the ADHD REPORT

Russell A. Barkley & Associates

• Volume 28 • Number 4 • ISSN 1065-8025 • June 2020 •

ADHD Adversely Impacts Health, Mortality Risk, and Estimated Life Expectancy by Adulthood

Russell A. Barkley, Ph.D.

Nearly 15 years ago, suggestive evidence began to arise that ADHD may have a detrimental impact on life expectancy, as I discussed in an editorial in this newsletter in the late 1990s. My concerns about the adverse impacts of ADHD on life expectancy are based on then-new findings from a 2002 longitudinal study at Stanford University initiated by Terman that tracked the entire lifespan of gifted children. The findings by Friedman and colleagues (2002) indicated that even among this gifted sample, children who placed below the bottom 25th percentile of the population as ranked by "conscientiousness" had a 7-8 year reduction in their lifespan compared to the remainder of the sample. In this study, conscientiousness refers to the use of one's conscience in making decisions about one's own actions and their long-term consequences for oneself and. Low conscientiousness reduces life expectancy by predisposing one to engage in adverse health and lifestyle activities known to reduce life expectancy, such as substance abuse, risk taking, poor health and hygiene practices, etc. Indeed, low conscientiousness has repeatedly been demonstrated to increase the risk of earlier death by all causes (Bogg & Roberts, 2004). The trait is generally detrimental to self-regulation and specifically detrimental to behavioral disinhibition, including the disinhibition listed in the central symptom dimensions of ADHD. It then follows that if those in the bottom quartile of this trait had a significant reduction in lifespan, even among gifted children, those with ADHD would have an even greater reduction in life expectancy, as those with ADHD placed in the bottom 5-7 percent of the population in their poor inhibition.

ADHD AND ADVERSE HEALTH CORRELATES

Aside from the conscientiousness factor, there are a number of other reasons to suspect that ADHD is linked to reduced life expectancy by young adulthood. For one thing, ADHD is linked to increased adverse consequences in nearly every domain of activity studied to date (Barkley et al., 2008; Boland, DiSalvo, Fried, Woodworth, Wilens et al., 2020), some of which are linked to shortened life expectancy. For instance, ADHD is associated with higher risks for accidental and self-inflicted injuries in childhood and adulthood (Nigg,

Contents

• ADHD Adversely Impacts Health, Mortality Risk, and Estimated Life Expectancy by Adulthood, 1 • Psychosocial Interventions for College Students with ADHD: Current Status and Future Directions, 5 • Research Findings, 13

NOTICE TO NON-PROFESSIONALS The information contained in this newsletter is not intended as a substitute for consultation with health care professionals.

© 2020 The Guilford Press

G4855.indd 1 8/17/2020 4:44:07 PM

Russell A. Barkley, Ph.D.
Virginia Treatment Center for Children
Virginia Commonwealth University
School of Medicine
Send correspondence to
drbarkley@russellbarkley.org

Dr. Russell Barkley discloses that his work includes serving as a paid Speaker/Consultant for pharmaceutical companies in his area of expertise.

ADVISORY BOARD
Kevin Antshel, Ph.D., Syracuse University • **José J. Bauermeister, Ph.D.,** University of Puerto Rico, San Juan • **Stephen P. Becker, Ph.D.,** Cincinnati Children's Hospital Medical Center • **Will Canu, Ph.D.,** Appalachian State University • **Anil Chacko, Ph.D.**, New York University • **Andrea M. Chronis, Ph.D.,** University of Maryland, College Park • **George J. DuPaul, Ph.D.,** Lehigh University, PA • **Gregory Fabiano, Ph.D.,** University of Buffalo • **Jeff Epstein, Ph.D.**, Cincinnati Children's Hospital Medical Center • **Sam Goldstein, Ph.D.,** University of Utah, Salt Lake City • **Cynthia M. Hartung, Ph.D.**, University of Wyoming • **Stephen Hinshaw, Ph.D.,** UC Berkeley • **Charlotte Johnston, Ph.D.,** University of British Columbia, Vancouver • **Laura E. Knouse, Ph.D.**, University of Richmond, VA • **Scott Kollins, Ph.D.,** Duke University Medical Center, Durham, NC • **Sandra Kooij, M.D.**, Expertise Center Adult ADHD, The Netherlands • **Joshua Langberg, Ph.D.**, Virginia Commonwealth University • **Florence Levy, M.D.,** The Prince of Wales Children's Hospital, Australia • **Larry Lewandowski, Ph.D.,** Syracuse University, NY • **Sandra Loo, Ph.D.,** Neuropsychiatric Institute, UCLA • **Keith McBurnett, Ph.D.,** University of California, San Francisco • **Richard Milich, Ph.D.,** University of Kentucky, Lexington • **Brooke Molina, Ph.D.,** University of Pittsburgh • **Kevin Murphy, Ph.D.,** Adult ADHD Clinic of Central Massachusetts • **Joel Nigg, Ph.D.,** Oregon Health Sciences University, Portland, OR • **Linda Pfiffner, Ph.D.,** University of Chicago • **J. Russell Ramsay**, Ph.D., University of Pennsylvania Perelman School of Medicine • **Mark Rapport, Ph.D.,** University of Central Florida • **Luis Rohde, M.D.,** Federal University of Rio Grande do Sul • **Julie Schweitzer, Ph.D.,** UC-Davis MIND Institute, Sacramento, CA • **Mary V. Solanto, Ph.D.,** Hofstra Northwell School of Medicine • **Dan Waschbusch, Ph.D.,** Penn State University Medical Center • **Jeanette Wasserstein, Ph.D.,** The Mount Sinai School of Medicine • **Lisa Weyandt, Ph.D.**, University of Rhode Island • **Alan Zametkin, M.D.,** Private Practice

THE ADHD REPORT (ISSN 1065-8025) is published bimonthly by The Guilford Press, 370 Seventh Avenue, Suite 1200, New York, NY 10001-1020. Guilford's GST registration number: 137401014.
Subscription price: (eight issues) Individuals $105.00, Institutions, $497.00. Add $15.00 for Canada and Foreign (includes airmail postage). Orders by MasterCard, VISA, or American Express can be placed by Phone at 800-365-7006, Fax 212-966-6708, or E-mail news@guilford.com; in New York, 212-431-9800. Payment must be made in U.S. dollars through a U.S. bank. All prices quoted in U.S. dollars. Pro forma invoices issued upon request.
Visit our website at www.guilford.com.
CHANGE OF ADDRESS: Please inform publisher at least six weeks prior to move. Enclose mailing label with change of address. Claims for lost issues cannot be honored four months after mailing date. Duplicate copies cannot be sent to replace issues not delivered because of failure to notify publisher of change of address. Postmaster: Change of address to The ADHD Report, Guilford Press, 370 Seventh Avenue, Suite 1200, New York, NY 10001-1020.

Photocopying of this newsletter is not permitted.
Inquire for bulk rates.
Copyright © 2020 by The Guilford Press.
Printed in the United States of America.

2013). Adverse driving outcomes, including more vehicular crashes (Barkley, 2015c; Barkley & Cox, 2007), are also associated with ADHD. ADHD also increases the risk for suicidal ideation (along with comorbid depression), attempts (associated with impulsivity), and completions (Barbaresi et al., 2013; Barkley et al., 2008). And teens and adults with ADHD-C are far more likely to be involved in interpersonal hostility and antisocial activities that include violent crimes, reactive aggression, and intimate partner violence, even when conduct disorder is not present or is statistically controlled (Buitelaar, Posthumus, & Buitelaar, 2015; Mohr-Jensen & Steinhausen, 2016; Saylor & Amann, 2016). All of these variables would lead to an increased risk for greater morbidity and likely earlier mortality by violent means.

Another line of evidence that suggests ADHD could be linked to shorter life expectancy is that ADHD is associated with various adverse medical conditions (Barkley, et al., 2008; Barkley, 2015; Nigg, 2013). These include:

- Upper respiratory infections, asthma, otitis media, allergies such as rhinitis, and skin disorders like eczema or acne.
- Nonspecific lung, cardiovascular, and other chronic diseases.
- Poorer dental hygiene and greater risk for diseased, missing, filed, or traumatically injured teeth, gum disease, and bruxism in children with ADHD.
- Greater substance use, misuse, dependence, and abuse.
- Obesity.
- Eating pathology.
- Enuresis and encopresis. Seizure disorders.
- Sleeping problems.
- Excessive internet use and addiction, and gaming addiction.
- Exposure to traumatic events and victimization.
- Risky sexual behavior, earlier age at first sexual intercourse, greater number of sex partners, sexually transmitted disease, and teenage pregnancy.
- Poorer nutrition, greater consumption of sugars and carbohydrates.
- Greater sedentary lifestyle, less physical exercise.
- Type II diabetes.
- Coronary heart disease.

Although significant health adversities in their own right, many of these conditions are well-known correlates of reduced life expectancy and are frequently used in algorithms that predict life expectancy in public health research and in the life insurance industry. Demontis et al. (2018) recently reported the results of a meta-analysis of DNA from 35,191 control cases and 20,183 of ADHD cases; the finding most relevant to this discussion was that there are genetic relationships between ADHD and nearly all of the first order risk factors used in our computation of estimated life expectancy (ELE), including educational attainment, smoking, sleep, etc. This also applied to other factors we did not use, such as the level of high-density lipid cholesterol, risk for rheumatoid arthritis, etc. It also found a genetic correlation between ADHD and lower intelligence, as well as a significant shared genetic relationship between ADHD and earlier parental mortality in both mothers and fathers. This further supports our conclusions that ADHD and its linkage to poor inhibition and low Conscientiousness are important genetic background factors that link the primary factors shortening life expectancy in those with ADHD.

ADHD AND EARLY MORTALITY

Over the past decade, there has been research that specifically examines the issue of greater mortality in those with ADHD using large epidemiological samples or even entire populations. That body of evidence showed the following:

- In 2012, Rachel Klein, Salvatore Mannuza, and colleagues (Klein, Mannuzza, Olazagasti, Roizen, Hutchinson et al., 2012), while conducting the longest study following children with ADHD into middle age, found that twice as many had died by age 41 as in their control group (7.2% vs. 2.8%). However, the sample sizes in such studies of clinic-referred chil-

© 2020 The Guilford Press

G4855.indd 2 8/17/2020 4:44:09 PM

dren are inadequate to detect such differences as being significant with any degree of statistical power.

- Multiple epidemiological studies of populations in the United States (Jokela, Ferrie, & Kivimaki, 2009; London & Landes, 2016), Denmark (Dalsgaard, Ostergaard, Leckman, Mortensen, & Pedersen, 2015), Sweden (Sun et al., 2019; Virtanen et al., 2018), and Taiwan (Chen et al., 2019) show that:
  - Children with ADHD are nearly twice as likely to die in childhood.
  - Adults with ADHD are 3 to nearly 5 times more likely to die in adulthood by midlife compared to typical people.
  - During any 4-year period, adults with ADHD in the US are almost twice as likely to die as adults without ADHD.

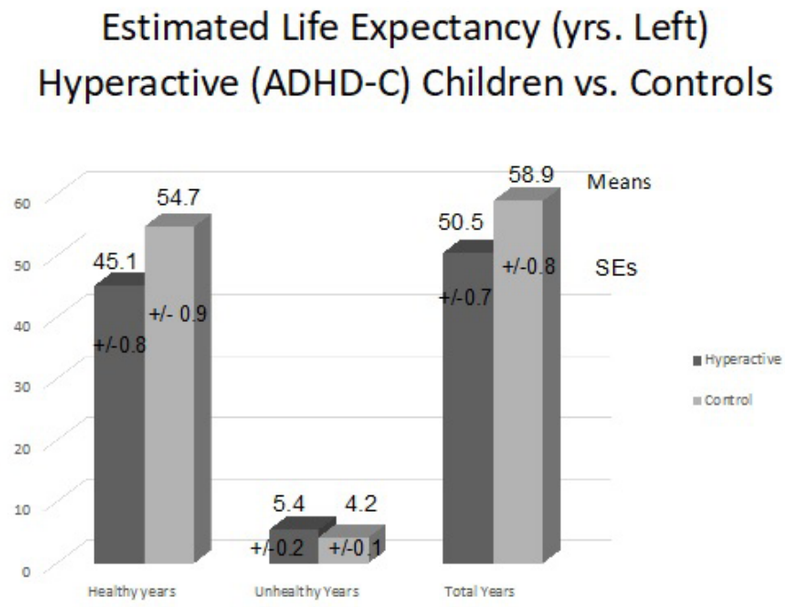
The greatest cause of early mortality in these studies is accidental injury, but death by suicide is also a significant factor, albeit in a much lower percentage of cases. Additionally, the Taiwanese study found that death from homicide was twice as likely for those with ADHD compared to those without.

ADHD AND ESTIMATED LIFE EXPECTANCY

These studies do not address the cumulative risk of chronically engaging in adverse health and lifestyle activities that can reduce life expectancy after mid-life. Mariellen Fischer, Ph.D., and I decided to account for this in our 2019 Milwaukee longitudinal study to examine the possibility of reduced life expectancy in ADHD children. We examined the group with ADHD and the control group at their young adult follow-up (mean age 27 years) by entering 14 variables related to disability, health, and lifestyle into a recently available ELE calculator provided by the University of Connecticut Goldenson Center for Actuarial Research. The results of this data were the first estimates ever reported on life expectancy in children with ADHD by young adulthood (Barkley & Fischer, 2019). The initial findings were used to create the graphs shown in Figures 1 and 2 (SEs = standard errors). Figure 1 compares the ELE of children with a childhood diagnosis of ADHD Combined presentation (ADHD-C; then called Hyperactive Child Syndrome) to those without.

Here one can see that having an ADHD-C diagnosis in childhood manifested in a 9.6 year reduction of estimated healthy life expectancy in remaining years, a 1.2 year period of greater unhealthy life expectancy in remaining years, and an overall 8.4 year reduction in total life expectancy by young adulthood. Thus, regardless of subsequent persistence of disorder, treatments and life course, having ADHD in childhood is associated with a substantial reduction in ELE, both healthy years remaining and total life remaining.

Figure 1.



Data for these graphs was also published in an article by Russell A. Barkely and M. Fischer (2019).

But what is the impact on ELE if ADHD was found to persist to young adulthood? Those findings are shown in Figure 2.

As is evident here, the persistence of ADHD in adulthood was associated with an even worse impact on ELE, with a 12.7-year reduction in healthy life expectancy and an 11.1-year reduction in total ELE than was seen in control cases. Persistent cases had a 5.3-year reduction in healthy life expectancy and a 4.6-year reduction in total ELE than non-persistent ADHD-C cases. Both persistent and non-persistent ADHD cases had significantly lower ELEs by adulthood than did control cases.

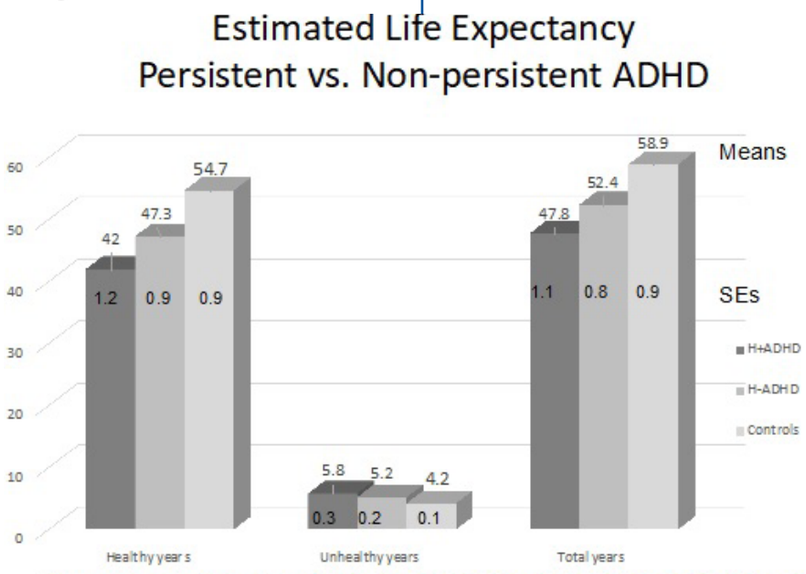
The magnitude of such reductions in life expectancy is better appreciated when considering that such reductions are far greater than those associated with smoking, obesity, alcohol use, high cholesterol, and high blood pressure either individually or combined. ADHD has a more adverse effect on life expectancy than any single adverse health event noted above.

Why? Because ADHD predisposes individuals to engage in a number of adverse health and lifestyle activities. For instance, we noted that ADHD reduced ELE in our study through its association with 8 of the 14 variables entered in the ELE calculations. Beyond these first order factors that adversely affect life expectancy, the background trait of behavioral disinhibition explains more than 30% of the variance in life expec-

© 2020 The Guilford Press

G4855.indd 3 8/17/2020 4:44:09 PM

Figure 2.



Data for these graphs was also published in an article by Russell A. Barkely and M. Fischer (2019).

tancy in our samples, consistent with the findings noted above concerning the role of low Conscientiousness in reducing lifespan.

The key finding by Barkley and Fischer is that, beyond the first order factors that adversely affect life expectancy, the background trait of behavioral disinhibition explains more than 30% of the variance in life expectancy in their samples, consistent with the findings noted previously by many others concerning the role of low conscientiousness in reducing lifespan (Hampson, 2008). Behavioral inhibition is one of the major executive functions that is routinely deficient in ADHD. In other words, it is ADHD and its underlying executive function deficits (especially its dimension of high impulsivity or disinhibition) that accounts for the predisposition to engage in these various adverse health related activities that result in a shorter life expectancy. Failing to appreciate the substantial background factor of ADHD and related disinhibition could easily lead to overlooking its role in poor health-related behavior and failing to understand why certain individuals may have such limited success with adhering to recommendations for health improvement activities intended to lessen those first order risk factors. Thus, professionals must identify and address the background risk posed by ADHD and especially behavioral disinhibition when dealing with patients who experience the primary health risks.

The evidence to date is more than sufficient to justify alarm at the substantial adverse impact ADHD poses for long-term quality of life and reduced life expectancy, as well as the call to action posed in this report. That call to action is even more compelling when one considers the burden that ADHD poses to affected individuals, their families, employers, insurers, public health agencies, and society.

These findings in the context of the other research noted above on increased mortality by mid-life argue for ADHD to be viewed as a public health, not just a mental health, disorder. They should also provide an impetus to reduce the primary factors that cause reduced life expectancy, such as obesity, smoking, excess alcohol use, etc. in children and adults with ADHD. After all, estimated life expectancy is malleable—change the adverse health and lifestyle factors affecting it and one can improve quality of life as well as life expectancy. However, our results also suggest that without efforts to address the background trait of poor inhibition, trying to improve only the first order factors may have limited success. Prescribing ADHD medications will likely prove helpful, for we now know that in view of multiple studies there is a reduction in many of these domains of adverse events thanks to medication treatment for ADHD (see meta-analysis by Boland et al., 2020). These findings also argue for making primary care physicians more aware of the linkage between ADHD and reduced life expectancy, as they are likely to be trying to improve the adverse health and lifestyle activities of individuals.

Dr. Barkley is the Editor of The ADHD Report and a Clinical Professor of Psychiatry at the Virginia Commonwealth University Medical Center in Richmond, VA. He can be contacted by email at: drbarkley@russellbarkley.org.

REFERENCES

Barbaresi, W. J., Colligan, R. C., Weaver, A. L., Voigt, R. G., Killian, J. M., Katusic, S. K. (2013). Mortality, ADHD, and psychosocial adversity in adults with childhood ADHD: A prospective study. *Pediatrics, 131*, 637-644.

Barkley, R. A. (2015c). Health problems and related impairments in children and adults with ADHD. In R. A. Barkley (ed.) *Attention deficit hyperactivity disorder: A handbook for diagnosis and treatment (4th Ed)* (pp. 267-313). New York, NY: Guilford Press.

Barkley, R. A. & Cox, D. J. (2007). A review of driving risks and impairments associated with Attention-Deficit/Hyperactivity Disorder and the effects of stimulant medication on driving performance. *Journal of Safety Research, 38*, 113-128.

Barkley, R. A. & Fischer, M. (2019). Hyperactive child syndrome and estimated life expectancy at young adult follow-up: The role of ADHD persistence and other potential predictors. *Journal of Attention Disorders, 23*, 907-923.

Barkley, R. A., Murphy, K. R., & Fischer, M. (2008). *ADHD in adults: What the science says.* New York: Guilford Press.

Bogg, T. & Roberts, B. W. (2004). Conscientiousness and health-related behavior: A meta-analysis of the leading behavioral contributors to mortality. *Psychological Bulletin, 130,* 887-919.

Boland, H., DiSalvo, M. Fried, R., Woodworth, K. Y., Wilens, T. Faraone, S. V., & Biederman, J. (2020). A literature review

(*continued on page 14*)

© 2020 The Guilford Press

G4855.indd 4 8/17/2020 4:44:09 PM

(continued from page 4)

ADHD Adversely Impacts Health, Mortality Risk, and Estimated Life Expectancy by Adulthood

and meta-analysis on the effects of ADHD medications on functional outcomes. *Journal of Psychiatric Research, 123*, 21-30.

Buitelaar, J. N. J., Posthumus, J. A., & Buitelaar, J. K. (2015). ADHD in childhood and/or adulthood as a risk factor for domestic violence or intimate partner violence: a systematic review. Journal of Attention Disorders. ePub ahead of print, https://doi.org/10.1177/1087054715587099.

Chen, M. H et al. (2018). Risk of Type 2 diabetes in adolescents and young adults with attention-deficit/hyperactivity disorder: A nationwide longitudinal study. Journal of Clinical Psychiatry, 79(3), 17m11607.

Chen, J. J. et al. (2013). Association of attention-deficit/hyperactivity disorder with diabetes: a population-based study. Pediatric Research, 73, 492-496. Also Chen, M. H et al. (2018). Risk of Type

Chen, V.C.H., et al. (2019). Attention-deficit/hyperactivity disorder and mortality risk in Taiwan. *JAMA Network*. Epub ahead of print.

Chesney, E. et al. (2014). Risks for all-cause and suicide mortality in mental disorders: a meta-review. *World Psychiatry, 13,* 153-160.

Dalsgaard, S., Ostergaard, S. D., Leckman, J. F., Mortensen, P. B., & Pedersen, M. G. (2015). Mortality in children, adolescents and adults with attention deficit hyperactivity disorder: a nationwide cohort study. *Lancet, 385*, 2190-2196.

Demontis, D. et al. (2018). Discovery of the first genome wide association significant risk loci for attention-deficit/hyperactivity disorder. *Nature Genetics*. Epub ahead of print. doi.org/10.1038/s41588-018-0269-7

Fekri, N. et al. (2019). Association of body mass index with life expectancy with and without cardiovascular disease. *International Journal of Obesity.* Epub ahead of print.

Friedman, H. S., Tucker, J. S., Schwartz, J. E., Tomlinson-Keasey, C., Martin, L. R., Wingard, D. L., & Criqui, M. H. (1995). Psychosocial and behavioral predictors of longevity: The aging and death of the "Termites." *American Psychologist*, *50*, 69–78.

Goodwin, R. D. et al. (2009). Do mental health problems in childhood predict chronic physical conditions among males in early adulthood? Evidence from a community based prospective study. *Psychological Medicine, 39(2),* 301-311.

Hampson, S. E. (2008). Mechanisms by which childhood personality traits influence adult well-being. *Current Directions in Psychological Science, 17*, 264-268.

Jokela, M., Ferrie, J. E., & Kivimaki, M. (2008). Childhood problem behaviors and death by midlife: The British National Child Development Study. *Journal of the American Academy of Child and Adolescent Psychiatry, 48*, 19-24.

Joshi, P. K., Pirastu, N., Kentistou, K. A., Fischer, K., Hofer, E., Schraut, K. E. et al. (2017). Genome-wide meta-analysis associates HLA-DQA1/DRB1 and LPA and lifestyle factors with human longevity. *Nature Communications*. Epub ahead of print: https://doi.org/10.1038/s41467-017-00934-5.

Klein, R. G., Mannuzza, S., Olazagasti, M. A. R., Roizen, E., Hutchinson, J. A., Lashua, E. C., & Castellanos, X. (2012). Clinical and functional outcome of childhood attention-deficit/hyperactivity disorder 33 years later. *Archives of General Psychiatry, 69*, 1295-1303.

Li et al. (2018). *Circulation*, 138, 345-355.

London, A. S., & Landes, S. D. (2016). Attention deficit hyperactivity disorder and adult mortality. *Preventive Medicine, 90,* 8-10.

Makela, P. (1998). Alcohol related mortality by age and sex and its impact on life expectancy: Estimates based on the Finnish death register. *European Journal of Public health, 8(1),* 43-51.

Mohr-Jensen, C., & Steinhausen, H. C. (2016). A meta-analysis and systematic review of the risks associated with childhood attention-deficit hyperactivity disorder on long-term outcome of arrests, convictions, and incarcerations. *Clinical Psychology Review, 48,* 32-42.

Nigg, J. T. (2013). Attention-deficit/hyperactivity disorder and adverse health outcomes. *Clinical Psychology Review, 33*, 215-228.

Saylor, K. E. & Amann, B. H. (2016). Impulsive aggression as a comorbidity of attention-deficit/hyperactivity disorder in children and adolescents. *Journal of Child and Adolescent Psychopharmacology, 26,* 19-25.

Sun, S. et al. (2019). Association of psychiatric comorbidity with the risk of premature death among children and adults with attention-deficit hyperactivity disorder. *JAMA Psychiatry.* Epub ahead of print.

Virtanen, M., Lallukka, T., Alexanderson, K., Ervasti, J., Josefsson, P., Kivimaki, M., & Mittendorfer-Rutz, E. (2018). Work disability and mortality in early onset neuropsychiatric and behavioral disorders in Sweden. *European Journal of Public Health, 28*, Supplement 4, p. 32.

(continued from page 12)

Psychosocial Interventions for College Students with ADHD

and depressive symptoms in youth. *Journal of Abnormal Child Psychology*, *40*(4), 595–606. https://doi.org/10.1007/s10802-011-9593-4

Shaw-Zirt, B., Popali-Lehane, L., Chaplin, W., & Bergman, A. (2005). Adjustment, social skills, and self-esteem in college students with symptoms of ADHD. *Journal of Attention Disorders*, *8*(3), 109–120. https://doi.org/10.1177/1087054705277775

Solanto, M. V. (2018). Cognitive-behavioral treatment to enhance executive function in college students with ADHD: Results of a pilot study. Paper presented at the meeting of the Association for Behavioral and Cognitive Therapies, Washington, DC.

Solanto, M. V. (2011). *Cognitive-behavioral therapy for adult ADHD: Targeting executive dysfunction*. New York, NY: Guilford Press.

Vasko, J. M., Meinzer, M. C., Murphy, J. G., Oddo, L. E., McCauley, K. L., Rooney, M. E., . . . Chronis-Tuscano, A. (2019). Brief intervention to reduce problem drinking in college students with ADHD. *Cognitive and Behavioral Practice*, *26*(3), 506–521. https://doi.org/10.1016/j.cbpra.2019.02.003

Weyandt, L., DuPaul, G. J., Verdi, G., Rossi, J. S., Swentosky, A. J., Vilardo, B. S., O'Dell, S. M. & Carson, K. S. (2013). The performance of college students with and without ADHD: Neuropsychological, academic, and psychosocial functioning. *Journal of Psychopathology and Behavioral Assessment*, *35*(4), 421-435. https://doi.org/10.1007/s10862-013-9351-8

Wilens, T. E., Adler, L. A., Adams, J., Sgambati, S., Rotrosen, J., Sawtelle, R., . . . Fusillo, S. (2008). Misuse and diversion of stimulants prescribed for ADHD: A systematic review of the literature. *Journal of the American Academy of Child and Adolescent Psychiatry*, *47*(1), 21–31. https://doi.org/10.1097/chi.0b013e31815a56f1

Zylowska, L. (2012). *The Mindfulness Prescription for Adult ADHD: An 8-Step Program for Strengthening Attention, Managing Emotions, and Achieving Your Goals*. Boston, MA: Shambhala Publications.

The ADHD Report
Guilford Publications, Inc.
370 Seventh Avenue
Suite 1200
New York, NY 10001-1020

Address Service Requested

PRESORTED STD
US POSTAGE
PAID
Burlington VT
Permit #165