

ISSN: 2584-0142

PSYCHOPEDIA
JOURNALSInternational Journal of
Interdisciplinary Approaches
in Psychology (IJIAP)

The Role of Sensory Processing Sensitivity in Emotional Regulation among Young Adult Population

¹**Praveen Dhiman**, *Student, MA Clinical Psychology, Department of Psychology, UILAH, Chandigarh University*

praveendhiman0200@gmail.com

²**Pooja Jaiswal**, *Assistant Professor, Department of Psychology, UILAH, Chandigarh University*

pooja.e14944@cumail.in

Abstract: Sensory Processing sensitivity (SPS) along with emotional regulation difficulties, and their interaction with stressful periods, such as young adulthood (i.e. ages 18–25), may represent a time when such stressors may reduce emotional and social functioning in this population. It is important to understand this relationship as maladaptive SPS and emotional dysregulation have been associated with increased stress, anxiety, and even clinical disorders. The present study aims to examine the relationship between Sensory processing sensitivity and Emotional regulation in young adult population using a quantitative study design to determine the relationship between sensory processing sensitivity and emotional regulation, with sensory processing as the independent variable and emotional regulation as the dependent variable. The hypothesis suggested that there will be significant negative relationship between the two variables where a higher SPS will be associated with a lower level of emotional regulation. The findings of this study conducted on 100 young adults using standardised tests, Highly sensitive person questionnaire (HSPQ) by Elaine Aron and Emotional Regulation questionnaire by Gross and John align with the proposed hypothesis and revealed a significant relationship between SPS and Emotional Regulation as predicted by the values of coefficient where p value = 0.042. This suggests that higher sensory processing is associated with lower emotional regulation abilities. The Beta coefficient of -0.203 indicate a small but negative relationship between the two variables. The

findings of this study are important to highlight the importance of SPS in the emotional conduct of an individual, especially a young adults.

Keywords: *SPS, Emotional Regulation, Young Adulthood, Significant, Negative Relationship.*

1. Introduction

Psychologists Elaine and Arthur Aron coined the terms sensory processing sensitivity (SPS) in the mid 1990's. Sensory processing sensitivity (SPS) may function as one of the predispositions that render individuals more susceptible to the adverse effects of life stress. SPS is a stable trait characterized by deep information processing, strong emotional responses and empathy, easy notice of subtle changes in the environment, and easy arousal by external stimuli (Aron & Aron, 1997). Previous studies have suggested that SPS is associated with negative outcomes. For instance, compared with their peers, people high in SPS reported poorer health conditions (Benham, 2006), more anxiety and depression symptoms (Liss et al., 2005), and lower life satisfaction (Booth et al., 2015).

Although Aron & Aron (1997) deemed SPS as a coherent construct. However, recent studies have proposed and empirically verified that SPS is composed of three dimensions of constructs (Pluess et al., 2018): 1) aesthetic sensitivity (AES) refers to the depth of aesthetic experiences; 2) low sensory threshold (LST) refers to the sensitivity to external stimuli; and 3) ease of excitation (EOE) refers to the susceptibility to internal and external stimuli. Even though the three dimensions are positively correlated with each other (Pluess et al., 2018), each of them is linked to different personality characteristics and adjustment outcomes.

Winnie Dunn's insights

Dunn(1997) suggested a model which refers to the interaction between the neurological threshold and active and passive self-regulation strategies. This model investigates the relationship between the individual neurological thresholds and behavioral responses derived from self-regulation strategies (Brown et al., 2001). In low neurological threshold, the nervous system is activated by minimal stimuli while in high neurological threshold a large amount of stimuli is needed for activation. In regard to self-regulation strategies, individuals with passive strategies allow stimuli to occur while subjects with active strategies act to control the amount of stimuli around them (Dunn, 1997). According to Dunn's model, four sensory processing patterns exist. Each of these patterns describes the interaction between the individual's neurological threshold and behavioral responses. The first two patterns refer to individuals with hyposensitivity:

1. Low registration – may be found in individuals with high neurological thresholds (requiring high intensity stimuli to detect sensory input) and passive self-regulation strategies (failing to detect stimuli that others are able to perceive). They may be considered as indifferent, having lack of motivation or interest in initiating social relationships. They may show inability to recognize emotions, express emotions or infer other's emotions from bodily language or facial expressions but they may also lack of sense of humor (Dunn, 1997).
2. Sensation Seeking – may be identified in individuals with high neurological thresholds and active self-regulation strategies. They experience pleasure from exciting sensory environments and behaviors. They often show risk-taking behaviors that are usually expressed by lack of physical boundaries. They may be also considered by others as irresponsible, impatient and lacking of respect (Dunn et al., 1997).

Emotional Regulation

Emotional Regulation generally refers to the process of modulating one or more aspects of an emotional experience or response (Campos and Sternberg, 1981). Adaptive ER is assumed to be intrinsic to mental health and adaptive functioning generally (Gross & Munoz, 1995). One crucial finding in the field of emotion regulation is that emotion-regulation strategies can have very different outcomes in different contexts (Cheng, 2001). Accordingly, several recent theoretical accounts have emphasized the importance of flexible choice among emotion-regulation strategies in the face of different situational demands (Gross, Kashdan & Rottenberg, 2010). Emotional self-regulation, referring to the understanding, acceptance, and modulation of emotional responses, is a process that children and adolescents carry out in order to adapt to their psychosocial environment, orienting themselves toward the achievement of their evolutionary goals and favoring their mental health (Van Lissa et al., 2019). The achievement of emotional self-regulation allows progress in the acquisition of greater autonomy, at the same time that it is related to the development of adequate self-esteem and feelings of self-efficacy that facilitate social and school adjustment. The emotional educational process is continuous and permanent throughout the life cycle (Gallardo Fernández & Saiz Fernández, 2016), favouring the individual in order to achieve emotional competence which allows to regulate their emotions. Emotions can be either adaptive or maladaptive, making their regulation vital for good health and well-being. Positive emotions promote mental and physical health (Diener & Seligman, 2002), (Richman et al., 2005) and broaden the scopes of attention and cognition (Fredrickson, 2004).

Although previous studies have studied in detail the concepts of SPS and Emotional regulation separately, there have not been a lot of studies focussing on the relationship of these two broad topics. Most studies focus on either the clinical population or the old and middle aged population hence leaving a gap in understanding of this relationship in young adults which has been explored through this study by focussing on individuals aged 18-25 years of age.

1.1 Objective

The objective of the current study is to examine the relationship between Sensory processing sensitivity and Emotional regulation in young adult population.

1.2 Hypothesis

H1: It is hypothesized that there will be a negative relationship between SPS and emotional regulation.

2. Methodology

2.1 Study Design

This research uses a quantitative study design to determine the relationship between sensory processing sensitivity and emotional regulation, with sensory processing as the independent variable and emotional regulation as the dependent variable.

2.2 Sample population and techniques

The target population included young adult individuals from 18 to 25 years of age as defined by the World health organisation. The inclusion criteria required individuals to speak English, and be within the determined age range. The exclusion was done if individuals belonged to a psychology background to avoid potential bias. A purposive sampling technique was employed along with quota sampling technique to ensure a balanced representation of all groups. A total of 200 responses were collected via Google forms, the link of which was submitted through snowball sampling approach via Whatsapp and Instagram.

2.3 Measures

The survey included four demographic questions followed by standardised tests:

Highly sensitive person questionnaire (HSPQ) (Elaine Aron, 1997) The 27-item questionnaire functions as a monitoring instrument that helps identify Sensory Processing Sensitivity (SPS) in people through self-assessment methodology. The HSPQ includes 27 rating items that span from “not at all” to “extremely” or “strongly disagree” to “strongly agree” on a Likert rating scale. The measurement tool evaluates different types of sensitive

reactions which include developing sharp noise perception and detecting small environmental details and intense experience of mood shifts in others. The scoring method requires an addition of participant responses from which higher total scores correspond to greater sensory sensitiveness. According to Aron the diagnosis of someone as a “highly sensitive person” cannot be determined from a specific score range yet he suggested that persons who score above the top third of the total range likely meet the criteria. The assessment tool known as the HSPQ exhibits reliable scores through studies showing consistency metrics (Cronbach’s alpha) at or above 0.85 level in various population sets. Currently research shows that HSPQ validity rests on its connections to neuroticism and introversion and emotional reactivity tests but researchers see these traits as separate entities from HSPQ. This scale is employed extensively throughout clinical and non-clinical domains to analyze the connection between sensory sensitiveness and personality traits and stress along with emotional regulation.

Emotional Regulation questionnaire (Gross and John, 2003) Marked by James J. Gross and Oliver P. John in 2003, the Emotion Regulation Questionnaire (ERQ) is a relatively well known self report measure to assess individual differences in habitual usage of two main emotion regulation strategies: cognitive reappraisal and expressive suppression. Consisting of 10 items, the ERQ measures six cognitive reappraisal items (e.g., ‘When I want to feel more positive emotion I change the way I am thinking about the situation’) and four expressive suppression items (e.g., ‘I control my emotions by not expressing them.’) Likert scale tuples from 1 (strongly disagree) to 7 (strongly agree) are presented for corresponding responses. Items for the two subscales are averaged to obtain scores for that subscale alone. The ERQ has met good internal reliability standards, Cronbach’s alpha coefficients being approximately .79 for the reappraisal subscale and .73 for the suppression subscale in terms of psychometric properties. It has also been found adequate to be test retest reliable over periods of weeks. Construct validity of the ERQ has demonstrated as expected positive relationships with well-being, social functioning and psychological health, for instance, the tendency to reappraise cognitively is positively associated with positive affect and life satisfaction and the tendency to suppress expression is positively associated with negative affect and poor interpersonal functioning.

2.4 Data Analysis

The data was coded and analysed using statistical software Jamovi and SPSS where linear regression was conducted to check the relationship between Sensory processing sensitivity and Emotional regulation.

3. Results

Table 1: *Descriptive Statistics*

	N	Minimum	Maximum	Mean	Std. Deviation
SPS	100	90.00	189.00	149.4500	25.54472
Emotional Regulation	100	20.00	70.00	41.2900	11.78451
Valid N (listwise)	100				

Table 2: *Model Summary*

	R	R Square	Adjusted R Square	Std. Error of the Estimate
1	.203 ^a	.041	.032	11.59702

N=100

Table 3: *Coefficients^a*

Model		Unstandardized Coefficients		Standardized Coefficients	t	Sig.
		B	Std. Error	Beta		
1	(Constant)	55.310	6.917		7.996	.000
	SPS	-.094	.046	-.203	-2.056	.042

4. Discussion

The results of analysis suggested that emotional regulation was significantly related to Sensory Processing Sensitivity (SPS) as indicated by p value of .042. The ability of young adults to regulate their emotions is lower when their sensory sensitivity is higher. In fact, we have a negative Beta coefficient of -0.203, that is to say, there is a small but significant negative relationship between the two variables. Specifically, this means that people are more prone to more problematically regulate and regulate their emotional response as gauged by their scores on the SPS measures.

According to the foundational research by Aron and Aron (1997), people who are more sensitive to their environment and peoples' emotions would be more prone to feeling emotionally overwhelmed. Their model extends the idea that these people process stimuli more deeply from which overstimulation can easily occur, impeding the ability to effectively

regulate emotions. In line with this assumption, the current results offer empirical support to the idea that emotional regulation challenges are particularly salient for people who are high in sensory sensitivity. This view is further supported by Acevedo et al. (2014) who performed neuroimaging studies showing that people with high SPS have more brain activity in areas related to the emotional and social processing, i.e. in amygdala and insula. One source of hyperactivity, which leads to an overall emotional overreaction and a paucity of quick or effective mechanisms for regulating the emotional state, is mediated through hyperactive frontal white matter. The results of the present study align with neurobiological findings for Acevedo et al.'s (2014) findings with regards to the multi-level vulnerability that high-SPS individuals face in navigating emotionally charged environments. In addition, the results are consistent with Liss et al. (2005) who found that higher sensory processing sensitivity was a risk factor for emotional dysregulation, enhanced anxiety, and depression. Liss and colleagues pointed out that people who are naturally sensitive to (SPS types) may experience long-lasting emotional malaise because they are highly attuned to, and reactive to sensory information. These findings are extended in the present study to the fact that this vulnerability is already present in young adulthood, a period typically associated with emotional and psychological shifts.

These findings are extended in the present study to the fact that this vulnerability is already present in young adulthood, a period typically associated with emotional and psychological shifts. These findings have high implications. The authors note that SPS should be observed as an individual difference factor in emotional regulation research, particularly among young adults. Learning about the effects of SPS on the regulation of emotions could help in developing treatments aimed at increasing the ability to cope better with highly sensitive individuals. Specifically, such individuals could be offered mindfulness based interventions, emotion focused therapies or resilience training programs in a form geared toward enabling its use as an adaptive emotion regulatory strategy. Also, this study addresses the important gap in the literature that has largely neglected the young adult population which has been rather prevalent in past research focused on either clinical populations or the older adults. There is a developmentally vital role for emotional self-regulation skills entering into adulthood and the role our SPS play is important for early prevention and support strategies to enhance better mental health outcomes of this age group.

Finally, the present study's findings are robust evidence for the negative association between sensory processing sensitivity and emotional regulation abilities in young adults. They confirm earlier theoretical frameworks and empirical studies, suggesting it is critical

that contexts that require effective emotional management enlighten themselves more on support and awareness for high-SPS individuals. Longitudinal future research should continue to explore this relationship and explore potential mediators of the relationship, such as resilience, coping style, and social support system.

5. Conclusion

The study seeks to examine the relations between sensory processing sensitivity and emotional processing in young adults. Findings of significant negative association were found in terms of greater challenges in regulating their emotions with their higher sensory processing sensitivity. They mirror previous research concerning the propensity of hypersensitive individuals to suffer emotional dysregulation. The findings of this study highlight the implications for sensory processing traits in the notion of emotional well-being, especially in young adults transitioning during critical and potentially vulnerable periods of the lifespan. The link of this can help in developing tailored interventions aimed to improve emotional regulation strategies among people with high sensory sensitivity.

Future research should probe the underlying mechanisms connecting SPS and emotion regulation and whether a type of emotion regulation method with more efficacy for highly sensitive people. Intervention and longitudinal studies could provide more details and practical suggestion to mental health professionals working with this population.

References

- Acevedo, B. P. (2020). The basics of sensory processing sensitivity. In B. P. Acevedo (Ed.), *The highly sensitive brain* (pp. 1–15). Academic Press. <https://doi.org/10.1016/B978-0-12-818251-2.00001-1>
- Alarcón-Espinoza, M., Sanduvete-Chaves, S., Anguera, M. T., Samper García, P., & Chacón-Moscoso, S. (2022). Emotional self-regulation in everyday life: A systematic review. *Frontiers in Psychology*, 13, Article 884756. <https://doi.org/10.3389/fpsyg.2022.884756>
- Aron, E. N., & Aron, A. (1997). A psychometric evaluation of the highly sensitive person scale. *Journal of Personality Assessment*, 69(3), 445-463.
- Biggio, G., Belvederi Murri, M., & Amerio, A. (2024). Exploring the link between sensory processing and psychopathology in a community sample of young adults: Bayesian network analyses. *International Journal of Mental Health and Addiction*, 22, 1234–1250. <https://doi.org/10.1007/s11469-024-01316-x>

- Booth, C., Standage, H., & Fox, E. (2015). Sensory-processing sensitivity moderates the association between childhood experiences and adult life satisfaction. *Personality and Individual Differences*, 87, 24–29. <https://doi.org/10.1016/j.paid.2015.07.020>
- Campos, J. J., & Sternberg, C. (1981). Perception, appraisal, and emotion: The onset of social referencing. In M. E. Lamb & L. R. Sherrod (Eds.), *Infant social cognition* (pp. 273–314). Hillsdale, NJ: Erlbaum.
- Chacón, A., Pérez-Chacón, M., & Avargues-Navarro, M. L. (2023). Aesthetic sensitivity: Relationship with openness to experience and agreeableness, health-related quality of life, and adaptive coping strategies in people with high sensory processing sensitivity. *Frontiers in Psychology*, 14, 1276124. <https://doi.org/10.3389/fpsyg.2023.1276124>
- Cheng, C. (2001). Assessing coping flexibility in real-life and laboratory settings: A multimethod approach. *Journal of Personality and Social Psychology*, 80(5), 814–833. <https://doi.org/10.1037/0022-3514.80.5.814>
- Diener, E., & Seligman, M. E. P. (2002). Very happy people. *Psychological Science*, 13(1), 81–84. <https://doi.org/10.1111/1467-9280.00415>
- Drndarević, N., Protić, S., & Mestre, J. M. (2021). Sensory-processing sensitivity and pathways to depression and aggression: The mediating role of trait emotional intelligence and decision-making style—A pilot study. *International Journal of Environmental Research and Public Health*, 18(24), 13202. <https://doi.org/10.3390/ijerph182413202>
- Dunn, W. (1997). The impact of sensory processing abilities on the daily lives of young children and their families: A conceptual model. *Infants & Young Children*, 9(4), 23–35. <https://doi.org/10.1097/00001163-199704000-00005>
- Engel-Yeger, B., Muzio, C., Rinosi, G., Solano, P., Geoffroy, P. A., Pompili, M., Amore, M., & Serafini, G. (2016). Extreme sensory processing patterns and their relation with clinical conditions among individuals with major affective disorders. *Psychiatry Research*, 236, 112–118. <https://doi.org/10.1016/j.psychres.2015.12.022>
- Fernandes, L., Panwar, N. Sensory processing sensitivity in relation to coping strategies: exploring the mediating role of depression, anxiety and stress. *Discov Psychol* 4, 112 (2024). <https://doi.org/10.1007/s44202-024-00214-6>
- Fredrickson, B. L. (2004). The broaden-and-build theory of positive emotions. *Philosophical Transactions of the Royal Society B: Biological Sciences*, 359(1449), 1367–1377. <https://doi.org/10.1098/rstb.2004.1512>
- Gross, J. J., & John, O. P. (2003). Individual differences in two emotion regulation processes:

- Implications for affect, relationships, and well-being. *Journal of Personality and Social Psychology*, 85(2), 348–362. <https://psycnet.apa.org/doi/10.1037/0022-3514.85.2.348>
- Gross, J. J., & Muñoz, R. F. (1995). Emotion regulation and mental health. *Clinical Psychology: Science and Practice*, 2(2), 151–164. <https://doi.org/10.1111/j.1468-2850.1995.tb00036.x>
- Gross, J. J., Kashdan, T. B., & Rottenberg, J. (2010). Emotion regulation pathways to psychopathology: A review and synthesis. *Current Directions in Psychological Science*, 19(2), 86–91. <https://doi.org/10.1177/0963721410364493>
- Gulla, B., & Golonka, K. (2021). Exploring protective factors in wellbeing: How sensory processing sensitivity and attention awareness interact with resilience. *Frontiers in Psychology*, 12, 751679. <https://doi.org/10.3389/fpsyg.2021.751679>
- Liss, M., Timmel, L., Baxley, K., & Killingsworth, P. (2005). Sensitivity and social functioning in the highly sensitive person. *Personality and Individual Differences*, 40(8), 1529–1539. <https://doi.org/10.1016/j.paid.2005.11.003>
- Pluess, M., Assary, E., Lionetti, F., Lester, K. J., Krapohl, E., Aron, E. N., & Aron, A. (2018). Environmental sensitivity in children: Development of the Highly Sensitive Child Scale and identification of sensitivity groups. *Developmental Psychology*, 54(1), 51–70. <https://doi.org/10.1037/dev0000406>
- Richman, L. S., Kubzansky, L., Maselko, J., Kawachi, I., Choo, P., & Bauer, M. (2005). Positive emotion and health: Going beyond the negative. *Health Psychology*, 24(4), 422–429. <https://doi.org/10.1037/0278-6133.24.4.422>
- Van Lissa, C. J., Hawk, S. T., Branje, S. J. T., Koot, H. M., & Meeus, W. H. J. (2019). The effects of affective and cognitive empathy on adolescents' social development: A longitudinal study. *Developmental Psychology*, 55(9), 2019–2032. <https://doi.org/10.1037/dev0000759>