difference had a large effect size (ES = 3.00).

In the test of a moderating effect of age on the anxiety-DLS association, the age by anxiety group interaction term was statistically significant ($F(1, 50) = 22.36, p < .01$) indicating a stronger association between anxiety status and DLS scores for older (ES = 4.47) as compared with younger (ES = 1.47) children.

Discussion

This study suggests that child anxiety disorder status is related to impairments in children's independence in using DLS. The group comparison between children with and without anxiety disorders yielded an average group difference of about 3 standard deviations – a large and clinically meaningful difference reflecting substantial impairment. This finding fits within a theoretical model of anxiety disorders and DLS deficits (Wood, 2006), and fits with recent research findings indicating that cognitive behavioural therapy targeting childhood anxiety can effect change on both children's anxiety disorder symptoms and DLS (Drahota *et al.*, 2011). When caregivers take over tasks that children could perform independently, children's mastery is limited, which may facilitate dependence and trigger anxiety (Wood *et al.*, 2007). However, the possibility of a reciprocal relationship between DLS deficits and anxiety must be acknowledged as well. A lack of skill use (e.g., due to motor delays or no opportunities for independent skill use as a result of parental intrusiveness) could itself trigger anxiety (e.g., self-consciousness; feelings of dependence and separation anxiety) in some children.

Older school-age children with an anxiety disorder experienced relatively greater DLS deficits in reference to their matched peers than did younger school-age children with an anxiety disorder, but for both groups of children with anxiety disorders, the ES was large in comparison with their matched typically developing peers. As children age, naturally occurring opportunities for mastering independent DLS with guided support may disappear as some caregivers (e.g., teachers) may expect groups of children under their care to have already mastered these skills. A child with a long history of clinical anxiety

may have avoided engaging in earlier opportunities to learn basic skills (e.g., buttoning, zipping, tying, independent toileting) when these opportunities were normative and numerous, resulting in a failure to acquire skills at the expected age. Many older typically developing children have mastered these skills and can employ them without assistance from caregivers. Older children with anxiety disorders who never acquired various DLS due to early anxiety, or who are currently scared to engage in DLS on their own (e.g., due to separation anxiety), may have more notable deficits in independent DLS use precisely because their age-matched peers have become largely autonomous in this domain.

Study limitations warrant consideration. In this study, only parents reported on their children's DLS use. Multiple informants of DLS use would provide a more robust test of hypotheses and help ascertain the role, if any, of context (e.g., home vs. school) in the effect of child anxiety on basic DLS use. Due to the cross-sectional design involved in this study, causation cannot be inferred. Prospective, longitudinal studies examining the development of DLS along with anxiety disorders would be informative. It is conceivable that the Typical group included some children experiencing subclinical or actual anxiety disorders not detected using the MASC screener. Future work in this area would benefit from the use of diagnostic interviews for all participants. Nonetheless, the use of an independent evaluator's diagnostic evaluation of anxiety disorders in the Clinical group is certainly a strength of this study.

In summary, child anxiety disorders appear to be associated with reduced independence in the use of basic living skills. Independence in the use of DLS is a key developmental milestone that eventually serves as a marker of readiness to take on the responsibility of living independently from one's family as an adult. During childhood and adolescence, the acquisition of DLS may facilitate important opportunities to traverse intermediate steps to independent living, such as attending sleepovers, overnight camps, athletic and recreational outings with friends, all of which may involve the use of basic DLS. While independence with DLS is no guarantee of success in such situations, such independence is often a necessary prerequisite for success. If anxiety disorders impair the learning or use of DLS in children, explicit clinical attention may need to be paid to ensure that children learn or begin employing DLS in an increasingly independent manner, so that key developmental steps can be achieved.

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