

Article

# Prevalence of working adult Attention-Deficit/Hyperactivity Disorder impairment during the COVID-19 pandemic: Implications for the future

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**Abstract:** In this study; we analyzed the relationship between U.S. workers' reported levels of ADHD symptomatology and the impact of pandemic conditions on symptomatic impairment and the estimated prevalence of Adult ADHD. We compared data from the Adult ADHD Self-Report Scale Screener (ASRS) collected during the pandemic with data from two pre-pandemic studies. Our findings indicate that during the pandemic; mean impairment scores on all six ASRS items increased; leading to a predicted rise in the Adult ADHD diagnosis rate to 9.26%; compared to the pre-pandemic estimate of 4.4%. These results suggest that more adults experienced significant ADHD-related challenges during the pandemic. As organizations continue to implement remote work and other pandemic-related changes; it is important to consider the unique difficulties that neurodiverse workers; particularly those with ADHD; may face in adapting to these new work environments.

**Keywords:** ADHD; remote work

## 1. Introduction

During the COVID-19 pandemic and ensuing lockdown; many have experienced increased mental health challenges; resulting in diverse government; public; and private sector organizations seeking to address the growing need for mental health support (Fancourt et al., 2020; Ettman et al., 2020; Son et al., 2020). Adults with Attention-Deficit/Hyperactivity Disorder (ADHD) struggle with co-occurring mental health problems; which have historically contributed to higher unemployment and occupational disability levels for this population (Antshel, 2018; Fredriksen et al., 2014; Hansen et al., 2018). Prior to the COVID-19 Pandemic; Kessler et. al (2007) estimated that 4.4% of adults in the United States had ADHD in their seminal paper in which the authors demonstrated the validity of an estimation methodology called the positive predictive value (PPV) using the Adult ADHD Self-Report Scale Screener (ASRS); rather than direct clinical evaluation of all respondents; to analyze clinically significant ADHD in the subject population. While many papers discuss ADHD and cite prior studies for estimated prevalence data; few provide insight on how to gather more recent; credible data; or provide methodologies for how to analyze datasets such as Kessler et. all did with the PPV. In this current paper; by demonstrating how Kessler et al.'s method can be used to estimate likely adult ADHD impairment on a more recent data set; the authors seek to add to the body of knowledge both on comparing and estimating ASRS based data; and to highlight the differences between previously

identified estimations and those identified in this data set collected during the pandemic.

ADHD is diagnosed based on symptoms reaching the level where a worker is impaired; and other studies have shown that workers in general are challenged in adapting to remote work and other work/life changes (Fosslien and Duffy, 2020; Wiederhold, 2020). Since neurodiverse adults with ADHD were already employed at significantly lower rates than their neurotypical peers prior to the pandemic (De Graaf et al., 2008) and experience greater struggles with mental health (Barkley, 2014); we sought to explore how the pandemic might exacerbate the challenges adults with ADHD symptoms face and how this may impact workplace impairment; rates of Adult ADHD diagnosis; and future need for additional pharmacological; vocational; or therapeutic support.

## **2. Study purpose**

Using the Adult ADHD Self-Report Scale (ASRS); Edwards (2021) previously identified that in data collected in September and October 2020 during the COVID-19 pandemic that overall prevalence of ADHD symptomatology was higher than would have been expected in comparison to Kessler et al.'s (2007) prior work. Since; as Enterprise Technology Research (2020) pointed out; many of the underlying factors that might have been expected to account for this increase during the pandemic may become permanent for many workers; this study is needed to understand how this may impact adults who are impaired by ADHD symptomatology; post-pandemic. The COVID-19 pandemic created a rapidly changing environment that provides a unique opportunity akin to the Difference-in-Differences (DID) analysis used in research to assess the impact of a significant event or regulatory change. This approach; famously employed in studies like Card and Krueger's (1994) minimum wage analysis. The DID approach allows researchers to compare changes in outcomes between a group affected by the change (in our case; workers during the pandemic) and a group that was not exposed to the change (pre-pandemic workers).

In this context; our study leverages the time-sensitive nature of the pandemic to examine its immediate effects on ADHD symptomatology. The DID approach is particularly well-suited for this analysis; as it helps isolate the impact of the pandemic from other factors that could influence mental health outcomes over time. By capturing data during this period of significant environmental change; we can more accurately assess how these conditions have affected ADHD symptoms in working adults and compare changes in ADHD symptomatology between population subgroups across time and other sector variances via what we call the ASRS DID Method.

## **3. Methods**

### **3.1. Study design**

Our analysis is based on Edwards' (2021) data collected using Amazon's Mechanical Turk (MTurk) survey tool from 16 September to 5 October 2020. The survey selected 921 respondents in the United States; all of whom were adults and employed full-time. The study was completed during the early-to-mid stages of the

COVID-19 lockdown in the United States. Participants were selected by convenience and availability to complete the online survey. This sample size was deemed appropriate because data collected during the COVID-19 pandemic captures unique conditions for comparative analysis; particularly at the height of lockdowns; which are unlikely to be replicated post-lockdown. The intention of this data is to report initial findings and highlight the need for further study; rather than solely inform policy.

Edwards' (2021) data were cross compared with findings from two previous data sets; chosen for sufficiency and specificity of data adequate to employ the ASRS DID Method to estimate Adult ADHD. The first of these; presented by Kessler et al. (2007); is longitudinal data collected between 2004 and 2005 of adults in California and Georgia by Brod et al. (2006). Data were collected in three stages; with populations of  $n = 20,011$  in the first stage;  $n = 668$  in the second stage; and  $n = 155$  in the third stage. The data collected by Brod et al. (2006) and analyzed by Kessler (2007) did not limit participation to adults employed full-time; but it did provide varied socio-demographic information related to age; gender; race; etc.

The second comparison dataset was collected by Biederman and Faraone; who found 500 respondents with clinical ADHD diagnoses and 501 respondents without a diagnosis to use as a control. This data was collected amongst adults in the United States in 2003; and was looking specifically at employment rates; educational attainment; and income of adults diagnosed with ADHD. This dataset; while otherwise useful; is insufficient for full comparison by the ASRS DID Method; and is instead shown in **Figure 1**.

### 3.2. Symptomatology comparison

We began our cross comparison by looking at mean responses for each of the six ASRS screening questions; and comparing them to the data presented by Kessler et al. (2007); using the following steps:

- 1) Record the mean response to each ASRS question; as well as the standard deviation; for each of Kessler et al.'s collection periods (see **Table 1**)
- 2) Calculate the arithmetic mean of Kessler et al.'s data ( $\bar{X}_{KA}$ ):

$$\bar{X}_{KA} = (\bar{X}_{K1} + \bar{X}_{K2} + \bar{X}_{K3}) \div 3$$

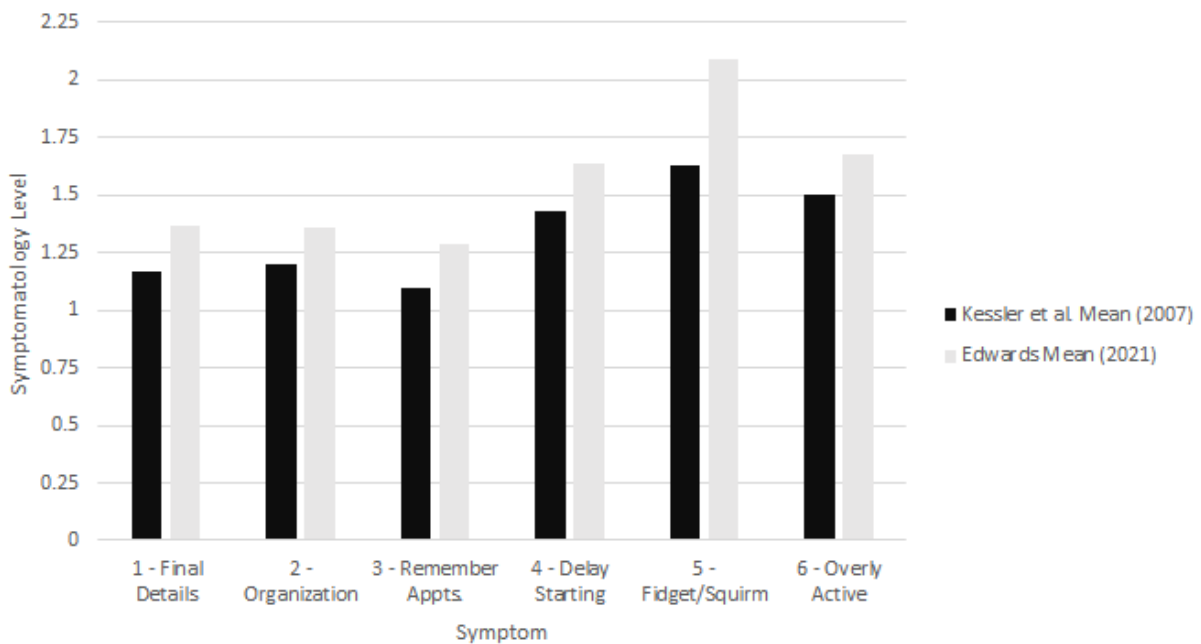
- 3) Generate descriptive statistics in SPSS for Edwards' data set to find  $\bar{X}_E$  during COVID (see **Table 1**)
- 4) Compare Edwards' mean and Kessler et al.'s overall mean to find the percent increase during COVID-19

$$\Delta\bar{X}\% = (\bar{X}_E - \bar{X}_{KA}) \div \bar{X}_{KA}$$

Our results can be found in **Table 1**:

**Table 1.** Symptomatology comparison between Kessler et al. (2007) and Edwards (2021).

ASRS Screener Symptom (abridged)	$\bar{X}_{K1}$		$\bar{X}_{K2}$		$\bar{X}_{K3}$		$\bar{X}_{KA}$		$\bar{X}_E$		$\Delta\bar{X}_{E-KA}$	$\Delta\bar{X}\%$
	$\bar{X}_{K1}$	SD	$\bar{X}_{K2}$	SD	$\bar{X}_{K3}$	SD	$\bar{X}_{KA}$	SD	$\bar{X}_E$	SD		
1–Trouble wrapping up final details	1.1	1.0	1.3	0.9	1.1	0.9	1.17	0.93	1.37	0.89	0.19	16.24
2–Difficulties with organizing	1.1	1.0	1.4	0.8	1.1	0.9	1.20	0.90	1.36	0.93	0.16	13.33
3–Problems remembering appointments or obligations	0.9	0.9	1.2	1.0	1.2	1.0	1.10	0.97	1.29	1.00	0.19	17.27
4–Avoid or delay getting started	1.3	1.0	1.6	0.9	1.4	1.1	1.43	1.00	1.64	1.10	0.24	17.14
5–Fidget or squirm when sitting for long periods	1.4	1.2	1.7	1.3	1.8	1.4	1.63	1.30	2.09	1.20	0.49	30.63
6–Feel overly active or compelled to do things	1.5	1.2	1.7	1.2	1.3	1.2	1.50	1.20	1.68	1.10	0.18	12.00



**Figure 1.** Mean symptomatology level comparison between Kessler et al. (2007) and Edwards (2021).

As seen above; the mean response (i.e., the average response level for each symptom; ranging from 0–4) has increased for all six categories; suggesting that more people are experiencing ADHD-related symptomatology during COVID-19 than were previously. Given the higher occurrence response rates for each individual symptom was found; the next step was to study likely predicted population prevalence that might be extrapolated from these rates.

### 3.3. Prediction of diagnosis rate

In their 2007 paper; Kessler et al. proposed a model for predicting occurrences of a clinical ADHD diagnosis using an assumed population prevalence; based on stratified results from the six question ASRS scale. The strata were based on the sum total of an individuals’ response to all six questions; with the strata being defined as: a. 0–9; b. 10–13; c. 14–17; and d. 18–24. They detailed a Positive Predictive Value (PPV) meant to predict the likelihood of an individual with responses in a given stratum meeting the criteria for a clinical ADHD diagnosis. The steps that they followed are:

- 1) Define a Stratum Specific Likelihood Ratio (SSLR) for each Stratum; expressed as the ratio of diagnoses to non-diagnoses in a specific stratum divided by the ratio of diagnoses ( $D$ ) to non diagnoses (ND) across the entire data set

$$SSLR = D:ND_{stratum} \div D:ND_{total}$$

- 2) Transform assumed Population Prevalence ( $P_p$ ) into assumed Population Odds ( $O_p$ ).

$$O_p = P_p \div (1 - P_p)$$

- 3) Define stratum-specific odds ( $O_s$ )

$$O_s = O_p \times SSLR$$

- 4) Transform  $O_s$  into an estimated Positive Predictive Value (PPV)

$$PPV = O_s \div (1 + O_s)$$

They found that; if the overall population prevalence of ADHD occurrence is 4%; the likelihood of being diagnosed with ADHD with a screener score of a. 0–9 is 0.0%; b. 10–13 is 4.0%; c. 14–17 is 30.0%; and d. 18–24 is 50.8%. Kessler’s 4% population prevalence predictions were used because they align the most closely with Kessler’s prior 4.4% estimate of occurrence in United States adults (Kessler et al., 2007). By conducting a frequency analysis of Edwards’ (2021) response data ( $n = 921$ ); the number of respondents in each stratum were:

- a. 0–9. 535
- b. 10–13. 278
- c. 14–17. 83
- d. 18–24. 25

Using Kessler’s prediction estimates (see **Table 2**):

**Table 2.** Stratified Respondents and Predicted Diagnoses in Edwards (2021) Dataset.

ASRS Strata (Score)	Number of respondents (Edwards)	Kessler et al. PPV	Predicted respondents meeting clinical diagnosis
	$n$	%	
a. (0–9)	535	0.0	0
b. (10–13)	278	4.0	11
c. (14–17)	83	30.0	25
d. (18–24)	25	50.8	13

Overall; 49 total respondents are predicted to meet the criteria of a clinical ADHD diagnosis. This comprises 5.32% of the total population; a higher population prediction than was previously given by Kessler et al. (2006) of 4.4%.

However; Edwards’ (2021) dataset was limited to respondents who were employed full-time; meaning that the overall population prevalence of people with ADHD symptomatology could be higher still than predicted. Here; data from Biederman and Faraone (2006) is used. They reported that 33.9% of respondents with ADHD ( $n_1 = 500$ ) were employed full-time; as compared to 59.0% of their control group ( $n_2 = 501$ ). Taking these statistics as a reasonable estimate; given that they are consistent with Kuriyan et al. (2013) and Fredricksen et al. (2014); who found that

unemployment and low educational attainment were more common in adults diagnosed with ADHD than their non-ADHD counterparts; we conducted the following operations to infer an overall predicted prevalence of adults in the United States who meet the criteria for a clinical ADHD diagnosis.

- 1) [% of individuals employed full-time in study population] ÷ [% of individuals in their control employed full-time] = [% of individuals employed full-time with ADHD] ÷ [% of individuals in the population with ADHD]

$$\%P_{FTE} \div \%C_{FTE} = \%ADHD_{FTE} \div \%P_{ADHD}$$

Therefore;

$$33.9\% \div 59.0\% = 5.32\% \div \%P_{ADHD}$$

- 2) Then; we rearranged to find our predicted % of individuals in the population with ADHD; %P<sub>ADHD</sub>:

$$\%P_{ADHD} = 59.0\% \times 5.32\% \div 33.9\%$$

$$\%P_{ADHD} = 9.26\%$$

As such; using the combined approaches of Kessler et al. (2007) and Biederman and Faraone (2006); we conclude that during the COVID-19 lockdown; there may have been a spike in the overall adult population prevalence ADHD of up to 9.26% in the United States based on the respondents surveyed by Edwards (2021).

#### 4. Discussion

This study was intended to examine the extent to which new working conditions imposed by the pandemic affected the extent to which American adults may be struggling with ADHD; moving forward. To achieve this purpose; we examined the extent to which workers' self-reported ASRS scores collected during the COVID-19 pandemic by Edwards (2021) differ from prior; pre-pandemic levels of worker self-reported impairment as measured by ASRS as reported by Kessler et al. (2007). Next; upon finding that self-reported impairment as reported by Edwards (2021) was greater than Kessler et al.'s (2007) pre-pandemic impairment estimates; and based on his figures; Kessler predicted an overall population prevalence of adult ADHD in the United States of 4.4%; we predicted the population prevalence of adult ADHD during the pandemic based on Edwards (2021) data.

To compare reported symptomatology levels; we recorded Kessler et al.'s (2007) mean responses to each symptom; and calculated the mean symptomatology level across all three collection periods to establish a baseline symptomatology level. From there; we calculated the average response level to each symptom in Edwards (2021) data set and calculated the percent change in response level to each symptom between Kessler et al. (2007) and Edwards (2021). We found that each symptom had a higher mean response level (as in; either more people were reporting each symptom; or people were reporting feeling the symptom more acutely) in Edwards' data.

To predict a diagnosis rate; we used Kessler et al.'s (2007) method of stratifying respondents by overall symptomatology into four buckets and used Kessler et al.'s

(2007) 4% positive predictive values to estimate the number of respondents in each of our strata likely to meet a clinical ADHD diagnosis. From this analysis; we found that approximately 49 people in our population of 921 were likely to qualify for a clinical ADHD diagnosis; a total of 5.32%. Since the COVID data only collected by Edwards (2021) only included respondents employed full-time and Kessler et al.'s data included unemployed workers; we had to further generalize our findings to apply to all American adults. In order to accomplish this; we used data from Biederman and Faraone (2006) to extrapolate how our findings might relate to American adults as a whole. We did this by using the ratio that Biederman and Faraone (2006) provided of individuals in their ADHD population employed full-time to the individuals in their control employed full-time and applied that ratio to the quantity of individuals in our study (already employed full-time) likely to meet a positive ADHD diagnosis. Applying this ratio led us to predict that approximately 9.32% of all American adults may have been struggling with ADHD symptomatology to an extent qualifying for clinical diagnosis during pandemic while significant strictures on working outside of the home were in force.

Finally; we wanted to compare our findings to previous; pre-pandemic literature. Kessler et al.'s 2007 prediction of 4.4% is an obvious starting point; as it aligns with several other studies predicting the prevalence of adult ADHD; including Polyzoi et al. (2018) and Faraone and Biederman (2005). Our estimated population prevalence of 9.26% marks a significant increase in relation to these prior findings. The findings presented here demonstrate a notable increase in both the mean level of individual ADHD symptoms; and in the occurrences of ADHD symptomatology likely severe enough to qualify for a clinical diagnosis.

Possible reasons for higher occurrences of ADHD symptomatology could include the removal of support systems for workers; which were recognized by Asherson et al. (2016) as one possible reason why ADHD remains unrecognized in certain circumstances. The significant changes to many workers' experience amongst the significantly higher occurrences of working from home; likely resulted in less social support; and; as a result; higher occurrences of ADHD-related struggles.

Holman et al. (2020) found that both pre-existing symptoms and secondary stressors (such as wage or job loss) significantly predicted development of stress or depressive-related psychiatric disorders during the COVID-19 pandemic. Especially given the high degree of co-occurring disorders in ADHD patients; we could infer that perhaps individuals with lower symptomatology pre-pandemic may have experienced heightening symptoms or may have developed symptomatology akin to ADHD as a result of co-occurring disorders.

Lifestyle changes could also account for heightened ADHD symptomatology. Findings such as those presented by Mehren et al. (2019) suggest that regular physical activity could assist in coping with ADHD symptomatology. When taken in conjunction with Tison et al. (2020); who found lower average activity levels amongst American adults during the COVID-19 pandemic; perhaps more sedentary behaviors amongst American adults are contributing to higher symptomatology.

## **5. Limitations**

The data represented here are based on a reconstruction of experimental results as derived from published studies (Kessler et al., 2007; Biederman and Faraone, 2006). More robust predictions and analysis on the data would have been possible with access to the original data. Further study could be performed if a researcher were able to access all these data sets for direct analysis.

In writing this paper; we also identified that; like us; our peers including Landes and London (2018) and Vos and Hartman (2022) are still citing papers published in 2007 for ADHD prevalence estimates. This practice is often due not to a fault on the part of the authors; but due to a lack of more recent publications with data on adult ADHD estimates. The dearth of more recently published data is a significant part of the confusion that abounds regarding the topic of Adult ADHD. In this paper; we have demonstrated that a method exists for estimating adult ADHD symptomatology that can be applied to any ASRS dataset where authors choose to publicly publish their data with all 6 questions as part of their publication. Where researchers utilizing ASRS choose to do so in future; this will allow future meta-analysis to more accurately estimate adult ADHD prevalence using the ASRS DID method using those researchers' public datasets in aggregate.

Regarding the dataset we did have access to (Edwards, 2021); non-probability sampling methods were used; which eliminated any potential respondents who were unemployed; self-employed; or employed part time. In addition; only five ISCO-08 (International Labor Organization, 2016) job classes were studied; further limiting the generalizability of these results. The five job classes included in the Edwards study were: managers; professionals; technicians and associate professionals; clerical support workers; and services and sales workers. Not enough responses were collected using the online paid collection method to allow for study of workers within the following job classes: skilled agricultural; forestry; and fishery workers; craft and related trades workers; plant and machine operators and assemblers; elementary occupations; and armed forces occupations.

The demographic information collected by Dr. Edwards was also limited to gender. Collecting information on other demographic indicators; such as race or educational attainment; would have helped to further compare our findings to those of previous studies. As well; collecting more demographic data would have allowed us to weight data using the same methods utilized by Kessler et al. (2007) for more specific comparative analysis.

## **6. Recommendations**

Regardless of whether our observations constitute a temporary spike or a durable increase in ADHD symptomatology; remote work is predicted to become a permanent part of the working adult's experience to a significantly greater extent (Enterprise Technology Research, 2020; Barrero et al., 2020). As such; we would not expect ADHD symptomatology to return to pre-COVID levels. During the first few months of the COVID-19 quarantine; a separate study conducted on adolescents and young adults with ADHD found that social isolation; motivation problems; boredom; and



difficulties engaging online were common problems reported by both ADHD subjects and close family (Sibley et al., 2021). While little has been published on working adults with ADHD during COVID other than Edwards (2021), this study demonstrates that working from home does significantly increase workplace impairment among all workers to the extent that a greater percentage may reach the level of impairment typically associated with adult ADHD diagnosis. Thus; further exploration of the link between remote or virtual work and adult ADHD symptoms is recommended. Further research is needed to develop and evaluate evidence-based interventions to support workers with ADHD such as encouraging remote workers to exercise (Den Heijer et al., 2016).

Lerner et al. (2018) stated that identifying key areas in which to target training and interventions could improve workplace outcomes for adults with ADHD. Current research suggestions for ADHD-centric interventions include psychosocial treatments (Asherton et al., 2016) and treatments geared towards inattentive ADHD and occupational disabilities (Fredriksen et al., 2014). Based on these factors; we urge consideration of providing executive functioning interventions to support inattentive aspects of ADHD; and physical work environment adjustments as previously mentioned to support hyperactive symptomatology. These can be incorporated within existing employee assistance programs without limiting employee access to these supports to those who can provide proof of an ADHD diagnosis.

In conclusion; Brohan et al. (2012) note that before any ADHD-specific intervention or treatment programs can be implemented successfully; mental-health related stigma and discrimination needs to be addressed from an individual and a systemic perspective. As demonstrated by Godfrey et al. (2020) and by Canu et al. (2008). ADHD is subject to a variety of public stigmas and misconceptions; both attributable to ADHD-specific behaviors and general labels. In this paper; we sought to provide an updated perspective on how adults may be impacted by ADHD during and following the pandemic. We hope in doing so; we can assist with efforts to raise awareness of how many people struggle with ADHD and can assist in reducing stigma; long-term. Meanwhile; while these issues of structural stigma are being addressed; we aimed to provide a short-term practical display of how many individuals may be currently struggling with adapting to virtual working conditions.

**Author contributions:** Conceptualization, AVE and WA; methodology, AVE; software, AVE and GM; validation, AVE and GM; formal analysis, AVE, GM and WA; investigation, AVE and GM; resources, AVE; data curation, AVE; writing—original draft preparation, AVE and GM; writing—review and editing, AVE and WA; visualization, GM; supervision, AVE; project administration, AVE; funding acquisition, AVE. All authors have read and agreed to the published version of the manuscript.

**Statement of relevance:** Independent studies estimate that approximately 50% of the United States workforce was working from home during pandemic conditions (Barrero et al. 2020; Brynjolfsson et al; 2020). These estimates demonstrate an upward trend in working from home that is expected to continue post-pandemic; with an estimated 34.4% of people expected to continue to work remotely in coming years

(Enterprise Technology Research; 2020). This study finds a significant increase in reported ADHD symptoms during the period when a large portion of the workforce was working virtually; suggesting that we might expect to see an increase in levels of worker impairment related to adult ADHD symptomatology if virtual work persists. The exodus from the on-site office to virtual workplaces could have serious implications for individuals struggling with ADHD if support for the needs of this at-risk population is not provided. Related supports for ADHD impaired individuals might include pharmacological; therapeutic; and vocational supports.

**Conflict of interest:** The authors declare no conflict of interest.

## References

- Antshel, K. M. (2018). Attention deficit/hyperactivity disorder (ADHD) and entrepreneurship. *Academy of Management Perspectives*, 32(2), 243–265. <https://doi.org/10.5465/amp.2016.0144>
- Asherson, P., Buitelaar, J., Faraone, S. V., & Rohde, L. A. (2016). Adult attention-deficit hyperactivity disorder: Key conceptual issues. *The Lancet Psychiatry*, 3(6), 568-578. [https://doi.org/10.1016/S2215-0366\(16\)30032-3](https://doi.org/10.1016/S2215-0366(16)30032-3)
- Barkley, R. A. (2014). *Attention-deficit hyperactivity disorder: A handbook for diagnosis and treatment*, 4th ed. Guilford Publications.
- Barrero, J. M., Bloom, N., & Davis, S. J. (2020). Why working from home will stick. Becker Friedman Institute for Economics; University of Chicago.
- Biederman, J. & Faraone, S. V. (2006). The effects of Attention-Deficit/Hyperactivity Disorder on employment and household income. *Medscape General Medicine*, 8(3).
- Brod, M., Johnston, J., Able, S., & Swindle, R. (2006). Validation of the adult attention-deficit/hyperactivity disorder quality-of-life scale (AAQoL): A disease-specific quality-of-life measure. *Quality of Life Research*, 15(1), 117–129. <https://doi.org/10.1007/s11136-005-8325-z>
- Brohan, E., Henderson, C., Wheat, K., et al. (2012). Systematic review of beliefs; behaviours and influencing factors associated with disclosure of a mental health problem in the workplace. *BMC Psychiatry*, 12(11).
- Brynjolfsson, E., Horton, J. J., Ozimek, A., et al. (2020). COVID-19 and remote work: An early look at US data. National Bureau of economic Research.
- Canu, W. H., Newman, M. L., Morrow, T. L., & Pope, D. L. W. (2008). Social appraisal of adult ADHD: Stigma and influences of the beholder's big five personality traits. *Journal of Attention Disorders*, 11(6), 700-710. <https://doi.org/10.1177/1087054707305090>
- Card, D., & Krueger, A. (1994). Minimum Wages and Employment: A Case Study of the Fast Food Industry in New Jersey and Pennsylvania. *American Economic Review*, 84 (4), 772-784.
- de Graaf, R., Kessler, R. C., Fayyad, J., et al. (2008). The prevalence and effects of adult attention-deficit/hyperactivity disorder (ADHD) on the performance of workers: Results from the WHO World Mental Health Survey Initiative. *Occupational and Environmental Medicine*, 65(12). <https://doi.org/10.1136/oem.2007.038448>
- Den Heijer, A. E., Groen, Y., Tucha, L., et al. (2016). Sweat it out? The effects of physical exercise on cognition and behavior in children and adults with ADHD: A systematic literature review. *Journal of Neural Transmission*, 124, 3-26. <https://doi.org/10.1007/s00702-016-1593-7>
- Edwards, A. V. (2021). *Neurodiversity and workplace social capital effects on employee attitudes and intentions* [PhD thesis]. Walden University.
- Enterprise Technology Research. (2020). COVID-19 survey: Permanent remote positions double and productivity improves? Enterprise Technology Research.
- Ettman, C. K., Abdalla, S. M., Cohen, G. H., et al. (2020). Prevalence of depression symptoms in US adults before and during the COVID-19 pandemic. *JAMA Network Open*, 3(9). <https://doi.org/10.1001/jamanetworkopen.2020.19686>
- Fancourt, D., Steptoe, A., & Bu, F. (2020). Trajectories of depression and anxiety during enforced isolation due to COVID-19: longitudinal analyses of 36,520 adults in England. *medRxiv*.

- Faraone, S. V., & Biederman, J. (2005). What Is the Prevalence of Adult ADHD? Results of a Population Screen of 966 Adults. *Journal of Attention Disorders*, 9(2), 384–391. <https://doi.org/10.1177/1087054705281478>
- Fosslein, L., & Duffy, M. W. (2020). How to combat Zoom fatigue. *Harvard Business Review*.
- Fredriksen, M., Dahl, A. A., Martinsen, E. W., et al. (2014). Childhood and persistent ADHD symptoms associated with educational failure and long-term occupational disability in adult ADHD. *ADHD Attention Deficit and Hyperactivity Disorders*, 6(2), 87–99. <https://doi.org/10.1007/s12402-014-0126-1>
- Godfrey, E., Fuermaier, A. B. M., Tucha, L., et al. (2020). Public perceptions of adult ADHD: Indications of stigma? *Journal of Neural Transmission*, 128, 993–1009. <https://doi.org/10.1007/s00702-020-02279-8>
- Hansen, A.-S. K., Madsen, I. E. H., Thorsen, S. V., et al. (2017). Does workplace social capital protect against long-term sickness absence? Linking workplace aggregated social capital to sickness absence registry data. *Scandinavian Journal of Public Health*, 46(3), 290–296. <https://doi.org/10.1177/1403494817721672>
- Holman, E. A., Thompson, R. R., Garfin, D. R., et al. (2020). The unfolding COVID-19 pandemic: A probability-based, nationally representative study of mental health in the United States. *Science Advances*, 6(42). <https://doi.org/10.1126/sciadv.abd5390>
- International Labour Organization. (2016). ISCO-08 structure; index correspondence with ISCO-88. International Labour Organization.
- Kessler, R. C., Adler, L. A., Gruber, M. J., et al. (2007). Validity of the World Health Organization Adult ADHD Self-Report Scale (ASRS) Screener in a representative sample of health plan members. *International Journal of Methods in Psychiatric Research*, 16(2), 52–65. Portico. <https://doi.org/10.1002/mpr.208>
- Kuriyan, A. B., Pelham, W. E., Molina, B. S. G., et al. (2012). Young Adult Educational and Vocational Outcomes of Children Diagnosed with ADHD. *Journal of Abnormal Child Psychology*, 41(1), 27–41. <https://doi.org/10.1007/s10802-012-9658-z>
- Landes, S. D., & London, A. S. (2018). Self-Reported ADHD and Adult Health in the United States. *Journal of Attention Disorders*, 25(1), 3–13. <https://doi.org/10.1177/1087054718757648>
- Lerner, D. A., Hunt, R. A., & Verheul, I. (2018). Dueling Banjos: Harmony and Discord between ADHD and Entrepreneurship. *Academy of Management Perspectives*, 32(2), 266–286. <https://doi.org/10.5465/amp.2016.0178>
- Mehren, A., Özyurt, J., Lam, A. P., et al. (2019). Acute Effects of Aerobic Exercise on Executive Function and Attention in Adult Patients With ADHD. *Frontiers in Psychiatry*, 10. <https://doi.org/10.3389/fpsy.2019.00132>
- Patton, E. (2009). When Diagnosis Does Not Always Mean Disability: The Challenge of Employees with Attention Deficit Hyperactivity Disorder (ADHD). *Journal of Workplace Behavioral Health*, 24(3), 326–343. <https://doi.org/10.1080/15555240903176161>
- Polyzoi, M., Ahnemark, E., Medin, E., et al. (2018). Estimated prevalence and incidence of diagnosed ADHD and health care utilization in adults in Sweden – a longitudinal population-based register study. *Neuropsychiatric Disease and Treatment*, 14, 1149–1161. <https://doi.org/10.2147/ndt.s155838>
- Sibley, M. H., Ortiz, M., Gaias, L. M., et al. (2021). Top problems of adolescents and young adults with ADHD during the COVID-19 pandemic. *Journal of Psychiatric Research*, 136, 190–197. <https://doi.org/10.1016/j.jpsychires.2021.02.009>
- Son, C., Hegde, S., Smith, A., et al. (2020). Effects of COVID-19 on college students' mental health in the United States: Interview survey study. *Journal of Medical Internet Research*, 22(9). <https://doi.org/10.2196/21279>
- Tison, G. H., Avram, R., Kuhar, P., et al. (2020). Worldwide effect of COVID-19 on physical activity: A descriptive study. *Annals of Internal Medicine*, 173(9), 767–770. <https://doi.org/10.7326/M20-2665>
- Vos, M., & Hartman, C. A. (2022). The decreasing prevalence of ADHD across the adult lifespan confirmed. *Journal of global health*, 12. <https://doi.org/10.7189/jogh.12.03024>
- Wiederhold, B. K. (2020). Connecting through technology during the Coronavirus disease 2019 pandemic: Avoiding “Zoom Fatigue”. *Cyberpsychology; Behavior; and Social Networking*, 23(7), 437–438. <https://doi.org/10.1089/cyber.2020.29188.bkw>