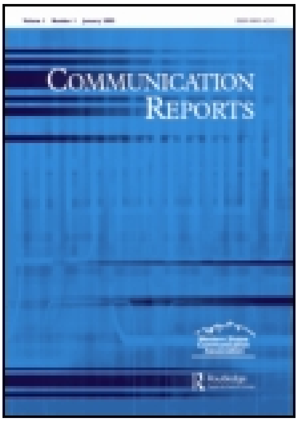

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Sensory-Processing Sensitivity and Communication Apprehension: Dual Influences on Self-Reported Stress in a College Student Sample

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Sensory-Processing Sensitivity and Communication Apprehension: Dual Influences on Self-Reported Stress in a College Student Sample

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This study investigated the influence of sensory-processing sensitivity on communication apprehension scores and self-reported stress levels of college students ($N = 304$). Two path models detailing relations among the variables were compared and findings were threefold. First, as self-report sensory-processing sensitivity increased so did self-reported communication apprehension. Second, as sensory-processing sensitivity increased so did perceived college stress, most noticeably academic stress. Third, sensory-processing sensitivity accounted for a greater amount of variance in self-reported stress than communication apprehension. Implications for future research regarding the impacts of sensory-processing sensitivity on communication are discussed.

Keywords: Classroom Environment; HSP; Sensory Stimulation; SPS

Among the many factors cited as sources of academic stress, two of the most common are in-class public speaking (Bodie, 2010) and aversive physical stimulation (e.g., cold classrooms) (Kohn & Frazer, 1986). To lower levels of college stress and improve student academic achievement, it may be necessary to consider how temperamental dispositions contribute to these notable causes of stress in some students. In particular, sensory-processing sensitivity may provide one explanation as a potential cause of stress in college students. Sensory-processing sensitivity (Aron, 1996; Aron & Aron, 1997) is an inherited neurological trait that predisposes students to

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become hyper-aware of and/or overwhelmed by their classroom surroundings. For those students who experience high sensory-processing sensitivity, or highly sensitive students, heightened consciousness to one's classroom environment may be a direct source of stress or, equally as detrimental, cause students to be apprehensive about communicating in class.

Communication apprehension (CA), the tendency to experience anxiety when communicating or thinking about communicating with others (McCroskey, 1977), is considered, to some extent, to be a function of biology (Beatty, McCroskey, & Heisel, 1998). The current study investigates CA as a possible symptom of a person's ''genetically inherited thresholds for activation'' (p. 201) by empirically testing its relation to sensory-processing sensitivity (SPS) (Aron & Aron, 1997). In addition, we investigate the degrees to which CA and SPS are related to academic stress. If SPS is a contributor to CA and college stress, the possible educational impact of high sensory-processing sensitivity on college students may be profoundly negative and should be considered by higher education administrators, counselors, and instructors. The models we tested are presented in Figure 1. Below we detail the rationale for specific hypotheses.

Sensory-Processing Sensitivity

Sensory-processing sensitivity (SPS) is a hereditary condition that is experienced in 15–20% of the population (Aron & Aron, 1997). SPS is closely related to previously labeled traits such as reactivity, introversion, and neuroticism, and is believed to be linked to differences in neurobiological systems such as Gray's (1982, 1991) behavioral inhibition system (BIS) (for a review see Aron & Aron, 1997). Persons

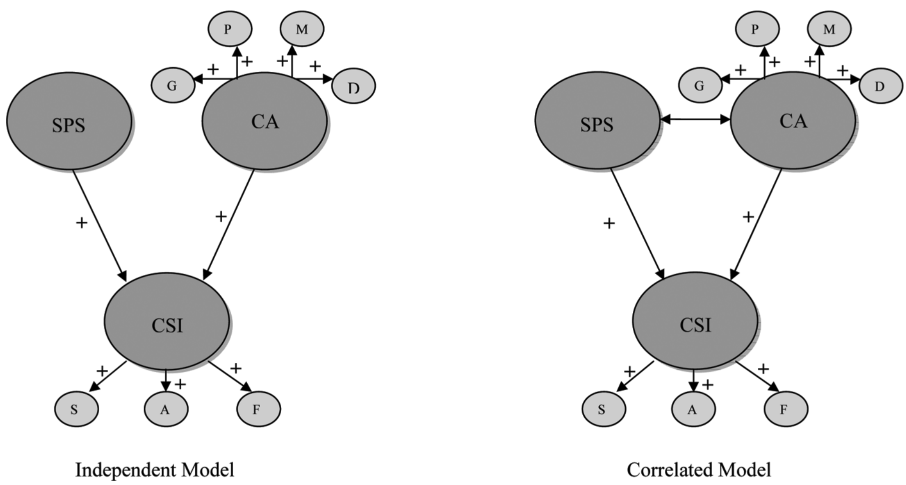

Figure 1 Proposed path models for SPS, CA, and college stress. *Note.* SPS = Sensory-processing sensitivity; CA = Communication Apprehension; CSI = College Stress Inventory; G = Group Apprehension; P = Public Speaking Apprehension; M = Meeting Apprehension; D = Dyad Apprehension; S = Social Stress; A = Academic Stress; F = Financial Stress.

characterized by neurobiological systems like the BIS that are more discerning of subtleties in the environment, including other people and emotions, have been labeled as "highly sensitive persons" (HSPs). Consequently, these individuals are highly aware of nuances in their surroundings, which contribute to longer durations of sensory processing activity in the brain (Jagiellowicz et al., 2011). Increased processing time and activity possibly reflect an increased ability to make finer distinctions regarding stimuli and better identification of subtle changes in one's surroundings (e.g., emotions of others; Gearhart, 2011b).

Increased attentiveness towards external stimuli, however, is also believed to be a cause of distractions that contribute to decreased cognitive and social performance (Aron, 1996; Gearhart, 2011a). Those who are highly sensitive become more easily overwhelmed by highly stimulating situations like noisy locations (Jaeger, 2004), large groups of people (Aron & Aron, 1997), or displays of strong emotion (Aron, 2000), and are apt to shut down communicatively. Thus, SPS seemingly has vast implications for communication educators and scholars alike.

As important as SPS seems to be for the communication classroom, the extent of current knowledge about its influence seems confined to one conference paper suggesting SPS has a negative influence on communication. In this study, Glonek, Nash, Shields, Sawyer, and Behnke (2007) found a strong, negative relationship ($r = -.71$) between SPS and communication adaptability, providing "evidence that the more sensitive an individual [*sic*] is to their environment, the less likely they will be able to adapt their communication style" (p. 20). These findings are important because, like CA, adaptability has previously been identified as having genetic origins (Beatty, Marshall, & Rudd, 2001).

The documented influence of SPS on a communication disposition previously identified to be, to some extent, biologically determined (e.g., adaptability) opens the door for the belief that other biologically determined communication constructs may likewise be influenced by SPS. The most researched individual difference in this regard is communication apprehension (McCroskey, 1977), which taps a person's tendency to seek out opportunities to communicate or find chances to avoid interactions due to a subjective, psychological experience of anxiety. Given that CA has been conceptualized as a consequence of biology and since SPS is a biological trait present from birth, a link between SPS and communication apprehension seems quite plausible. Chiefly, SPS is considered to be an inherited trait intimately related to one's threshold for stimulation (Aron & Aron, 1997); the inception of CA is likewise believed to be the result of "genetically inherited thresholds for the activation of neurobiological systems" (Beatty et al., 1998, p. 201). Moreover, the relations both SPS and CA share with well-researched, highly agreed upon personality characteristics such as neuroticism and introversion provide strong support for a possible association between the two (see Aron & Aron, 1997; Beatty et al., 1998).

In sum, the parallel characteristics and characterizations of SPS and CA seem to provide adequate rationale for proposing their statistical relationship. On the other hand, these two constructs, though both representing biologically determined communication constructs, might not share a common genesis.

The Influence of SPS and CA on College Stress

College stress is a result of physical and/or social sources of anxiety. Socially, the value that American educational systems place on sociability may present challenges and cause stress for those students who are apprehensive about communicating. Indeed, Daly (1986) noted that the culture in America considers communication as "critical to success in academic settings as well as virtually all other environments. Our society as a whole, and the academic world in particular, values sociability" (p. 22). Those who experience CA, then, are at a disadvantage in this academic landscape; to wit, research using actual students who differ in apprehension levels finds that teachers have a negative bias towards high apprehensive pupils (Daly, 1986). In addition, a number of studies (Comadena & Prusank, 1988; McCroskey & Andersen, 1976; McCroskey, Andersen, Richmond, & Wheless, 1977) have documented the influence of CA on poor academic performance, a commonly reported source of academic stress (Aldwin & Greenberger, 1987; Felsten & Wilcox, 1992). Furthermore, students who experience high sensitivity are more aware of their presence amongst peers, a feeling McCroskey (1984) termed conspicuousness. Feelings of conspicuousness and communication apprehension likely contribute to higher stress levels with these feelings being most pronounced amongst highly sensitive students.

With respect to physical sources of stress, studies of SPS have provided direct empirical evidence for the link between SPS and a variety of types of stress, and such associations also have been highlighted in studies of reactivity, a construct conceptually similar to sensory processing sensitivity (e.g., Gannon, Banks, Shelton, & Luchetta, 1989). In a study of workplace stress, Evers, Rasche, and Schabracq (2008) found that employees who are highly sensitive experience greater levels of work stress than non–highly sensitive individuals, likely due to "burnout symptoms" associated with SPS (p. 197). It is speculated that continuous exposure to the bright fluorescent lights common in many business environments and repeated distraction caused by extraneous noises are more taxing on highly sensitive workers than their nonsensitive counterparts. College students who are exposed to similar conditions during class meetings are likely to experience much of the same feelings of stress and overarousal.

Thus, we tested the correlated model presented in Figure 1 against an independent model whereby both SPS and CA independently influence levels of college stress.

Methods

Participants and Procedures

Undergraduate students ($N = 304$; 168 female, 135 male, 1 missing value; $M_{age} = 20.46$, $SD = 3.52$) enrolled in communication courses at Louisiana State University reported to a lab with approximately 20 computers and completed an online version of the survey. Students were recruited for the study via an online scheduling system whence they were able to select from a variety of research credit opportunities. Only those students enrolled in Communication Studies classes that required research participation were permitted to complete the survey. All students who completed the survey received a small amount of required research credit for their participation. Participants' reported ethnicity/race included: Caucasian ($n = 237$), African American ($n = 42$), Asian ($n = 14$), Hispanic ($n = 7$), Native American ($n = 1$), and Other ($n = 3$). All grade levels were represented: Freshman ($n = 90$), Sophomore ($n = 112$), Junior ($n = 46$), Senior ($n = 51$), Graduate ($n = 1$), and Other ($n = 3$) (1 missing value). Though participants were recruited through classes in the Department of Communication Studies, 10 University academic programs were represented. All data collected were anonymous, and all procedures were approved by the appropriate Institutional Review Board.

Measures

Sensory-processing sensitivity

SPS was measured using a modified version of the Highly Sensitive Person Scale (HSPS; Aron & Aron, 1997), originally a 27-item scale; however, respondents were administered a shorter 18-item forced choice (*True-False*) version previously recommended (Evers et al., 2008; Smolewska, McCabe, & Woody, 2006). Despite claims of scale unidimensionality (Aron & Aron, 1997), Smolewska et al. (2006) have suggested that the HSPS is a three-factor, 18-item scale: (1) Ease of Excitation (EOE), which includes eight items related to becoming mentally overwhelmed by external and internal demands (e.g., Do you find it unpleasant to have a lot going on at once); (2) Aesthetic Sensitivity (AES), which includes five items related to aesthetic awareness (e.g., Do you seem to be aware of subtleties in your environment); and (3) Low Sensory Threshold (LST), which consists of five items related to unpleasant sensory arousal to external stimuli (e.g., Are you easily overwhelmed by things like bright lights, strong smells, coarse fabrics, or sirens close by).

Confirmatory factor analysis (CFA) was conducted utilizing Amos 19.0 to evaluate model fits for all instruments utilized in this study. Commonly used fit indices and comparison thresholds were used to evaluate all CFA fit statistics and path model fit statistics, including the comparative fit index (CFI) above .90, the standardized root mean square residual (SRMR) below .10, and the root mean square error of approximation (RMSEA) below .08. Standardized residual covariance matrices were inspected for values greater than two in absolute value. Specifics related to these statistics are found in an assortment of different sources (e.g., Byrne, 2010; Hoyle, 2000; Hu & Bentler, 1999; Kline, 2005; Raykov & Marcoulides, 2006).

The unidimensional SPS model demonstrated a poor fit to the data, χ^2 (135) = 335.975, $p < .001$, SRMR = .077, CFI = .63, RMSEA = .07 (90% CI: .061, .080), which can be attributed to an especially low CFI value. To improve model fit we explored two options. First, we fit the second-order model proposed by Smolewska et al. (2006), which was also poor fitting, χ^2 (132) = 232.78, $p < .001$, SRMR = .060, CFI = .83, RMSEA = .048 (90% CI: .037, .059). Second, after inspecting item loadings and the standardized residual covariance matrix, we removed eight items.[1] This

Table 1 Zero-Order Correlations among SPS, PRCA, and CSI Scales

	1	2	3	4	5	6	7	8	9	10
1. SPS (*M* = 1.5; *SD* = .25)	<u>.69</u>									
2. Group (*M* = 15; *SD* = 1.8)	.27***	<u>.80</u>								
3. Meeting (*M* = 12; *SD* = 2.0)	.33***	.76***	<u>.82</u>							
4. Dyad (*M* = 12; *SD* = 1.5)	.23***	.74***	.67***	<u>.74</u>						
5. Public speaking (*M* = 11; *SD* = 2.3)	.25***	.43***	.52**	.37***	<u>.83</u>					
6. PRCA Total (*M* = 14; *SD* = 1.1)	.33***	.87***	.89***	.82***	.73***	<u>.91</u>				
7. Social (*M* = 2.9; *SD* = .82)	.22***	.24***	.17**	.30***	−.01	.20***	<u>.75</u>			
8. Academic (*M* = 1.7; *SD* = .71)	.30***	.09	.12*	.17**	.16**	.17**	.31***	<u>.83</u>		
9. Financial (*M* = 2.0; *SD* = .95)	.20***	.17**	.17***	.20**	.00	.16**	.46***	.38***	<u>.82</u>	
10. CSI (*M* = 2.2; *SD* = .63)	.31***	.22***	.20***	.28***	.07	.22***	.73***	.73***	.83***	<u>.85</u>

Note. SPS = Sensory-processing Sensitivity; PRCA = Personal Report of Communication Apprehension; CSI = College Stress Inventory.
$^{***}p < .001$; $^{**}p < .01$; $^{*}p < .05$. Reliabilities are presented along the diagonal.

effectively removed from consideration one of the three putative subscales (Aesthetic Sensitivity) and returned an adequate unidimensional scale with 10 items, χ^2 (35) = 59.656, $p < .01$, SRMR = .048, CFI = .91, RMSEA = .048 (90% CI: .026, .053). A point estimation of scale reliability computed from the CFA output was .69, as was the Cronbach's alpha value (see Table 1).

Communication apprehension

The Personal Report of Communication Apprehension (PRCA-24; McCroskey, Beatty, Kearney, & Plax, 1985) has been described as the most widely used self-report scale in communication because of its consistent reliability and extensive evidence of validity (Pribyl, Keaten, Sakamoto, & Koshikawa, 1998). Four subscales assess individual ratings of perceived levels of apprehension in group (e.g., I am tense and nervous while participating in group discussions), meeting (e.g., I am afraid to express myself at meetings), dyadic (e.g., I'm afraid to speak up in conversations), and public speaking situations (e.g., Certain parts of my body feel very tense and rigid while I am giving a speech). Each subscale has six items assessed on a 5-point Likert scale (*1 = Strong Disagreement* to *5 = Strong Agreement*), though Levine and McCroskey (1990) recommend using 20 items.

We first tested the second-order model with all 24 items, χ^2 (248) = 906.19, $p < .001$, SRMR = .069, CFI = .83, RMSEA = .094 (90% CI: .087 .10). Similar to Levine and McCroskey (1990), several standardized covariance residual values in this sample indicated problematic items. After removing the four previously recommended as well as three additional items an acceptable model was retained, χ^2 (115) = 387.09, $p < .001$, SRMR = .058, CFI = .89, RMSEA = .088 (90% CI: .079 .098).[2] Standardized coefficients were high for all remaining items and first-order factors ($\lambda > .50$). Subscale scores, as well as the total scale, were computed by averaging items, and internal consistency estimates were all adequate (see Table 1).

College stress

Stress was measured using the College Stress Inventory (CSI; Solberg, Hale, Villareal, & Kavanagh, 1993). This 21-item scale asked respondents how often they have experienced various stressors in the past month, scored on a 5-point scale (0 = *Never* to 4 = *Very Often*). Three dimensions comprise the CSI: seven items regarding academic stress (e.g., Difficulty handling your academic load), eight items for social stress (e.g., Difficulty handling relationships), and six items measuring financial stress (e.g., Financial difficulties due to owing money).

The unidimensional CSI model demonstrated poor fit statistics for all criteria, χ^2 (189) = 1442.877, $p < .001$, SRMR = .126, CFI = .51, RMSEA = .148 (90% CI: .141, .155). After removing 13 items due to high standardized residual covariances or low item loadings, fit statistics indicated a slightly better model fit, χ^2 (20) = 76.29, $p < .001$, SRMR = .058, CFI = .91, RMSEA = .096 (90% CI: .074, .120); however, RMSEA estimates were still above acceptable levels.

The initial second-order model of the CSI provided an inadequate fit, χ^2 (186) = 746.006, $p < .001$, SRMR = .097, CFI = .78, RMSEA = .10 (90% CI: .092 .107). After removing eight items[3] due to high standardized residual covariance values, all fit statistics were adequate, χ^2 (62) = 159.79, $p < .001$, SRMR = .07, CFI = .93, RMSEA = .072 (90% CI: .058 .086); therefore, fit statistics indicated that the three-factor solution was a better representation of the data. Scores were averaged for each of the three subscales, and all three subscale scores were averaged for a total CSI score. Reliabilities were adequate and are provided in Table 1 for the total scale and all subscales.

Results

With $N = 304$ and $\alpha = .05$, power to detect bivariate relationships was .54 for small effects ($r = .10$) and in excess of .99 for moderate ($r = .30$) and large ($r = .50$) effects. Table 1 presents the zero-order correlations for all SPS, PRCA, and CSI subscales and total scores.

To identify the best representation of the relations among SPS, CA, and college stress, two structural models utilizing item parcels for each subscale were evaluated using SEM procedures and following the maximum likelihood estimation method in Amos 19.0. Item parcels were chosen because the goal of the manuscript is to model effects of a latent variable at a given level of generality. Thus, parceling of items can minimize or cancel out the effects of nuisance factors at a lower level of generality (see Little, Cunningham, Shahar, & Widaman, 2002).

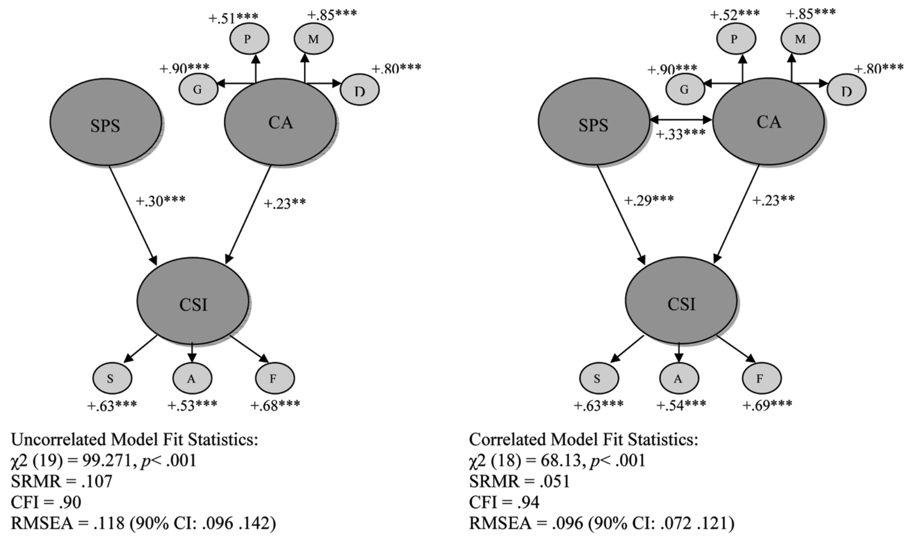

Figure 2 Coefficients and fit statistics for the independent and correlated models. *Note.* SPS = Sensory-processing sensitivity; CA = Communication Apprehension; CSI = College Stress Inventory; G = Group Apprehension; P = Public Speaking Apprehension; M = Meeting Apprehension; D = Dyad Apprehension; S = Social Stress; A = Academic Stress; F = Financial Stress; SRMR = Standardized Root Mean Residual; CFI = Comparative Fit Index; RMSEA = Root Mean Square Error of Approximation. $^{***}p < .001$; $^{**}p < .01$; $^{*}p < .05$.

Two models were estimated, one in which SPS and CA were uncorrelated and thus independently associated with stress, and one in which SPS and CA were correlated. Fit statistics are presented in Figure 2 and show that the correlated model resulted in a statistical and substantive improvement to model fit, though the RMSEA value was noticeably higher than the conventional cut-off value of .08. Figure 2 also presents the standardized path coefficients for the relations among SPS, CA, and stress. All paths were significant and suggest positive and predominately moderate to large associations among all variables.

Discussion

The purpose of this study was to determine the relations among sensory-processing sensitivity, scores on a measure of communication apprehension, and self-report stress levels amongst college students. In sum, the findings were threefold: (1) measures of SPS and CA are moderately correlated providing preliminary self-report evidence that these two biologically based constructs may share a common origin; (2) both sensory-processing sensitivity and communication apprehension are positively associated with levels of college stress; and (3) the magnitude of the association between SPS and stress is three times that of CA and stress (18.5% versus 6.25% shared variance).

Several possible explanations for a positive relationship between SPS and CA exist. For instance, the noticeable increase in apprehension in the group, meeting, and public speaking situations may be a result of anxiety from being evaluated by an audience larger than a dyad. Indeed, one SPS scale question, "When you must compete or be observed while performing a task, do you become so nervous or shaky that you do much worse than you would otherwise?", seemingly measures a person's tendency to become mentally overwhelmed due to the presence of a keen and watchful audience. Thus, a heightened sense of awareness amongst the highly sensitive may likely contribute to feelings of conspicuousness when interacting in groups. As McCroskey (1984) noted, "Probably nothing can increase CA more than being conspicuous in one's environment . . . generally, the more conspicuous people feel, the more CA they are likely to experience" (p. 25). Therefore, it may be that college students with high sensitivity are more cognizant of their conspicuousness, thus becoming mentally overwhelmed and distracted by worries about audience appraisal. As one might expect, feelings such as these could lead to increased levels of academic stress.

A second finding was that reports of stress increased as scores on processing sensitivity increased and this relationship remained the same despite the addition of the SPS-CA correlational path. The hypothesized association between SPS and college stress was predicted primarily based upon previously examined relationships between stress and sensitivity processing (Benham, 2005; Evers et al., 2008) and, interestingly, patterns of association in the current study sharply reflected those of Evers et al. (2008). Items that represented a tendency to become overwhelmed by sensory stimuli were most significantly related to self-reported stress, rather than those that reflected a greater conscientiousness of one's environment. It seems that external stimulation such as loud noises, distracting lights or smells, and multitasking are likely factors that will contribute to stress in highly sensitive college students, but a tendency towards hyper-awareness of the aesthetic quality or novelty in one's environment does not appear to influence perceived stress.

Finally, a comparison between the independent and correlated models did favor the correlated model; however, neither model was able to meet satisfactory statistical criteria. Of note from the correlated model, however, is that SPS was found to explain more variance in college stress than was CA. The findings from these data suggest that, generally speaking, students who are highly sensitive report higher levels of college stress and a portion of the stress that students are reporting is due to increased feelings of communication apprehension.

With respect to theoretical assumptions of causality, these results provide auxiliary evidence for the communibiological belief that biological predispositions underlie certain communicative processes. If SPS is a trait present at birth that characterizes persons with hyper-active neurobiological systems, as claimed by Aron and Aron (1997), and CA truly is a consequence of genetically inherited thresholds for neurobiological stimulation, then the causal effects proposed in this manuscript appear to be partially supported. Unfortunately, correlated and mediated models depicting this causal structure fell short of meeting conventional RMSEA fit statistic criteria.

The practical implication for college educators is that SPS is related to college stress, most notably academic stress, and, as such, it is not wholly inappropriate to claim that the possible educational impact of high SPS on college students may be profoundly negative. In fact, Kohn and Frazer (1986) suggested, "Cumulative effects of physical stress, in conjunction with other stressors, contribute to the burden with which students must cope. Hot or crowded classrooms . . . might have a greater impact were a student speaking in front of a class or taking an examination" (p. 424). Given the nature of SPS and the findings of this study, it seems especially apparent that highly sensitive students would suffer more from the effects of physical stressors than their nonsensitive counterparts. Thus, screening incoming students for high SPS would allow for possible preventative courses of action that could be developed to help students perform at their best/highest ability, such as smaller classroom sizes and/or quieter classrooms.

Limitations

While the authors of this manuscript took great care to address many foreseeable limitations inherent in self-report research, no manuscript is without them. First, the use of self-report measures for the study of biological predispositions and communicative abilities is problematic insofar as participants in our study may have attempted to present themselves in the best possible light, thus potentially distorting the true relationship between any variables of interest. As such, any resultant data may be systematically biased toward perceptions of what is "correct" (Fisher, 1993) as opposed to what is.

Issues regarding the HSPS measure, chiefly the low internal consistency estimate, also call into question the veracity of findings in this study. Part of the problem is the contested structure of the HSPS measure as evidenced by the fact that researchers have proposed unidimensional (Aron & Aron, 1997), two-factor (Evans & Rothbart, 2008), and three-factor structures (Smolewska et al., 2006) for the instrument. Confusion abounds because SPS has been conceptualized as having both positive and negative consequences (Aron & Aron, 1997), and these orthogonal domains of SPS seem to cause problems in its measurement. For instance, it is interesting to note that in this study the items removed from the unidimensional scale were those that reflected the AES subscale proposed by Smolewska et al. (2006). What was remaining, then, were items that assessed and reflected the negative consequences of SPS while ignoring the positives of increased conscientiousness. Future research should continue to examine the HSPS measure to modify the scale to best reflect the orthogonal domains of SPS, which may ultimately increase the likelihood of adequate reliability estimates and help to maintain consistency across studies.

Additional measures of stress may have helped develop a better understanding of the interplay between the variables of interest in this study. For instance, the CSI was developed for use with a Hispanic population, but the large majority of the sample reported being White. Thus, scores on the social subscale of the CSI may be somewhat lower because, seemingly, several questions do not relate to majority university populations (e.g., Difficulty trying to meet peers of your ethnicity/race on campus). We must also caution that results from cross-sectional, self-report data provide only speculation and fodder for future research into claims of causality. But, this potential framework aims to be a descriptive conceptual map of the empirical relations among this particular set of variables. Future research should continue to investigate the ways in which these variables are related and might extend the findings in this paper by utilizing longitudinal research methods or experimentally testing the model in actual situations.

Conclusion

In sum, this manuscript reports the results of statistical tests that investigated the relations among sensory-processing sensitivity, communication apprehension, and college stress. It appears that college students who identify themselves as being highly sensitive (as measured by the HSPS) report higher scores on the PRCA-24 and perceive higher levels of college stress. Two conceptual models depicting the influence of these two variables on perceived college stress were also tested and evaluated. The correlational model best fit the data and demonstrated that the interaction of SPS and CA is predictive of higher levels of reported stress, and in the model sensory-processing sensitivity was found to account for a greater amount of variance in self-reported stress than communication apprehension.

Notes

[1] The items deleted included: Do you startle easily; When you were a child, did your parents or teachers seem to see you as sensitive or shy; Do you seem to be aware of subtleties in your environment; Do you have a rich, complex inner life; Are you deeply moved by the arts or music; Are you conscientious; Do you notice and enjoy delicate or fine scents, tastes, sounds, works of art; and, Are you made uncomfortable by loud noises?

[2] The items deleted in addition to those recommended by Levine and McCroskey (1990) were: My thoughts become confused and jumbled when I am giving a speech; Communicating at meetings usually makes me uncomfortable; and, Ordinarily I am very tense and nervous in conversations.

[3] The items deleted included: Difficulty taking exams; Difficulty participating in class; A fear of failing to meet family expectations; Difficulty because of feeling a need to perform well in school; Difficulty handling relationships; Difficulty with peers treating you unlike they treat each other; Difficulty paying for food; and, Difficulty paying for recreation and entertainment.

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