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SENSORY PROCESSING SENSITIVITY AND VIA CHARACTER STRENGTHS AMONG STUDENTS

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Abstract

Sensory processing sensitivity (SPS), a significant hereditary personality trait, plays a crucial role in how individuals perceive, process, and respond to stimuli. It is characterized by heightened sensitivity, deep cognitive engagement with sensory input, and a strong capacity for empathic responses. Individuals with high SPS, often referred to as highly sensitive persons (HSPs), are distinguished by their ability to detect subtle environmental changes and their predisposition toward reflective behaviors. While previous studies have emphasized the potential challenges faced by individuals with high SPS, there is a growing focus on understanding how these individuals can achieve greater well-being, given that they are more responsive and flexible to negative and positive environmental effects and can significantly benefit from psychological interventions. Apart from the complexity of sensory processing sensitivity, character strengths represent another psychological concept of interest. According to Peterson and Seligman (2004), these strengths are positive attributes that manifest in thoughts, emotions, and behaviors. Recognition and application of character strengths are associated with enhanced well-being, life satisfaction, and resilience. This research examines the relationship between SPS and the 24 VIA character strengths, aiming to provide insights into how SPS influences positive psychological traits. Using the HSP scale (Aron and Aron, 1997) and the VIA Character Strengths Survey (Peterson and Seligman, 2001) data were collected from 204 undergraduate students (61% female). Spearman's correlation analysis was conducted to examine their relationships. Statistical significance was set at $p < 0.05$. Results indicate that SPS is positively correlated with 15 of the 24 character strengths: curiosity, love of learning, open-mindedness, social intelligence, perspective, bravery, honesty, kindness, teamwork, fairness, leadership, prudence, appreciation of beauty, gratitude, and humor. No significant correlation was found between SPS and the following strengths: creativity, perseverance, love, self-regulation, hope, spirituality, humility, forgiveness, and zest. These findings highlight the cognitive and social advantages of high SPS. The significant associations with strengths such as curiosity, love of learning, judgment and appreciation of beauty align with theoretical assumptions that highly sensitive individuals engage in deeper cognitive processing and demonstrate a heightened awareness of their surroundings. Also, the connections with honesty, kindness, teamwork, leadership, fairness, prudence, gratitude and humor reflect a heightened sense of interpersonal dynamics, moral considerations, and social harmony. The results indicate that although SPS is often linked to emotional reactivity, it also fosters strengths that enhance well-being. Future research and interventions can leverage these insights to support highly sensitive individuals more effectively.

Keywords: *Sensory processing sensitivity, highly sensitive person, VIA character strengths*.

1. Introduction

Sensory processing sensitivity (SPS) is a biologically-based temperamental trait characterized by heightened sensitivity to environmental stimuli, leading to deeper cognitive processing and emotional reactivity (Aron & Aron, 1979). Approximately 30% of individuals exhibit high sensory processing sensitivity (Lionetti et al., 2018). A series of studies has shown that SPS is associated with higher levels of emotional reactivity, stress, fatigue, depression, and other mental health challenges (Benham, 2006; Hofmann & Bitran, 2007). However, SPS also correlates positively with empathy and creativity (Laros-van Gorkom et al., 2025), emotional intelligence (Li et al, 2020) and behavioral activation system reward responsiveness (Smolewska et al., 2006). This suggests that highly sensitive individuals respond in various ways to reward signals, including experiencing increased positive affect (e.g., elation and hope), increased energy, and increased psychomotor activity (Depue & Collins, 1999). In addition, evidence from functional magnetic resonance imaging (fMRI) studies suggests that SPS is linked to increased activity in brain regions

involved in awareness, empathy, and self-other processing (Acevedo et al., 2014). Although a wealth of studies has been conducted on this topic, a unified view of SPS is still lacking. Individuals with high SPS are more responsive and flexible to negative and positive environmental effects (Greven et al., 2018). Thus, favorable parenting practices and a positive home environment can lead to better emotional well-being among these individuals, while they also tend to benefit more from psychological interventions (Nocentini et al., 2018).

Beyond the complexity of sensory processing sensitivity, another psychological construct of interest is character strengths. Defined by Peterson and Seligman (2004), character strengths represent positive traits expressed through thoughts, emotions, and behaviors. Research has demonstrated that the recognition and application of character strengths are associated with enhanced well-being, life satisfaction, and resilience (Seligman et al., 2005). Individuals who can identify and leverage their strengths tend to experience greater fulfillment in their personal and professional lives. Moreover, character strengths are seen as fundamental components in fostering positive relationships (Habenicht & Schutte, 2023), promoting psychological health, and enabling effective coping strategies during times of stress (Harzer at al., 2015). According to most conducted factor analyses, three fundamental groups of character strengths emerge: strengths of the "head", strengths of the "heart", and "other" character strengths (Peterson, 2006, as cited in Biswas-Diener & Dean, 2007).

The interplay between sensory processing sensitivity and character strengths remains underexplored. While previous studies have highlighted the potential challenges faced by individuals with high SPS (Benham, 2006; Hofmann & Bitran, 2007), there is a growing interest in understanding how these individuals can experience greater well-being and flourishing, knowing that they can benefit a lot by using psychological interventions (Greven et al., 2019). The aim of this study is to explore the relationship between SPS and VIA character strengths, that can contribute to understanding how individual differences in sensory processing relate to positive psychological traits.

2. Method

2.1. Participants and procedure

The study included 204 participants (61% female), aged between 18 and 27 years (M = 19.92). The participants were students from all academic years across eight institutes of the Faculty of Philosophy in Skopje and coming from various cities across Republic of North Macedonia. Most students were Macedonians (97%). All participants held student status at the time of the study.

Data collection was conducted in the premises of the faculty and through Google Forms distributed via social networks. Participants were informed of the objectives of the study, and that their responses were anonymous and confidential. The estimated time for completion was approximately 25-30 minutes.

2.2. Measures

Sensory processing sensitivity was assessed using the HSP Scale (Aron & Aron, 1997), a self-report questionnaire consisted of 27 items (only total score is used in this study). Participants responded on a 7-point Likert scale ranging from "1=strongly disagree" to "5=strongly agree". The higher the score, the greater the sensitivity. The Cronbach's alpha value for overall scale reliability was 0.82.

24 VIA character strengths were measured using VIA character strengths survey (Peterson & Seligman, 2001), consisted of 240 items, 10 items per scale (the 24 scales each assess a distinct character strength). Participants rated their responses on a 5-point Likert scale, with options ranging from "1=not at all like me" to "5=very much like me", where higher score indicates greater character strength. The Cronbach's alpha values for all scales ranged from 0.69 to 0.77.

2.3. Statistical analysis

The questionnaire data were analyzed statistically using JASP software (version 0.18.3.). Since most of the 24 variables did not follow a normal distribution, Spearman's correlation analysis was used to assess their relationships. The significance value was accepted as $p < .05$.

3. Results

The data analysis revealed a significant positive correlation between 15 character strengths and sensory processing sensitivity (SPS). Four of the five strengths classified as strengths of the "head" were significantly positively correlated with SPS: curiosity ($r = .30$, $p < .001$), love of learning ($r = .27$, $p < .001$), judgment ($r = .44$, $p < .001$), and appreciation of beauty ($r = .34$, $p < .001$). No significant correlation was found between creativity and SPS ($r = .09$, $p > .05$).

Of the 15 character strengths classified as “heart” strengths, 8 showed a significant positive correlation with SPS: honesty ($r = .21$, $p < .05$), kindness ($r = .25$, $p < .01$), teamwork ($r = .34$, $p < .001$), fairness ($r = .39$, $p < .001$), leadership ($r = .45$, $p < .001$), prudence ($r = .24$, $p < .001$), gratitude ($r = .39$, $p < .001$), and humor ($r = .24$, $p < .01$). No meaningful positive correlation emerged between SPS and perseverance ($r = .08$, $p > .05$), love ($r = -.01$, $p > .05$), hope ($r = .04$, $p > .05$), spirituality ($r = .05$, $p > .05$), humility ($r = .11$, $p > .05$), zest ($r = .12$, $p > .05$), or forgiveness ($r = .03$, $p > .05$).

Among the “other” character strengths, social intelligence ($r = .20$, $p < .05$), perspective ($r = .29$, $p < .001$), and bravery ($r = .19$, $p < .05$) positively correlated with SPS. No significant correlation was found between self-regulation and SPS ($r = .15$, $p > .05$).

4. Discussion

The findings of this study suggest that 15 out of the 24 character strengths exhibit a significant positive correlation with sensory processing sensitivity, highlighting their potential relevance in understanding the positive traits associated with highly sensitive individuals.

The results indicate that most of the strengths of the "head", such as curiosity, love of learning, judgment, and appreciation of beauty, are significantly positively correlated with SPS. This aligns with theoretical assumptions that highly sensitive individuals engage in deeper cognitive processing (Aron & Aron, 1997) and demonstrate a heightened awareness of their surroundings. The absence of a significant correlation between creativity and SPS is somewhat unexpected, as prior research has suggested that SPS is associated with creative thinking (Laros-van Gorkom et al., 2025). This discrepancy may be due to methodological differences, the specific sample characteristics, or variations in the way creativity manifests among highly sensitive individuals.

Regarding the strengths of the "heart", eight character strengths—including honesty, kindness, teamwork, fairness, leadership, prudence, gratitude, and humor—showed significant positive correlations with SPS. These findings suggest that individuals with high SPS may be particularly attuned to interpersonal dynamics, moral considerations, and social harmony. Their heightened sensitivity enables them to perceive and respond to subtle social cues, making them more empathetic and responsive in social interactions (Acevedo et al., 2014). This increased awareness may translate into stronger moral decision-making, as highly sensitive individuals tend to engage in deeper emotional and cognitive processing, leading to greater concern for fairness, justice, and ethical dilemmas (Greven et al., 2018). Moreover, highly sensitive individuals appear to be particularly invested in fostering social harmony. Their ability to detect emotional shifts and respond empathetically makes them well-suited for teamwork and leadership roles where emotional intelligence is crucial. Highly sensitive individuals process stimuli deeply (Aron & Aron, 1997), meaning they tend to analyze situations thoroughly before acting**.** This aligns with prudence, which involves weighing options carefully and avoiding impulsive decisions. Interestingly, strengths such as love, hope, spirituality, and perseverance did not show significant associations with SPS. This suggests that while highly sensitive individuals might exhibit strong social awareness and emotional depth, their sensitivity does not necessarily translate into higher levels of meaning and purpose and future-oriented mindset**.**

In the group of "other" strengths, social intelligence, perspective, and bravery were found to be positively correlated with SPS, further supporting the idea that highly sensitive individuals possess a heightened ability to understand complex social and emotional situations. However, the lack of a significant correlation between self-regulation and SPS is noteworthy, as one might expect highly sensitive individuals to struggle with emotional regulation due to their heightened reactivity to stimuli (Aron & Aron, 1997). Since highly sensitive individuals are more susceptible to emotional overwhelm, fostering self-regulation is essential for their well-being.

Overall, these results contribute to a more nuanced understanding of the relationship between SPS and character strengths. While SPS is often discussed in terms of its challenges—such as increased susceptibility to stress, anxiety, and emotional overwhelm—the study highlights its potential advantages, particularly in cognitive engagement, social awareness, and ethical decision-making. By considering the effectiveness of positive interventions for highly sensitive individuals (Nocentini et al., 2018), the findings may have practical implications for designing character strengths-based interventions aimed at supporting highly sensitive individuals and enhancing their personal and professional fulfillment.

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