

Symposium Title: Depression service status and the effects of life circumstances on depressive symptoms in adults with ASD

Chairs: Shuting Zheng¹, Somer Bishop¹

Discussant: Katherine Gotham²

Overview: Poor mental health is an urgent concern for adults with autism spectrum disorder (ASD), contributing to increased risk for suboptimal long-term outcomes. With lifetime estimates approaching 70%, depression is particularly prevalent. Despite the need for effective mental health services in this at-risk group, data on mental health treatments for adults with ASD, both in terms of service receipt and effectiveness, are still lacking. Meanwhile, even less is known regarding the life circumstances of adults living with both ASD and depression or how these experiences might be associated with their mental health. Therefore, the current symposium will present data from a sample of 315 self-reporting independent adults with a childhood diagnosis of ASD recruited from a national research registry. These adults with ASD aged between 18 and 35 years completed an online survey module to provide information on how they are being served in the community and the effects of certain life experiences on depression in this sample. Besides, they also completed self report measures of depression, anxiety, stress and loneliness: (Beck Depression Inventory-II [BDI-II])(Beck et al., 1996), Depression Anxiety Stress Scale [DASS](Lovibond & Lovibond, 1995), and the Asher Loneliness in Context Scale (Weeks & Asher, 2014).

The symposium consists of three presentations all based on the analysis of data from the above described sample of 315 adults with ASD. The first presentation will describe the landscape of depression diagnosis and treatment receipt among currently depressed adults with ASD and the demographic factors associated with the likelihood of service receipt for depression. The second presentation will examine the relationships between the amount and the perception of time spent in social activities and depressive symptoms and loneliness in this adult sample. Finally, the third presentation will analyze the experiences of job loss and examine its associated demographic and mental health variables in adults with ASD. Collectively, these presentations highlight how depression services are an unmet need for many adults with ASD who are experiencing depression and the possibility of targeting life experiences to improve mental health.

References:

Beck, A. T., Steer, R. A., & Brown, G. K. (1996). *Beck Depression Inventory-II (BDI-II)*. Pearson.
Lovibond, S. H., & Lovibond, P. F. (1995). *Manual for the Depression Anxiety Stress Scales. (2nd. Ed.)*. Psychology Foundation.
Weeks, M. S., & Asher, S. R. (2014, March). *Are females more lonely and less satisfied with their friendships than males? The answer is "yes" when controlling for friendship quality*. Poster presented at the biennial meeting of the Society for Research on Adolescence, Austin, TX.

Presentation 1 of 3

Presentation Title: The landscape of depression service among currently depressed adults with ASD

Presenting Authors: Shuting Zheng¹, Somer Bishop¹

Introduction: Adults with ASD experience high rates of depression (Hollocks et al., 2019) but little is known about the current community service landscape among depressed adults with ASD. With high rates of unmet services needs and reported service disparities in the ASD population, it is important to narrow in on the depression service receipt status in currently depressed adults with ASD to provide implications to improve access to mental health care.

Methods: Data on demographic information, depression diagnosis and treatment status, together with two self-report current depressive symptoms measures (i.e., BDI-II and DASS depression subscale) were used for the current analysis. Current depression

¹ University of California, San Francisco

² Rowan University

status was determined by meeting the cut-off scores for moderate levels of depression on either the BDI-II or the DASS. A subsample of 147 adults with ASD in the sample (46.7% of the 315) met the cut-off for current depression and are thus included in the current analysis. The currently depressed subsample did not differ significantly from those who were not depressed in demographic characteristics. The qualitative responses on service barriers were coded and analyzed.

Results: Among currently depressed adults with ASD, the majority (83.0%) had a formal depression diagnosis, with females (biological sex) more likely than males to receive a depression diagnosis (aOR: 3.53, $p=0.01$). As for depression treatment, 58.5% of currently depressed adults were receiving current treatments, and 68% of them had previously been in treatment for depression, with medication being the most frequently used treatment followed by individual therapy. Adults with ASD with a formal depression diagnosis were more likely than those without a diagnosis to receive treatment (Current treatment: aOR=17.08, $p<.001$; previous treatment: aOR=30.21, $p<.001$), and those who had received post-secondary education (versus those who did not) were more likely to be in treatment currently (aOR=2.87, $p=0.009$). Medication was the most common treatment for depression (77.6%), followed by individual therapy (56.5%). Adults reported several barriers to accessing treatment for depression, including financial and insurance issues, accessibility to appropriate care, and professionals' lack of understanding of depression in ASD.

Discussion: Findings from the current analysis provide needed information about how depressed adults with ASD were served in the community. Despite no significant sex difference in the rates of current depression status, women were more likely than men to receive a depression diagnosis; future studies and clinical practices are needed to better understand and capture depression in male adults with ASD. Moreover, while it is not surprising that depression diagnosis is the best predictor for depression treatment receipt, it highlights the importance of screening and identifying depression in adults with ASD in order to provide appropriate treatments in time. Awareness of depression and accessibility to related care also need to be improved.

References:

Hollocks, M. J., Lerh, J. W., Magiati, I., Meiser-Stedman, R., & Brugha, T. S. (2019). Anxiety and depression in adults with autism spectrum disorder: A systematic review and meta-analysis. *Psychological Medicine, 49*(4), 559–572.
<https://doi.org/10.1017/S0033291718002283>

Presentation 2 of 3

Presentation Title: Understanding associations between time spent in social activities and depressive symptoms in adults with ASD: mitigating effects of perceptions and loneliness

Presenting Authors: Linnea Lampinen¹, Ryan Adams²

Introduction: Studies of individuals with ASD often focus on the amount of time spent in social activities, and accordingly interventions often aim to increase the amount of time spent in social interactions. Given that individuals, especially those with ASD, have different levels of social motivation and social skills, it may be that the amount of time spent in social activities might not reflect how one feels about the amount of time spent, and in turn, how social activities impact well-being. In other words, it may be impactful to not only consider how much time an individual spends in social activities, but also how they feel about the amount of time spent in social activities (e.g., The amount of time I spend in social activities is just right/too little). To test this new approach for studying social activities, the current study examines how feelings about time spent in social activities moderates the effects of the amount of time spent in activities on depressive symptoms through the indirect effect of loneliness.

¹ University of California, San Francisco

² Cincinnati Children's Hospital Medical Center

Methods: Along with the depression and loneliness measures, the 315 adults with ASD also completed a questionnaire (revised based on Gotham et al., 2014) on the amount time spent (on a seven-point scale) and their perceptions of time spent (i.e., about right and too little) on six types of social activities. Total time in social activities was the dependent variable and the total number of “too little” time across the six social activities was examined as a moderator. The PROCESS macro Hayes (2018, version 3.4) was used to test a moderated mediation pathway.

Results: As seen in Figure 1, moderated mediation was found. For those who had 1 SD above the mean for total number of activities but who perceived that to be too little time, lower amount of total time spent across activities was associated with higher loneliness scores and in turn, higher loneliness scores were associated with greater depressive symptoms. For those at 1 SD below the mean for total number of activities who also perceived that to be too little time, there were no significant associations between total time spent in activities and depressive symptoms or loneliness, with no significant mediated effects found.

Discussion: Our findings indicate the perception of time spent is important in considering the subjective feeling of loneliness and the effects of social activities on depressive symptoms, especially among those who were spending more than average time in social activities but perceived too little time were spent. Thus, perception of time spent in social activities should be considered when designing interventions targeting the social experiences of those with ASD.

References/Citations:

Hayes, A. F. (2018). *Introduction to mediation, moderation, and conditional process analysis*. (2nd Ed.). New York: The Guilford Press.

Gotham, K., Bishop, S. L., Brunwasser, S., & Lord, C. (2014). Rumination and perceived impairment associated with depressive symptoms in a verbal adolescent–adult ASD sample. *Autism Research*, 7(3), 381–391.

Presentation 3 of 3

Presentation Title: The association between being fired from a job and mental health in young adults with ASD

Presenting Authors: Florencia Pezzimenti¹, Julie Lounds Taylor¹

Introduction: Previous studies have shown that individuals with ASD experience poorer employment outcomes than the general population (Wei et al, 2018, Shattuck et al. 2012), despite their desires and skills to work (Hendricks, 2010). Being fired from a job is one type of negative employment experience that is associated with mental health challenges in the general population, but has not been studied in adults with ASD. In this study, we examine the experiences of young adults with ASD who have been fired and test the demographic and mental health variables that are associated with being fired.

Methods: Employment status and job loss history were collected for the 315 adults described in the overview. As part of data on employment history, adults were asked whether they had ever been fired from a job and reasons why they were fired. Demographic characteristics and mental health status (i.e., BDI-II, DASS, Loneliness) were included as independent variables in regression analysis to: (1) identify demographic factors associated with being fired; and (2) understand the relationships between mental health and being fired after controlling for demographic factors. Qualitative responses about reasons for being fired were coded and analyzed.

Results: Older individuals were more likely than younger individuals to reported having ever been fired ($B=0.03$ $SE=0.005$, $p<0.001$). Level of education, sex, whether or not in school, and whether receiving benefits or not, were not associated with being fired. All differences in mental health symptoms between those who were fired and those who were not remained after

¹ Vanderbilt University Medical Center

controlling for demographic variables; being fired accounted for a 6.44 increase, on average, in depression scores on the BDI-II (B=6.44, SE=1.76, p<0.001), a 4 point increase in DASS anxiety scores (B=3.95, SE=1.22, p<0.01), a nearly 5 point increase in DASS stress scores (B=4.83 SE=1.35, p<0.001), a 3 point increase in loneliness scores (B=3.12, SE=1.38, p<0.05). From qualitative data, we found that almost half of those who had been fired before identified an internal reason as the main cause, with the most common reasons related to work performance, social difficulties, and attendance.

Discussion: The findings of associations between experiences of job loss and mental health highlighted the importance of understanding aspects of adults with ASD’s life experiences while identifying and treating mental health problems in this population. While directionality of effect could not be determined with the current data, it is possible that bi-directional relationships exist between employment experiences and mental health, providing potential insights into improving employment outcomes and treating mental health in this population: worse mental health (i.e., depression, anxiety, and stress) was significantly associated with the likelihood of having ever being fired. The qualitative comments also provide specific areas to target for mental health and employment.

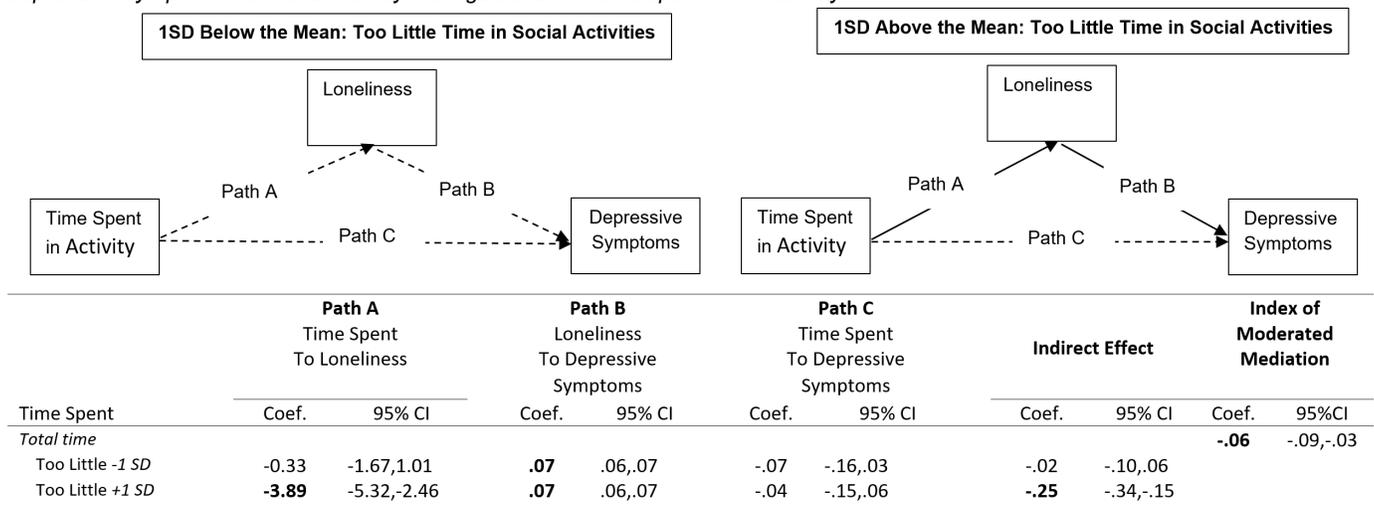
References/Citations:

Wei, X., Yu, J. W., Wagner, M., Hudson, L., Roux, A. M., Shattuck, P., & Blackorby, J. (2018). Job searching, job duration, and job loss among young adults with autism spectrum disorder. *Journal of Vocational Rehabilitation*, 48(1), 1-10.

Shattuck, P. T., Narendorf, S. C., Cooper, B., Sterzing, P. R., Wagner, M., & Taylor, J. L. (2012). Postsecondary education and employment among youth with an autism spectrum disorder. *Pediatrics*, 129(6), 1042–1049. <https://doi.org/10.1542/peds.2011-2864>

Hendricks, D. (2010). Employment and adults with autism spectrum disorders: Challenges and strategies for success. *Journal of vocational rehabilitation*, 32(2), 125-134.

Figure 1. Tests of *Moderated mediation for the indirect effects of loneliness in the association between time spent in activities and depressive symptoms as moderated by feelings about the time spent in the activity.*



Note. Paths with 95% CI that do not cross zero are in bold.