



Sensory Profile for Self-Awareness among University Students

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ABSTRACT: The main objective of this study was to analyze the sensory profile for self-awareness among university students. This study employed a quantitative, cross-sectional correlational design to examine the sensory processing patterns among university students. Participants were 60 undergraduate sports rehabilitation students recruited from a Universiti Pendidikan Sultan Idris using convenience sampling. Adult Sensory Profile (ASP) is a standardized self-report questionnaire that assesses an individual's sensory processing patterns across four quadrants; 1) Low Registration, 2) Sensation Seeking, 3) Sensory Sensitivity, and 4) Sensation Avoiding. The questionnaire consists of 60 items rated on a 5-point Likert scale, ranging from 1 (Almost Never) to 5 (Almost Always). The results for Low Registration showed almost 40% were categorized under similar to most people and more than most people. This trend differed in Sensory Seeking, where the majority is under similar to most people with 67.35%. On the other hand, the results showed that most student fall under Sensory Sensitivity category with 95.96%, similar patterned showed in Sensory Avoiding. In conclusion, this study emphasizes a significant link between sensory processing patterns and self-recognition in university students. Acknowledging the sensory foundation of self-awareness could open up new avenues for enhancing psychological health, academic success, and personal growth in young adults experiencing higher education settings.

Keywords: sensory profile; self-awareness; sensorimotor integration; intervention; sensory processing disorder.

I. INTRODUCTION

Sensory processing pertains to the nervous system's capability to receive, organize, and interpret sensory data from the environment and the body (Dunn, 1997). Differences in sensory processing such as hypersensitivity or hyposensitivity can influence a person's interaction with their surroundings and their internal feelings. The overlap of sensory processing and self-awareness is an important yet fairly overlooked field. Patterns of sensory processing influence the amount and quality of sensory information individuals focus on, subsequently impacting their capacity to perceive and manage internal states (Ben-Sasson et al., 2009).

The Adult Sensory Profile (ASP), a standardized self-assessment instrument rooted in Dunn's Model of Sensory Processing, offers a systematic approach to assess sensory processing patterns (Brown & Dunn, 2002). By recognizing specific sensory preferences and limits, the ASP can indirectly shed light on elements of self-awareness especially how an individual perceives and reacts to sensory information both internally and externally. The Sensory Profile, particularly in its Adult version, encourages self-reflection by asking individuals to describe their responses to different sensory stimuli (Brown & Dunn, 2002). This self-evaluation can increase awareness of sensory triggers and preferences, allowing individuals to gain a deeper understanding of their

sensory environment and its impact on mood, behavior, and relationships. There are into 4 quadrants in Sensory Profile as showed in Figure 1. The left side showed the Low Registration, Sensory Seeking, Sensory Sensitivity and Sensory Avoiding quadrants in Sensory Profile. The y-axis represents the neurological threshold continuum while x-axis showed the self-regulation continuum. The right side showed that each of these quadrants consists of 5 sub-items such as (- -) Much less than most people, (-) Less than most people, (=) Similar to most people, (+) More than most people and (++) Much more than most people.

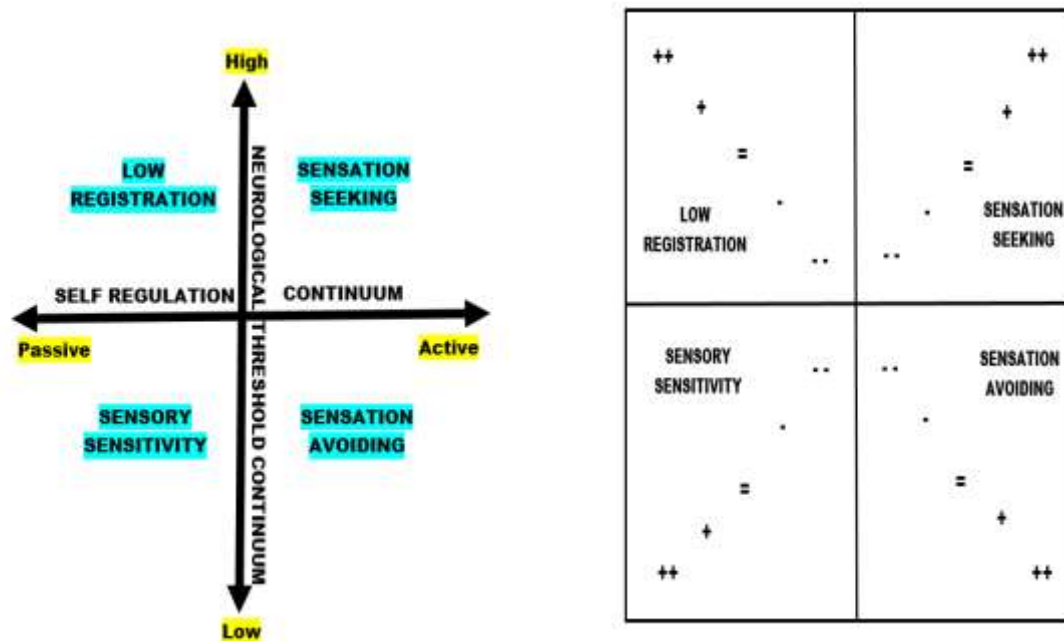


Figure 1: Sensory Profile based on four quadrants

Self-awareness is a core concept in psychology, essentially defined as the ability to acknowledge and contemplate one's own internal states, feelings, actions, and sense of self (Morin, 2006). It includes an intentional understanding of oneself as a person, which involves awareness of emotions, thoughts, physical sensations, and how others perceive them (Duval & Wicklund, 1972). Self-awareness is essential for emotional regulation, making decisions, social interactions, and mental well-being (Eurich, 2018). From philosophical and psychological perspectives, self-awareness is viewed as a complex cognitive function that arises when individuals form an internal representation of themselves, frequently referred to as metacognition capacity to reflect on one's own thought processes (Flavell, 1979). Neuroscientific studies indicate that self-awareness activates particular brain areas, such as the prefrontal cortex and the insula, which are linked to introspection and interoception, respectively (Craig, 2009; Fleming & Dolan, 2012).

Studies show that heightened sensory self-awareness is linked to better emotion regulation and lower anxiety levels (Dunn et al., 2022). For instance, a person who identifies their inclination for sensory avoidance in noisy settings can create coping mechanisms like finding tranquil areas or utilizing noise-canceling headphones. Likewise, understanding sensory-seeking behavior may promote intentional integration of movement or tactile stimulation to sustain concentration and emotional equilibrium. Additionally, incorporating interoceptive awareness into sensory processing evaluations enhances self-awareness by linking external sensory stimuli with internal bodily signals (Mehling et al., 2012). Interventions based on mindfulness frequently utilize this link, instructing people to observe physical sensations without judgment, which enhances self-regulation and psychological resilience (Khoury et al., 2015).

Imbalances or inaccuracies in self-awareness are noted in various clinical groups with sensory processing variations, including autism spectrum disorder (ASD), attention-deficit/hyperactivity disorder (ADHD), and

anxiety disorders (Geurts et al., 2014; Garfinkel et al., 2016). Improving sensory self-awareness in these groups may decrease maladaptive behaviors and enhance quality of life. Occupational therapists and healthcare professionals utilize sensory profiles to shape intervention strategies that enhance self-awareness while developing sensory regulation abilities. Sensory diets is customized daily regimens that include sensory input suited to an individual's characteristics which depend significantly on the client's self-awareness for effective application (Pfeiffer et al., 2015). In both educational and work environments, promoting sensory self-awareness enables individuals to seek accommodations and support that match their sensory requirements, enhancing inclusion and efficiency (Ashburner et al., 2014). The main objective of this study was to analyze the sensory profile for self-awareness among university students.

II. METHODOLOGY

This study employed a quantitative, cross-sectional correlational design to examine the sensory processing patterns among university students. The approach allowed for the assessment of associations between sensory profile dimensions and different aspects of self-awareness within a single time frame. Participants were 60 undergraduate sports rehabilitation students recruited from a Universiti Pendidikan Sultan Idris using convenience sampling. Inclusion criteria required participants to be:

- i. Between the ages of 18 and 25,
- ii. Able to provide informed consent,
- iii. Free from any diagnosed neurological or psychiatric conditions

Adult Sensory Profile (ASP) is a standardized self-report questionnaire that assesses an individual's sensory processing patterns across four quadrants; 1) Low Registration, 2) Sensation Seeking, 3) Sensory Sensitivity, and 4) Sensation Avoiding. The questionnaire consists of 60 items rated on a 5-point Likert scale. The ASP has demonstrated good reliability and validity in previous research.

Data collection was conducted online using the Google Forms. Participants were invited to complete the informed consent form prior to accessing the questionnaires. The survey took approximately 15–20 minutes to complete. Participants were assured of confidentiality and informed that participation was voluntary, with the option to withdraw at any time without penalty. Ethical approval was obtained from the Research Ethics Committee. All procedures adhered to ethical standards in accordance with the Declaration of Helsinki. Descriptive statistics (mean, standard deviation, frequencies) were computed to summarize demographic characteristics and questionnaire scores. All analyses were conducted using SPSS version 30, and significance levels were set at $p < 0.05$.

III. RESULT

The results in Figure 2 - 5 demonstrated the sensory profiles into 4 quadrants; Low Registration, Sensory Seeking, Sensory Sensitivity and Sensory Avoiding. Each of these quadrants consists of 5 sub-items; (- -) Much less than most people, (-) Less than most people, (=) Similar to most people, (+) More than most people and (++) Much more than most people. For Low Registration, almost 40% were categorized under similar to most people and more than most people. This trend differed in Sensory Seeking, where the majority is under similar to most people with 67.35%. On the other hand, the results showed that most student fall under Sensory Sensitivity category with 95.96%. The results showed similar patterned with mostly fall under Sensory Avoiding.



Figure 2: Low Registration in Sensory Profile among university students

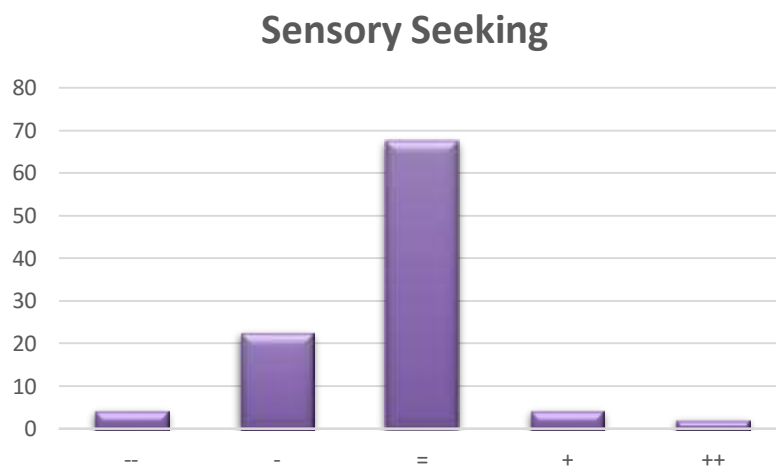


Figure 3: Sensory Seeking in Sensory Profile among university students

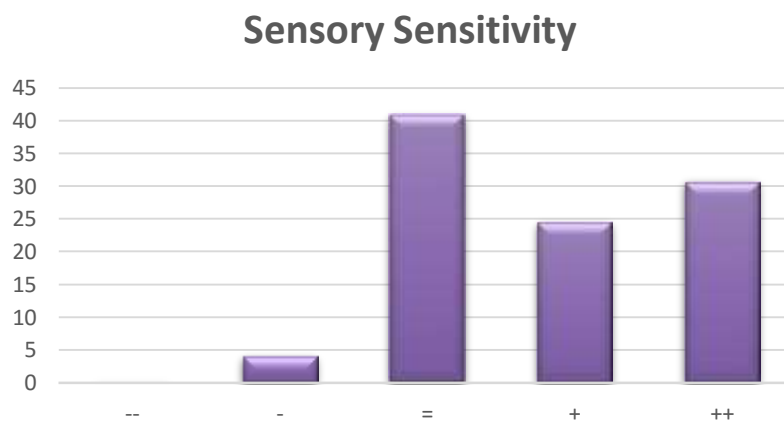


Figure 4: Sensory Sensitivity in Sensory Profile among university students

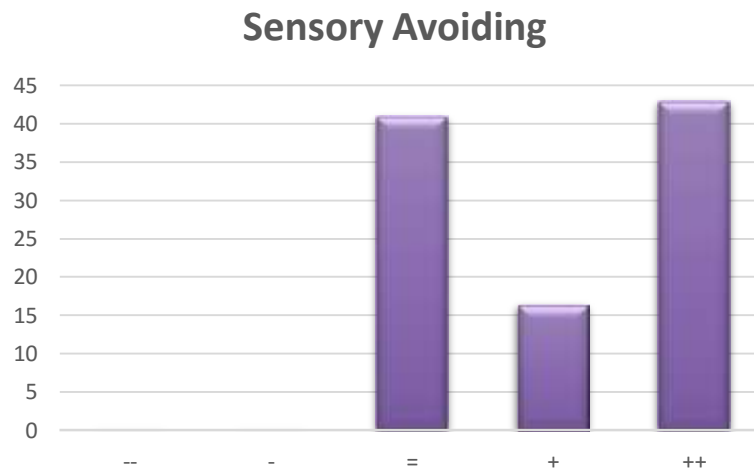


Figure 5: Sensory Avoiding in Sensory Profile among university students

IV. DISCUSSION

This study examined the four quadrants of sensory profile among university students. The results indicated notable connections between certain sensory profile quadrants and aspects of self-awareness, implying that individuals' methods of processing sensory information could affect their self-perception and self-reflection. In line with our hypotheses, low registration and sensory sensitivity significantly correlated with private self-consciousness, suggesting that students who under or over respond to sensory stimuli might be more focused on their inner thoughts. This aligns with Dunn's Model of Sensory Processing (1997), which suggests that people's neurological thresholds influence their behavior and perception. The increased self-focus in these people may arise from the necessity to internally manage or comprehend either the deficiency or excess of sensory information.

Conversely, sensation seeking showed a positive correlation with public self-consciousness, indicating that students who pursue sensory experiences might also be more aware of others' perceptions of them. This may be attributed to their inclination towards high-arousal settings, which frequently entail social engagement and external affirmation, thus heightening consciousness of external actions. Notably, sensation avoiding displayed a slight positive correlation with social anxiety, supporting earlier studies that link sensory defensiveness with unease in social settings. This discovery has practical significance for comprehending the difficulties encountered by students who exhibit increased sensory avoidance behaviors, especially in group situations or crowded settings common in university life. These results correspond with earlier studies emphasizing the relationship between sensory processing and social-emotional functioning (Brown & Dunn, 2002). They further enhance the comprehension of self-awareness by incorporating sensory viewpoints into cognitive-affective frameworks of self-reflection.

Grasping the sensory foundations of self-awareness can enhance student support services, especially in areas like mental health and academic counseling. For example, understanding that a student's sensory sensitivity may affect their inclination towards rumination or anxiety could inform how interventions are designed including sensory regulation techniques together with cognitive-behavioral methods. Additionally, this understanding could enhance inclusive education methods. Environments that consider sensory needs and tailored teaching methods may enhance educational experiences for neurodiversity learners, especially those with unusual sensory profiles who might otherwise find self-regulation or social interaction challenging. A number of restrictions must be recognized. Initially, the application of self-report tools might lead to social desirability bias or distortions in self-assessment. Additionally, the cross-sectional design restricts causal conclusions. Longitudinal or experimental approaches would be required to determine the direction of the

relationship between sensory processing and self-awareness. Moreover, the sample was collected from one university through convenience sampling, potentially affecting the generalizability of the results.

Future research ought to encompass a broader range of populations and incorporate qualitative elements to investigate individual experiences of sensory processing more thoroughly. Additional studies are recommended to investigate these connections in particular student groups, like those with ADHD or Autism Spectrum Disorder, where sensory variations and self-awareness issues are more evident. Exploring how emotional regulation, mindfulness, or executive functioning serve as mediators or moderators could further enhance knowledge of these dynamics. Interventions for adults with different sensory processing patterns should be tailored according to Dunn's Sensory Profile quadrants, as shown in Table 1. This ensures support that matches individual sensory thresholds.

For those with low registration, strategies involve increasing sensory input, such as brighter lighting, alarms, and movement reminders. Sensation seekers benefit from enriched environments that provide active engagement through various sensory experiences, like tactile activities, music, or exercise. On the other hand, individuals with sensory sensitivity need strategies that reduce overwhelming stimuli, such as minimizing noise, glare, or unexpected touch. Sensation avoiders require structured, predictable, and low-stimulation environments to maintain comfort and participation. Research shows that personalized interventions can improve daily functioning, work productivity, and quality of life for adults with sensory processing differences (Brown et al., 2001; Dunn, 2007).

Table 1: Intervention for all senses in Sensory Profile

Sense	Low Registration (High threshold, passive)	Sensation Seeking (High threshold, active)	Sensory Sensitivity (Low threshold, passive)	Sensation Avoiding (Low threshold, active)
Vision	Increase lighting, high-contrast colour, visual reminders, organized environment	Provide stimulating visuals (art, dynamic displays, varied colour schemes)	Reduce glare, limit visual clutter, use calming colour, structured spaces	Use dim lighting, minimal décor, sunglasses/visors for comfort
Hearing	Use alarms, clear verbal cues, background music for alertness	Allow variety of auditory input (music, rhythmic sounds, podcasts)	Provide quiet zones, noise-reducing headphones, reduce unpredictable sounds	Control noise with white noise machines, earplugs, private spaces
Touch	Encourage tactile reminders (textured objects, weighted items, grooming prompts)	Provide tactile activities (fidgets, varied textures, massage, crafts)	Limit unexpected touch, choose soft familiar fabrics, teach social boundaries	Minimize physical contact, allow personal space, select comfortable clothing
Proprioception	Use posture/movement reminders, resistance bands, weighted objects for awareness	Encourage heavy work, exercise, resistance training, dynamic seating	Avoid overwhelming physical activities, promote slow controlled movements	Provide structured, predictable movement routines, allow stable seating
Taste / Smell	Use strong flavours/spices, scented	Encourage varied food textures/	Avoid strong smells, bland diet if needed,	Stick to predictable, preferred foods,

	reminders (coffee, citrus)	(coffee, flavours, aromatherapy, food exploration)	reduce exposure to perfumes	fragrance-free environments
Vestibular	Offer balance/ coordination exercises, movement reminders (short walks, stretching)	Provide high-intensity movement (spinning, jumping, dancing, sports)	Reduce sudden movement, ensure stable seating, slow transitions	Create controlled settings, avoid crowded/ busy spaces, allow rest

For university students, understanding their sensory processing patterns can improve self-awareness, stress management, and involvement in academic and social activities. Using Dunn's Sensory Processing Framework, students can think about whether they tend to seek or avoid certain sensory inputs. They can then apply strategies such as changing their study environment by reducing noise or adjusting lighting, or adding movement breaks to help with concentration and wellbeing. Research indicates that being aware of their sensory preferences is linked to better self-regulation and coping skills in young adults. This helps them perform better academically and manage their daily routines (Brown et al., 2001; Engel-Yeger & Dunn, 2011). When students identify their sensory preferences, it promotes both personal growth and academic achievement.

V. CONCLUSION

Self-awareness is a complex concept crucial for effective functioning in cognitive, emotional, and social areas. Its interaction with sensory processing emphasizes the significance of acknowledging both internal bodily conditions and external sensory inputs. Instruments such as the Adult Sensory Profile act as links to improve this understanding, providing people with knowledge to navigate sensory settings and emotional reactions successfully. Further investigation is required to enhance comprehension of how sensory self-awareness evolves among various populations and how it can be utilized in therapeutic and educational strategies. Acknowledging the sensory foundation of self-awareness could open up new avenues for enhancing psychological health, academic success, and personal growth in young adults experiencing higher education settings.

VI. REFERENCES

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