



Attention-deficit/hyperactivity disorder symptoms and loneliness among adults in the general population



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ABSTRACT

Background: Research on the association between adult attention-deficit/hyperactivity disorder (ADHD) and loneliness is scarce even though factors which have been previously linked to loneliness, such as divorce and poorer mental health may be more prevalent among adults with ADHD. This study investigated the relation between ADHD symptoms/symptom severity and loneliness in the general adult population.

Methods: Data from the Adult Psychiatric Morbidity Survey 2007 (N = 7403, aged ≥ 16 years) were analyzed. ADHD symptoms and common mental disorders (CMDs) were assessed with the Adult ADHD Self-Report Scale (ASRS) Screener and the Clinical Interview Schedule Revised, respectively. Loneliness was measured with a question from the Social Functioning Questionnaire. Multivariable logistic regression analysis was used to examine the associations.

Results: In the fully adjusted model, an ASRS score ≥ 14 was strongly associated with loneliness (OR = 2.48 95%CI = 1.83–3.36). ADHD symptom severity was related to loneliness in a dose-response fashion. Over one-third of the association between ADHD symptoms and loneliness was explained by CMDs.

Conclusions: Adults with more ADHD symptoms are at an increased risk of feeling lonely. Future research should determine how ADHD symptoms are linked to loneliness and if loneliness is affecting well-being.

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What this paper adds?

Research among adults in the general population has shown that loneliness is common and that for some people is associated with worse health and well-being. However, until now, there has been an absence of research focused specifically

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on loneliness among adults with attention-deficit/hyperactivity disorder (ADHD), even though factors which have been previously linked to loneliness, such as divorce and poorer mental health may be more prevalent among adults with ADHD. To address this research gap the current study examined the association between ADHD symptoms and loneliness among adults in a large, nationally representative general population sample. Results showed that adults with a higher number of ADHD symptoms had increased odds for feeling lonely and that ADHD symptoms were linked to loneliness in a dose-response fashion. Moreover, a mediational analysis further revealed that common mental disorders (CMDs) explained over one-third of the association while social support explained almost 6%. This research thus suggests that loneliness may be elevated in adults with ADHD and that in addition to poorer mental health, other factors may also be important for this association. Further research is now needed to determine what factors underlie this association and whether loneliness is affecting well-being among adults with ADHD.

1. Introduction

Following earlier research which showed that for many children, attention-deficit/hyperactivity disorder (ADHD) symptoms persist into adulthood in varying degrees (Matte, Rohde, & Grevet, 2012), in the last 20 years there has been an increasing focus on ADHD among adults (Castellanos, 2015). A meta-analysis of community-based studies using DSM-IV diagnostic criteria found that the pooled prevalence of adult ADHD was 2.5% (95% confidence interval [CI]: 2.1–3.1%) and that this figure decreased with age (Simon, Czobor, Bálint, Mészáros, & Bitter, 2009), although a recent study from the Netherlands showed that symptoms are present even among elderly adults (aged 71–94) (Michielsen et al., 2012).

ADHD has been linked to a number of functional impairments that impact on well-being and quality of life throughout adulthood in terms of family functioning, work and health (Barkley Murphy, & Fischer 2008; Das, Cherbuin, Butterworth, Anstey, & Easteal, 2012; Eakin et al., 2004; Murphy & Barkley, 1996; Nigg, 2013). Despite this, there are many aspects of adult ADHD that still need to be illuminated. For example, there has been little focus on the association between ADHD and loneliness even though there are several reasons to expect that loneliness may be linked to adult ADHD. Earlier research among children found that ADHD was associated with a deficit in adaptive social functioning (Greene et al., 1996; Stein, Szumowski, Blondis, & Roizen, 1995). This deficit might help explain why subsequent studies among adults with ADHD/ADHD symptoms have shown that they often experience more relationship difficulties, including poorer relationship quality (Das et al., 2012), worse marital functioning (Eakin et al., 2004), and reduced social support (Brod, Schmitt, Goodwin, Hodgkins, & Niebler, 2012). Research suggests they are also more likely to be single (Lensing, Zeiner, Sandvik, & Opjordsmoen, 2015), divorced, and have multiple marriages (Biederman et al., 2006; Murphy & Barkley, 1996). In turn, several of these factors have also been linked to loneliness in the general population (Fokkema, De Jong Gierveld, & Dykstra, 2012; Stickley et al., 2013; Yang & Victor, 2008).

Furthermore, given the strong association between adult ADHD and a range of mental health conditions including mood and anxiety disorders (Kessler et al., 2006), it is also possible that comorbidity might be playing a role in the link between ADHD and loneliness. Many mental disorders have been linked to loneliness (Meltzer et al., 2013), while longitudinal research has suggested that among adults, depressive symptoms and loneliness may have a reciprocal influence on each other across time (Cacioppo, Hughes, Waite, Hawkey, & Thisted, 2006). Indeed, a recent study has indicated that depressive symptoms might be important for the association between adult ADHD symptoms and some forms of loneliness (Michielsen et al., 2015).

The few studies that have examined the association between ADHD and loneliness have produced conflicting findings. Two studies among children and adolescents in Australia and Sweden respectively found that neither an ADHD diagnosis (Houghton, Roost, Carroll, & Brandtman, 2015) nor ADHD symptoms (Diamantopoulou, Henricsson, & Rydell, 2005) were linked to loneliness. In contrast, an earlier longitudinal study from Canada showed that some children who were diagnosed as being hyperactive at age 6–12 years old tended to report feelings of loneliness in early adulthood (average age 25.1) (Weiss & Hechtman, 1993). A more recent study among older adults in the Netherlands (aged 60–94, average age 71) also found that an ADHD diagnosis and symptoms were both linked to emotional loneliness (Michielsen et al., 2015). Comparing the results from these studies is difficult however, because of important methodological differences. For example, while two of the studies obtained information on child (internalizing problems) (Diamantopoulou et al., 2005) and adult (depressive symptoms) psychopathology (Michielsen et al., 2015), another study found that no adolescent participants had depression/depressive symptoms while specifically noting the link seen between depression and loneliness in earlier studies (Houghton et al., 2015).

To the best of our knowledge, until now there has been an absence of research that has specifically focused on the association between ADHD/ADHD symptoms and loneliness among adults of all ages in the general population. As ADHD often remains undiagnosed in adults (Asherson et al., 2012; Lamberg, 2003), understanding this association in the general population may be particularly important, especially as loneliness has itself been associated with poorer health and well-being among adults (Hawkey & Cacioppo, 2010; Holt-Lunstad, Smith, Baker, Harris, & Stephenson, 2015). To address this deficit, the current study used data from a large community-based survey carried out in England. Given the scarcity of studies on ADHD and loneliness, the conflicting results between the few previous studies on this topic, and uncertainty concerning the role of other factors such as comorbid mental disorders in this association, the aims of the current study were: (1) to

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