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SELF-ESTEEM IN ADOLESCENTS: MEDIATOR OF THE RELATIONSHIP BETWEEN SENSORY PROCESSING SENSITIVITY AND AFFECTIVE DEPENDENCE

Alizée Richalley[1], Anaïs Seite[1], Amandine Deloustal[1], Caroline Giraudeau[1,2], & Jimmy Bordarie[1,3]
[1]*Department of Psychology, University of Tours (France)*
[2]*PAVéA UR2114, University of Tours (France)*
[3]*QUALIPSY UR1901, University of Tours (France)*

Abstract

High Sensory Processing Sensitivity (HSPS) (Aron & Aron, 1997) is an innate personality trait that affects approximately 30% of the population (Lionetti et al., 2018). It is characterized by more intense, complex and rapid cognitive processing of stimuli and heightened emotional reactivity than their peers (Gere et al., 2009). Highly sensitive adolescents are more reactive to stressful events (Burgard et al., 2022) and report lower socio-emotional well-being when faced with negative life events (Iimura, 2021). HSPS negatively predicts well-being, which is positively predicted by self-esteem (Orth & Robins, 2014). Self-esteem varies throughout an individual's life according to their positive or negative life experiences. In addition, individuals who are sensitive to sensory stimuli in general may be dependent in their peer relationships (Jerome & Liss, 2005). This study aims to investigate the influence of HSPS on self-esteem and affective dependence in adolescents, a critical developmental period characterized by significant physical, psychological, emotional and social changes. Our main hypotheses were (1) HSPS will negatively influence self-esteem and positively influence affective dependence; and (2) self-esteem will mediate the relationship between HSPS and affective dependence. The sample (n=100) consisted of 53% females and 47% males aged between 15 and 20 years. The mean age was 16.16 years old (SD=1.22) and 16% are in middle school and 87% in high school. They anonymously completed an online questionnaire assessing high sensory processing sensitivity (HSPS-FR), self-esteem (RSE) and affective dependence (ADS-9). Correlations, linear regressions and a mediation analysis were performed using JASP (version 0.19.3). Results showed that HSPS negatively influenced self-esteem (p<.001) and positively influenced affective dependence (p<.001). Self-esteem negatively influenced affective dependence (p<.001). The mediation analysis revealed the mediating role of self-esteem between HSPS and affective dependence, explaining the negative influence of HSPS. HSPS appears to be a vulnerability factor in the development of both self-esteem (Liss et al., 2005) and affective dependence (Jerome & Liss, 2005). However, self-esteem was a protective factor against affective dependence. Therefore, it would be interesting to investigate how highly sensitive people could increase their self-esteem. Limitations of the study (such as sample size and appropriateness of instruments for adolescents) are discussed. Suggestions and avenues for future research are also suggested.

Keywords: *High sensory processing sensitivity, self-esteem, affective dependence, adolescents, mediation.*

1. Introduction

Adolescence is a sensitive and non-homogeneous developmental period (De La Torre-Luque et al., 2019) between childhood and adulthood (Arnett, 2007), from approximately 14 to 21 years of age (Cunningam, 2005). Adolescence implies a certain distance from the family and a rapprochement with peers (Laursen, 1996), leading to the construction of the adolescent's identity. This construction of identity is generally associated with self-esteem (James, 1890), which can be defined as the "overall evaluation of your worth as a person, high or low, based on all the positive and negative self-perceptions that make up your self-concept" (Sigelman, 1999). Self-esteem is a predictor of well-being and success in work, health and relationships (Orth & Robins, 2014). These relationships may take a particular form, particularly if they involve some form of dependence. Scantamburlo et al. (2013, p. 340) describe affective dependence as "characterized by emotional distress (insecure attachment) and dependence on another person with low self-esteem and a need for reassurance". People with affective dependence show negative moods and

feelings when they are away from their partner (Pugliese et al., 2023). Some authors (e.g. Versaevel, 2011) argue that affective dependence and self-esteem stem from the same cause and share the same manifestations, while others (e.g. Crépel, 2022) state that low self-esteem is a trigger for entering into affective dependence.

This dependence on peers may be due to certain personality traits. For example, individuals who are highly sensitive to sensory stimuli in general may be dependent in their peer relationships (Jerome & Liss, 2005). High sensory processing sensitivity (HSPS) (Aron & Aron, 1997) is considered an innate temperamental trait (Dunn, 2001) that enables some individuals to cope with environmental stressors. This trait is thought to affect 30% of the population (Lionetti et al., 2018). Although HSPS is not a pathology, it is often considered a vulnerability factor. In general, highly sensitive adolescents are more responsive to environmental stimuli, leading them to report lower socio-emotional well-being when faced with negative life events than less sensitive adolescents (Iimura, 2021). HSPS in adolescents is particularly associated with internalized problems (Aron et al., 2005; Liss et al., 2005, 2008). The problems most commonly reported by highly sensitive individuals include overstimulation, strong emotional reactions, but also low self-esteem (Aron, 2020). In fact, self-esteem is significantly correlated with HSPS (Baryła-Matejczuk et al., 2021), especially among highly sensitive adolescents and young adults (Kibe et al., 2020). Crépel (2022) highlights the importance of self-esteem for highly sensitive children and adolescents, who have high expectations of their relationships with others and can easily become dependent on the gaze of others.

2. Objectives and hypotheses

In this study we seek to understand the relationship between sensory processing sensitivity, self-esteem and affective dependence. We are also interested in the relationships between the different components of these constructs. We have the following hypotheses:

- Hypothesis 1: sensory processing sensitivity and self-esteem will correlate with affective dependence.
- Hypothesis 2: Gender will influence the scales scores.
- Hypothesis 3: Romantic relationship experience will influence affective dependence scores.
- Hypothesis 4: Self-esteem will mediate the relationship between sensory processing sensitivity and affective dependence.

3. Method

3.1. Participants

The study involved 100 adolescents and young adults. The sample was 53% female and 47% male; 16% were in junior high school and 87% were in high school. The mean age was 16.16 years old (SD=1.22) and ranged from 15 to 20 years. In terms of their relationship experience, 59% had already been in a relationship (of which 18% were currently in a relationship) and 41% had never been in a relationship.

3.2. Procedure and recruitment

The study protocol was approved by the Ethics Committee for Research Involving the Human Person of the Universities of Tours and Poitiers (CER-TP) (approval number 2023-12-05). Participants were invited to complete an anonymous and confidential online questionnaire via the Sphinx platform. They were first informed of the aims of the study and gave their explicit consent. The estimated time to complete the questionnaire was 20 minutes. The questionnaire was open from 5 February to 31 March 2024, and the link was shared through social media discussion groups, secondary schools with administrative consent, and word of mouth.

3.3. Measures

The questionnaire consisted of three validated scales, three questions on socio-demographic characteristics (gender, age, educational level) and two additional questions to sort the participants according to two criteria: whether they were currently in a relationship or had at least been in one in the past. The questions were as follows: 1- “Have you ever been in a relationship?” [yes/no]; 2- “Are you currently in a relationship?” [yes/no], followed by instructions. If participants answered “no” to these two questions, they were asked to complete the scale by answering how they would feel if they were in a hypothetical romantic relationship. As the questions focus very much on the couple’s relationship, it was important to be able to distinguish the answers according to these criteria.

The French version of the Highly Sensitive Person Scale (HSPS-FR) (Bordarie, Aguerre & Bolteau, 2022; adapted from Aron & Aron, 1997) was used to assess sensitivity (27 items). The French version of the Rosenberg Self-Esteem Scale (RSES; 10 items) was used (Vallières and Vallerand, 1990;

adapted from Rosenberg, 1965). Affective dependence was measured with the Affective Dependence Scale (ADS-9; 9 items) (Sirvent-Ruiz et al., 2022). As the ADS-9 was only available in Spanish, we used a translation and back-translation procedure as described by Vallerand (1989).

The data were analyzed using JASP version 0.18.3. The internal reliability of the scales was measured using Cronbach's alpha [HSPS-FR: α=.91; RSES: α=.89; ADS-9: α=.87]. The Shapiro-Wilk analyses indicated that the data for RSES, ADS-9 did not follow a normal distribution. Nonparametric tests were therefore used such as Mann-Whitney tests, Kruskal-Wallis tests and Spearman's correlations. Linear regressions and a mediation analysis were also performed.

4. Results

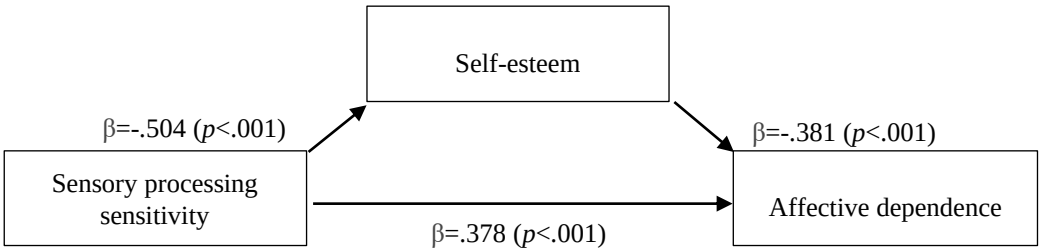
Regarding the influence of socio-demographic characteristics, gender influenced the scores of both HSPS (p<.001) and RSES (p=.003) and some of their components. Previous experience of being in a relationship influenced the affective dependence score (p=.028).

The results show positive correlations between the total scores of the HSPS-FR and those of the ADS-9 (r=.390; p<.001), and negative correlations between the HSPS-FR and the RSES (r=-.485; p<.001) and between the RSES and the ADS-9 (r=-.395; p<.001). All components of the HSPS were positively correlated with each other (p<.005). The components of the RSES were positively correlated with each other (p<.001), as are the components of the ADS-9 (p<.001). The components of the different constructs were also correlated with each other, except for the AES component, which was not correlated with any of the components of affective dependence, nor with the self-competence component of self-esteem, which was not correlated with the CHA component.

Sensory processing sensitivity positively influenced affective dependence. The model was significant, explaining about 14% of the variance (r2=.143; F(1;98)=16.336; p<.001). Conversely, sensory processing sensitivity negatively influenced self-esteem. The model was significant and explained approximately 25% of the variance (r2=.254; F(1;98)=33.390; p<.001). Self-esteem negatively influenced affective dependence. The model was significant, explaining about 15% of the variance (r2=.145; F(1;98)=16.667; p<.001).

In summary, the overall model (Figure 1) showed that both sensory processing sensitivity and self-esteem influenced affective dependence (p<.001). Sensory processing sensitivity had a positive influence on affective dependence, but a negative influence on self-esteem, which in turn had a negative influence on affective dependence.

Figure 1. Mediation model of the relationship between high sensory processing sensitivity and affective dependence through self-esteem.



5. Discussion, limitations and perspectives

The aim of this study was to investigate the relationship between sensory processing sensitivity and affective dependence through self-esteem. We formulated four hypotheses, which were confirmed by our results. There was indeed a correlation between these three different constructs (confirming hypothesis 1). And some socio-demographic characteristics influenced the scores, such as gender and romantic relationship experience. Indeed, women reported higher sensory processing sensitivity scores and lower self-esteem scores than men (confirming hypothesis 2). Previous or current relationship experience negatively influenced affective dependence scores (confirming hypothesis 3).

Affective dependence was found to be positively correlated with sensory processing sensitivity and negatively correlated with self-esteem. On the one hand, the results showed that the higher a person's sensitivity, the higher their level of affective dependence. On the other hand, the higher their self-esteem, the lower their degree of affective dependence. Our results are therefore in line with previous studies which have shown that highly sensitive people are more dependent within their couple (Jerome & Liss, 2005). In other words, the higher the sensory processing sensitivity, the more it tends to increase affective

dependence. This process seems to be partly explained by the negative mediating influence of HSPS on self-esteem, which in turn has a negative influence on emotional dependence (confirming hypothesis 4).

Certain limitations need to be considered, in particular that of the ADS-9 scale, where the responses of participants who have never been in a relationship need to be treated with great caution. A person who has never been in a couple and who bases his or her answers on a hypothetical romantic relationship may be influenced by certain beliefs and representations of the couple. Out of a sample of 100 participants, 41 had never been in a relationship. This number should not be overlooked as it is significant. Our findings cannot be generalized. However, given the small size of the sample, we decided to retain this characteristic for the statistical analysis, which we can see has influenced the results, although we are aware that using a hypothetical relationship to infer the existence of a dependence introduces a significant bias.

In terms of perspectives, we could suggest that the same study be carried out under more favorable conditions in order to obtain a larger sample. It would be interesting to use a different scale to measure affective dependence and eventually analyze sensitivity on a categorical basis. Furthermore, on the one hand, Paiva et al. (2022) have confirmed the influence of attachment style on affective dependence and have shown that insecure attachment is a factor in the development of affective dependence. On the other hand, sensory processing sensitivity is correlated with affective dependence (excluding romantic relationships) due to marked parental overprotection (Liss et al., 2005). This raises a new hypothesis about the causes and consequences of HSPS that would be interesting to test. It would also be interesting to ask, using a qualitative methodology such as interviews, how individuals perceive their sensitivity and its consequences.

References

Arnett, J. J. (2007). Emerging adulthood: What is it, and what is it good for? *Child Development Perspectives*, *1*(2), 68-73. doi: 10.1111/j.1750-8606.2007.00016.x

Aron, E. N. (2020). Clinical assessment of sensory processing sensitivity. In B. Acevedo (Ed.), *The highly sensitive brain Research, Assessment, and Treatment of Sensory Processing Sensitivity* (pp. 135-164). Academic Press.

Aron, A., & Aron, E. N. (1997). Self-expansion motivation and including other in the self. In S. Duck (Ed.), *Handbook of personal relationships: Theory, research and interventions* (pp. 251-270). John Wiley & Sons.

Aron, E. N., Aron, A., & Davies, K. (2005). Adult shyness: the interaction of temperamental sensitivity and an adverse childhood environment. *Personality and Social Psychology Bulletin*, *31*(2), 181-197. doi: 10.1177/0146167204271419

Baryła-Matejczuk, M., BIENIEK, J., & ŚLusarczyk, A. (2021). Link Between Sensory-Processing Sensitivity and Self-Esteem Using the Example of a Group of Polish Adolescents. *Journal of Communication and Behavioural Sciences*, *2*(2), 5-18. https://www.ceeol.com/search/article-detail?id=1009605

Bordarie, J., Aguerre, C. & Bolteau, L. (2022). Validation and study of psychometric properties of a French version of the Sensory-Processing Sensitivy scale (HSPS-27). *European Review of Applied Psychology*, *72*. doi: 10.1016/j.erap.2022.100781

Crépel, E. (2022). *L'enfant hypersensible: L'accompagner de la naissance à l'adolescence*. Hatier Grand Public.

Gourion, D. (2015). *La fragilité psychique des jeunes adultes: 15-30 ans: prévenir, aider et accompagner*. Odile Jacob.

Iimura, S. (2021). Highly Sensitive adolescents: the relationship between weekly life events and weekly socioemotional well-being. *British Journal of Psychology*, *112*(4), 1103-1129. doi: 10.1111/bjop.12505

James, W. (1890). *The principles of psychology (1).* Henry Holt and Co. doi: 10.1037/10538-000

Jerome, E. M., & Liss, M. (2005). Relationships between sensory processing style, adult attachment, and coping. *Personality and Individual Differences*, *38*(6), 1341-1352. doi: 10.1016/j.paid.2004.08.016

Kibe, C., Suzuki, M., Hirano, M., & Boniwell, I. (2020). Sensory Processing sensitivity and Culturally Modified Resilience Education: Differential Susceptibility in Japanese Adolescents. *PLOS ONE*, *15*(9), e0239002. doi: 10.1371/journal.pone.0239002

Laursen, B. (1996). Closeness and conflict in adolescent peer relationships: Interdependence with friends and romantic partners. In W. M. Bukowski, A Newcomb, & W. W. Hartup (Eds.), *The company they keep: Friendship in childhood and adolescence* (pp. 186-210). Cambridge University Press.

Lionetti, F., Aron, A., Aron, E. N., Burns, G. L., Jagiellowicz, J., & Pluess, M. (2018). Dandelions, tulips and orchids: Evidence for the existence of low-sensitive, medium-sensitive and high-sensitive individuals. *Translational Psychiatry*, *8*(1), 1-11. doi: 10.1038/s41398-017-0090-6

Liss, M., Mailloux, J., & Erchull, M. J. (2008). The relationships between sensory processing sensitivity, alexithymia, autism, depression, and anxiety. *Personality and Individual Differences*, *45*(3), 255-259. doi: 10.1016/j.paid.2008.04.009

Liss, M., Timmel, L., Baxley, K., & Killingsworth, P. (2005). Sensory processing sensitivity and its relation to parental bonding, anxiety, and depression. *Personality and Individual Differences*, *39*(8), 1429-1439. doi: 10.1016/j.paid.2005.05.007

Orth, U., & Robins, R. W. (2014). The development of Self-Esteem. *Current Directions in Psychological Science*, *23*(5), 381-387. doi: 10.1177/0963721414547414

Paiva, T. T., Da Silva Lima, K., & Cavalcanti, J. G. (2022). Abuso psicológico, autoestima e dependência emocional de mulheres durante a pandemia de COVID-19. *Ciencias Psicológicas*. doi: 10.22235/cp.v16i2.2257

Pugliese, E., Saliani, A. M., Mosca, O., Maricchiolo, F., & Mancini, F. (2023). When the war is in your room: A cognitive model of pathological affective dependence (PAD) and intimate partner violence (IPV). *Sustainability*, *15*(2), 1624. doi: 10.3390/su15021624

Rosenberg, M. (1965). Rosenberg Self-Esteem Scale [Base de données]. Dans *PsycTESTS Dataset*. doi: 10.1037/t01038-000

Scantamburlo, G., Pitchot, W., & Ansseau, M. (2013). La dependance affective. *Revue Medicale de Liege*, *68*(5-6).

Sigelman, C. K. (1999). *Life Span Human Development* (3rd ed.). NewYork: Brooks/Cole Publishing Co.

Sirvent-Ruiz, C., & De La Villa Moral Jiménez, M. (2018). Construcción y validación del Inventario de Relaciones Interpersonales y Dependencias Sentimentales (IRIDS-100). *African journal of rhetoric*, *18*(2), 35-47. doi: 10.21134/haaj.v18i2.342

Sirvent-Ruiz, C. M., De La Villa Moral Jiménez, M., Herrero, J., Miranda-Rovés, M., & Díaz, F. J. R. (2022). Concept of affective dependence and validation of an affective dependence scale. *Psychology Research and Behavior Management*, *15*, 3875-3888. doi: 10.2147/prbm.s385807

Vallieres, E. F., & Vallerand, R. J. (1990). Traduction et validation canadienne-française de l'échelle de l'estime de soi de Rosenberg. *International journal of psychology*, *25*(3), 305-316. doi: 10.1080/00207599008247865

Versaevel, C. (2011). La dépendance affective et la psychiatrie : une mésentente. *L'Encéphale*, *37*(1), 25-32. doi: 10.1016/j.encep.2010.04.005