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Overview

The Highly Sensitive Person (HSP) scale is a measure of sensory-processing sensitivity, which is conceptualized as involving both high levels of sensitivity to subtle stimuli and being easily overaroused by external stimuli. Previous research from our lab demonstrated a relationship between sensory-processing sensitivity, self-perceived stress, and self-reported health. The current study attempted to replicate these results in an independent sample.

Method

Two hundred and eighteen undergraduate students from the University of Texas-Pan American completed a packet of surveys that included a measure of subjective psychological stress, health, and sensory-processing sensitivity.

Participants ranged in age from 18 to 48 ($M=22.6$, $SD=5.18$). Nearly three-fourths of the sample (74%) was female and a large majority (93%) of participants classified themselves as Hispanic.

Research sessions were conducted in groups of 3 to 15 participants, during which the surveys were completed individually and responses were collected anonymously.

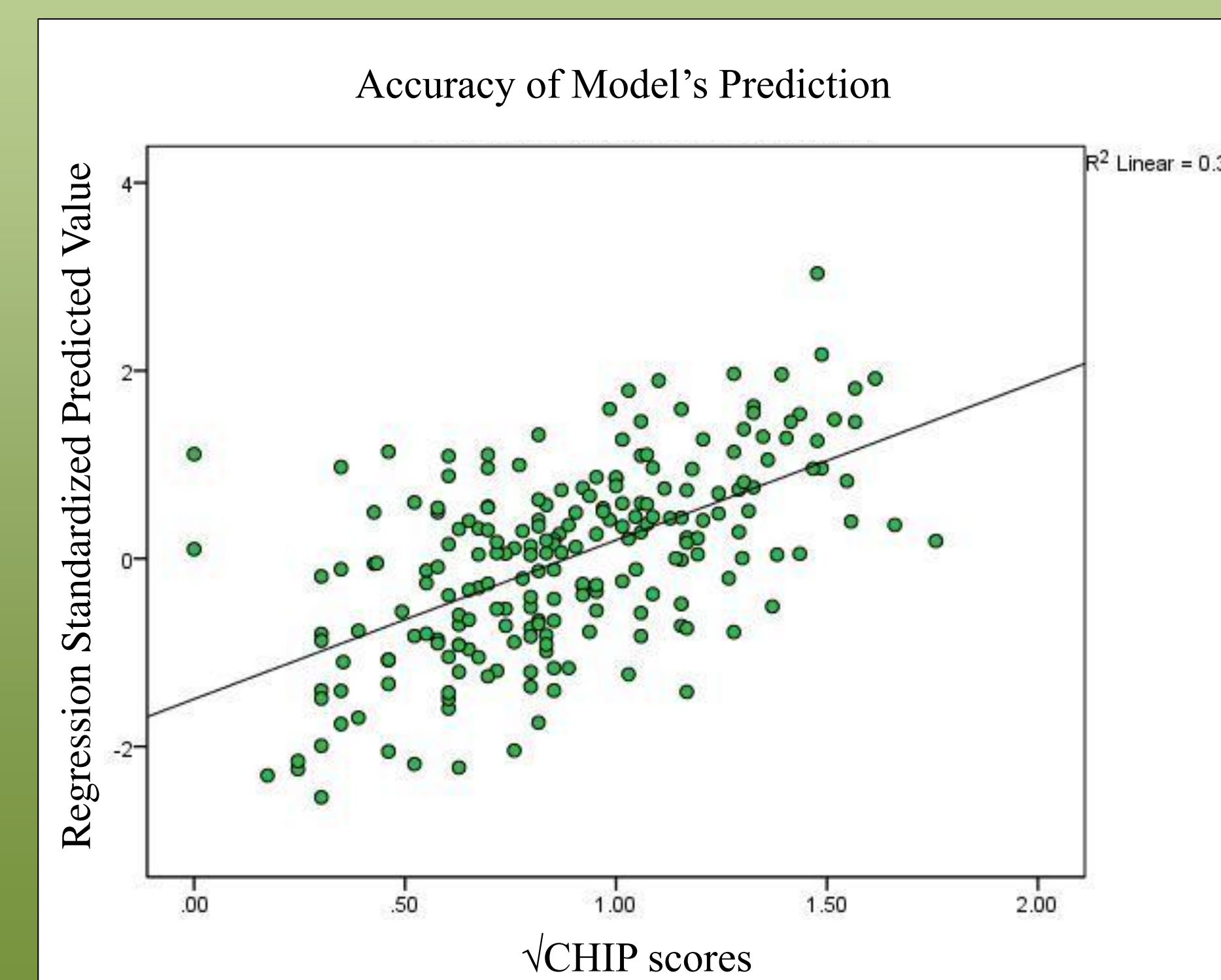
Results

The distribution of illness symptom scores was positively skewed and therefore all analyses are based on a square-root transformation of this measure. Illness symptoms were positively correlated with both stress and sensory processing sensitivity ($r=.48$, $p<.001$ and $r=.49$, $p<.001$, respectively). Sensory-processing sensitivity was positively correlated with stress ($r=.38$, $p<.001$). Females scored significantly higher than males on measures of stress ($M=19.30$, $SD=6.87$ and $M=14.14$, $SD=6.45$, respectively; $t(213)=4.9$, $p<.001$), illness symptoms ($M=.99$, $SD=.66$ and $M=.64$, $SD=.48$, respectively; $t(213)=3.70$, $p<.001$) and sensory-processing sensitivity ($M=4.08$, $SD=.86$ and $M=3.43$, $SD=.94$, respectively; $t(213)=4.90$, $p<.001$).

Given the observed associations between stress and health and between sensory-processing sensitivity and health, a hierarchical regression analysis was performed to explore whether a stress-health model could be improved by adding the measure of sensory-processing sensitivity (See Table 1). To control for the observed differences between males and females, participant gender was entered at the first step of the model. Stress scores (PSS) were entered at the second step and sensory-processing sensitivity scores (HSP) were entered at the third step.

The stress-health model was significant ($F(2,212)=34.52$, $p<.001$), accounting for 25% of the variance in health. Sensory-processing sensitivity accounted for an additional 9.2% of the variance in illness symptoms, an increase in R-squared that was statistically significant ($F(1,209)=29.07$, $p<.001$). In the final model, stress and sensory-processing sensitivity were significant predictors of illness symptoms (standardized Beta = .35 and .36, respectively), but gender was not significant. The stress+sensory-processing sensitivity model accounted for 34% of the variance in health.

TABLE 1	R	R ²	ΔR ²	F	df
Step 1: Gender	.24	.06	.06	12.83	212
Step 2: PSS	.49	.24	.17	49.03	211
Step 3: HSP	.58	.33	.10	31.00	210



Measures

• Stress

The Perceived Stress Scale (PSS; Cohen & Williamson, 1988) is a 10-item Likert-type scale that asks respondents "In the last week, how often have you . . ." and includes items such as "felt nervous and stressed?", "felt that you were unable to control the important things in your life?" Response choices range from (0) "Never" to (4) "Very Often". The 10-item version of the scale is a revision of the originally published 14-item version, has been shown to provide a slight gain in psychometric quality over the longer version, and is recommended over the 14-item version by the scale's authors (Cohen & Williamson). The PSS has been reported as a better predictor of psychological symptoms, physical symptoms, and health service utilization than life-event scales (Cohen, Kamarck, & Mermelstein, 1983). Possible scores range from 0 to 40 and were calculated by summing up the 10 item ratings (after reverse scoring specific items). Higher PSS scores represent more stress. Cronbach's alpha was .88 in the present study.

• Health/Illness

The Cohen-Hoberman Inventory of Physical Symptoms (CHIPS; Cohen & Hoberman, 1983) is a 33-item Likert-type scale that asks respondents to rate how much a particular symptom has bothered or distressed them during the last month, and includes items such as "Back pain" and "Diarrhea". Responses range from (0) "not been bothered by the problem" to (4) "the problem has been an extreme bother". The final score ranges from 0 to 4 and is calculated as the average of the 33 item ratings. Higher CHIPS scores represent higher physical symptom reporting. In the present study, Cronbach's alpha was .93.

• Sensory-processing Sensitivity

The Highly Sensitive Person scale (HSP; Aron & Aron, 1997) is a Likert-type scale that includes a broad range of items related to sensitivity, including "Are you easily overwhelmed by strong sensory input?", and "Do you have a rich, complex inner life?" Response options range from (1) "Not at All" to (5) "Extremely". The final score ranges from 1 to 5 and is calculated as the average of the 27 ratings. In the present study, Cronbach's alpha was .89.

Discussion

Sensory-processing sensitivity added significantly to a stress-health model, replicating our prior findings. It is unclear why individuals who are highly sensitive are more likely to experience symptoms of ill health. One possible explanation is that heightened sensitivity increases general physiological arousal, thus leading to a genuine chronic stress to the body with subsequent health consequences. It is also possible that highly sensitive people are more sensitive to (aware of) somatic symptoms, paying attention to minor physiological sensations that others may not notice. As with all studies based on correlational data, however, a causal relationship between measures of sensory-processing sensitivity and health cannot be established. Due to the homogeneity of our participant sample (majority being Hispanic females), these results might not be generalizable to other cultures, ethnicities, or races. Future studies should attempt to replicate these studies in different populations to examine whether the findings are generalizable.

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