
Adolescent/Adult Sensory Profile and Obsessive–Compulsive Disorder

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KEY WORDS

- mental processes
- obsessive–compulsive disorder
- perception
- sensation
- sensory thresholds

OBJECTIVE. We sought to describe how the sensory processing of adults with obsessive–compulsive disorder (OCD) differs from that of the general population within the context of Dunn’s (1997) model of sensory processing and to evaluate the discriminant validity of the Adolescent/Adult Sensory Profile (AASP).

METHOD. Using unequal variance *t* tests, the AASP results of 51 adults with OCD were compared with the means of the AASP standardization study’s adult age group.

RESULTS. Adults with OCD scored higher than the means of the AASP standardization study’s adult age group on sensory sensitivity and sensation avoiding, consistent with predictions based on the OCD literature. Adults with OCD also scored higher on low registration and lower on sensation seeking.

CONCLUSIONS. The results provide a preliminary description of how the sensory processing of adults with OCD differs from that of the general population and preliminary support for the AASP’s discriminant validity.

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Sensory processing has been described as the way in which the nervous system receives, organizes, and understands sensory stimuli from within and outside the body to enable a person to determine how to react to environmental demands (Miller & Lane, 2000). Consequently, sensory processing has broad effects across the domain of occupational therapy, making it an integral factor in the practice of many therapists and a focal source for generating research and theory. One theory receiving considerable attention within the field of occupational therapy is Dunn’s (1997) model of sensory processing (see Figure 1).

In Dunn’s (1997) model, sensory processing is characterized by four constructs, the behavioral patterns resulting from interactions between neuroscience and behavioral concepts. The neuroscience concepts are represented on the model’s vertical axis as the neurological threshold continuum (see Figure 1), which refers to how readily the nervous system detects and reacts to stimuli. The lower the neurological threshold is, the greater the likelihood of the nervous system will be to detect and react to stimuli, and vice versa (Brown & Dunn, 2002).

Habituation, sensitization, and modulation are neurophysiological processes that permit the neurological threshold to vary along the continuum. Habituation produces higher thresholds, and sensitization produces lower thresholds. Modulation governs a continuous interchange that exists between habituation and sensitization, which determines the threshold’s position along the continuum (e.g., if modulation allows habituation to predominate, higher thresholds result; if it allows sensitization to predominate, lower thresholds result; Brown & Dunn, 2002).

The behavioral concepts of Dunn’s (1997) model are represented on the model’s horizontal axis as the behavioral response continuum (see Figure 1), which depicts how people behave in response to stimuli with respect to their neurological

		Behavioral Response Continuum	
		Accordance	Counteract
Neurological Threshold Continuum	High	Low Registration	Sensation Seeking
	Low	Sensory Sensitivity	Sensation Avoiding

Figure 1. Dunn's Model of Sensory Processing.

Note. From "The Impact of Sensory Processing Abilities on the Daily Lives of Young Children and Their Families: A Conceptual Model," by W. Dunn, 1997, *Infants and Young Children*, 9, p. 24. Copyright © 1997 by Wolters Kluwer Health. Adapted with permission.

thresholds. Responding in accordance with thresholds suggests behaviors that mirror thresholds. These are passive responses in which no attempts are made to alter or control stimuli. Responding to counteract thresholds suggests behaviors that are contrary to thresholds. These are active responses characterized by engaging with the environment to alter or control stimuli (Brown & Dunn, 2002).

A host of biopsychosocial factors (e.g., genetics, experience, and context) influencing the neurological threshold and behavioral response continua can cause a person's positions to vary anywhere along the two continua at any particular time. The interactions between the two continua produce four behavioral patterns whose strengths of expression change as a person's positions move along the continua. The closer the positions move to the outermost ends of a behavioral pattern's corresponding continua, the more strongly the pattern is expressed, and vice versa. These behavioral patterns, known as the *sensory-processing patterns*, are the constructs that characterize sensory processing within Dunn's (1997) model and are named low registration, sensory sensitivity, sensation seeking, and sensation avoiding (see Figure 1; Brown & Dunn, 2002).

Responding in accordance to high thresholds results in low registration, which entails a passive disregard of stimuli, meaning an individual tends to miss and have delayed responses to stimuli. Responding in accordance to low thresholds results in sensory sensitivity, which entails a passive discomfort with stimuli in which the individual has difficulty ignoring stimuli and readily responds to them. Responding to counteract high thresholds results in sensation seeking, in which stimuli are pleasurable and the individual actively creates additional stimuli. Responding to counteract low thresholds results in sensation avoiding, in which stimuli are overwhelming and the individual actively limits exposure to them (Brown & Dunn, 2002).

Research involving people from the general population (i.e., people with no conditions that significantly affect their sensory processing) has provided cross-sectional evidence that supports and expands on the previously described concepts from Dunn's (1997) model. This research includes

factor analytic and psychophysiological studies supporting the construct validity of Dunn's (1997) model (Brown, Tollefson, Dunn, Cromwell, & Fillion, 2001; Dunn & Brown, 1997; Dunn & Daniels, 2002; McIntosh, Miller, Shyu, & Dunn, 1999). Also included are factor analytic and multivariate studies that implicated the following: People express all four sensory-processing patterns to a certain degree (i.e., as opposed to expressing certain patterns and not others), and any combination of expressions is possible, even ones that seem incompatible (e.g., strongly expressing both sensation seeking and sensation avoiding; Brown et al., 2001; Dunn & Brown, 1997; Dunn & Daniels, 2002); the patterns' strengths of expression are relatively stable across the lifespan (Dunn & Daniels, 2002; Dunn & Westman, 1997; Pohl, Dunn, & Brown, 2003); the patterns' expressions are inclusive of stimuli from multiple modalities (Brown et al., 2001; Dunn & Brown, 1997; Dunn & Daniels, 2002); and there are no gender-related trends (Dunn & Westman, 1997). Although this research provides important preliminary support for Dunn's (1997) model, more research efforts are needed before it can be confirmed. For instance, longitudinal studies are needed to verify the findings from the cross-sectional studies described here (Dunn, 2001).

Another research area in need of expansion involves populations whose sensory processing is believed to differ from that of the general population (Brown et al., 2001). This study contributes to that body of research in two ways. First, we describe how the sensory processing of adults with obsessive-compulsive disorder (OCD) differs from that of the general population by comparing the sensory profiles of adults with OCD and adults from the general population. Here, *sensory profile* refers to the outcome measure provided by the Adolescent/Adult Sensory Profile (AASP), which is a set of four scores, one for each sensory-processing pattern. These scores measure how strongly their corresponding patterns are expressed; higher scores indicate stronger expressions and vice versa. These scores do not represent immediate states but instead represent stable strengths of expression (Brown & Dunn, 2002).

Second, we evaluate the AASP's *discriminant validity*, defined here as the ability of an instrument to detect differences between groups known to differ on the characteristics assessed by it. The OCD literature suggests that the sensory processing of adults with OCD differs in particular ways from that of the general population. If this study's results were consistent with those suggestions, then the AASP's discriminant validity would be supported.

Since the AASP's development, only one study with purposes similar to ours has been published (Brown, Cromwell, Filion, Dunn, & Tollefson, 2002). That study involved adults with schizophrenia and found that the mean scores for sensation avoiding and low registration for the group with schizophrenia were higher than those of adults from the general population. Also, the mean score for sensation seeking was lower for the group with schizophrenia. These findings were consistent with suggestions from the schizophrenia literature that provided support for the AASP's discriminant validity.

OCD and Sensory Processing

The American Psychiatric Association (2000) described *OCD* in the *Diagnostic and Statistical Manual of Mental Disorders* (4th ed., text revision, or *DSM-IV-TR*) as an anxiety disorder characterized by obsessions and compulsions severe enough to be very time consuming, to cause marked distress, or to cause significant impairment in areas of life functioning. *Obsessions* are defined as persistent thoughts experienced as being a product of one's own mind that are inappropriate, intrusive, distracting, and anxiety provoking. Obsessions are not simply excessive worries about real-life problems and are often unrelated to those problems. Common contents of obsessions include contamination, sexual imagery, doubt, violence, and a need for organizing. *Compulsions* are defined as mental acts or repetitive behaviors performed to reduce or prevent anxiety (most often the anxiety caused by obsessions). When accompanying obsessions, compulsions are either clearly excessive or unrealistically connected to the contents of the obsessions. Common compulsions include counting, repeating actions, cleaning, seeking assurances, and organizing.

Findings from the OCD literature suggest that adults with OCD express sensory sensitivity and sensation avoiding to a stronger degree than the general population. Sensory sensitivity entails difficulty ignoring and readily responding to stimuli (Brown & Dunn, 2002). Studies examining neuropsychological tasks calling for the inhibition of behavioral responses to stimuli have found that adults with OCD fail to inhibit their responses more often than do adults from the general population (Martinot et al., 1990). Also, studies

examining the electrophysiological measures that signify the efficiency of the inhibitory processes involved in those types of tasks found that adults with OCD exhibited less efficient processes than adults from the general population (Herrmann, Jacob, Unterecker, & Fallgatter, 2003).

Sensation avoiding involves engaging with the environment to limit exposure to stimuli (Brown & Dunn, 2002). Studies examining temperament found that adults with OCD exhibited stronger tendencies than the general population to impose stable structure and routine on the environment (Kusunoki et al., 2000). These are strategies associated with sensation avoiding that increase the predictability of the sensory environment, allowing people to limit their exposure to stimuli (Brown & Dunn, 2002).

Sensory sensitivity and sensation avoiding are associated with aversive affects toward stimuli ranging from discomfort to being overwhelmed (Brown & Dunn, 2002). A review of functional neuroimaging studies described how exposure to stimuli in adults with OCD can leave them with psychic distress, an outcome suggestive of aversive affects ranging from discomfort to being overwhelmed (Baxter, 1990). The review described how subcortical areas that normally suppress attention directed to sensations with little conscious effort are dysfunctional in adults with OCD and how, as a result, sensations can intrude into conscious awareness when mental processes should be otherwise engaged. Attention is continuously directed to the intrusive sensations unless cortical areas are activated to consciously suppress them. The increasing neuronal work of this cortical activation is what then produces psychic distress.

Method

Participants

Adults From the General Population. In a standardization study, Brown and Dunn (2002) administered the AASP to a sample of 950 adolescents and adults who were considered to represent the general population. The sample was divided into three age groups: adolescents (11–17 years old, $n = 193$, 49% male), adults (18–64 years old, $n = 496$, 49% male), and older adults (≥ 65 years old, $n = 261$, 42% male). Sensory profiles were determined for each group. Mean ages and standard deviations for each group were not reported, nor was the method of participant recruitment. Roughly 92% of the sample was White, and the majority were from the midwestern region of the United States. None of the sample had psychiatric disabilities, but an unreported number had unspecified medical conditions. No other demographic information was reported. For convenience, we used the

existing AASP standardization study's results for comparison with this study's OCD group.

Adults With OCD. Adults with OCD, referred to hereinafter as the *OCD group*, composed a convenience sample of anonymous OCD support group members. The two inclusion criteria were (1) having a formal diagnosis of OCD or nonclinical OCD (i.e., either OCD symptomatology not severe enough to warrant a formal diagnosis or OCD symptomatology that is severe enough but has never been formally diagnosed) and (2) being 18 years of age or older because the study was approved by the institutional review board only for that age range.

Instrument

The AASP consists of two parts completed independently by people ages 11 or older. The first part, the self-questionnaire, consists of 60 items. Each item describes a behavior related to an everyday sensory experience that is scored on a 5-point Likert scale indicating how frequently the behavior is performed. The scale ranges from 5 (*the behavior is almost always performed*) to 1 (*the behavior is almost never performed*). Each item also corresponds to one of four specific sensory-processing patterns, with 15 items corresponding to each pattern. The 60 items are organized on the self-questionnaire into six categories pertaining to the types of sensory experiences to which they relate (i.e., taste or smell, movement, visual, touch, activity level, auditory), with items corresponding to the four patterns interspersed evenly throughout each category. The second part of the AASP, the summary score sheet, sums the item scores for each pattern to produce the sensory profile (Brown & Dunn, 2002).

The development of the AASP involved the evaluation of item face validity, reliability, construct validity, and revisions to ensure understandability by the adolescent age group. This process yielded the following results: an 87.5% or better level of agreement between eight expert judges for sorting items (Brown et al., 2001); coefficient alphas for each pattern that ranged from .66 to .82 in a pilot study (Brown et al., 2001) and from .64 to .78 in the standardization study (Brown & Dunn, 2002); Pearson product-moment item-to-total pattern correlations that ranged from .11 to .56 (Brown et al., 2001); a factor analysis with a four-factor solution that was generally supportive of Dunn's model (Brown et al., 2001); skin conductance patterns of participants from the pilot study that were consistent with predictions based on Dunn's model (Brown et al., 2001); and items deemed to be understandable by the adolescent age group (Brown & Dunn, 2002).

Procedure

Following procedures approved by the University of Minnesota Institutional Review Board (HSC 0208S31501),

we wrote to contact people from 15 OCD support groups found on the Obsessive Compulsive Foundation's "Search for a Support Group" Web page (www.ocfoundation.org/quick_search_groups.html) asking permission to recruit their members to participate in the study. Four of the 15 groups granted permission. We then sent packets with modified AASP self-questionnaires, demographic sheets, consent cover letters, and return-addressed stamped envelopes to the contacts to distribute to group members willing to participate.

To maintain confidentiality, we removed all solicitations for identifying demographic information from the self-questionnaires. Instead, we used separate demographic sheets to collect data about gender, age, OCD type (i.e., formal diagnosis or nonclinical), comorbid diagnoses, and medication use. Consent cover letters informed group members that our receipt of their completed self-questionnaires and demographic sheets via the provided return-addressed stamped envelopes would be considered informed consent to participate.

Participant recruitment was approved for 12 months after the initial distribution of packets to support groups. On receipt, we evaluated the demographic sheets to determine whether participants were appropriate for inclusion into the OCD group; we completed AASP summary score sheets for those who were.

Data Analysis

We compared the OCD group's sensory profile to that of the AASP standardization study's adult age group (referred to hereinafter as the AASP group) because it most closely matched the OCD group in age. To compare sensory profiles, we used unequal variance *t* tests with the level of significance established at an alpha of .05. We compared low registration and sensation seeking with two-tailed *t* tests because these patterns had no predicted differences. Sensory sensitivity and sensation avoiding were compared with one-tailed *t* tests because the OCD literature suggested that adults with OCD express these patterns to stronger degrees than the general population.

We used unequal variance *t* tests in anticipation of the sample sizes differing greatly. The literature indicates that unequal variance *t* tests provide the best control for Type I and II errors when comparing the means of two independent samples with unequal sample sizes even if their variances are equal (Zimmerman, 2004). We performed other statistical tests along with each *t* test to facilitate a more holistic interpretation; these included 95% confidence intervals for each mean score involved, post hoc power analyses, and Cohen's *d* effect sizes with 95% confidence intervals. All statistical tests were carried out with SPSS software (SPSS, Inc., Chicago).

Results

Participants

The OCD group included 51 participants, of whom 41 had a formal diagnosis of OCD and 10 had nonclinical OCD. Of the 51 participants, 12 were men, 39 were women, 35 had comorbid diagnoses, and 35 were using medications (see Table 1). The group's mean age was 46 ($SD = 10.4$). Ages ranged from 18 to 62, and a chi-square goodness-of-fit test indicated the ages were normally distributed across the range of 18 to 64 years ($\chi^2[5, 51] = 4.18, p = .52$). No other demographic information was collected.

The OCD group's characteristics showed that the group was heterogeneous, which made it comparable in many ways to the population of adults with OCD. For example, world epidemiological studies have found that OCD occurs more often in women than in men, with female–male ratios ranging from 0.8 to 3.8 (Horwarth & Weissman, 2000). This study's female–male ratio was 3.25. World epidemiological studies have also found that the comorbidity rates for major depressive disorder range from 12.4% to 60.3% and those for having another anxiety disorder range from 24.5% to 69.6% (Horwarth & Weissman, 2000). This study's comorbidity rate for major depressive disorder was 45.1% and that for having another anxiety disorder was 23.5%. Finally, 43.1% of this study's OCD group were using selective serotonin reuptake inhibitors (SSRIs), a class of antidepressants with widely documented efficacy for reducing the severity of OCD symptoms (Storch & Merlo, 2006). This is not surprising considering that SSRIs are a first-line treatment for OCD (Storch & Merlo, 2006).

Sensory Profiles of the AASP Group and the OCD Group

Table 2 displays the results of the unequal variance t tests used to compare the sensory profiles of the OCD group and the AASP group. The OCD group's mean scores were higher

for low registration, sensory sensitivity, and sensation avoiding and lower for sensation seeking. These differences were all statistically significant and yielded high power, which suggests they were real and not a result of chance. The confidence intervals for the groups' means indicate that the OCD group's greatest departure from the AASP group was for sensory sensitivity and sensation avoiding (whose intervals overlapped only at the AASP group's uppermost boundaries and the OCD group's lowermost boundaries), followed by low registration (whose intervals overlapped more than those for sensory sensitivity and sensation avoiding), and then sensation seeking (in which the OCD group's interval fell completely within the AASP group's; see Table 2). Likewise, the effect sizes and effect size confidence intervals indicate the differences between the two groups with the greatest magnitudes were for sensory sensitivity and sensation avoiding, followed by low registration, and then sensation seeking (see Table 2).

Discussion

Although the results suggest that the differences observed between the OCD and AASP groups were unlikely to be a result of chance, limitations to this study's internal validity make it impossible to determine exactly why these differences existed. The OCD group encompassed many confounding variables, and the study's statistical analysis did not attempt to sort out their effects and OCD's effect. For example, the results for sensory sensitivity and sensation avoiding were consistent with the OCD literature that adults with OCD express these patterns to a stronger degree than the general population, which makes it tempting to conclude that OCD was accountable for these results. However, comorbid anxiety disorders and attention deficit disorders were also prevalent in the OCD group (see Table 1), both of which encompass conditions that may be associated with lower neurological thresholds and greater expressions of sensory sensitivity or

Table 1. Comorbid Diagnoses and Medication Use Most Prevalent Within the Obsessive–Compulsive Disorder Group ($N = 51$)

Diagnosis	n (% Group)	Medication	n (% Group)
Depressive disorders	26 (51.0)	Antidepressants	36 (70.6)
Major depressive disorder	23 (45.1)	SSRI	22 (43.1)
Dysthymia	3 (5.9)	Bupropion	6 (11.8)
Anxiety disorders	12 (23.5)	SNRI	4 (7.8)
Posttraumatic stress disorder	4 (7.8)	Tricyclic antidepressants	2 (3.9)
Generalized anxiety disorder	3 (5.9)	Monoamine oxidase inhibitors	1 (2.0)
Anxiety not otherwise specified	3 (5.9)	NSS	1 (2.0)
Social anxiety disorder	2 (3.9)	Anxiolytics	10 (19.6)
Attention deficit disorders	7 (13.7)	Benzodiazepines	6 (11.8)
Attention deficit disorder	4 (7.8)	Buspirone	4 (7.8)
Attention deficit/hyperactivity disorder	3 (5.9)		4 (7.8)

Note. SSRI = selective serotonin reuptake inhibitors; SNRI = serotonin–norepinephrine reuptake inhibitors; NSS = noradrenergic and specific serotonergic antidepressants.

Table 2. Adolescent/Adult Sensory Profile (AASP) Standardization Study's Adult Age Group ($n = 496$) vs. Obsessive-Compulsive Disorder (OCD) Group ($N = 51$)

Sensory Processing Pattern	<i>M</i> (95% CI)	<i>SD</i>	<i>S</i>	SEM	<i>t</i>	<i>df</i>	Power	<i>D</i> (95% CI)
Low registration					5.26*	57	.99	0.83 (0.54, 1.12)
AASP group	30.3 (23.3, 37.3)	6.3	39.1	3.6				
OCD group	36.0 (34.0, 38.1)	7.5	56.9	1.1				
Sensation seeking					-3.78*	60	.97	-0.56 (-0.85, -0.27)
AASP group	49.9 (41.9, 58.0)	6.8	46.7	4.1				
OCD group	46.1 (44.2, 48.0)	6.9	47.5	1.0				
Sensory sensitivity					7.22**	56	1.00	1.16 (0.86, 1.46)
AASP group	33.7 (25.0, 42.5)	7.6	58.2	4.5				
OCD group	43.9 (41.2, 46.5)	9.7	94.9	1.4				
Sensation avoiding					5.94**	54	1.00	1.00 (0.70, 1.29)
AASP group	34.6 (26.7, 42.5)	7.3	53.9	4.0				
OCD group	43.8 (40.8, 46.8)	10.8	117.1	1.5				

Note. The AASP standardization study's adult age group (AASP group) was adapted from the *Adolescent/Adult Sensory Profile: User's Manual* (p. 20), by C. E. Brown and W. Dunn, 2002, San Antonio, TX: Psychological Corporation. Copyright © 2002 by NCS Pearson, Inc. Reproduced with permission. All rights reserved. "Adolescent/Adult Sensory Profile" is a trademark, in the United States and/or other countries, of Pearson Education, Inc., or its affiliate(s). CI = confidence interval.

* $p < .001$, two-tailed. ** $p < .001$, one-tailed.

sensation avoiding (Dunn & Bennett, 2002; Neal, Edelman, & Glachan, 2002). Perhaps these comorbidities were really accountable for these results, or maybe they interacted with OCD to somehow boost OCD's effect.

Other confounding variables even more prevalent within the OCD group were comorbid depressive disorders and antidepressant medication use (see Table 1). Depressive disorders may be associated with lower expressions of sensation seeking and greater expressions of low registration (Dickens, McGowan, & Dale, 2003; Rotenberg & Cholostoy, 2004), and certain antidepressant medications may be associated with either raising or lowering neurological thresholds (Fann et al., 2005; Quednow et al., 2004). Possibly the OCD group's comorbid depressive disorders and use of antidepressant medication were accountable for the results for low registration and sensation seeking, and possibly these variables interacted with the variables promoting sensory sensitivity and sensation avoiding (e.g., OCD, comorbid anxiety, attention deficit disorders) to somehow dampen their effects.

Another limitation to the study's internal validity stems from the AASP's potential limitation to distinguish between behavioral patterns that do represent sensory processing and those that do not. Many of the behaviors described by the AASP's items do not specify what the actual motivation is behind their performance, and because of this, it seems possible that an individual's sensory profile may reflect more than just sensory processing. For example, many adults with OCD avoid objects or situations that provoke obsessions and compulsions, such as people prone to contamination obsessions who avoid crowds (American Psychiatric Association, 2000). In this case, avoidance of crowds is not motivated by an aversion toward the tactile stimuli received from bumping into other people or by an aversion toward any other sensory stimuli provided by crowds the way it would be in the expres-

sion of sensation avoiding. Differences in motivation like this may result in falsely inflated scores for sensation avoiding on the AASP, and if instances such as this were highly prevalent within the OCD group it would seriously call their results into question.

The characteristics of the OCD group provided important support for the study's external validity because the group was comparable in many ways to the population of adults with OCD. Nevertheless, this study does have limitations in external validity, including issues related to the OCD group. Demographic information such as ethnicity, geographic location, education level, and socioeconomic status was not collected from the group. We collected no information regarding the severity of group members' OCD symptomatology or comorbidities, nor did we collect any information regarding treatments they were receiving aside from the medications they were using.

The study's external validity is also limited because this study was the first to describe how the sensory processing of adults with OCD differs from the general population within the context of Dunn's (1997) model. A complete account of how these populations differ cannot realistically be achieved from the results of a single study. A complete account can only be achieved through the synthesis of the results from many studies investigating this matter.

Several other issues limit the study's internal and external validity, some of which relate to sampling. The groups involved were clearly subject to selection biases because they consisted of a preexisting group (i.e., the AASP group) and a convenience sample (i.e., the OCD group), and the independent variable of interest (i.e., OCD) was an attribute variable (Portney & Watkins, 2000). The groups also differed greatly in size, which we tried to rectify statistically in data analysis.

The study also operated under several assumptions. One was that the anonymous participants in the OCD group provided accurate information on their demographics sheets (i.e., their gender, age, diagnoses, medication use). Other assumptions were that the ages of the AASP group's participants were normally distributed across their reported age range of 18 to 64 as were the OCD group's participants and that the AASP group was free of any conditions that may have significantly affected their sensory processing. Finally, we assumed that the psychometric properties of the AASP were sound despite the results of studies that have brought its psychometric properties into question (Brown et al., 2001; Brown & Dunn, 2002).

Conclusions and Implications for Practice and Further Research

This study provided an account of how the sensory processing of adults with OCD differs from that of the general population, but because of the study's limitations, that account is not conclusive. This study also provided support for the AASP's discriminant validity because its outcome was consistent with suggestions from the OCD literature. However, the AASP's discriminant validation is far from being complete because this was only the second study to evaluate its discriminant validity (Brown, Cromwell, Filion, Dunn, and Tollefson's [2002] study was the first). This process requires multiple studies involving not only adults with schizophrenia and OCD but also adults from other populations whose sensory processing is believed to differ from the general population.

When considering this study's implications for practice, it is apparent that the sensory profiles of the OCD and AASP groups differed. What is not apparent is whether these differences were clinically significant because the study did not collect any information regarding the impact of the OCD group's sensory processing on their daily functioning. Further research efforts are needed to investigate not only how the sensory processing of adults with OCD differs from the general population but also whether these differences are clinically significant.

The OCD literature reviewed in this study suggests an interesting direction for future research efforts. The literature reviewed included work that used functional neuroimaging and electrophysiological and neuropsychological methods to examine certain neurocognitive mechanisms that may contribute to OCD's symptomatology (Baxter, 1990; Herrmann et al., 2003; Martinot et al., 1990). Although these mechanisms were examined in light of their potential contributions to OCD's symptomatology, the results of these studies suggest that they may also contribute to elevated expression of

sensory sensitivity and sensation avoiding. Thus, OCD's symptomatology and the elevated expression of these sensory-processing patterns may be linked through common neurocognitive mechanisms.

An example of this concept involves sensory sensitivity and response inhibition, a neurocognitive mechanism that plays a role in behaviors such as delaying gratification, controlling impulses, suppressing motor responses, and ignoring irrelevant information (Bannon, Gonsalvez, Croft, & Boyce, 2002). Studies investigating how response inhibition contributes to OCD's symptomatology have proposed that deficiencies in this mechanism diminish the ability to ignore and suppress responding to obsessions and compulsions (Herrmann et al., 2003; Martinot et al., 1990). Because it was not possible to directly evaluate response inhibition's relationship with obsessions and compulsions, these studies evaluated the functioning of this mechanism in adults with OCD by testing their abilities to ignore and suppress responding to more tangible and measurable sensory stimuli. The results found that adults with OCD had greater difficulties ignoring and responded more readily to stimuli than the general population, which directly reflects the elevated expression of sensory sensitivity. Thus, by finding indirect evidence of response inhibition's contribution to OCD symptomatology, these studies also found direct evidence of this mechanism's contribution to the expression of sensory sensitivity.

At this point, relationships like the one described here are mere hypotheses. If further research efforts were to confirm their existence, then further questions such as the following will be raised. Does the expression of sensory sensitivity and sensation avoiding increase as OCD's symptomatology increases in severity and vice versa? If so, does the increased expression of these patterns contribute to the clinically significant impairments in daily functioning caused by OCD's symptomatology (e.g., is an individual with OCD overwhelmed by an onslaught of obsessions, compulsions, and everyday sensory experiences?), and if they do will treatments aimed at managing the expression of these patterns also improve the severity of OCD's symptomatology and vice versa? The answers to these questions hold obvious practical importance for occupational therapy practitioners working with adults who have OCD. ▲

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