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Chih-Yuan Lee
Montclair State University, leech@mail.montclair.edu

Sara Goldstein
Montclair State University, goldsteins@mail.montclair.edu

Bryan J. Dik
Colorado State University

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The Relational Context of Social Support in Young Adults: Links with Stress and Well-Being

Chih-Yuan Steven Lee[1] · Sara E. Goldstein[2] · Bryan J. Dik[3]

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Abstract This study examined the roles of relationship-specific social support and gender in the associations between perceived stress and well-being. Three sources of support (family, friends, and romantic partners) and three well-being indicators (loneliness, depressive symptoms, and physical health) were assessed in 628 young adults attending college (M_{age} = 19.72; range of 18–24). Stress directly predicted all well-being indicators, and indirectly predicted well-being through social support in relationship-specific ways. Family support mediated the relationship between stress and physical health, friend support mediated the association between stress and loneliness, and romantic partner support mediated the relationships of stress with both loneliness and depressive symptoms. With regard to loneliness and physical health, women were more strongly impacted when they had less support from friends.

Keywords Gender · Social support · Stress · Well-being · Youth

✉ Chih-Yuan Steven Lee
leech@mail.montclair.edu

[1] Department of Family and Child Studies, Montclair State University, 4180 University Hall, 1 Normal Avenue, Montclair, NJ 07043, USA

[2] Department of Family and Child Studies, Montclair State University, 4032 University Hall, 1 Normal Avenue, Montclair, NJ 07043, USA

[3] Department of Psychology, Colorado State University, 209 Behavioral Sciences Building, Fort Collins, CO 80523, USA

Introduction

Young adulthood is a developmental period characterized by multiple social and relational transitions. Although this time is often experienced as exciting and full of potential, it is also characterized by relatively high incidences of stress, loneliness, and anxiety-related challenges (Arnett 2015a; Qualter et al. 2015). Young adults attending college, in particular, encounter various stressors on a daily basis, including academic struggles, financial pressure, social strain, and uncertainty of the future (Hurst et al. 2013). These stressors place them at risk for relationship- or health-related problems, which potentially interfere with progress toward various positive developmental outcomes such as academic and professional achievement (Arnett 2015b). To promote positive adjustment, then, it is critical to better understand factors that may influence or explain the association between stress and well-being.

Social support has been linked to a variety of well-being indices, and those with more social support are at lower risk for a variety of psychosocial challenges (e.g., Cohen and Willis 1985; Hefner and Eisenberg 2009). Benefits associated with social support have been found at various points throughout the lifespan, including during the transition to college (Holahan et al. 1994; Taylor et al. 2014), although research has generally investigated social support as a global construct without considering specific sources of support. In response, the purpose of the current study is to examine the extent to which the mediating role of social support varies as a function of the relational context in which it occurs in young adults. Because well-being is a multifaceted construct (Barr et al. 2013; Lucas et al. 1996), the current study examines relational, mental, and physical health. Finally, gender moderation is examined to ascertain whether women and

men are differentially impacted by social support in their various relationships.

Associations of Stress, Social Support, and Well-Being

Research has consistently demonstrated a direct, negative relationship between stress and well-being. For example, stress adversely impacts interpersonal relationships as it may induce feelings of loneliness (Hawkley et al. 2008; Mahon et al. 2006). Stress also impairs health, both physical (Denton et al. 2004; Thorsteinsson and Brown 2009) and psychological, as evidenced by increased symptoms of depression (Chou 2012; Dalgard et al. 2006; Galaif et al. 2003; Matud et al. 2015; Meadows et al. 2006; Roxburgh 2004).

Beyond these direct effects, stress impacts individuals' well-being indirectly. One line of research has focused on the role of social support in the associations between stress and well-being (Raffaelli et al. 2012; Thoits 2011). For example, the deterioration deterrence or mediation model proposes that stress predicts adverse well-being indirectly through diminished social support (Ensel and Lin 1991; Pearlin et al. 1981; Wheaton 1985). Numerous studies have established strong empirical evidence for this mediation model, suggesting that stress may reduce social support, which in turn may impair individual well-being (e.g., Dalgard et al. 2006; Galaif et al. 2003; Gjesfjeld et al. 2010; Kwag et al. 2011; Lee et al. 2009; Lincoln et al. 2005; Meadows et al. 2006; Norris and Kaniasty 1996; Rivera 2007; Roxburgh 2004). In the studies supporting the model, researchers primarily focused on psychological distress or depression when operationalizing well-being. As a result, it is unclear whether this model would be supported with regard to other well-being indicators, such as social relationships or physical health. This research is thus warranted, especially because previous studies have suggested that the dynamics between stress and social support may vary by the well-being indicators (Kwag et al. 2011).

Another issue pertains to the specific characteristics of the social support provided. For instance, who is providing the support—what is the relational context? Is it coming from friends, from family, or from a romantic partner? Most research empirically testing the role of social support in the deterioration deterrence model has assessed its aggregate or global indices (i.e., general social support), giving less attention to its relational context (i.e., the particular sources of support). When focusing on implications for adult development, this means that many questions are left unanswered. Support from different interpersonal relationships may influence individuals in distinct ways, under differential circumstances, and during different life stages via an interplay of developmental trajectories and social pathways (Cavanaugh and Buehler 2016; Elder 1998; Meadows et al. 2006; Segrin 2003; Sheets and Mohr 2009). As noted by Raffaelli et al. (2012) and Uchino (2009), research on the relational context of social support is essential, given that perceptions of general and social sources of support (i.e., relationship-specific support) are empirically distinct constructs (Horwitz et al. 2015; Pierce et al. 1991). This is particularly relevant during young adulthood, given that research has shown there is a shift in the focus of their relationships from family to peers, friends, and intimate partners during this time period (Arnett 2015b; Eshbaugh 2010). Therefore, it is critical for research to examine the relational context of social support, as support from various relationships may be more or less effective in mediating the relationship between stress and well-being among young adults.

Although research directly comparing support from different relational sources is scant, research has examined the impact of support from specific relationships independently. For example, Rivera (2007) found that stress was related to lower levels of family support, which in turn was associated with depression. Similarly, Lepore et al. (1991) found that higher stress was related to lower support from friends, which in turn, was associated with increased psychological distress. Although these studies provided insight to the unique impacts of relationship-specific sources of support as mediators, they do not provide a direct comparison of support derived from various relational contexts. Therefore, furthering our understanding of how social support functions to mediate the relationship between stress and well-being will require simultaneously assessing distinct sources of social support, while also including diverse well-being dimensions to broaden the focus beyond psychological distress.

Gender Differences

Conditional Direct Effects

Although the literature examining gender differences in the association between stress and well-being is not extensive, the available research suggests that gender is a factor in how people respond to stress (Hammen 2005; Mezo and Baker 2012), with worse outcomes in well-being for women (Maciejewski et al. 2001). For example, Hawkley et al. (2008) found that women exhibited a greater association between stress and loneliness than men. Denton et al. (2004) found the negative association of stress with health greater in women than in men. However, regarding depression, research results are mixed. For instance, Maciejewski et al. (2001) found that women, as compared to men, are more likely to be depressed in response to stress. In Meadows et al.'s (2006) study using an adolescent sample, the relationship was only found in girls, but in Galaif et al.'s (2003) study also using an adolescent sample, the opposite finding was reported. Studies with adult samples generally do not find gender moderation (e.g., Dalgard et al. 2006; Gracia and

Herrero 2004; Matud et al. 2015; Roxburgh 2004). In light of these mixed findings, whether and how gender impacts the association between stress and well-being remains unclear, and might depend on the developmental stage of the sample and the particular well-being outcomes under study. This highlights the importance of examining multiple indices of well-being within a single study, and also considering the extent to which specific gendered experiences may coincide with unique developmental periods.

Conditional Indirect Effects

Despite the above-discussed findings regarding gender and the relation between stress and well-being, it is not clear whether social support differentially impacts the association between stress and well-being for women versus men. In other words, it is not clear whether gender moderates the indirect association of stress with well-being through social support. To our best knowledge, studies by Thorsteinsson and Brown (2009) and Gracia and Herrero (2004) are the only two that have examined whether the association of stress with social support might vary by gender. However, both studies measured general social support (rather than specifying the relational context of the support) and found inconsistent results. Although there was no gender difference in the relationship between stress and social support in Gracia and Herrero's (2004) study, gender differences were found in Thorsteinsson and Brown's (2009) study. For women, stress was negatively associated with social support, but this was not the case for men (Thorsteinsson and Brown 2009). Thus, further investigation is warranted given the scarcity and inconsistency of related studies.

More is known about whether gender moderates the relationship between social support and well-being. Previous research has noted that although women, as opposed to men, overall perceive higher levels of social support and tend to benefit more from it (Campos et al. 2014; Morrison 2009; Stoliker and Lafreniere 2015; Verger et al. 2009), and lacking social support may have more detrimental impacts on their well-being (Crevier et al. 2014; Sifers 2011; Thorsteinsson and Brown 2009). Such gender differences may vary by different sources of support. For example, previous studies have found stronger negative relationships between friend or romantic partner support and loneliness for adolescent girls than boys (Koenig and Abrams 1999; Zhang et al. 2015). Similarly, stronger relationships have been found in women than in men between support from family or parents and physical health (Almgren et al. 2009) and depressive symptoms (Kendler et al. 2005; Kerr et al. 2006; Needham 2008; Pettit et al. 2011). However, one study (Kerr et al. 2006) found friends' support associated (negatively) with depressive symptoms only in men. Other studies have found no gender differences in the associations of family or friends support with depression (e.g., Hann et al. 2002; Sangalang and Gee 2012). Therefore, given the limited scope of the available research coupled with its mixed results, additional research is warranted to assess whether gender moderates the associations between various sources of social support and different well-being indicators, especially loneliness and physical health. Further, it is notable that there is a lack of research on the specific implications of social support from romantic partners on well-being during the transition to adulthood. This is unfortunate, given the increasing salience of romantic partners during this time period (Arnett 2015b; Collins et al. 2009). Clearly, research is needed in this area that includes romantic partners, in addition to friends and parents (which both remain important relational contexts throughout adolescence and into the early adult years; De Goede et al. 2012; Furman et al. 2002; Simon and Barrett 2010).

The Present Study

The goal of the current study is to investigate the direct relationship between stress and well-being and to extend the social support research by examining whether its mediating role in the relationship varies by its relational context and by well-being outcome. We explore these issues using a large sample of college-attending young adults. Specifically, supports from three relational contexts (family, friends, and romantic partners) are considered in reference to their impacts on three well-being indicators (loneliness, depressive symptoms, and physical health). In addition, gender moderation is tested as an influence on the direct and indirect associations between stress and well-being. Results from this study will provide important information for interventions to strengthen young adults' interpersonal relationships in college life, hoping to alleviate the consequences of stress on well-being in relationship and health domains. Figure 1 presents the conceptual model to be tested, based on the deterioration deterrence model (Ensel and Lin 1991) and prior empirical research reviewed above.

We hypothesize that higher levels of perceived stress are directly and negatively related to well-being. We also hypothesize that the mediating role of social support in the relationship between perceived stress and well-being will vary by its sources and the particular well-being indicators under investigation. Finally, we explore the extent to which gender moderates the association of perceived stress with any well-being indicators (conditional direct effects), and the extent to which gender moderates the indirect or mediating relationships between perceived stress and well-being indicators (conditional indirect effects, or moderated mediations).

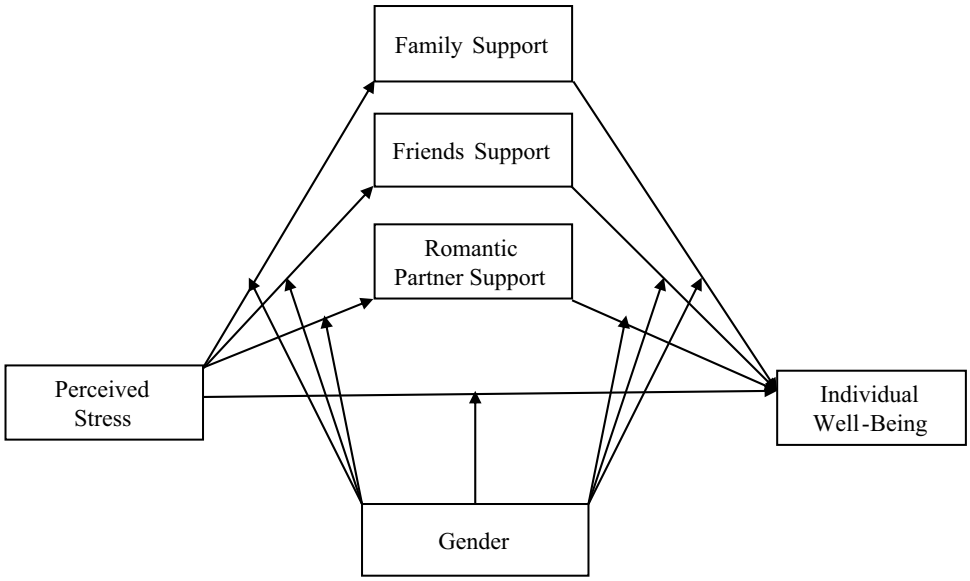

Fig. 1 Conceptual model of multiple mediation and gender moderation effects

Method

Participants and Procedure

The sample consisted of 628 undergraduate students from a mid-sized public university in the Northeast of the United States. Most respondents (80.1%) self-identified as women. The average age was 19.72 years ($SD = 1.43$; Range = 18–24), with 37.4% freshmen, 23% sophomores, 25.1% juniors, and 14.5% seniors. About half of the participants (53.7%) self-identified as White, 21.2% as Hispanic, 13.1% as Black or African–American, 3.7% as Asian–American, 6.5% as multiracial, and 1.9% as other; these statistics are representative of the campus where the study was conducted. Participants were recruited in a variety of ways, including email, flyers, word of mouth, in classrooms, at the student center, and at student organization meetings, and were offered a $5 incentive for completing the survey. All data were collected in person, and all procedures were approved by the university's Institutional Review Board (IRB).

Measures

After providing informed consent, participants were administered a survey that included demographic questions and the following measurement instruments

Perceived Stress

Perceived stress was assessed by the 10-item version of the Perceived Stress Scale (PSS-10; Cohen and Williamson 1988). The scale measures the degree to which situations in an individual's life are appraised as stressful. Using a probability sample of individuals ages 18 or more, Cohen and Williamson (1988) found that the PSS-10 had adequate psychometric qualities (e.g., internal reliability with a coefficient alpha of .78 and concurrent validity via a positive correlation with a life-events scale, and negative correlation with self-reported physical health). Further psychometric support for the PSS-10 was provided in a recent study using a sample of college students (Roberti et al. 2006). In addition, despite its high correlation with depressive symptomology, Cohen and Williamson (1988) found that the scale measured a different and independently predictive construct. Using a 5-point scale (0 = *never*, 4 = *very often*), respondents indicated how often in the last month they felt or thought a certain way, such as being upset because something that happened unexpectedly, and being unable to control the important things in their lives. Mean ratings of the ten item responses were used, with higher scores indicating higher levels of perceived stress. Cronbach's α for scores in this study was .81.

Relational Context of Social Support

The relational context of social support was measured by the Multidimensional Scale of Perceived Social Support (MSPSS; Zimet et al. 1988). The MSPSS consists of 12 items assessing three particular sources of social support: Family, Friends, and Romantic Partner (four items per source of support). Zimet et al. (1988) used undergraduate college youth in their study, reporting coefficient alphas of .87, .85, and .91 for the support subscales of family, friends, and romantic partner, respectively. Test–retest reliability over a 2 to 3 month interval was also reported (i.e., .85, .75, and .72 for the support subscales of family, friends, and romantic partner, respectively). Construct validity of

scale scores has been established in the study through its negative correlations with depression and anxiety symptomatology measured by the Hopkins Symptom Checklist (Derogatis et al. 1974). The respondents indicated to what extent they agreed with each statement using a 7-point scale (1 = *strongly disagree*, 7 = *strongly agree*), including "I get the emotional help and support I need from my family," and "I can count on my friends when things go wrong." The mean score of each subscale for the each relational context of support was calculated, with higher scores indicating higher levels of particular sources of support. Cronbach's αs for scores in this study were .92, .93, and .93 for the support subscales of family, friends, and romantic partner, respectively.

Loneliness

Loneliness was evaluated by the 8-item short-form of the UCLA Loneliness Scale (UCLA-8; Hays and DiMatteo 1987). Participants rated how often they felt the way described in each of the eight statements (1 = *never*, 4 = *often*). Sample statements are "I feel isolated from others" and "I lack companionship." Mean scores were calculated so that higher scores signify higher levels of loneliness. Hays and DiMatteo (1987) reported a coefficient alpha of .84 for the scale's scores. Support for construct validity was found via positive correlations with personality characteristics such as alienation and social anxiety. Cronbach's α for scores in this study was .83.

Depressive Symptoms

Depressive symptoms were measured by the 20-item Center for Epidemiologic Studies-Depression (CES-D) Scale (Radloff 1977). The CES-D scale is widely used, developed to screen for depressive symptomology in nonclinical populations and found more sensitive than the Beck Depression Inventory to variability in depressive severity among college students (Santor et al. 1995). Participants were asked to indicate how often they might have felt each of the 20 ways listed within the past week, including "I felt sad" and "I had crying spells" (1 = *rarely or none of the time*, 2 = *some or little of the time*, 3 = *occasionally or a moderate amount of time*, 4 = *most or all of the time*). Mean ratings of the 20 item responses were used, with higher scores indicating more depressive symptoms. Radloff (1977) reported a coefficient alpha of .85 for the scale using nonclinical samples, indicating adequate reliability. Convergent validity of scale scores was supported by their positive correlations with scores on other depression scales, such as the SCL-90 (Derogatis et al. 1973). Cronbach's α for scores in the present study was .90.

Self-rated Physical Health

Physical health was assessed by asking the participants a single question to evaluate their health in general using a 5-point scale (1 = *poor*, 5 = *excellent*). A self-rated, single item has long been used to measure individuals' physical heath (Barr et al. 2013). Evidence for validity of its scores has been established through high correlations with physician ratings of health, immune system functioning, and mortality (Christian et al. 2011; Idler and Benyamini 1997; Zheng and Thomas 2013).

Results

Analysis Strategy

PROCESS (Hayes 2013) was used to test the proposed multiple-mediator models to examine whether perceived stress was directly associated with well-being, and whether the three sources of social support each was a mediator in the association (their relative salience). Models with multiple mediators allow all possible mediators to be tested concurrently, and the results provide information about the effect of a specific mediator in the presence of other mediators (i.e., its ability to mediate the relationship controlling for all other mediators). Using on a regression-based analytic approach, PROCESS is a newly developed computational tool that can be used to test path analysis-based mediation. For continuous outcomes, it uses OLS regression to estimate unstandardized model coefficients, standard errors, *t* and *p* values, and confidence intervals. In mediation models, PROCESS generates direct effects (*c*'), as well as indirect effects (*ab*) estimated by bootstrapping. In the current study, the indirect effects were tested with 10,000 bootstrap samples and a bias-corrected 95% bootstrap confidence interval (CI), and the indirect effects are statistically significant when zero is not located in the CI. We tested the proposed multiple-mediator model on the three well-being outcomes separately.

PROCESS also was employed to test conditional process models of direct and indirect effects. Specifically, we explored whether gender would moderate the direct relationships between stress and well-being (conditional direct effects) and the indirect relationships between stress and well-being through any of the social support sources (i.e., conditional indirect effects or moderated mediations). Whenever any conditional effects were identified, we followed the guideline provided by Aiken and West (1991) to interpret the results (gender moderation effects). Ethnicity was considered as covariate in the analyses on loneliness and depressive symptoms, given its correlations with these two well-being variables in our data. Table 1 presents the correlation matrix with means and standard deviations for the

Table 1 Means, standard deviations (SDs), and intercorrelations among study variables ($N = 628$)

	1	2	3	4	5	6	7	8
1. Gender	–							
2. Perceived stress	.16*	–						
3. Family support	.20*	−.23*	–					
4. Friends support	.19*	−.21*	.55*	–				
5. Romantic partner support	.30*	−.19*	.56*	.55*	–			
6. Loneliness	−.06	.46*	−.38*	−.46*	−.42*	–		
7. Depressive symptoms	−.01	.65*	−.31*	−.31*	−.34*	.56*	–	
8. Physical health	−.04	−.32*	.30*	.20*	.16*	−.30*	−.29*	–
M	1.80	2.94	5.71	5.76	5.89	1.93	1.84	4.08
SD	.40	.62	1.33	1.24	1.31	.63	.56	.87

Note Gender (1 = male, 2 = female)

*$p < .001$

focal predictor, moderator/mediator variables, and criterion variables in the study.

Figure 2 presents the results of the multiple-mediator models on the three dimensions of individual well-being. Perceived stress was found to have direct relationships with loneliness, depressive symptoms, and self-rated physical health (c's = .36, .54, and −.36, SEs = .03, .03, and .05, ts = 10.76, 19.63, and −6.81, all ps < .001, 95% CIs [.29, .42], [.48, .59], and [−.47, −.26], respectively). With regards to indirect relationships, we found that perceived stress was associated with loneliness only through friend support and romantic partner support (abs = .05 and .03, SEs = .02 and .01, 95% CIs [.03, .09] and [.02, .06], respectively), was related to depressive symptoms only through romantic partner support (ab = .03, SE = .01, 95% CI [.01, .05]), and was associated with physical health only through family support (ab = −.07, SE = .02, 95% CI [−.13, −.04]).

Results of the gender moderation analyses showed that gender did not moderate the direct relationship between perceived stress and any of the well-being indicators; that is, no evidence was found for any conditional direct effects explored. As for the potential conditional indirect effects, although it did not moderate the relationships between perceived stress and any of the social support sources, gender moderated the associations of friends support with well-being, particularly loneliness (B = −.12, SE = .05, t = −2.17, p = .03, 95% CI [−.23, −.01]) and physical health (B = .21, SE = .09, t = 2.43, p = .02, 95% CI [.04, .39]). Specifically, the negative association between friends support and loneliness was greater in women, as compared to men. Similarly, for women only, lower levels of friend support were related to lower levels of physical health. No such association was found for men.

Discussion

In a large, diverse sample of 628 college-attending young adults, we empirically tested direct associations between stress and well-being, and examined a theoretical model that

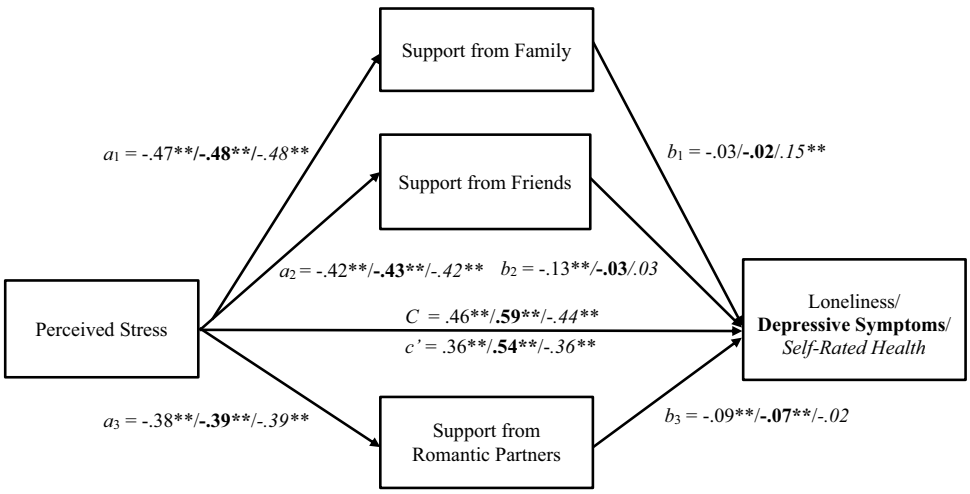

Fig. 2 Results for the multiple mediator model among perceived stress, sources of social support, and well-being. *Note* Three unstandardized coefficients are listed to show results for three well-being indicators: The first is for loneliness, the second (in *bold*) is for depressive symptoms, and the third (in *italics*) is for self-rated health. C = total effect of independent variable (IV) on dependent variable (DV); a = IV to mediator; b = direct effect of mediator on DV; c' = direct effect of IV on DV. *$p < .05$. **$p < .001$

demonstrates the mediating role of social support. Three relationship-specific sources of social support (family, friends, and romantic partners) were considered to examine the relational context of social support, and three different dimensions of well-being (loneliness, depressive symptoms, and physical health) were assessed to capture its complexity. Our findings reaffirm the direct, negative relationship between stress and well-being as well as the mediating role of social support across the multiple relationship contexts, providing an important contribution to the literature. Few previous studies have contrasted the effectiveness of different sources of support (Uchino 2009). We also examined the gender differences in the direct and indirect relationships between stress and well-being, and established evidence that whether and how social support functions as a mediator in the association between stress and well-being may depend on the relationship context in which the support was provided, as well as the particular domain of well-being under consideration.

As expected and supporting our first hypothesis, we found that perceived stress was directly related to individual well-being, and that the relationship was robust for all three well-being indicators. Specifically, greater stress was associated with increased loneliness, more depressive symptoms, and lower self-rated physical health. As noted previously, young adulthood is a period characterized by multiple relational, social, and psychological transitions, thus creating a period of heightened risk for anxiety, loneliness, and stress-related challenges (Arnett 2015a; Qualter et al. 2015). The transition to college after high school graduation, coinciding with their transition to adulthood for our study sample, is in itself a major life transition. During this period, many young adults reside separately from their families for the first time, while also physically separating from their long-time peer relationships from their hometowns. These changes may make individuals during this developmental period uniquely vulnerable to problems associated with social relationships and/or health, both physical and psychological. Thus, although some stress is inevitable, our study suggests that efforts to decrease stress are essential and likely will help enhance well-being in both relationship and health domains.

Another main finding of the current study involves the potential implications of low social support on well-being. Our analysis indicated that, in addition to the direct association between stress and well-being, stress was also associated with well-being through lower social support. Especially notable with regard to this finding is that the indirect effect varied by the source of support, which supports our second hypothesis. Results showed that stress was associated with physical health only through family support, with loneliness only through support from friends and romantic partners, and with depressive symptoms only through romantic partner support. The differential implications of the relational context of support may reflect the age-related functions of the particular relationships. In young adulthood, parents often still provide their adult children with material resources, including food and health care, and may also continue to play an important role in decision making about health-related issues such as dietary choices or medical treatment (Arnett 2015b; Johnson and Benson 2012). Thus, if parents are not providing this feedback to their children through this period of transitioning to adulthood and autonomy, their children may be particularly vulnerable to experiencing health-related challenges especially in the face of high levels of stress. Conversely, during adolescence and young adulthood, friends and romantic partners play key roles in terms of companionship and emotional intimacy (Brown and Braun 2013; Eshbaugh 2010; Shulman and Connolly 2016). Young adults are more likely to discuss social dilemmas and intimacy-related concerns with their peers as compared to their parents (Papini et al. 1988; Solís et al. 2015). Thus, a lack of support from friends and/or romantic partners during this time may differentially impact loneliness and depression as these challenges may be especially impacted by a lack of support in these areas.

From a developmental perspective, as noted by the life course theory, an individual's need for social support may vary with age-related changes, particularly across contexts (Colarossi and Eccles 2003). For example, going to college may trigger changes in needs that may be fulfilled by different sources of supportive interpersonal relationships, especially when experiencing stress. Building on prior research (e.g., Ensel and Lin 1991; Gjesfjeld et al. 2010; Lee et al. 2009), our findings further extend the deterioration deterrence model by suggesting that the function of social support as a mediator between stress and well-being varies by the relational source of the support.

It is worth noting that while both friend support and romantic partner support are effective in mediating the relationship between stress and well-being, particularly psychosocial functioning, support from friends is a stronger mediator for loneliness, whereas support from romantic partners appears to be a stronger mediator for depression. In other words, the indirect association of stress with loneliness is more through lowering friends support than romantic partner support, whereas the indirect relationship of stress to depression is only through deteriorating romantic partner support than friends support. Perhaps perceiving lower support from friends may imply inadequate social relationship networks and companionship opportunities and thus induces feelings of loneliness. In an age when peer outings and fun are broadcast through multiple outlets of social media (Goldstein 2015; Madden et al. 2013), it is plausible that young adults who perceived low friendship support could feel left out and relatively lacking in companionship, since their

peers' seemingly more positive experiences are displayed electronically. In contrast, perceiving lower support from romantic partners may be associated with jeopardized self-esteem or self-worth (or may spark questions about the feasibility of the relationship's future), thereby triggering depressive symptoms. Alternatively, it may be that young adults with depressive symptoms are not as skilled at seeking the support that they need from their romantic partners, or may be developing relationships with people who are not as skilled at providing the support. Overall, these results support our overarching hypothesis in that how social support is associated with stress and well-being may depend on both the source of support and the well-being outcomes under study (Kwag et al. 2011).

Finally, our study explored the role of gender in the direct and indirect relationships between stress and well-being (i.e., moderation and moderated mediation effects, respectively). Consistent with other research (e.g., Dalgard et al. 2006; Gracia and Herrero 2004; Matud et al. 2015), we found that gender does not moderate the direct association between stress and well-being (i.e., for both women and men, stress is adversely related to well-being, with effect sizes not significantly different from each other). Similar to Gracia and Herrero's (2004) study, we did not find gender moderating any of the relationships between perceived stress and particular social support sources. However, our results also suggest that the indirect relationships between stress and well-being differ for women versus men. Specifically, lower levels of friend support are only associated with lower physical health for women. This finding is consistent with previous research indicating that, in a variety of age groups, in response to social challenges, females are more sensitive to males when faced with social support deficits (e.g., Kochenderfer-Ladd and Skinner 2002; Rigby 2000; Taylor et al. 2000). An additional conditional indirect effect was observed in the analysis on loneliness, although the gender differences involved the size of the relationship. Specifically, the magnitude of the negative association between friends support and loneliness was greater in women than in men, providing further evidence that women, as opposed to men, may be relatively more sensitive to lower levels of support from friends, experiencing worse outcomes, such as greater vulnerability to feeling lonely. This gender difference may be related to differential socialization with regard to the significance of social relationships. From an early age, females emphasize relationships and relationship experiences as a reflection of self-worth and self-concept (Cambron et al. 2009; Roeder et al. 2014). Alternatively, perhaps these gender differences are related to gender differences in other, related constructs (such as rumination, Nolen-Hoeksema and Jackson 2001), which may also be associated with negative implications for well-being. This last possibility could be tested empirically, and is an important direction for future research.

Limitations

Despite the strengths of this study, there are several limitations that should be noted. First, data were all based on participants' self reports, which likely contributed to greater associations among the variables due to shared method variance. Second, this study was cross-sectional in design. Thus, no causal inferences can be made. Future research exploring similar topics may wish to employ a longitudinal design to provide stronger evidence for directionality in the associations proposed in our model. Third, the study sample consists of only college students; the extent to which results generalize to young adults who do not attend college is unclear. Although the number of youth attending colleges has increased significantly in recent years (Arnett 2015b; Brock 2010), there are still many youth who do not go to college; such youth are underrepresented in research (Arnett 2000), which is especially problematic given that college students do differ from nonstudent young adults on demographic, socioeconomic, and psychosocial variables (Halperin 2001). Subsequent research should recruit research participants from this understudied population of nonstudents.

Implications

Results from the current study provide strong justification for the establishment of university- and community-based mechanisms through which young adults in college can maintain and develop their social ties. As evidenced by the current findings, at a time of major social and psychological transition, perceived support from their intimate relationships helps to protect young college students from the detrimental social, psychological, and physical ramifications of stress. Although relationship maintenance and initiation may come easily for some, others may struggle substantially with this task. Based on the current findings, it is important to provide support for those young adults who are struggling to find and/or maintain supportive social connections.

The current findings emphasize the importance of fostering family social ties as well as friendships and romantic relationships. Although online support was not measured specifically in the current study, seeking out virtual support may provide some benefits for social adjustment (Gray et al. 2013). Some parents may need to learn new technologies to "keep up" with this online opportunity for relationship connection with their young adult children, but this effort seems to be well worth it. It is critical to also include offline support mechanisms, though, because for some, excessive online presence and social network use may also have a detrimental impact for establishing offline "face to face" relationships, or may reinforce previously existing social challenges (Caplan 2007; Kim et al. 2009). Thus, college-attending young adults should also be encouraged to embark

on activities that inspire the development of offline relationships, such as campus-sponsored clubs, support groups, and organizations (Abe et al. 1998; Weir and Okun 1989). First year or new student orientation programs are also promising for introducing students to new peers, and also provide opportunities to screen students for identification of increased social risk. Finally, young adults in college should also be encouraged to seek out other opportunities within the community for establishing new relationships, such as through volunteer opportunities, community involvement, religious groups, or paid employment (e.g., Semplonius et al. 2015; Zaff et al. 2015). For the college student who has moved to a new community, activities such as these provide an opportunity to build social connections and potential supportive relationships in their new locale.

Conclusion

The current study extends the literature by showing that stress can impact young adults' well-being in a number of ways. First, our results show that increased stress directly predicted increases in loneliness and depressive symptoms, and poorer physical health. Second, our research also shows that social support from three important relationships during young adulthood (friends, romantic partners, and family) has implications for the associations between stress and well-being. Specifically, social support from peers (friends and romantic partners) can influence the association between stress and loneliness and/or depression, whereas social support from family can influence the relationship between stress and physical health. For women, the implications of having low support seem especially problematic. The results further our understanding by suggesting that the direct relationship of stress to well-being is robust across three indicators (loneliness, depressive symptoms, and physical health), and that the indirect relationship varies by the sources of support, the indicators of well-being, and gender. Future research focusing on social support should give more attention to its relational context. Just as all relationships do not serve the same social and psychological functions, our study suggests that support from different relationships also serves diverse functions.

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