Effectiveness of a Tailored Intervention for Women With Attention Deficit Hyperactivity Disorder (ADHD) and ADHD Symptoms: A Randomized Controlled Study

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Importance: Women with attention deficit hyperactivity disorder (ADHD) and ADHD symptoms may experience difficulty carrying out desired life roles and activities.

Objective: To determine whether a 7-wk tailored occupation-based intervention can reduce perceived stress and ADHD symptoms and enhance perceived performance of and satisfaction with daily roles and activities among women with ADHD.

Design: Randomization to intervention (n = 11) and control (n = 12) groups.

Setting: Home and community.

Participants: Twenty-three participants ages 20–55 yr, English speaking, and with a self-reported diagnosis of ADHD.

Intervention: The intervention was administered for 7 wk in individual 1-hr sessions and addressed routine establishment, organization, time management, stress management, and sensory regulation in the home and community.

Outcomes and Measures: Adult Attention Deficit Hyperactivity Disorder Self-Report Scale, Perceived Stress Scale, and Canadian Occupational Performance Measure.

Results: At 1-wk postintervention, statistically significant differences were found between intervention and control groups in perceived stress (Z = –3.838, p < .000, d = –2.66), ADHD symptoms (Z = –3.605, p < .000, d = –2.17), and COPM Performance (Z = –4.074, p < .000, d = 3.04) and Satisfaction change scores (Z = –3.759, p < .000, d = 2.82).

Conclusion and Relevance: A 7-wk tailored intervention reduced perceived stress and ADHD symptoms and enhanced perceived performance of and satisfaction with desired occupational roles and activities in a sample of women with ADHD. Further research is warranted to determine whether the intervention can be useful to women with ADHD beyond the present sample.

What This Article Adds: This intervention may offer an effective nonpharmacological option for women with ADHD symptoms.

Attention deficit hyperactivity disorder (ADHD) is believed to be neurologically based and is characterized by enduring attentional problems, motor restlessness, and cognitive and motor impulsivity that affect a person's ability to function optimally in daily life activities (American Psychiatric Association [APA], 2013). ADHD is commonly diagnosed in childhood at a prevalence rate of 11% and a male to female ratio of 3:1 (Centers for Disease Control and Prevention, 2017; Vande Voort et al., 2014). The prevalence of adult ADHD varies from 4% to 6% (APA, 2013), and it is estimated that two-thirds of adult ADHD disorders are extensions of childhood ADHD (Jaconis et al., 2016).

Researchers have suggested that the male to female prevalence ratio is inaccurate and that females experience ADHD at similar levels to males but are underdiagnosed (Coles et al., 2012). Although boys with ADHD are often identified by their teachers because of motor impulsivity and inattention, girls with ADHD who may experience

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attentional problems and impulsivity without significant hyperactivity may not be identified by teachers as needing evaluation and treatment. Some studies have found that female children and adolescents who experience the ADHD symptoms of inattention, disorganization, poor time management, and distractibility are more likely to be misdiagnosed with depression and anxiety (Quinn & Madhoo, 2014). Depression and anxiety that occur in children and adolescents with undiagnosed ADHD symptoms may result from the inability to manage ADHD symptoms as they affect functional performance in the home, school, and community.

Much of the research exploring ADHD has been devoted to children and adolescents (Fredriksen et al., 2014; Hechtman et al., 2016). The research examining adult ADHD has thus far largely attempted to describe the phenomenon of adult ADHD (Fayyad et al., 2017; Vande Voort et al., 2014) and develop evaluation instruments (Stern et al., 2017). Research investigating intervention effectiveness for adult ADHD has primarily focused on pharmacological treatment (Biederman et al., 2017). The small body of research examining nonpharmacological treatment has found moderate effectiveness for pharmacological intervention combined with cognitive–behavioral therapy and psychoeducation (Philipsen et al., 2015).

Two notable occupational therapy studies have assessed interventions for adults with ADHD. In a one-group pretest–posttest design study that lasted 15 mo, Lindstedt and Umb-Carlsson (2013) examined how effectively assistive technology could enhance participation in the daily life activities of 19 adults (12 women and 7 men) with ADHD. The researchers found that although participants rated low-tech devices (e.g., weekly schedule planners, watches and alarms, weighted blankets) more highly than high-tech devices (e.g., mobile phone apps), participants did not perceive a change in quality of life or satisfaction in daily life activities from pre- to postintervention.

Stern et al. (2016) conducted a 12-wk randomized controlled trial for adults with ADHD comparing a computerized cognitive training program in the intervention group ($n = 26$) with a simpler cognitive training program with less executive function demand in the control group ($n = 13$). Outcome measures evaluated which intervention more effectively reduced ADHD symptoms and enhanced neurocognitive performance, perceived quality of life, and executive functions in daily life. Although both groups reported reduced ADHD symptoms, no statistically significant differences were found between groups on outcome measures. Both male and female participants were included in the study, but the ratio of male to female participants after attrition was unreported.

Although these two studies are pioneering in that they were among the first to address nonpharmacological intervention effectiveness for adults with ADHD (De Crescenzo et al., 2017), the unique and complex issues facing women with ADHD were not acknowledged. Largely absent from the adult ADHD body of literature across professions is research examining interventions specifically for women with ADHD, who present with symptoms that both overlap with and are unique from those of their male counterparts.

Studies have found that women with ADHD tend to have difficulty maintaining and succeeding in employment, school, and parenting and spousal roles. The ability to organize and implement tasks associated with each role, follow daily schedules and routines needed to support desired roles, prioritize and manage tasks in a timely manner, and regulate internal and external stressors to maintain consistent emotional responses may be difficult for women with ADHD (Fuller-Thomson et al., 2016). Moreover, although men with ADHD often rely on spouses or other family members who commonly provide assistance and compensation, studies have shown that women with ADHD tend to deal with symptoms and their impact on daily life activities in isolation (Cortese et al., 2016). Interventions addressing the unique needs of women with ADHD are doubly critical in light of the estimated large percentage of women who are misdiagnosed or who are not diagnosed (Ginsberg et al., 2014).

The purpose of our pilot study was to assess a 7-wk tailored intervention for women with ADHD and ADHD symptoms who have difficulty carrying out desired life roles and activities as a result of poor time management, organization of their physical environments, management of internal and external stressors, and regulation of internal and external stimulation. Our research question asked whether a 7-wk tailored occupation-based intervention could

enhance participants' satisfaction with desired daily roles and activities, reduce self-reported ADHD symptoms, and reduce perceived stress.

Method

Research Design

This intervention effectiveness study used randomization and control. Twenty-five women who self-reported a diagnosis of ADHD were recruited to participate and were randomly assigned to either the intervention or control group. The intervention group received the 7-wk intervention; the control group did not receive intervention. Both groups completed three outcome measures pre- and postintervention: the World Health Organization Adult ADHD Self-Report Scale (ASRS; Kessler et al., 2005), the Perceived Stress Scale (PSS; Cohen et al., 1983), and the Canadian Occupational Performance Measure (COPM; Law et al., 1994, 2005). The study was approved by the Columbia University Medical Center institutional review board. All participants provided written consent.

Participants

Twenty-five women were recruited for study participation through flyers posted in the community (e.g., college campuses, grocery stores) and in the meeting places of local support groups for women with ADHD. Inclusion criteria required participants to be age 20–55 yr, be English speaking, and have a self-reported diagnosis of ADHD. Participants were excluded if they had a severe comorbid condition, such as an eating disorder, major depression, bipolar disorder, schizophrenia spectrum disorder, or substance use disorder. Because studies have suggested that women with ADHD are commonly under- or misdiagnosed (Fuller-Thomson et al., 2016; Ginsberg et al., 2014), we did not exclude women who underwent ADHD screening procedures with inconclusive results. The first 25 women enrolled in the study were randomized to either the intervention or control group using a random number generator.

Instruments

Adult Attention Deficit Hyperactivity Disorder Self-Report Scale.

The ASRS is an 18-item, 5-point Likert scale (1 = *never;* 5 = *very often*) that requires 5 min to complete. The scale produces a total score ranging from 18 to 90, with scores >65 indicating moderate to severe ADHD symptoms. The scale was shown to have moderate internal consistency, with Cronbach's α values ranging from .63 to .72, $p < .05$, and moderate test–retest reliability with scores of $r = .58–.77$, $p < .05$. Content validity was found to be high by a panel of experts (Kessler et al., 2007).

Perceived Stress Scale.

The PSS is a 10-item, 5-point, self-report Likert scale (0 = *no stress*; 4 = *high stress*) that requires 5 min to complete. The scale yields a total score ranging from 0 (*no stress*) to 40 (*highest stress*), with scores >20 indicating a possible stress disorder. The PSS measures stress level in the past month and was intended for use by community-dwelling adults. Both internal consistency (Cronbach's $\alpha = .85$, $p < .01$) and test–retest reliability ($r = .85$, $p < .01$) were found to be high. The PSS was also moderately correlated with depressive and physical symptoms ($r = .76$, $p < .01$) and social anxiety ($r = .48$, $p < .001$) in a sample of community-dwelling adults ranging in age from 20 to 65.

Canadian Occupational Performance Measure.

The COPM is a 5-item, 10-point rating scale, designed to be completed conjointly by a therapist and participant, that requires approximately 30 min to administer (Law et al., 1994, 2005). The scale allows participants to identify and prioritize the five most important problems impeding their functional performance (from 1 = *most important* to

10 = *least important*) in activities of self-care, productivity (e.g., work, volunteerism, home management), and leisure; it can be used with clients of all ages and diagnoses. Participants are then asked to rate both performance and satisfaction levels of the identified activities on a 10-point scale (from 1 = *not satisfied* to 10 = *extremely satisfied*). An open-ended narrative section is provided to allow therapists to record participant comments.

The COPM is intended to be used pre- and postintervention to determine whether intervention affected participants' perceived performance and satisfaction levels in the identified activities. Test–retest reliability was reported to be high for both performance ($r = .89$, $p < .001$) and satisfaction ($r = .88$, $p < 0.001$; Cup et al., 2003). Interrater reliability was reported to be moderate for both performance (intraclass correlation coefficient [ICC] = .67, $p < .05$) and satisfaction (ICC = 0.69, $p < .05$; Eyssen et al., 2005). Convergent validity of the COPM with the Disability and Impact Profile was found to be moderate ($r = .74$, $p < .05$; Dedding et al., 2004).

Procedure

Intervention.

The intervention ran for 7 consecutive weeks and consisted of individual 1-hr sessions that took place in the home and community environments (e.g., work, school, grocery store) in which participants carried out the roles they identified as most important. The first author (Gutman) developed manualized intervention guidelines to facilitate intervention adherence that included training guidelines, an instruction manual, and a fidelity checklist. Intervention was based on a five-part approach (Gutman & Szczepanski, 2005) and helped participants to

1. Establish routines that supported desired role function using daily, weekly, and monthly schedule systems (e.g., participants created consistent times to sleep and wake, prepare and eat meals, complete school work, pack backpacks for the following day, complete weekly tasks such as laundry);
2. Organize personal physical environments (e.g., homes, work, school, car, handbag, backpack) using strategies that could be maintained over time (e.g., participants established assigned places for all essential items; used labels and color-coded systems for object location and identification; used hard-copy and electronic file systems for all important documents; used organizational bins and storage boxes for desks, closets, and backpacks; set a weekly time to reorganize each environment);
3. Enhance time management skills by identifying all needed daily activities, prioritizing the most important activities, breaking down overwhelming activities into smaller, more manageable subtasks, accurately predicting the required time of activities, and using electronic reminders to guide activity start and stop times;
4. Monitor and regulate internal and external sensory stimulation to avoid sensory overload by recognizing the relationship among mood, performance, and sensory stimulation as well as modify the environment to avoid specific sensory experiences that reduce optimal functioning (e.g., participants replaced fluorescent lights with incandescent or halogen lights and used screens to reduce glare, limited extraneous noise and distractions in the work or school setting with earbuds and screens, and dressed in layers to accommodate temperature changes in various settings); and
5. Develop effective stress management skills by planning breaks of 5–10 min into stressful activities, scheduling recreation and relaxation into each day, and using stress management techniques (e.g., breathing exercises, walking meditation) to decrease hyperactivity and restlessness.

All interventions were tailored to each participant's specific goals, self-identified desired roles and activities, and reported areas of difficulty.

Control Group.

The control group did not receive intervention or contact from the research team during the 7-wk intervention.

Interventionists.

The intervention was implemented by six occupational therapists who received 5 hr of training from the first author, who served as the supervising interventionist. Each therapist followed 2 intervention participants throughout the study to maintain consistency and build trust. Weekly 3-hr meetings were held by the intervention team to discuss each participant's progress and to plan the following week's intervention objectives. Interventionists were not blinded to study purpose.

Intervention Fidelity.

During each weekly interventionist meeting, therapists monitored the team's adherence to intervention guidelines, and each therapist completed a weekly eight-item fidelity checklist. All therapists averaged a 90%–95% agreement with manualized instructions over the 7-wk intervention.

Data Collection

The ASRS and the PSS were completed 1 wk before and 1 wk after intervention by both the intervention and control groups. Each participant completed the scales independently and submitted them electronically to the supervising interventionist. The COPM was administered in each intervention and control group participant's home by the occupational therapist assigned to that participant at 1 wk before and 1 wk after intervention.

Data Analysis

A Mann–Whitney *U* test was used to determine whether the intervention and control groups attained equivalent scores on the ASRS and the PSS at baseline. A Mann–Whitney *U* test was also used to determine whether a statistically significant difference existed between groups on these outcome measures at 1-wk postintervention (Portney & Watkins, 2015).

A Wilcoxon signed-rank test was used to determine whether a statistically significant difference existed between COPM Performance 1 and 2 scores (from 1 wk pre- and 1 wk postintervention) and between Satisfaction 1 and 2 scores (from 1 wk pre- and 1 wk postintervention) within each group. A Mann–Whitney *U* test was used to determine whether a statistically significant difference existed between COPM Performance change scores and Satisfaction change scores at 1-wk postintervention between groups (Portney & Watkins, 2015).

Data were analyzed using IBM SPSS Statistics (Version 24; IBM Corp., Armonk, NY), and significance level was set at $\alpha < .05$. A power analysis suggested that with a sample size of 12 (per group) and a standard deviation (*SD*) of 2, we were powered to detect between-groups differences of 2.4 points on COPM pre- and postintervention scores with a power of .80 at $\alpha < .05$ at a 95% confidence interval (Snedecor & Cochran, 2014). A COPM score of 2 points is considered to be a minimally detectable important clinical change (Law et al., 1994).

A fragility index was calculated for the dichotomous outcome of COPM change scores of ≥2. A *fragility index* is a measure of the robustness of a clinical trial's results and indicates how many participants are required to convert a study's outcomes from statistical significance ($p < .05$) to nonsignificance ($p > .05$; Walsh et al., 2014).

Results

Twenty-five women enrolled in the study. One participant withdrew from the intervention group, leaving 11; a second participant withdrew from the control group, leaving 12 ($N = 23$). Participants had a mean age of 30.86 ($SD = 10.22$; range = 20–53). Race and ethnicity were White ($n = 15$; 65.21%), Asian ($n = 5$; 21.74%), Hispanic/non-White ($n = 2$; 8.70%), and African-American/Black ($n = 1$; 4.35%). Participants were highly educated and completed graduate degrees ($n = 11$; 47.83%), college ($n = 8$; 34.78%), or some college ($n = 4$; 17.39%). Nineteen (82.61%) participants had a formal diagnosis of ADHD (8 in the intervention group; 11 in the control group);

4 (17.39%) underwent formal screening with inconclusive results (3 in the intervention group; 1 in the control group). Sixteen (69.56%) participants were on medication for ADHD symptoms (6 in the intervention group; 10 in the control group).

At baseline, no statistically significant differences were found between intervention and control group scores on the PSS ($Z = –0.062$, $p < .95$, $d = 0.12$) and the ASRS ($Z = –0.432$, $p > .66$, $d = 0.17$). At 1-wk postintervention, statistically significant differences were found between intervention and control groups, with large effect sizes, on the PSS ($Z = –3.838$, $p < .000$, $d = –2.66$) and the ASRS ($Z = –3.605$, $p < .000$, $d = –2.17$; Table 1). Statistically significant differences, with large effect sizes, were also found between COPM Performance 1 and 2 scores ($Z = –2.941$, $p < .003$, $d = –2.21$) and COPM Satisfaction 1 and 2 scores ($Z = –2.936$, $p < .003$, $d = –2.25$) for intervention group participants (Table 2). No statistically significant differences were found between COPM Performance 1 and 2 scores ($Z = –1.572$, $p < .11$, $d = 0.18$) and COPM Satisfaction 1 and 2 scores ($Z = –0.712$, $p < .47$, $d = –0.06$) for the control group. Statistically significant differences in COPM Performance ($Z = –4.074$, $p < .000$, $d = 3.04$) and Satisfaction ($Z = –3.759$, $p < .000$, $d = 2.82$) change scores were found, with large effect sizes, between the intervention and control groups (see Table 2).

Table 1. Pre- and Postintervention Raw and Mean Scores on the PSS and ASRS

PSS, Raw Score or *M* (*SD*)		ASRS, Raw Score or *M* (*SD*)	
Pre	Post	Pre	Post
Intervention Group			
32	14	83	59
25	14	62	45
22	16	62	53
27	12	66	50
31	12	69	60
20	12	68	53
34	12	79	56
24	20	62	61
26	12	69	43
25	11	71	49
34	11	74	44
27.27 (4.79)	13.4 (2.79)	69.54 (6.91)	52.09 (6.47)
Control Group			
29	25	63	57
27	24	71	71
34	33	85	75
13	15	62	64
33	27	79	71
21	19	64	63
23	19	76	70
26	22	65	60
26	32	59	65
32	28	65	64
24	26	55	57
31	29	74	68
26.58 (5.93)	24.91 (5.43)	68.16 (8.86)	65.41 (5.74)

Note. Each row represents scores for 1 participant. ASRS = World Health Organization Adult Attention Deficit Hyperactivity Disorder Self-Report Scale; *M* = mean; PSS = Perceived Stress Scale; *SD* = standard deviation.

A fragility index of 6 was calculated on the basis of number of participants who attained COPM change scores of ≥2 (indicating the minimally detectable important clinical change). Ten (90.9%) intervention participants and 0 control participants attained change scores of ≥2, indicating a moderate degree of intervention robustness (Walsh et al., 2014); however, note that this fragility index may have been lowered by the small sample size.

Discussion

Few nonpharmacological interventions exist for women with ADHD symptoms. Although two noteworthy occupational therapy intervention studies were uniquely designed for adults with ADHD, they did not target the unique constellation of symptoms experienced by women with ADHD symptoms and instead solely addressed either cognitive skills or the use of compensatory technology (Lindstedt & Umb-Carlsson, 2013; Stern et al., 2016). Research has shown that, in contrast to men, women with ADHD experience difficulty organizing and implementing tasks associated with major life roles and following schedules and routines needed to support those roles (Fuller-Thomson et al., 2016). Our 7-wk tailored intervention may have contributed to observed gains because we addressed routines supporting desired roles, organization of the physical environment, time management, regulation of internal and external sensory stimulation, and stress management directly within the environments in which participants identified role difficulty.

In their open-ended COPM narrative sections, many participants reported that they struggled with routines. The idea that routines need to be created to support the activities of each desired life role was novel for many participants, who did not have established routines for basic activities of daily living. Many did not have regular sleep–wake patterns or

Table 2. Pre- and Postintervention Canadian Occupational Performance Measure Raw and Mean Scores

Raw Score or *M* (*SD*)					
Performance 1	**Performance 2**	**Change**	**Satisfaction 1**	**Satisfaction 2**	**Change**
Intervention Group					
2.8	4.8	2.0	2.2	7.1	4.9
4.8	5.8	1.0	5.0	5.4	0.4
2.4	6.4	4.0	2.4	7.6	5.2
5.6	7.1	1.5	4.6	7.8	3.2
3.8	5.8	2.0	2.6	5.3	2.7
2.4	6.6	4.2	2.6	6.0	3.4
4.4	6.4	2.0	3.2	6.0	2.8
2.6	6.6	4.0	2.4	6.2	3.8
2.8	5.6	2.8	3.2	5.6	2.4
5.8	8.2	2.4	7.4	8.9	1.5
5.2	6.8	1.6	3.6	7.4	3.8
3.87 (1.33)	6.37 (0.88)	2.5 (1.1)	3.56 (1.56)	6.66 (1.16)	3.1 (1.38)
Control Group					
5.0	5.0	0.0	5.4	4.6	–0.8
6.8	6.2	–0.6	5.2	4.6	–0.6
4.6	5.0	0.4	4.0	4.0	0.0
6.2	5.8	–0.4	6.4	6.4	0.0
6.25	5.75	–0.5	6.5	6.5	0.0
5.0	3.8	–1.2	5.0	4.0	–1.0
5.0	5.6	0.6	5.6	6.0	0.4
6.4	6.4	0.0	2.2	2.8	0.6
4.6	4.0	–0.6	2.8	3.2	0.4
4.4	4.2	–0.2	4.2	5.2	1.0
5.5	5.9	0.4	3.8	4.0	0.2
3.8	3.8	0.0	3.2	4.0	0.8
5.29 (0.93)	5.12 (0.95)	–0.17 (0.57)	4.52 (1.38)	4.6 (1.19)	0.08 (0.62)

Note. Each row represents scores for 1 participant. *M* = mean; *SD* = standard deviation.

established routines for activities such as laundry or financial management. Students had no set place to complete schoolwork and often spent hours each night seeking a study location. Creating routines and habits for each desired role likely helped participants establish efficiency in the implementation of needed activities to support desired roles.

Although organizing the physical environment appears simple, it likely substantially contributed to participants' self-management. Almost none of the participants reported having set locations to store and locate essential items such as keys, credit cards, eye glasses, phones, and medical and financial records. Many participants lived among severe clutter and boxes that had never been unpacked from past moves. Through COPM assessment, participants expressed that prior attempts at organization felt overwhelming or did not last more than several weeks. Providing organizational and storage systems, and breaking down the steps of organization into small, manageable stages, likely enabled participants to organize their homes, cars, handbags, and desks. The idea that weekly routines needed to be established to reorganize each environment may have helped participants learn to maintain organization over the study period.

Time management was also a key intervention component that likely enhanced participants' performance and satisfaction ratings. Although almost all participants used phone calendars as scheduling devices, we found that phones were too small to record all essential details of daily and weekly schedules and actually increased confusion and disorganization. Most participants' time management skills were enhanced simply by transitioning to hard-copy schedule planners and chalkboard walls that could accommodate the ability to code and reprioritize scheduled activities. Procrastination was also addressed by teaching participants to break down overwhelming activities into small, manageable components that could be spread over time. In addition, many participants could not accurately estimate the time required for given activities and, as a result, commonly failed to complete all needed occupations scheduled for 1 day. Learning to more accurately estimate activity lengths and factoring in extra time for allotted activities may have helped participants with time management skills.

Similarly, many of the participants reported through COPM assessment that they were sensitive to lights, noise, odors, and temperatures, but they did not understand how such stimuli could accumulate over the course of a day to affect mood and concentration. We helped participants identify the specific environmental stimuli that caused headaches, restlessness, sluggishness, and feelings of sensory overload and taught them how to modify their

environments (and their exposure to stimuli) to prevent or decrease sensory overload. Learning such strategies may have helped participants feel greater control over their concentration levels.

Finally, although most of the participants were already engaging in some form of stress management, many waited until the end of the day to do so, after stress had accrued to a dysfunctional level. For many, engaging in several stress management periods of 5–10 min throughout the day to reduce restlessness and hyperactivity was novel, but the process may have helped participants better manage stress before it adversely affected concentration, focus, and the ability to adhere to a daily schedule.

Although we addressed the majority of participants' desired occupations identified on their COPM, we found that for 5 participants, 7 wk was not sufficient to address all five identified goals. For some participants, three or four goals took precedence, whereas for others, different areas that were not identified on the initial COPM required attention first. An intervention lasting 8–10 wk may have provided more sufficient time for attending to all five occupational areas.

Limitations

One limitation of this study was the small sample size of 23, which may have affected statistical power. Although a larger sample size would have increased statistical power, our power analysis suggested that our sample size was sufficient to detect between-groups differences of 2.4 points on COPM pre- and postintervention scores. Nevertheless, replication of this study with larger sample sizes is needed.

A second limitation was related to diagnosis. Nineteen participants had a formal diagnosis of ADHD (8 in the intervention group, 11 in the control group) and 4 underwent formal screening with inconclusive results (3 in the intervention group, 1 in the control group). Because there is evidence that women may experience ADHD differently from men (Fuller-Thomson et al., 2016) and that traditional ADHD evaluations may not adequately identify ADHD in women (Ginsberg et al., 2014), we did not want to exclude women whose screenings were inconclusive but who believed that they fit the criteria for an ADHD diagnosis. We also did not want to use a cutoff score on the ASRS as an inclusion criterion, because the scale authors did not identify one. Although both the intervention and control groups scored equivocally on the ASRS at baseline, we cannot be sure whether the control group experienced ADHD symptoms more severely than the intervention group.

Similarly, 16 participants were taking medication for ADHD symptoms (10 in the control group, 6 in the intervention group; 2 women in the intervention group were prescribed medication but did not take it). We do not know whether the 10 women in the control group who were taking medication experienced their symptoms more severely than those in the intervention group. We also do not know whether those taking medication experienced benefits from the medication that could have affected the study results.

Note that because the interventionists were not blinded to study purpose and administered the COPM at pre- and posttest, they may have biased participant responses. One final limitation involved our lack of follow-up data collection, without which we were unable to determine whether the gains made by the intervention group were maintained over time.

Future Research

Future research should involve larger samples with equal numbers of participants in each group who are taking medication and who have a formal ADHD diagnosis. Future research should also address intervention dosage to determine the optimal length of time needed to effect desired change. Follow-up data should be collected to determine whether observed gains were maintained at 3- and 6-mo postintervention. Additional research should examine how ADHD symptoms affect the participation in desired roles of women compared with men and how intervention can address such differences.

Implications for Occupational Therapy Practice

The results of this study have the following implications for occupational therapy practice:

- This study demonstrated that a 7-wk tailored intervention reduced perceived stress and ADHD symptoms and enhanced perceived performance of and satisfaction with desired occupational roles and activities in a sample of women with ADHD.
- Key intervention components included establishing routines that support the activities of desired roles, organizing the physical environment, enhancing time management, monitoring and regulating sensory overload, and enhancing stress management.
- Intervention should be carried out in the environments in which clients identify difficulty in desired and meaningful roles, and sufficient time should be allotted to address participant goals over time.
- Because research has shown that women experience ADHD differently than men and may not be identified as meeting traditional ADHD diagnostic criteria, occupational therapists should consider a client's perceived self-assessment of ADHD symptoms during evaluation and goal setting.
- Study results warrant further research to determine whether the intervention can be useful to women with ADHD beyond the present sample.

Conclusion

This study demonstrated support for a nonpharmaceutical intervention for women with ADHD and ADHD symptoms addressing the establishment of routines that support the activities of desired roles, organization of the physical environment, time management, the monitoring and regulation of sensory overload throughout the day, and stress management. Immediate future research should involve a replication study with a larger sample size and greater control of variables including whether participants have a formal ADHD diagnosis and are taking medication.

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