

Research

Managing Stress and Maintaining Well-Being: Social Support, Problem-Focused Coping, and Avoidant Coping

Ruth Chu-Lien Chao

This study tested a model that links stress, social support, problem-focused coping, and well-being. First, it looks at how high support significantly moderated the association between stress and well-being. Next, the students' problem-focused coping was seen as mediating this moderated association. Finally, a 3-way interaction of stress, social support, and avoidant coping revealed that only frequent use of avoidant coping accelerated the association between stress and well-being in a negative way at both low and high support.

Life is full of stress for college students (Roberti, Harrington, & Storch, 2006). For students to manage their stress, positive social support and useful coping are essential. Bear in mind that students manage stress differently; they assess stress, seek support from families and friends, and execute their coping all in their own ways.

However, although many researchers report that social support and coping are positively associated with well-being (Ben-Zur, 2009), there are two pitfalls in applying these associations to students. One, social support is unstable or even decreasing for some students in the recent decade (Arria et al., 2009), so it is important to see how low support may change the association between stress and students' well-being. Two, not all coping strategies are effective; some are functional and useful, whereas others are less so (Carver, Scheier, & Weintraub, 1989). This study aims to examine the moderating roles of social support and coping on the association between stress and well-being.

From both theoretical and practical perspectives, there is lack of clear understanding of the factors that can predict the well-being of college students surrounded by a multitude of stressors (Skowron, Wester, & Azen, 2004). Thus, in this article I seek to address this gap by providing theoretical, empirical, and practical insight into the conditions under which stress is linked to the well-being of college students. I integrate theories of social support and coping to propose that the association between stress and well-being will be buffered when students perceive high support that enhances their problem-focused coping; in contrast, the association will be deteriorated when students frequently use avoidant coping when they perceive low support.

A particularly useful framework for understanding the potential protective nature of social support and coping is Lazarus

and Folkman's (1984) stress, appraisal, and coping theory. This theory focuses on *perceived stress* (a relationship between the person and environment that is appraised as exceeding available resources), *appraisal* (one's perception and assessment of social support in the situation), and *coping* (effortful or purposeful thoughts and actions to manage or overcome stressful situations; Frydenberg, 1997; Lazarus & Folkman, 1984). Lazarus and Folkman characterized coping as *problem-focused*, referring to attempts to engage, act on, or change the perceived stress (Carver et al., 1989). This overarching conceptual framework has often served as a useful framework for understanding college students' stress experiences.

Perceived Stress and Well-Being of College Students

Because college students are in transition from living at home to living in a new city, in a new school, or with new roommates, their developmental needs could be specifically related to their college life. Their perceived stress can be attributed to a multitude of social, academic, and emotional stressors (Allgower, Wardle, & Steptoe, 2001), ranging from academic difficulties to uncertainty about the future, conflicts with friends, or problems with dating. Moreover, daily constant stressors in college life are more detrimental to well-being than episodic or change-related stressors (Lepore, Miles, & Levy, 1997). What comes out as a major issue is how much the students themselves feel their lives are unpredictable, uncontrollable, and overloaded (S. Cohen, Kamarck, & Mermelstein, 1983; Weinstein, Brown, & Ryan, 2009). S. Cohen et al. (1983) added that the stress "can be viewed as assessing a state that places people at risk of, i.e., is anteced-

Ruth Chu-Lien Chao, Counseling Psychology Program, University of Denver. Correspondence concerning this article should be addressed to Ruth Chu-Lien Chao, Counseling Psychology Program, Morgridge College of Education, University of Denver, 1999 East Evans Avenue, Denver, CO 80208 (e-mail: cchao3@du.edu).

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ent to, clinical psychiatric disorder” (p. 394) and encouraged scholars to “determine whether social support protects one from the pathogenic effects of stressful events . . . appraised stress causes an illness outcome” (p. 393). Lazarus and Folkman (1984) suggested that the stress perceived as harmful or threatening may exacerbate the impact of stress and may be associated with lower well-being. Thus, the present study measures college students’ perceived stresses that involve a variety of stressors and are negatively associated with well-being (Schwitzer, 2008; Wang & Castaneda-Sound, 2008; Weinstein et al., 2009).

Social Support and Problem-Focused Coping

According to Brown, Brady, Lent, Wolfert, and Hall (1987), satisfaction with social support is a function of the match between the strength of one’s interpersonal needs and the social resources provided to fulfill those needs. It was further hypothesized that dissatisfied interpersonal environment would be accompanied by behavioral, emotional, and physiological strain. In short, the present study focuses on how much college students are satisfied with the social support they receive (Brown et al., 1987).

Moreover, research on social support and coping has shown that satisfaction with social support is related to problem-focused coping (Sarid, Anson, Yaari, & Margalith, 2004). Indeed, social support has been found to be related to coping behaviors in college female students, and perceived satisfactory support will positively associate with students’ use of problem-focused coping (Asberg, Bowers, Renk, & McKinney, 2008). I thus draw on theories of social support (Brown et al., 1987) and coping (Carver et al., 1989) to propose that students’ satisfied support may be related to their use of problem-focused coping. Figure 1 shows four hypotheses of the study.

Hypothesis 1: Social support is positively associated with students’ problem-focused coping.

(I report each hypothesis after reviewing relevant literature. Concretely, Hypothesis 1 follows the literature review on social support and problem-focused coping.)

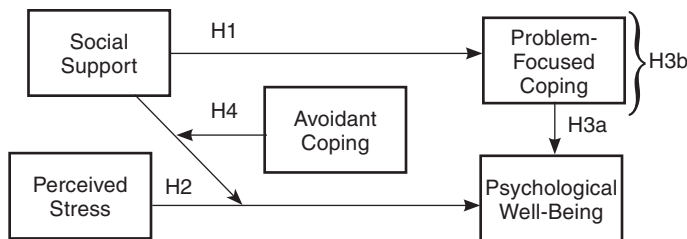


FIGURE 1

Model of Four Hypotheses

Note. The model links perceived stress, social support, problem-focused coping, and avoidant coping to psychological well-being. H = hypothesis.

Social Support, Problem-Focused Coping, and Well-Being of College Students

Social support is negatively related to mental problems (Brown et al., 1987). In addition, although many students live stressful lives, some appear to handle stressors better than their peers. For instance, some seek and obtain support from families and/or friends to manage stress to maintain well-being, whereas others may lack support and feel devastated (Hefner & Eisenberg, 2009; Lee, Keough, & Sexton, 2002). Uneven levels of social support cannot always buffer stress and facilitate growth; low social support is incapable of buffering the negative impact of stress on well-being. Among the few studies on low social support that are negatively associated with well-being (e.g., Vermeulen & Mustard, 2000), individuals with low social support were found more likely to engage in less healthy activities such as sedentary behavior, alcohol use, too much or too little sleep, and fatigue (Thorsteinsson & Brown, 2008). Worse, people with low social support were found linked to life dissatisfaction, even suicidal behavior (Allgower et al., 2001). In interviews with 1,249 college students, 6% reported having suicidal ideation, and low social support was a predictor of suicidal ideation (Arria et al., 2009). Taken together, data show that when people perceive insufficient social support, they would lack a buffer against life stress that deteriorates well-being (Hefner & Eisenberg, 2009). That is, when encountering stress, the college students who have high social support may have a buffer to moderate the association between stress and well-being, whereas those with low social support lack the buffer against stress. It seems likely that during times of increased stress associated with the transition to college, social support may be a useful way of insulating the individual from the harmful impact of stress. According to Lazarus and Folkman (1984), a mismatch between appraisal of available social support and perceived stress can result in negative outcomes, whereas the appraisal of adequate social support can serve as a buffer against perceived stress on well-being.

Hypothesis 2: Social support moderates the relation between stress and well-being. High social support may buffer against perceived stress that negatively associates with well-being.

I then propose that by strengthening students’ use of problem-focused coping, social support will further protect the students’ well-being. Past research on college students has revealed positive relationships between the use of problem-focused coping and well-being (Sarid et al., 2004). Specifically, students who use problem-focused coping tend to be more optimistic and persistent (Sarid et al., 2004). Because stressed college students struggle to maintain their well-being,

their ability to achieve well-being is heavily dependent on their use of problem-focused coping. Students with lower levels of stress, in contrast, may be less concerned about using problem-focused coping to buffer the association between stress and well-being. Thus, problem-focused coping maintains the well-being of stressed college students by enabling them to deal with stressors with effective coping (Carver et al., 1989; Sarid et al., 2004). These arguments suggest that social support is likely to protect the well-being of stressed college students by enhancing their use of problem-focused coping. When people perceive stress, they appraise social support and seek out coping resources. Lazarus and Folkman's (1984) theory characterized such coping as problem-focused, that is, engaging, acting on, or changing the perceived stress (Carver et al., 1989) so as to manage and/or overcome it.

Lazarus and Folkman (1984) suggested that coping effectiveness plays an important role in the impact of perceived stress on psychological outcomes: Effective coping strategies such as problem-focused coping result in "[managing] situations in a way such as to mitigate stress when it occurs" (p. 198). Carver et al. (1989) further explained that problem-focused coping aims at problem-solving or doing something to alter the perceived stress. One might expect that, on the basis of Lazarus and Folkman's theoretical model, problem-focused coping would buffer the impact of stress by influencing individuals' accurate appraisals of available coping resources and using specific coping efforts that mitigate stress.

Hypothesis 3a: Problem-focused coping moderates the relationship between stress and well-being. The stronger the problem-focused coping is, the greater the buffer effect is on the relationship.

Next, I propose that social support buffers the association between stress and well-being by enhancing students' use of problem-focused coping. Lopez, Mauricio, Gormley, Simko, and Berger (2001) found that there are mediating roles for coping in the relationship between attachment orientations and current distress. Furthermore, problem-focused coping was found to significantly mediate the relationship between social support and well-being (Chen, Ma, & Fan, 2009). Thus, I go further than Lazarus and Folkman's (1984) theory and Lopez et al.'s (2001) finding to predict that the moderating effect of support on the relationship between stress and well-being is mediated by problem-focused coping. According to Frazier, Tix, and Barron (2004), mediated moderation refers to instances in which a mediator variable (i.e., problem-focused coping) explains the relation between an interaction term (i.e., social support) in a moderator model and an outcome (i.e., well-being). Because mediated moderation is present when a moderating effect is explained by a mediating process (e.g., Edwards & Lambert, 2007), my arguments suggest the following hypothesis:

Hypothesis 3b: The moderating effect of social support on the relationship between stress and well-being is mediated by problem-focused coping.

■ Avoidant Coping

Lazarus and Folkman (1984) stated that the effectiveness of a coping strategy depends on the extent to which it is appropriate to internal and/or external demands of the situation. Carver et al. (1989) elaborated that certain responses to stress may tend to be maladaptive. Specifically, the tendency to focus only on venting frustration may be less useful to meet the demands of the situation. Avoidant coping refers to the strategies with little or no effectiveness (Roth & Cohen, 1986). Avoidant coping includes three aspects: (a) focusing on and venting of emotions, (b) behavioral disengagement, and (c) mental disengagement (Carver et al., 1989). Focusing on and venting of emotions indicates how distress is central in emotions without adaptive behaviors. Behavioral disengagement stops one's struggling to deal with stress, and the stress still remains. For instance, sleeping away stress is an avoidant coping behavior (Carver et al., 1989). Mental disengagement puts stress out of sight by various activities ("out of sight, out of mind").

Avoidant coping may also serve as an important source of information about college students' well-being. Coping theorists have long argued that in addition to relying on social support to manage stress, college students sometimes use avoidant coping (Ben-Zur, 2009; Brown et al., 1987; Lopez et al., 2001). Thus, it is important to understand avoidant coping because it is prevalent among current college students (Brougham, Zail, Mendoza, & Miller, 2009). For example, to reduce stress, the five most frequent coping strategies among students were browsing the Internet, sleep and rest, using instant messaging, complaining, and watching television or movies (Sideridis, 2008).

Individual differences in avoidant coping—the tendency to distract from stressors (Carver et al., 1989)—appear to play a critical role in shaping how students process the social support they receive and translate that information into the association between stress and well-being. Drawing on theories of coping, I propose that high avoidant coping may deteriorate the effect of perceived social support or further weaken the association. General support for this proposition appears in Carver et al.'s (1989) model of coping. I predict that, when students lack support, high avoidant coping may further deteriorate the relationship between stress and well-being. The logic underlying this idea is that students who lack social support may also be deprived of resources, protection, and role modeling, which are crucial buffers to stress. When social support is low, the buffer is also low, and students are more vulnerable to stress, especially when they frequently use avoidant coping. Besides, students who perceive low support and frequently use avoidant coping may have the lowest scores in well-being.

It is interesting to note that even with high social support, some college students may still use their own avoidant coping to manage their stress. Carver et al. (1989) suggested that some individuals habitually use avoidance or distraction to cope with stress. Lopez et al. (2001) found that avoidant coping is convenient, easy, and quick to use. Thus, I predict that even in the presence of sufficient social support, high avoidant coping would exacerbate the association between stress and well-being, and low avoidant coping would make no difference on the association because students did not have many avoidant behaviors.

Hypothesis 4: There will be a three-way interaction of stress, support, and avoidant coping in predicting well-being, such that the association will be weakest when the support is low but avoidant coping is high.

The Present Study

In this study, I constructively tested the four hypotheses (see Figure 1) with a sample of nonclinical college students. This study examines how college students handle stress and aims to determine (a) whether social support relates to problem-focused coping; (b) whether social support moderates the association between stress and well-being; (c) whether problem-focused coping mediates the moderation of support on the association; and (d) whether there is a three-way interaction among stress, support, and avoidant coping. It is my hope that the findings will assist college students to deal with stress and help advance knowledge on avoidant coping in the face of life stress. Because college students' well-being could be confounded with three covariates (age, year in college, and psychotherapy), I controlled these covariates. Note that, first, previous studies reported that age might influence the study results if it was not controlled (e.g., Nilsson, Lepert, Simonsson, & Starrin, 2010; Noor, 2008). Next, senior students have more college years and are more familiar with college life, and so may have higher levels of well-being (Bettencourt, Charlton, Eubanks, Kernahan, & Fuller, 1999). Finally, psychotherapy undergone by students might be a confounding variable for their well-being (Colbert, Jefferson, Gallo, & Davis, 2009) because they may know more than students without therapy how to increase well-being. For these reasons, I examine these three variables as covariates.

Method

Participants

A total of 459 college students responded to the online survey; 390 (85%) were Caucasian White, 32 (7%) were African American, 23 (5%) were Latino, and 14 (3%) were Asian American. Among these participants, 239 (52%) were men and 220 (49%) were women at a large public university, with a mean age of 20.23 years old ($SD = 3.45$, range = 18–35

years old). These participants included 120 (26%) freshmen, 115 (25%) sophomores, 110 (24%) juniors, and 114 (25%) seniors. Among them, 12% ($n = 55$) reported having had therapy or counseling.

Instruments

Perceived Stress Scale. The Perceived Stress Scale (PSS; S. Cohen et al., 1983) is a 10-item measure, with a 5-point Likert scale ranging from 1 (*not at all satisfied*) to 7 (*very satisfied*), to assess the degree to which individuals perceive their lives as stressful. Higher scores indicate greater perceptions of life stress, and lower scores reflect lower perceptions of stress. The PSS showed adequate coefficient alphas, .84 and .85 for two college samples (S. Cohen et al., 1983); in this study, the coefficient alpha was .85. The PSS has been positively correlated with life-event scores, depressive and physical symptomatology, social anxiety, and maladaptive health-related behaviors such as increased smoking (S. Cohen, Sherrod, & Clark, 1986). These pieces of evidence indicate the construct and concurrent validity of the PSS. Furthermore, Kuiper, Olmeyer, and Lyons (1986) found the PSS to be associated with people's greater vulnerability to depressive symptoms related to stressful life events.

Social Support Inventory. The Social Support Inventory (SSI; Brown et al., 1987) is a 39-item questionnaire that assesses satisfaction with support and help received from others over the previous month. Ratings are made on 7-point Likert-type scales ranging from 1 (*not at all satisfied*) to 7 (*very satisfied*). The SSI has five subscales: Acceptance and Belonging, Appraisal and Coping Assistance, Behavioral and Cognitive Guidance, Tangible Assistance and Material Aid, and Modeling. Brown et al. (1987) suggested that the total score can be obtained by summing up ratings over 39 items. Higher scores indicate higher perception of and satisfaction with support received. Brown et al. conducted a factor analysis of SSI among 340 college students from three universities and reported satisfactory coefficient alphas of the five subscales, from .79 to .91. For the total score, the coefficient alpha was .95 in Brown et al. and .90 for the present sample. The SSI had appropriate construct validity, being positively related to other social support measures and negatively related to depression measures (Brown et al., 1987).

Coping. Problem-focused coping and avoidant coping were measured with the COPE Inventory (Carver et al., 1989), which assesses different ways of responding to stress. The 60-item self-report measure uses a 4-point Likert scale ranging from 1 (*I usually don't do this at all*) to 4 (*I usually do this a lot*) to assess 13 patterns of coping, including problem-focused coping and avoidant coping. Among these 13 patterns of coping, problem-focused coping is composed of five scales: Active Coping, Planning, Suppression of Competing Activities, Restraint, and Use of Instrumental Social Support. Avoidant Coping has three scales: Focus on and Venting of Emotions,

Behavioral Disengagement, and Mental Disengagement. High scores of particular patterns indicate high tendency to use these coping patterns in stress. Carver et al. (1989) reported that coefficient alphas of the scales were adequate for both problem-focused coping (.83) and avoidant coping (.80); my sample had a coefficient alpha of .85 for problem-focused coping and .84 for avoidant coping. Convergent validity has been demonstrated with numerous personality measures, including optimism, control, self-esteem, internality, hardiness, self-monitoring, and anxiety. The COPE Inventory has also been used to assess strategies for coping with specific life events (Carver & Scheier, 1994). Previous studies have shown that the COPE Inventory fit the original factor structures well, with adequate convergent and discriminant validity. The COPE Inventory is correlated with various measures, including hassles and uplifts, physical symptoms, degree of satisfaction with life, positive affectivity, and negative affectivity (Clark, Borman, Cropanzano, & James, 1995).

Mental Health Inventory. The Mental Health Inventory (MHI; Veit & Ware, 1983) is a 38-item measure assessing both distress and well-being among adults. Ratings are made on a 5-point Likert scale. The MHI has two scales: Psychological Distress and Psychological Well-Being. The present study used the Psychological Well-Being scale, which Veit and Ware (1983) reported as appropriate as an outcome measure. The MHI has been used extensively in studies of nonpsychiatric samples, and its psychometric adequacy has been well established (Siegel, Karus, Raveis, & Hagen, 1998; Veit & Ware, 1983). My sample was found to have a coefficient alpha of .89. Concurrent and convergent validity for the MHI–Psychological Well-Being scale have been established through positive correlations with measures on positive affect (Siegel et al., 1998).

Demographic information. The demographic information includes questions on participants' ethnicity/race, age, sex, year in college, and whether they have had therapy or counseling.

Procedure

Participants completed answering an online questionnaire package containing the PSS, SSI, COPE problem-focused and COPE avoidant scales, MHI–Psychological Well-Being scale, and a demographic questionnaire. Immediately after completion of the questionnaire, participant data were stored in a password-protected data file on a networked computer. Participants' login details were immediately placed in a separate file; these files could not be combined to identify individual participants' responses. However, the login data file was used to verify individual student participation; these data were also used to verify that participants only participated once.

Before the survey began, a research coordinator announced the study project in psychology classes, such as introductory psychology, psychological assessment, personality theory, experimental psychology, and statistics. The research coordinator then e-mailed 500 students an invitation and a reminder.

Four hundred and eighty-five students agreed to participate, 479 students completed the survey, and 20 students responded to a validity item inaccurately. So, the completed data of 459 participants (a response rate of 92% [$459/500 = 92\%$]) were used in the analyses. Those who agreed to participate received an invitation e-mail with a survey link. Participants were informed that the goal of the study was to identify factors that can change well-being among college students. The online survey indicated to the participants that by completing the survey, they had consented to participate in the study. After the survey was completed, a debriefing form was provided. Also, in addition to receiving their research credit, participants could provide their contact information, which would be stored in a separate data file, to enter a drawing for one of ten \$20 cash prizes.

Results

Preliminary Analyses and Descriptive Statistics

The descriptive statistics, internal consistency reliability estimates, and correlations among variables of interest were examined for the study. The zero-order correlations among the variables indicated that both perceived stress and avoidant coping were related negatively to overall psychological well-being, but social support and problem-focused coping were related positively to well-being. A series of analyses of variance (ANOVAs) were then conducted on well-being to examine whether the dependent variable varied as a function of participants' sex and ethnicity. None of these demographic variables had significant effects on well-being: sex, $F(1, 458) = 0.69, p > .05$, and ethnicity, $F(4, 455) = 0.78, p > .05$. Thus, in general, the dependent variable did not differ significantly in terms of these demographic variables (all $ps > .05$). Yet, to college students, stress may be perceived differently according to differences in age, year of college, and psychotherapy (Thorsteinsson & Brown, 2008), therefore it was critical to control these factors before conducting multiple regression analyses.

Another issue with multiple regression analysis is normality, because substantial departures from normality can adversely affect the analyses, and thus the data need to meet regression assumptions of normality, linearity, and homoscedasticity (J. Cohen, Cohen, West, & Aiken, 2003). Results of multiple regression analyses indicated that the skewness of residuals ranged from $-0.17 (Z = -1.33, p > .05)$ to $-0.19 (Z = -1.54, p > .05)$ and the kurtosis of residuals ranged from $0.54 (Z = 1.65, p > .05)$ to $0.57 (Z = 1.68, p > .05)$; the results indicated no statistical departure from normality.

Two-Way Interaction of Stress and Social Support

To test the four hypotheses (see Figure 1) in the link between perceived stress and psychological well-being, I followed Dawson and Richter's (2006) recommendation and used hierarchical multiple regression analyses to test moderator effects. I followed Aiken and West's (1991) suggestion and

used centered variables (i.e., mean deviation scores) to reduce multicollinearity between interaction terms and main effects when testing for moderator effects.

In support of Hypothesis 1, social support was positively associated with problem-focused coping ($B = 1.58, SE = 0.32, \beta = .23, t = 4.97, p < .001$). The results of analyzing Hypothesis 2 are displayed in Table 1, Steps 1, 2, and 3. Step 1 indicated that no covariate (i.e., age, year in college, and psychotherapy) significantly accounts for the variance of psychological well-being in college students. In Step 2, perceived stress and social support accounted for 40% of well-being. In Step 3, the two-way interactions significantly predicted well-being ($\Delta R^2 = .01, p < .05$). In addition, the regression coefficient for the two-way interaction of Perceived Stress \times Social Support was statistically significant (see Table 1). Champoux and Peters (1987) comprehensively reviewed social science literature and reported that interaction terms typically account for approximately 1% to 3% of the variance, although J. Cohen (1992) indicated that an R^2 value of .01 indicates a small effect size.

After a significant two-way interaction effect was found, the next step was to interpret the interaction by plotting social support scores for stress scores of one standard deviation above and below the mean (Aiken & West, 1991). To check whether the slopes of simple regression lines at high and low social support significantly differed from zero, I conducted simple regression analyses outlined by Aiken and West (1991). This regression model's criterion variable (i.e., well-being) is regressed on the predictor (i.e., stress), the moderator (i.e., social support) at a conditional value (e.g., high or low), and the Predictor \times Moderator interaction. The t test for the regression coefficient of the predictor variable in this equation did reflect the significance of the simple slope (i.e., whether the slope is significantly different from zero).

The results indicated that the slope with high social support was insignificantly different from zero ($B = -0.52, SE = 0.61, \beta = -.05, t = -0.86, p = .39$), but the slope with low social support was significantly different from zero ($B = -2.80, SE = 0.58, \beta = -.25, t = -4.85, p < .001$). These results indicate that high social support served as a buffer for college students to keep up their well-being, whereas low support was not a buffer against stress. The difference between these two regression lines was also significant, as indicated by the significant regression coefficients found for the interaction terms in the tests of the moderator effects, according to the procedure recommended by Aiken and West (1991).

Test of Mediated Moderation by Problem-Focused Coping

Next, I sought to examine whether problem-focused coping mediated the moderating effect of social support on the relationship between stress and well-being. To do so, I used the path analysis framework developed by Edwards and Lambert (2007). Because my previous results supported the link between social support and problem-focused coping, I turned to Hypothesis 3a, which stated that problem-focused coping would moderate the association between stress and well-being. Following recommendations from Edwards and Lambert, I tested this hypothesis with a hierarchical regression analysis in which I first controlled for stress, support, and the interaction product of stress and support (see Table 1, Step 3) and then entered problem-focused coping and the interaction product of stress and problem-focused coping (see Table 1, Steps 4 and 5). The result in Table 1, Step 5, showed that, as hypothesized, the interaction of Perceived Stress \times Problem-Focused Coping significantly predicted psychological well-being of college students.

TABLE 1
Hierarchical Multiple Regression Analysis Predicting Psychological Well-Being:
Test of Hypotheses 2 and 3a

Step and Variable	<i>B</i>	<i>SE B</i>	β	<i>t</i>	<i>R</i> ²	ΔR^2	ΔF	<i>df</i>
Step 1					.01	.01	1.03	(1, 426)
Age	0.24	0.19	.06	1.25				
College year	-0.63	0.53	-.06	-1.19				
Previous counseling	2.46	2.77	.04	0.89				
Step 2					.41	.40	140.25***	(2, 424)
Perceived stress	-1.32	0.47	-.12	-3.97***				
Social support	6.98	0.44	.60	15.89***				
Step 3					.42	.01	7.86*	(3, 423)
Perceived Stress \times Social Support	-0.01	0.00	-.57	-2.80**				
Step 4					.43	.01	11.87**	(1, 422)
Problem-focused coping	1.54	0.45	.13	3.45**				
Step 5					.44	.01	4.25*	(1, 421)
Perceived Stress \times Problem-Focused Coping	0.96	0.45	-.08	-2.06*				

Note. $N = 459$.

* $p < .05$. ** $p < .01$. *** $p < .001$.

I interpreted the interaction by plotting the simple slopes for the relationships between stress, problem-focused coping, and well-being at one standard deviation above and below the mean. The simple slopes indicated that stress was more negatively associated with well-being when college students reported low rather than high problem-focused coping. Similar to the pattern observed for social support, the simple slopes for the relationship between stress and well-being were negative and differed significantly from zero at low levels of problem-focused coping ($B = -3.40$, $SE = 0.79$, $\beta = -.30$, $t = -4.28$, $p < .001$) but did not differ significantly from zero at high levels of problem-focused coping ($B = -0.71$, $SE = 0.72$, $\beta = -.06$, $t = -0.98$, $p = .33$). These results indicate that, in support of Hypothesis 3a, problem-focused coping did buffer the relationship between students' stress and well-being, and students who had high problem-focused coping had significantly higher well-being than those with low problem-focused coping. Hypothesis 3b predicted that problem-focused coping would mediate the moderating effect of social support on the association between stress and well-being. I completed the test of mediation following the recommendations from Edwards and Lambert (2007) and estimated the indirect effects of the Perceived Stress \times Social Support interaction through problem-focused coping. I used the coefficients from the prior analyses and then applied bootstrapping methods to construct bias-corrected confidence intervals on the basis of 1,000 random samples with replacement from the full sample. Mediation occurs when the size of an indirect effect differs significantly from zero (MacKinnon, Fairchild, & Fritz, 2007). The size of the indirect effect from the full sample was -3.24 (1.58×-2.05), and the 95% confidence interval $[-5.33, -1.15]$ excluded zero. Thus, in support of Hypothesis 3b, perceived task significance mediated the moderated effect of social support on the relationship between stress and well-being.

Three-Way Interaction of Perceived Stress, Social Support, and Avoidant Coping

I tested Hypothesis 4 by examining the three-way interaction among perceived stress, social support, and avoidant coping. All terms (all predictors and two-way interactions) were entered, followed by the three-way interaction term, in the regression analyses. Data in Table 2 show that, in Step 4, a three-way interaction was found to significantly contribute to the variance of well-being ($\Delta R^2 = .01$, $p < .05$). After seeing that Step 4 showed significant three-way interaction, I then used the same procedure described earlier to plot the three-way interaction. As illustrated in Figure 2, among students who reported high levels of social support, the association between stress and well-being was not significantly different from zero for those who only infrequently used avoidant coping ($B = 0.78$, $SE = 0.96$, $\beta = .07$, $t = 0.81$, $p > .05$) but was significantly different for those who frequently used avoidant coping ($B = -1.86$, $SE = 0.73$, $\beta = -.16$, $t = -2.54$, $p < .05$). The results indicate that even with high social support, frequent use of avoidant coping would still affect the association between stress and well-being in a negative way (see Figure 2).

Lower social support relates to lower well-being than does higher support, and a similar finding appears on the patterns of interaction of stress and avoidant coping (see Figure 2). When students perceived low support, those with frequent avoidant coping had the lowest scores on well-being ($B = -3.88$, $SE = 0.95$, $\beta = -.33$, $t = -4.02$, $p < .001$). In contrast, even perceiving low support, those who used less avoidant coping exhibited a pattern in which the association between stress and well-being was not significantly different from zero ($B = 0.40$, $SE = 0.79$, $\beta = .04$, $t = 0.51$, $p > .05$). These results indicated that college students who reported low social support and frequent use of avoidant coping were most vulnerable to

TABLE 2

Hierarchical Multiple Regression Analysis Predicting Psychological Well-Being From Perceived Stress, Social Support, Dysfunctional Coping, and Their Interaction: Test of Hypothesis 4

Step and Variable	<i>B</i>	<i>SE B</i>	β	<i>R</i> ²	ΔR^2	ΔF	<i>df</i>
Step 1				.01	.01	1.03	(1, 426)
Age	0.24	0.19	.06				
College year	-0.63	0.53	-.06				
Previous counseling	2.46	2.77	.04				
Step 2				.41	.40	95.58***	(3, 423)
Perceived stress	-1.32	0.47	-.12**				
Social support	6.98	0.44	.60***				
Avoidant coping	-0.96	0.47	-.08*				
Step 3				.42	.01	2.88*	(3, 420)
Perceived Stress \times Social Support	-0.01	0.00	-.57**				
Perceived Stress \times Avoidant Coping	0.23	0.40	.02				
Social Support \times Avoidant Coping	0.21	0.44	.02				
Step 4				.43	.01	4.32*	(1, 419)
Perceived Stress \times Social Support \times Avoidant Coping	-0.79	0.38	-.09*				

Note. $N = 459$.

* $p < .05$. ** $p < .01$. *** $p < .001$.

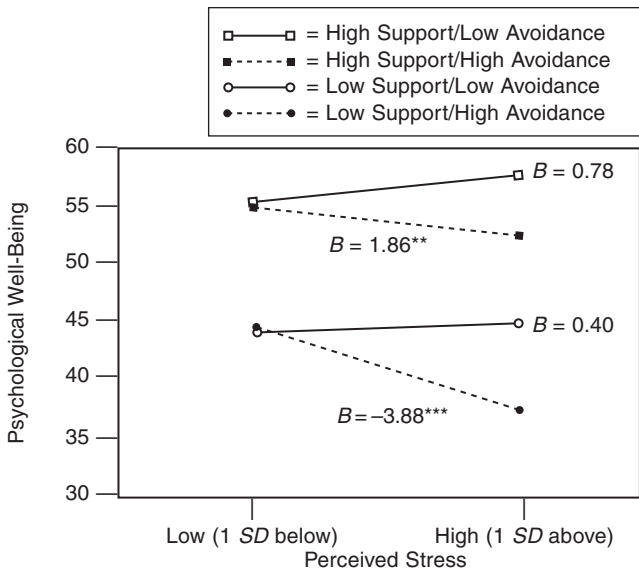


FIGURE 2
Three-Way Interaction of Stress, Social Support, and Avoidance Coping on Psychological Well-Being

p* < .01. *p* < .001.

stress, and infrequent use of avoidant coping would not worsen the association between stress and well-being.

Discussion

The results provide initial support for Hypotheses 1, 2, 3a, 3b, and 4. Social support appears to buffer the relationship between perceived stress and psychological well-being of college students, and this moderating effect is mediated by problem-focused coping. In addition, as predicted in the three-way interaction, avoidant coping deteriorates the association between stress and well-being, especially when there is low social support. Specifically, students using high avoidant coping in a low social support environment may have the lowest well-being when they are in stress. Taken together, the present study offers important contributions to research on stress, social support, coping, and well-being in three ways.

First, the study extends a growing body of research on stress and well-being. Rather than assuming that stress is always negatively associated with well-being, I examined the conditions under which stress would be more and less likely to predict these outcomes. In doing so, my findings provide novel insights into the role of social support and a significant two-way interaction between stress and social support. When in stress, college students need assurance that others (e.g., friends, family) are willing to listen and talk. Unfortunately, some students may feel dissatisfied with the social support they receive (Arria et al., 2009). Not surprisingly, students with unsatisfactory support in their social environment were quite vulnerable, showing a low level of well-being.

Moreover, many college students live at the crossroads of various stressors, struggling for independence, problems with roommates or friends, worries about dating, and concerns about grades. All these stressors can make students feel as if things happen to them unpredictably, unexpectedly, and overwhelmingly. For instance, who could provide them support by serving as models on how to bounce back to Grade A after they fail a midterm exam? How could they see hope and love after breaking up with a loved one? Students face a long list of daily stressors. Rather than detailing stressors, scholars, educators, and counselors must understand that low levels of support diminish well-being, and as I have specified, particular components of support moderate the association between stress and well-being.

Second, problem-focused coping in the present study serves two roles regarding stress and well-being. On the one hand, a high level of problem-focused coping helped students maintain their well-being when in stress, whereas a low level of problem-focused coping affected this association in a negative way. Simply put, when students face stressors, dealing with the problems may be a good way to keep “peace of mind” while postponing or not solving the problem may take a mental or emotional toll on their well-being. On the other hand, problem-focused coping significantly mediates the moderation of support on the association between stress and well-being. In other words, when individuals feel supported by family and friends, concentrating on solving problems may further help them maintain their well-being.

Third, a significant three-way interaction of Perceived Stress × Social Support × Avoidant Coping significantly contributes to the variance of college students’ well-being. High avoidant coping reduces well-being at both high and low social support (see Figure 2); however, low avoidant coping does not affect the association between stress and well-being in a negative way at high and low support. Thus, taken together, the findings highlight the significance of avoidant coping. Specifically, even as students perceive high levels of social support, continuing avoidant coping will lower their well-being. In other words, avoidant coping may overpower social support to reduce well-being. Worse, in recent years, avoidant coping has been used by some college students (Brougham et al., 2009) and appears to weaken well-being, but to date, not much scholarly attention is paid to this problem.

These findings have advanced the knowledge on college students’ mental health in two ways. First, social support is indispensable to the students. Students’ well-being wanes without social support buffering harmful stress, and the moderation effect of support is mediated by problem-focused coping. Second, high divorce rate, unsteady family income, and absentee parents are indexes to low social support that fail to alleviate students’ stress at school and in relationships with others (Bulduc, Caron, & Logue, 2007). The findings suggest that when support is low, students are more vulnerable

to avoidant coping. The study's results of the exacerbating effects of low social support and avoidant coping on stress and well-being contribute to the understanding of college life.

Limitations

The present study has four limitations. One, the findings describe current college students' social support, problem-focused coping, avoidant coping, and well-being based on the theories of Lazarus and Folkman (1984), Brown et al. (1987), and Carver et al. (1989) and cannot be generalized to other populations. People of different ages and status of learning may have different or even contrasting perceptions on stress and well-being. For example, seniors may embrace the value of "toughing out" stress, whereas some young adults may prefer to have fun (Sideridis, 2008). Two, the study examined two types of coping, problem-focused and avoidant, to better describe that people may use more than one type of coping to manage stress; however, the study does not focus on the relation between these two types of coping. The findings did not examine when and how students use a particular type of coping over the other, although it is understood that students may simultaneously use problem-focused coping academically and avoidant coping (e.g., venting emotions) for other issues. Three, the findings may only explain the avoidant coping of students in the United States and do not demonstrate that avoidant coping is cross-culturally universal in deteriorating the well-being of all students. Fortunately, this limitation could be resolved by future studies. Four, there is a potential monomethod bias based on using self-report measures alone. The participants were recruited in classrooms and then followed up with e-mails, and so the sampling process could be limited in external validity.

Future Research Directions

There are four recommendations for future research. First, I recommend replicating this study among students in different cultures. For example, I found that social support is critical for students, but students of different cultures may need other types of support, such as financial help (Olson, Garriott, Rigali-Oiler, & Chao, 2009). Appreciating the role of a specific component of social support in a specific cultural framework is essential for counselors who attempt to provide effective help to students of various cultures. Second, it may be beneficial to examine how college students in different cultures use problem-focused and/or avoidant coping. Specifically, some Asian students were found to use behavioral disengagement more often than U.S. students did, whereas U.S. students used problem-focused coping more often than students in other countries (Connor-Smith & Flachsbart, 2007; Cross, 1995) did. Thus, it is necessary to know how problem-focused and avoidant coping interweave with culture. Third, the present study relies on self-report measures, so the connections between the variables need to be further evaluated by other

types of research. I suggest that future studies examine social support and avoidant coping via other methodologies (such as qualitative research). For example, students' subjective reflection may prove or disprove my results, offer information I may not be aware of, or extend my results to provide a better understanding how college students cope with stress. It is equally important to further evaluate interventions based on the model in the present study. For instance, future study could examine the effectiveness of interventions, such as social support as a buffer or problem-solving coping as a mediator between stress and well-being. Fourth, how to maintain well-being in the face of stress has been a challenge for college students (Schwitzer, 2008; Wang & Castaneda-Sound, 2008). The present study examines a nonclinical sample, and so it appears appropriate to take well-being, not distress, as an outcome variable. Future studies may need to include distress as an outcome variable to see how social support, problem-solving coping, and avoidant coping relate to psychological distress.

Implications for Counseling

This study has three implications for counseling. To begin with, as the literature review shows, when students perceive low levels of social support, they may have less of a buffer against stress. So, counselors would do well to invite the students to talk about how they perceive their social support rather than assuming that most students enjoy a highly supportive life. For students with low social support or lack of a buffer against stress, counselors can help them explore which specific component(s) of social support was so low as to render them quite vulnerable.

Next, counselors can facilitate students' problem-focused coping. Enhancing problem-focused coping could help students in stress in crucial ways. For example, counselors can offer psychoeducation to help students make plans, such as breaking problems into workable steps or having mentors to guide in academic work. Learning how to solve problems to work through stress could very possibly increase their well-being. Or students can learn to cultivate self-assurance and hope, thereby buffering their stress. Shapiro, Oman, Thoresen, Pante, and Flinders (2008) reported that increased mindfulness mediated reductions in perceived stress and rumination.

Furthermore, counselors can allow college students to describe what, why, how, and when they use avoidant coping. The more counselors understand the function of this type of coping in students' life, the more effective counselors' interventions would become. For instance, some students may struggle with academic stress without knowing how to take notes or make reading plans, to the point that they avoid problems by resorting to listening to music, complaining, or mentally disengaging. Counselors' resources on study skills could enable the students to reduce avoidant coping. Thus, low avoidant coping, especially combined with high levels

of support, will help students maintain their well-being and make them less vulnerable to stress (see Figure 2).

In sum, in addition to the moderating effect of social support on the association between stress and well-being, this study advanced knowledge on coping. Problem-focused coping significantly mediates the moderating effect of social support on the association between stress and well-being, but avoidant coping has a negative effect on association.

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