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Psychosocial Adjustment to College among Lower Division Students with Disabilities

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This paper explores the relationships among college stress, functional limitations, engagement coping and perceived social support (PSS), and psychosocial adjustment to disability among first-year and second-year undergraduate students with disabilities (SWD) with emphasis on the potential direct and moderating influence of coping and PSS on adjustment, using a correlational (both bivariate and multiple regression analysis) research design. The sample consisted of 103 undergraduate students with physical, sensory, cognitive, and psychiatric disabilities. Results indicated that college stress and functional limitations were negatively and significantly associated with psychosocial adjustment to college, while engagement coping and PSS were positively and significantly linked to college adaptation. No support was found to the moderating role of either engagement coping or PSS in buffering the relationships between college stress or functional limitations and adjustment to college.

Key Words: psychosocial adjustment to college; students with disabilities; coping; perceived social support

INTRODUCTION

Attending a college or university for the first time marks an important major life transitional event in American society. Postsecondary entrance is often regarded as a positive life experience, with great opportunities for personal growth, development, and achievement. However, as with other major life transitions, it can also be a challenging, demanding, as well as potentially stressful experience (Morosanu, Handley, & O'Donovan, 2010; Morrison & O'Connor, 2005). These life changes, while often positive in many ways, may also induce increased stress as the individual struggles to regain stability in the face of new challenges. One specific life change in American society that has attracted considerable research attention involves students' transition to college (Lenz, 2001; Locks, Hurtado, Bowman, & Oseguera, 2008). Although entry into college yields many opportunities for personal growth and development, the literature reveals that students, particularly during their first two years of undergraduate study face a number of potential college-related stressors as they adjust to their new environment (Dyson & Renk, 2006; Kitzrow, 2003). Stress may arise from academic factors (maintaining high academic standards, competition for grades, test anxiety, time and task management) (Misra & Castillo, 2004), financial pressures (managing personal finances, having adequate funds for food and housing)(Harding, 2011; Nelson, Lust, Story, & Ehlinger, 2008) or interpersonal/social factors (fluxes in perceived supportive interpersonal relationships due to relocation and unfamiliarity of postsecondary life) (Friedlander, Reid, Shupak, & Cribbie, 2007; Morosanu et al., 2010). The importance of exploring college stress is

related to the recognition by counseling and education professionals that excessive student stress may lead to poor adjustment (e.g., low grade point average, excessive drinking, depression, anxiety; Dyson & Renk, 2006), or withdrawal from college (Hamilton & Hamilton, 2006). Despite the importance of a college education for increased earnings, meaningful employment, and subsequent quality-of-life, nearly one in four undergraduate students leave college before completing their second academic year (Hamilton & Hamilton, 2006). This has prompted counseling and education professionals to focus attention on stress, coping, and college adjustment, particularly among first-year and second-year undergraduate students (Pierceall & Keim, 2007; Saber, Mohmoud, Staten, Hall, & Lennie, 2012).

Because periods of transition are inherently stressful it seems reasonable to conclude that the transition to college may be more challenging for those concurrently managing other major life demands, such as students with disabilities (SWD). Indeed, the rehabilitation and education literatures reveal notable difficulties in adjustment to a postsecondary setting among individuals with varied physical impairments (e.g., epilepsy, multiple sclerosis, paraplegia, diabetes, deafness, blindness, visual/hearing (Adams & Proctor, 2010; Wodka & Barakat, 2007), cognitive conditions (e.g., dyslexia, Asperger's Syndrome, attention deficit hyperactivity disorder (Blase et al., 2009; Shaw-Zirt, Popali-Lehane, Chaplin, & Bergman, 2005) and psychiatric disabilities, such as bipolar disorder, anxiety, depression, post-traumatic stress disorder and schizophrenia (Hysenbegasi, Hass, & Rowland, 2005; Megivern, Pellerito, & Mowbray, 2003).

The rehabilitation and higher education bodies of literature suggest that among the various factors that influence adjustment to college among students in general, and among SWD, three are of paramount importance, namely, degree of functional ability, coping skills and strategies, and PSS (Dyson & Renk, 2006; Livneh & Wilson, 2003; Mattanah et al., 2010). These findings are reviewed next.

Functionality and Adjustment to College

The role of disability-related factors that influence adjustment to college among SWD remains largely unexplored empirically. According to the rehabilitation literature (Falvo, 2005; Livneh & Antonak, 1997), people with disability face an increase in both the frequency and severity of stressful situations. Among the more commonly recognized disability-related factors that create increased demands on the lives of individuals with disability are: limitations in functional ability, prolonged course of medical or psychiatric treatment, dealing with medication side-effects, and financial concerns involving the cost of health insurance and health care (Bramston & Mioche, 2001; Falvo, 2005).

Studies on adjustment to disability indicate that functional restrictions (indicated by increased limitations in the ability to perform usual daily tasks and roles) are often associated with poorer psychosocial outcomes (e.g., depression, psychosocial distress) (Eide & Roysamb, 2002; Haden, Scarpa, Jones, & Ollendick, 2007). However, no empirical studies could be located in the rehabilitation or education research literatures that examined the role of functionality as a possible link to adjustment to college among SWD.

Coping and College Adjustment

When faced with the transition to a postsecondary setting, new undergraduate students will inevitably have to draw upon coping to deal with their stressful experiences. Indeed, psychosocial adaptation to stressful life conditions and crisis situations intimates the existence of personal coping (Livneh & Wilson, 2003; Pierceall & Keim, 2007). As such, coping has assumed a dominant role in the empirical literature in investigating psychosocial adjustment, to include adjustment to college (Dyson & Renk, 2006; Julal, 2012; Struthers, Perry, & Menec, 2000).

The two dimensions of coping modes, engagement-type and disengagement-type strategies, have been related to different adaptive outcomes in postsecondary students, with engagement-type coping efforts positively associated with academic and psychosocial adjustment (Friedlander et al., 2007; Kariv & Heiman, 2005; Pierceall & Keim, 2007), while disengagement-type coping has been associated with poorer overall academic and psychosocial college adjustment (Dyson & Renk, 2006; Mahmoud, Staten, Hall, & Lennie, 2012). Empirical investigations have supported the role of engagement coping strategies operating as a moderator, protecting the individual against the negative impact of stress when high levels of stress are faced (Connor-Smith & Compas, 2004; Haden et al., 2007). Although the literature has supported active, engagement-type coping strategies as most effective in managing stress, and promoting adaptive outcomes in postsecondary students, only a paucity of studies have investigated coping strategies as a predictor of college adjustment among SWD, and no studies were located that examined the role of engagement coping as a moderator of college-related stress among undergraduate SWD.

Furthermore, the available studies have been limited by their relatively small sample sizes and low statistical power in testing the association between coping and adaptation-associated outcomes (Heiman & Kariv, 2004;

Sanders & DuBois, 1996).

Perceived Social Support and College Adjustment

The construct of social support has received considerable attention as a valuable resource influencing psychosocial adaptation including adaptation to college (Mattanah et al., 2010; Murray, Lombardi, Bender, & Gerdes, 2012). Research on perceived social support (PSS) has highlighted its role as both a predictor and a moderator variable influencing college adjustment (Calvete & Connor-Smith, 2006; Coffman & Gilligan, 2002).

PSS has been portrayed as a moderator variable that buffers the individual against the negative consequences of stress (Bozo, Gundogdu, & Buyukasik-Colak, 2009; Folkman & Moskowitz, 2004). It does so by providing a solution to a stressful problem or facilitating healthy, adaptive behavioral responses. Indeed, research supports the role of PSS as a moderator of the adverse impact of exposure to stressful life events and functional limitations related to college adjustment (Cohen & Wills, 1985; Folkman & Moskowitz, 2004; Malinauskas, 2010). However, only a single study was located that investigated PSS as a moderator in the relationship between negative life events (e.g., college stress; functional limitations) and adaptation to college among undergraduate SWD. Haden et al. (2007) assessed whether PSS moderated the relationship between functionality and adjustment to disability in undergraduate college students. Individuals who reported reduced levels of daily activities and life roles reported less severe PTSD symptoms when they perceived higher levels of support from friends. Similarly, only a single study was found in the literature that addressed the role of both coping and PSS in adjustment to college among undergraduate SWD (Wodka & Barakat, 2007). The perception of supportive social relations was linked to positive psychological adjustment (lower levels of anxiety). Coping was also directly linked to psychological adjustment. Specifically, passive, disengagement-type coping (i.e., denial, mental and/or behavioral disengagement, alcohol/drug use) was related to higher levels of anxiety. However, that study did not examine the potential moderating, stress-interacting role of engagement coping and PSS in linking the relation between stress and adaptation, and assessed adaptation-associated outcomes using only negative outcome measures (i.e., anxiety, depression).

To better understand the psychosocial adjustment of undergraduate SWD, the present study sought to explore the role of engagement coping strategies and PSS in promoting adjustment to college, and, more specifically, the potential moderating effects of coping efforts and PSS on the relationships between college stress and functionality, and adjustment to college in undergraduate SWD. An empirical investigation of coping strategies such as engagement-type coping and PSS to ameliorate negative effects of stress (i.e., college stress; functionality-induces stress) on adjustment offers a potentially viable approach for supporting SWD during their college life. Findings may be especially helpful in guiding higher education and rehabilitation professionals in the selection of therapeutic and academic interventions that will promote better college adjustment among these students.

Study Goals and Hypotheses

The first goal of this study was to explore the relationships between each of the four predictor variables (i.e., college stress, functional limitations, engagement coping, PSS), and psychosocial adjustment to college. The second goal was to examine the role of engagement coping and PSS as possible moderators of the relationships between college stress and functionality, and psychological adjustment to college.

The following hypotheses were proposed: first, there will be a negative relationship between (a) college stress and (b) functionality (more pronounced functional limitations), and psychosocial adjustment to college among undergraduate SWD. Second, there will be a positive relationship between (a) engagement coping and (b) PSS, and psychosocial adjustment to college among SWD. Third, engagement coping will moderate the impact of college stress and functionality on adjustment to college among SWD. Finally, PSS will moderate the impact of college stress and functionality on adjustment to college among SWD.

METHODOLOGY

Sample

In order to detect medium effect size (R^2 =.15) for multiple regression analysis, a power analysis was conducted, and determined to be: N = 85 (for α = .05; power = .80; 5-8 predictors).

Varying the number of predictors from 5 to 8 variables, suggested a sample size in the range of 85 to 98 respondents would be sufficient for the present study. Accordingly, 103 students registered with Offices of Services for SWD, and who were attending one of two postsecondary institutions (located in the Pacific Northwest) participated in the study. All data were collected online, via a web-based survey. Analysis of socio-demographic data revealed that respondents ranged in age from 18 to 47, with a mean age 21.91 (*Mdn* = 19; *SD* = 6.76) years. With respect to gender, 55.3% of

respondents were women and 44.7% were men. These data approximated the distribution of gender in undergraduate SWD at postsecondary institutions in the United States (56.9% and 43.1%, respectively), as reported by the U.S. Department of Education, National Center for Education Statistics (USDE-NCES; 2012).

The majority of respondents described themselves as White (88.4%), followed by Asian/Pacific Islander (6.7%), Black/African American (1.9%), Native American (1%), Hispanic (1%), and Multiple Ethnicities (1%). This distribution did not accurately reflect that reported by the U.S. Department of Education, NCES (2012) of: White (66.3%), Asian/Pacific Islander (4.8%), Black/African American (12.6%), Native American (0.8%), Hispanic (12.3%), and other (3.2%). Marital status categories included: single (89.5%), married or partnered (6.7%), and divorced or separated (3.8%). Hours of employment categories for this sample included: none or occasional work hours (65.4%), 11-20 hours (17.3%), 1-10 (10.6), 21-30 hours (3.8%), and 31-40 hours (2.9%). The sample's academic level was reported as 61.2% first-year and 38.8% second-year students.

Data concerning participants' disability type included the categories of (a) physical (i.e., sensory or communication disorders [e.g., blindness, deafness], mobility or orthopedic conditions [e.g., arthritis, spinal cord injury], health and medical conditions [e.g., fibromyalgia, congestive heart failure, multiple sclerosis]; 34.6%), (b) cognitive (e.g., attention deficit/hyperactivity disorders, autism spectrum disorders, specific learning disabilities; 45.2%), and (c) psychiatric (e.g., anxiety, depression, bipolar disorder; 19.2%). These data suggest that the respondents represented a balanced cross-section of postsecondary SWD. Available national distribution figures for type of disability reported by undergraduates attending 2-year and 4-year postsecondary institutions (Raue & Lewis, 2011) were as follows: physical disabilities (25%), cognitive disabilities (57%), psychiatric disabilities (16%), and other disabilities (not specifically reported; 2%). Lastly, information was obtained on the disability age of onset which ranged from birth to 40 years (M = 12.65; Mdn = 12; SD = 8.01).

Measures

Measures used to obtain data pertinent to this study included:

Socio-demographic characteristics.

A Participant Survey was self-administered to obtain socio-demographic data and included questions on respondents' age, gender, ethnic background, marital status, years since diagnosis of disability, primary disabling condition, type of housing, number of hours per week employed, academic level (i.e., first-year or second-year), and cumulative grade point average.

College stress.

A modified version of the 21-item College Stress Inventory (Solberg, Hale, Villarreal, & Kavanagh, 1993) was used to assess college-related stress. The CSI contains three subscales: Academic stress, social stress, and financial stress. The social stress subscale consists of two sub-factors; stress stemming from issues related to ethnicity (or in the present study, from issues related to disability), and stress resulting from issues related to interpersonal competence. Individuals rate each item on a 4-point frequency scale from 0 = never to 4 = always. Scores range from 0 to 84, with higher scores indicating greater college stress. Lower CSI scores have been shown to predict greater well-being (Solberg & Villarreal, 1997). Internal consistency for the total CSI scale has been reported at .89, and each of the three subscales has been found to possess adequate internal consistency reliability (ranging from .82 to .88) (Solberg et al., 1993). In the present sample, internal consistency (Cronbach's alpha) for the subscales was as follows: academic stress (α = .87), social stress (α = .86), and financial stress (α = .91). The total CSI scale had a Cronbach's α of .91. For purposes of this study it was determined, following Solberg et al. (1993) rationale, that a single, summative score would best capture the essence of college stress and, therefore, only the total CSI score was included in further analyses.

Functionality.

The *Disability Functional Limitations Scale*, developed by the researchers, was a self-administered instrument designed to measure disability-related functional limitations. The degree of functional limitations was measured by seven items that required participants to indicate on a 5-point scale (1 = *not restricted at all, to* 5 = *totally restricted)* the degree to which their ability to function within their own environment is restricted by their disability. Individual scores were added up to yield a total DFLS score, with higher scores indicating more severe functional limitations. Included items were selected based on *activities* and *participation* (two dimensions of disability listed by the International Classification of Functioning, Disability and Health [ICFDH-2] [World Health Organization, 2001]) in relevant domains of functioning in which a university student would be engaged daily. Several studies have supported the ICF as a useful framework for the assessment of functioning and disability in chronic conditions (Bruyere, Van Looy, & Peterson, 2005; Chwastiak & Von Korff, 2003).

PSS.

PSS was measured with the Social Support Appraisals (SSA) scale (Vaux et al., 1986). The SSA is a 23-item measure that taps the extent to which a person believes he or she is loved by, esteemed by, and involved with family, friends, and others. Items are scored on a 4-point Likert Scale, ranging from "strongly agree" to "strongly disagree." Lower scores on the scale indicate a stronger subjective appraisal of social support. In addition to the total score, the seven *family* items make up a family subscale, and the seven *friend* items make up a friend subscale. The remaining nine items refer to people or *others* in general. For the purposes of this study, scores' direction was reversed so that higher scores reflect higher PSS. The SSA has demonstrated good internal consistency, with α coefficients that range from .81 to .90. Internal consistency in the current study sample was .96. For the purposes of this study, and as advocated by Vaux et al. (1986), it was determined that a single, summative score would best represent this measure.

***Coping*.**

The use of coping strategies was measured with the 14-subscale, 28-item Brief Coping Orientations to Problems Experienced (Brief-COPE; Carver, 1997). Each of the strategies consists of two items. Respondents are instructed to indicate how they generally feel and what they generally do when experiencing a stressful event. Items on the Brief-COPE Inventory are endorsed on a 4-point frequency scale, ranging from 1 ("I usually do not do this at all") to 4 ("I usually do this a lot"). The responses are then summed up separately for each scale to yield 14 individual coping scores. The 14 coping subscales include: active coping, planning, positive reframing, acceptance, humor, religion, using emotional support, using instrumental support, self-distraction, denial, venting, substance use, behavioral disengagement, and self-blame. Despite the fact that the 14 scales are only two items each, their reliabilities all meet or exceed the value of .50, regarded as a minimally acceptable psychometric value.

Coping theory proposes that coping strategies, as assessed by the Brief COPE and other measures, are part of several larger coping styles or constructs (e.g., problem-focused, emotion-focused, approach, avoidance, engagement, and disengagement coping), however, researchers have warned against the practice of assuming that certain coping strategies are always grouped in the same way across different contexts (Carver, 1997; Lazarus & Folkman, 1984). Therefore, a PCA was conducted to examine how the various subscales form broader coping constructs in this sample of SWD. To ensure factorability of the correlation matrix, Bartlett's test of sphericity was applied to the 14 x 14 correlation matrix. A significant chi-square value of 1008.51 ($p < .001$) supported continuation of the PCA. The varimax-rotated procedure with Kaiser Normalization for the data indicated a three-factor solution. This solution was retained because it was further supported by three factor retention criteria. Namely, eigenvalue larger than 1, the Scree test, and interpretability of results. The three factor solution accounted for 70.22% of the variance in the data. Only scores on engagement coping were included in further analyses. Engagement coping, accounted for 48.24 % of the pre-rotation variance (eigenvalue = 6.75), and included five coping scales (Active Coping, Planning, Positive Reframing, Spiritual-Religious, and Seeking Social Support-Instrumental). These scales suggest cognitive, social, and behavioral efforts at engaging the problematic event. The internal consistency of engagement coping was adequate (α = .81).

Psychosocial Adaptation to College.

Assessing student psychosocial adjustment to college, was accomplished with the *Student Adaptation to College Questionnaire* (SACQ) (Baker & Siryk, 1999). The SACQ is a 67-item, self-report questionnaire that yields scores for overall adaptation to college as well as four facets of college adjustment: academic, social, personal-emotional, and goal commitment-institutional attachment. Each item is rated on a 9-point Likert-like scale (1 = "applies very closely to me" to 9 = "doesn't apply to me at all"). The total adjustment score is the sum of the ratings for all 67 items. Items are coded such that higher scores are indicative of more positive adjustment ratings in that domain. The current study reports only the total SACQ score per respondent. Internal consistency for the total SACQ scale yielded a Cronbach's α of .91. Extensive reliability data for all subscales, as well as total SACQ scale data, have been reported by Baker and Siryk (1999), suggesting that the SACQ is a reliable measure of college adjustment.

RESULTS

Table 1 presents the means and standard deviations of the study's variables as well as their inter-correlations. Among the socio-demographic variables only gender, hours of employment, and age at disability diagnosis, significantly correlated with adjustment to college. Specifically, gender and age of disability diagnosis were correlated significantly ($r = .185$; $p < .05$; $r = -.21$; $p < .05$, respectively) with psychosocial adjustment to college. As can be seen from the Table, the associations between the four predictors and adjustment to college were all

Table 1. *Zero-Order Correlation Matrix of Predictor and Psychosocial Outcome Adjustment Variables*

Variable	M	SD	1	2	3	4	5	6	7	8
1. Gender										
2. Hrs. Emp.	1.69	1.1	.024							
3. Age. Dis.	12.65	8.00	-.230**	.032						
4. CSI	40.28	14.30	.102	.213	.214*					
5. DFLS	16.08	4.60	.082	-.015	.281**	.582*				
6. E-COPE.	27.84	5.36	-.142	.075	.147	-.072	.015			
7. SSA-R	75.70	12.32	.060	-.080	-.259*	-.344**	-.290**	.420**		
8. SACQ-T	45.71	12.47	.185*	-.092	-.213*	-.364**	-.176*	.444**	.668**	

*$p < .05$; **$p < .01$

Note. Gender = Gender; Hrs. Emp. = Hours Employed; Age. Dis. = Age Disability Diagnosed; CSI = College Stress Inventory; DFLS = Disability Functional Limitations Scale; E-COPE = Engagement Coping; SSA-R = Social Support Appraisal scale-Revised; SACQ-T = Student Adaptation to College Questionnaire (Total score).

significant and consistent with the directions expected by hypotheses 1 and 2. Namely, psychosocial adjustment was significantly and negatively correlated with college stress (r = -.36, p < .01) and functionality (r = -.18, p < .05), and positively with PSS (r = .44, p < .01) and engagement coping (r = .67, p < .01).

To assess the hypothesized moderating effects, the regression with interaction procedure described by Baron and Kenny (1986) and Holmbeck (1997) was used. First, the predictor and moderator main effects were regressed on the criterion variable. Second, the interaction terms representing the product of the two main effects (i.e., engagement-coping X college stress; engagement-coping X functional limitations; PSS X college stress; PSS X functional limitations) were entered, separately, into the equation. The moderator hypothesis is supported when the interaction term is significant.

More specifically, the study's second goal, testing a moderating role for engagement coping and PSS (each) was addressed by conducting a set of four-step multiple regression analyses. In step one, relevant socio-demographic variables were entered as control variables. In step two, the unique contribution of each predictor variable were entered. These predictor variables included: college stress and functional limitations. In step three, each potential moderator variable (i.e., engagement-coping; PSS) was entered (in separate regressions). Lastly, in step four, the interaction terms were entered, separately.

Table 2 depicts the data pertaining to hypotheses 3 and 4. Four separate hierarchical MRAs were conducted, using psychosocial adjustment to college as the outcome. Prior to undertaking the moderator analysis, the predictor variables and the potential moderators were centered (variables means were subtracted from each individual score) and the interaction term was created by multiplying the centered predictor by the centered potential moderator. This procedure lessens multicollinearity problems (Aiken & West, 1991). The first two MRAs tested for the moderator role of engagement coping on adjustment. In Step 1 (Hypothesis 1), both control variables (gender; age disability diagnosed) were entered into the model. This set of demographic variables were statistically significant, R^2 = .065, ΔF (2, 100) = 3.462, p = .035. In step 2a, the college-related stress variable was added to the model. The CSI was statistically significant as a predictor of psychosocial adjustment to college (ΔR^2 = .12, ΔF [1, 99] = 15.17 [p < .001]). Separately, in step 2b, the disability-related predictor, DFLS, was added to the model, but failed to

Table 2. Hierarchical MRA for testing the moderating effects of engagement coping and perceived social support on college stress and functional limitations as measured by psychosocial adjustment to college

Step & Predictor Variables	R^2	ΔR^2	*B*	*SEB*	β	ΔF
Step 1	.065*		47.65	2.74		
					.14	
Gender			3.58	2.48		
Age Dis.			-.28	.15	-.18	
Step 2a			45.20	2.64		
CSI	.19***	.12***	-.32	.08	-.37***	15.17***
Step 2b			46.43	2.84		
DFLS	.09	.02	-.41	.27	-.15	2.29
Step 3a			46.03/47.03	2.27/2.44		
E-COPE/CSI	.41***	.22***	1.11	.18	.48***	36.50***
E-COPE/DFLS	.33***	.25***	1.18	.19	.51***	36.49***
Step 3b			43.39/44.35	2.11/2.19		
SSA-R/CSI	.49	.30***		.08***	.60***	58.99***
SSA-R/DFLS	.47	.38***	.67	.08	.66***	70.03
Step 4a			*B*= 46.05(4a1)/47.06(4a2); *SEB*= 2.29(4a1)/ 2.46(4a2)			
Int. Term:						
E-COPE X CSI	.41	.00	.00	.01	.01	.01
E-COPE X DFLS	.33	.00	.01	.04	.01	.03
Step 4b			*B*= 43.432(4b1)/44.30(4b2); *SEB*= 2.15(4b1)/2.21 (4b2)			
Int. Term:						
SSA-R X CSI	.49	.00	.00	.01	.01	.04
SSA-R X DFLS	.47	.00	.00	.01	-.02	.04

*$p < .05$; ***$p < .001$

Note. Age Dis. = Age Disability Diagnosed; CSI = College Stress Inventory; DFLS = Disability Functional Limitations Scale; E-COPE = Engagement Coping; SSA-R = Social Support Appraisal-Revised Scale; Int. Term = Interaction Term.

reach statistical significance (i.e., $\Delta R^2 = .02$, ΔF (1, 99) = 2.29, β = -.15, p = .13). In step 3a, the engagement coping was added to the model and a significant main effect emerged, $\Delta R^2 = .22$, ΔF (1, 98) = 36.50, β = .48 (p

< .001), revealing that it added significantly to psychosocial adjustment, beyond the contribution of CSI. Examination of Table 2 reveals that E-COPE, uniquely, accounted for approximately 22% of the variance in college adjustment scores. As indicated in Table 2, the *F* change statistic and weights show that engagement coping was the most important predictor in this regression model. In step 3b, engagement coping was added to the model, following the DFLS score, and a significant main effect emerged (ΔR^2 = .25, ΔF [1, 98] = 36.49, β = .51, p < .001), revealing that E-COPE adds significantly to the SACQ scores. E-COPE accounted for approximately 25% of the variance in psychosocial adjustment scores. Engagement-type coping, then, was the most important predictor in this regression model and was associated with increased psychosocial adjustment to college. Lastly, in steps 4a and 4b, separately, the interaction term between engagement coping and college stress (E-COPE X CSI) or (E-COPE X DFLS) was added to the model. Table 2 reveals that ΔR^2 was not statistically significant in either model (ΔR^2 = .00, ΔF [1, 97] = .01, β = .01 [p > .05], and ΔR^2 = .00, ΔF [1, 97] = .03, β = .015, p > .05), respectively). Therefore, neither interaction term was found to significantly increase the amount of variance explained in SACQ-T scores, when compared to that contributed by the two main predictor variables (CSI; E-COPE, and separately, DFLS and E-COPE) entered in steps 2 and 3, respectively. The results, therefore, provide support for the direct (main) effect model of engagement coping in the relation between college-related stress and, separately, perceived functional limitations, and psychosocial adjustment to college. Analyses offered no support for the moderating model of engagement coping in the relationship between college-related stress, or functional limitations, and psychosocial adjustment to college among undergraduate SWD.

A second set of two hierarchical MRAs was conducted to address hypothesis 4. This time, the moderator role of PSS was assessed. As before, in Steps 1 and 2, the control variables of gender and age disability diagnosed were entered first into the model, followed by scores on the CSI and DFLS. Following steps 1 and 2, in step 3a, PSS (i.e., SSA scores) was added to the model, and a significant main effect emerged, ΔR^2 = .305, ΔF (1, 98) = 58.99, β = .62 (p < .001). PSS accounted for approximately 30% of the variance in psychosocial adjustment scores. Separately, in step 3b, PSS was added to the model. A significant main effect emerged, ΔR^2 = .38, ΔF (1, 98) = 70.03, p < .001), indicating PSS as a positive predictor of college adjustment scores, with higher scores associated with increased psychosocial adjustment. In step 4a, the interaction term (SSA X CSI) was added to the model. Examination of the *F* change statistic and weights in Table 2 indicate that the interaction of PSS with college stress was not a significant overall predictor of psychosocial adjustment (ΔR^2 = .00, ΔF [1, 97] = .015, β = .01, p = .90 [p > .05]).

Separately, in step 4b, the interaction term between PSS and functional limitations (SSA X DFLS) was added to the regression model. Results of the interaction analysis are presented in Table 2. Examination of the *F* change statistic and weights indicate that the interaction of PSS with functional limitations, was not a significant overall predictor of college adjustment (ΔR^2 = .00, ΔF [1, 97] = .04, β = - .02, p = .84 [p > .05]). The results of this hypothesis provide support for the direct (main) effect model of PSS in the relationship between college stress, and separately, degree of functionality, and psychosocial adjustment among undergraduate SWD. There was no support for the moderator model of PSS in the relationship between college-related stress, or functionality, and psychosocial adjustment to college.

DISCUSSION

Many variables can impact students in their adjustment to college environment. This study explored relationships among college stress, functional limitations, coping strategies, and PSS in adjustment to college among 103 undergraduate SWD. Of particular interest were the potential relationships of both direct and stress-interacting effects of engagement coping and PSS upon adjustment outcomes. An exploration of these coping strategies and resources may be helpful in guiding higher education and rehabilitation professionals to the selection of therapeutic and academic interventions that will most optimally promote successful college adjustment for SWD.

The first goal of this study was to examine the relationships among the study's four predictor variables (i.e., college stress, functional limitations, engagement coping, and PSS) and psychosocial adaptation to college. The results are summarized below.

College stress and adaptation.

As predicted, higher levels of college stress were significantly related to psychosocial adjustment. This finding was consistent with previous research of the general postsecondary student population, directly linking college stress to relevant outcome criteria, such as life satisfaction and psychosocial college adjustment (Coffman & Gilligan, 2002; Saber et al., 2012). The findings were also consistent with those studies examining the relation between college stress and measures of college adaptation among disabled student postsecondary populations (Kerr, Johnson, Gans, & Krumrine, 2004; Malinauskas, 2010; Sanders & DuBois, 1996).

Functionality and adaptation.

Degree of functionality was found to be significantly and negatively related to college adjustment. The discovery of a negative association between functionality and psychosocial college adjustment was an indication that adaptation to college among SWD involved perceived degree of impairment that may negatively influence the pursuit of educational goals. It is important, therefore, for researchers to continue to explore the role of disability-related variables such as stigma, chronic pain, chronic fatigue, and endurance in future studies investigating college adjustment among SWD.

Engagement coping and adaptation.

As in prior research with nondisabled postsecondary students (Calvete & Connor-Smith, 2006; Dyson & Renk, 2006), engagement coping was found in this sample to have a significant association with successful adjustment to college. Engagement coping involve behavioral, affective, and cognitive aspects of coping, such as active planning, seeking instrumental support for problem solving, and positive reframing to combat stress. Accordingly, it is well suited for reducing and managing college-based stress. These findings which replicate previous empirical work in coping and adjustment, are nonetheless uniquely meaningful, because they add to the paucity of literature examining coping strategies in a college population of SWD.

PSS and adjustment.

As hypothesized, PSS was positively related to college adjustment. This finding was consistent with previous research in general undergraduate students, in which students reporting higher levels of PSS also reported higher levels of life satisfaction (Coffman & Gilligan, 2002; Malinauskas, 2010), and psychosocial adjustment to college (Friedlander et al., 2007; Tao, Dong, Pratt, Hunsberger, & Pancer, 2000). PSS obtained from family, peers, and other significant individuals, therefore, played a significant and beneficial role in the lives of this sample of SWD. Findings were also consistent with previous studies suggesting a significant and positive relationship between PSS and college adjustment in SWD (Murray et al., 2012; Winterowd, Street, & Boswell, 1998).

The second goal of this study was to examine possible moderating relationships involving college stress and functionality, and two moderators, including engagement coping and PSS in adjustment to college. The results are summarized below.

Engagement coping as a moderator.

Engagement coping was not found to moderate the predicted stress-adjustment relations in this sample. Despite the findings of the current study, other researchers continue to endorse the role of engagement coping as an effective moderator against stressful life events (Compas, Connor-Smith, Saltzman, Thomsen, & Wadsworth, 2001; Connor-Smith & Compas, 2004; Moos & Holahan, 2003).

The lack of support for engagement coping as a moderating variable in the current study may be attributable to several factors. It may be that other unexplored and unknown moderating variables were responsible for the outcomes in this study, such as personality characteristics. Personality researchers have found that a number of stable individual differences predispose individuals to use certain coping strategies (Connor-Smith & Flachsbart, 2007; Ferguson, 2001; Moos & Holahan, 2003). For example, Ferguson (2001) found that neuroticism and introversion were associated with ineffective coping behaviors, such as denial. Optimistic individuals, alternatively, were found to engage in active, problem-focused coping or strategies that could alter the problematic situation, leading to more effective resolution of the stressful situation. Optimistic individuals also tend to seek out social support, engage in positive reappraisal of adverse events, and feel as if they have the resources to overcome stressful situations. These are factors that can help buffer against the effects of negative life events, thereby influencing well-being and other adaptive outcomes. Further research would profit by examining the possible interaction effects of stable, personality traits (e.g., optimism, hope, neuroticism, introversion) with life stress and psychosocial outcomes in adjustment to college among undergraduate SWD.

PSS as a moderator.

PSS was not found to moderate adjustment to college in this sample of SWD. Gaining a better understanding of when and how PSS serves as a moderator is important for higher education and counseling professionals working with such students. Previous studies have suggested that PSS can ameliorate the potentially debilitating effects of stress, particularly when high levels of stress are faced. That is, the availability of supportive social relations can help the individual better deal with stressful situations, resulting in greater psychosocial adjustment as compared to individuals who perceive little or no available social support (Cairney, Boyle, Offord, & Racine, 2003; Cropley & Steptoe, 2005).

While there was no evidence for the moderating model of PSS, the current study did weigh heavily in support of a main, direct effects model. Thus, PSS mostly exerts direct effects in enhancing psychosocial adjustment to college. Other studies also revealed support for the main effects model of PSS in college adjustment outcomes (Murray et al., 2012; Rodriguez, Mira, Myers, Morris, &

Cardoza, 2003). For example, Rodriguez et al. found no support for the moderating role of PSS, but did find support for the main effects model in college adjustment among Latino students. One possible explanation for the lack of moderating effects in the current study may be related to the way in which PSS was conceptualized and measured. In the current study, PSS was conceptualized as a global, unitary entity. In an earlier paper, Cohen and Wills (1985) suggested that social support functions should match the resources needed to cope with a specific type of stressor. The authors implied that only specific functional measures of support will show moderating effects. When faced with stressors that involve academic-related problems, for example, it may be that only the informational function of support (e.g., tutoring, academic advising, assisting in writing) will serve to moderate its effects on college adjustment. Future research examining the potential interacting role of PSS in the stress-adjustment relation should, therefore, include a measure that incorporates several functional indexes of such support. Indeed, other studies have supported the moderating role of PSS, when specific functions of such support have been empirically investigated (Bozo et al., 2009; Murray et al., 2012).

It is also possible that PSS was a proxy for some causal variable(s) with which support was highly correlated. Stable personality characteristics such as competence and sociability could have been plausible candidates. That is, it may have been that socially competent people were more capable of developing the perception of supportive relationships by effectively coping with stressful events or by performing effective coping behaviors. Hence, effects that might have been attributable to PSS may have been partially or wholly attributable to personality traits such as competence and sociability that were highly correlated with social support (Ferguson, 2001). Studies using longitudinal prospective designs that include measures of variables such as social competence, sociability, extraversion, and neuroticism would be informative in ruling out specific rival explanations for PSS effects.

Limitations.

The findings of this study must be interpreted with caution because of several limitations. First, the sample of respondents included mostly single, and composed of lower division SWD attending a public university. Respondents also represented a specific geographical area (i.e., Pacific Northwest) of the United States. In addition, the decidedly Caucasian sample renders the results ethnic-specific. Respondents were also not randomly selected, possibly affecting representativeness of the population. The voluntary nature of participation, as well as relatively high adjustment scores may suggest that these respondents represented a motivated group, with more successful academic backgrounds than other groups of undergraduate SWD. These factors all limit the generalizability of the findings.

Second, the measures used in this study were based exclusively on self-report. Despite the ensured anonymity of respondents, social desirability, defensiveness, and other reactive confounds may have influenced participants' responses. Second, the exclusive reliance on web-based survey methodology poses its own set of unique challenges and limitations. In the current study, this primarily included the possibility of measurement errors in translating a survey from traditional paper-and-pencil format to an electronic survey format.

Finally, this study used a correlational design. Therefore, no causal inferences can be made concerning directionality of relations between the tested predictors and college adjustment. It is conceivable that college adjustment may also influence degree of college stress, engagement coping efforts, and PSS.

Implications for Higher Education and Rehabilitation Services

Several important clinical implications can be drawn, especially if the findings of this study are replicated. First, if engagement coping is indeed an effective modality for improved college adjustment, regardless of functional limitations, then cognitive-behavioral strategies designed to promote active, goal-oriented and problem-directed coping could profitably be implemented (Folkman, Chesney, McKusick, Ironson, & Johnson, 1991; Kennedy & Duff, 2001; Taylor, 2006). One such program that has empirical support in terms of helping individuals with disability develop the requisite engagement-type coping skills with which to manage their functional status is Coping Effectiveness Training (CET). CET is derived from Lazarus and Folkman's (1984) theory of coping with stress and was further developed by Chesney, Chambers, Taylor, Johnson, and Folkman (2003), and King and Kennedy (1999) to assist people with disabilities in choosing among adaptive coping modes (e.g., problem-solving, planning, emotional regulation, seeking social support) that would best serve to cope with stressful situations and reduce distress. CET was found to successfully facilitate adaptive coping in individuals with a variety of disabling conditions, including spinal cord injury (Duchnick, Letsch, & Curtiss, 2009; Kennedy & Duff, 2001; King & Kennedy, 1999), HIV+/AIDS (Chesney et al., 2003), and chronic pain (Keefe, Blumenthal, Baucom, Affleck, & Waugh, 2004). Furthermore, as noted by Ramsay and Rostain (2006), these cognitive-behavioral coping interventions could be used to assist SWD in setting and implementing realistic goals. In a college setting, the goals are typically focused

on academic issues, such as earning good grades. Although it may be understandable for a student's goal to earn an "A" in a class, such an outcome is more than can be reasonably ensured. On the other hand, the student can be encouraged to focus on behavioral goals that will increase the likelihood of earning a good grade. Such goals might include improving class attendance, making use of academic support services, and completing assigned readings prior to each class.

Second, the finding that PSS is beneficial to students' psychosocial adjustment to college is also of clinical significance. The utility of peer-led support groups have garnered empirical support as a highly effective and low cost modality for reducing and managing stress, and ultimately promoting overall adjustment to college (Chen & Katz, 2009; Gray, Vitak, Easton, & Ellison, 2013; Mattanah et al., 2010). This modality offers a mutual, empathic environment where SWD are encouraged to share their experiences, thoughts, and feelings in facing and overcoming challenges related to college life experiences. For example, Mattanah et al. (2010) implemented a peer led social support intervention for first-year college students that included activities pertaining to: (a) creating new social ties; (b) balancing work, academics, and a social life; (c) peer pressures, values, and college life; (d) residential issues; (e) expectations versus realities of college life; and (f) examining old social ties. Those students who participated in the intervention group reported reduced loneliness, and a significantly greater level of PSS following the intervention than did students in a control group. The most salient feature of the peer-led support group was facilitating intimate exchanges among participating students. According to Mattanah et al. (2010), this feature alone provided the supportive social context first-year students found valuable to ease their transition and adjustment to college.

Finally, the psychosocially adaptive nature of both engagement coping and PSS, as anchored within the context of QOL and subjective well-being, can be regarded as reflective of what has been termed positive psychology (Diener, 2009; Seligman, Steen, Park, & Peterson, 2005). As viewed from the perspective of positive psychology, most disabling conditions, many of which are permanent in nature, involve physical restrictions that cannot be removed and let alone "cured". Instead, they necessitate psychosocial and behavioral adaptation which is often achieved through promoting both internal (e.g., using engagement coping, adopting benefit and meaning finding attitudes, bolstering hope, optimism, resilience, and self-efficacy), and external (e.g., seeking and maintaining social support, achieving financial stability) resources. From this broader perspective of confronting life stresses, then, the targeting of engagement coping (i.e., focusing on planning and executing meaningful, personally-beneficial, future oriented activities), and participating in social and recreational activities, are highly valuable approaches to inducing personal well-being, happiness, and positive QOL (Cohn & Fredrickson, 2010; Seligman et al., 2005). Indeed, positive psychology-based clinical interventions and adopted coping modes have been found to contribute consistently to increased subjective well-being and decreased negative affectivity in a wide range of populations, including people with disabilities (Boiler et al., 2013; Helgeson, Reynolds, & Tomich, 2006; Seligman et al., 2005).

In sum, then, engagement coping and PSS are valuable psychosocial resources, both demonstrating direct link to psychosocial adjustment to college. This finding suggests that counseling efforts, as applied by higher education and rehabilitation professionals, could serve an important role in mitigating stressful college experiences. Despite the lack of support for the moderating role of these two resources under differential stressful conditions, in the present sample, the findings of this study, nevertheless, offer several venues of clinical interventions for undergraduate SWD, as well as implications for future research. More specifically, educators and clinicians could profitably help SWD mitigate the stressful situations they encounter, in college settings, by instilling and honing an adaptive coping repertoire, as well as providing opportunities for broadening and deepening their social network.

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