Social Support as an Explanatory Mechanism of the Relationship Between Social Class and Mental Health in University Students: A Structural Mediation Model

Mollie A. McDonald
University of Nevada, Reno, United States

Jeniece A. Cordova
Georgia State University, United States

Lawrence S. Meyers
California State University, Sacramento, United States

Abstract

In addition to the challenges associated with economic adversity, college students of low socioeconomic status or self-identified social class are at higher risk of experiencing social isolation and mental health difficulties which can impede their academic success. Identifying modifiable protective factors can inform the development of interventions to improve the mental health of at-risk students. The present study examined social support as a potential explanatory mechanism. University students (N = 211) completed an assessment battery including various measures of social class, social support, and mental health. Three factors were identified, and structural equation modeling was employed to examine Supportive Social Environment (i.e., higher levels of general social support and social capital from peers and teachers) as a mediator of the relationship between Social Class Alienation (i.e., lower subjective social status and greater anticipated class-based rejection) and Mental Health Difficulties (i.e., greater levels of psychological symptoms and lower perceived ability to cope with emotions). The indirect effect was significant, and a comparison between a mediated model and an unmediated model indicated that Supportive Social Environment fully mediated the observed positive relationship between Social Class Alienation and Mental Health Difficulties. Results suggest that lower perceived social support (including from peers and teachers) contributes to the psychological struggles experienced by college students who self-identify as being of lower socioeconomic status. These findings have significant implications for programs developed to support students experiencing economic adversity by highlighting the importance of going beyond practical supports to better engage students socially.

Keywords: socioeconomic status, social class, social support, mental health, education

Introduction

Evidence suggests that the prevalence of mental health disorders in college students is on the rise (Lipson et al., 2018), and students of lower socioeconomic status (SES) may be particularly vulnerable. The relationship between SES and mental health can be examined in terms of both

Corresponding author: **Mollie McDonald (mcdonaldmollieann@gmail.com**)

subjective SES (i.e., one's perceived socioeconomic class or social status relative to others) and objective SES (e.g., income and education level). Both types of indicators tend to be correlated (Rahal et al., 2020; Zell et al., 2018). However, previous research shows that subjective SES is a stronger predictor of psychological health than objective SES, suggesting that perceiving oneself as being disadvantaged relative to others may have a greater impact on mental health than one's access to socioeconomic resources (Adler et al., 2000). Meta-analytic data support robust positive associations between subjective SES and mental health in the broader population (e.g., Zell et al., 2018). Among college students in particular, disproportionately high rates of objective indicators of lower SES, such as food and housing insecurity, have been observed (Freudenberg et al., 2019; Silva et al., 2017), and such experiences are associated with both lower academic performance (Silva et al., 2017) and worse mental health (Pourmotabbed et al., 2020). Additionally, the relationship between social class (e.g., working class versus middle class identity) and mental health has been examined in college students, with results indicating that lower social class also predicts worse mental health (see Rubin et al., 2019, for a review). These findings suggest that college students of lower SES, as determined either subjectively or objectively, are especially vulnerable to experiencing mental health difficulties. The identification of mechanisms explaining how lower SES predicts worse mental health can inform the development of programs to address the mental health needs of students facing economic adversity by implementing interventions which target the identified mechanisms. One potential mechanism explaining why lower SES students experience worse mental health is lower levels of social support.

The relationship between lower SES and greater mental health problems may be explained by lower social support, whether it be lower levels of general perceived social support or more precise examples such as support stemming from specific social relationships (e.g., peers, teachers). Robust associations between social support and mental health have been observed, including in college students (Harandi et al., 2017; Hefner & Eisenberg, 2010). Previous research suggests that social support functions as a protective factor (Gariépy et al., 2016) that could buffer against the development of mental health difficulties associated with lower SES. Social support is a particularly important protective factor in the context of examining the relationship between SES and mental health not only because lower social support is associated with worse mental health in college students, but also because lower SES students are at greater risk of social isolation (Hefner & Eisenberg, 2010). Fortunately, social support is modifiable, and interventions designed to increase social support can be effective in boosting mental health (Hogan et al., 2002; Yusufov et al., 2019). In sum, social support is a modifiable protective factor that could explain why students of lower SES experience greater mental health difficulties, making it an important mechanism of interest.

Previous research has also examined social support as a mediator explaining the relationship between SES and different psychological outcomes in college students. According to longitudinal data collected in a university sample, Rubin et al. (2016) found that the relationship between subjective social status and mental health was mediated by social contact with university friends in the last week. Additional research by Rubin and Kelly (2015) has shown that perceived social support as measured by indicators such as friendship quality and social integration at university contributed to mediating the relationship between SES (both objective SES and self-identified social class) and psychological symptoms in an undergraduate sample. Together, these studies primarily focused on how friendships and general social support contribute to explaining lower SES students' experience of mental health difficulties, such as depression and anxiety symptoms. Rubin and Kelly (2015) additionally addressed other aspects of social support relevant to a university context, such as students' sense of belonging and integration in the university

community. However, neither study tested the contribution of support stemming specifically from teachers. Relationships with teachers are a relevant aspect of support to consider in a college environment, and support from different relationships (e.g., family friends, teachers) may have differential effects on mental health. For example, it has been shown in adolescents that support from teachers as well as friends contribute to predicting better psychological health in the form of lower depression symptoms and greater self-esteem, but support from parents did not influence self-esteem (Colarossi & Eccles, 2003). Relationships with teachers may also play a particularly important role for lower SES college students because previous research indicates that lower SES youths have less access to mentors who can provide support in the form of role modeling and career advice (Raposa et al., 2018). Therefore, supportive relationships with teachers may play a substantial role in filling this gap for lower SES students. Taken together, further examination of social support involving multiple relationships with different types of supporters could help researchers better understand how social support is impacting the mental health of lower SES individuals in a college environment.

Another aspect to consider to enhance our understanding of how social support relates to lower SES students' experience of mental health difficulties is rejection sensitivity. Both Rubin and Kelly (2015) and Rubin et al. (2016) included measures of subjective social standing or class, but neither study assessed students' perceptions of whether they might be rejected by others specifically due to their SES. Rejection sensitivity is robustly associated with psychological difficulties such as depression and anxiety symptoms (Gao et al., 2017). Unfortunately, evidence also suggests that rejection sensitivity results in a self-fulfilling prophecy of higher rejection sensitivity leading to interpersonal difficulties characterized by avoidance that increase the likelihood of being rejected by others (Meehan et al., 2018). Therefore, both lower SES and greater rejection sensitivity related to SES may function as risk factors for social rejection and psychological symptoms. Rejection sensitivity can be broad and also specific to rejection based on group membership, and class-based rejection sensitivity in particular has been shown to predict depression symptoms over and above rejection sensitivity related to social interactions broadly as well as rejection sensitivity related to ethno-racial identity. Consequently, an examination of the role of class-based rejection sensitivity could help researchers to better understand the relationships between SES, social support, and mental health in college students.

The current study tests a mediation model assessing whether social support explains the relationship between subjective SES and mental health in college students. The model examines multiple indicators related to subjective social class, social support, and mental health, including measures of anticipated class-based rejection from peers and social support from teachers. Overall, we hypothesized that lower social class would predict worse mental health and that this relationship would be explained by lower levels of social support.

Methodology

Participants

The current sample was composed of 211 undergraduates in a public university in the United States. The sample was ethno-racially diverse (34% Hispanic or Latinx, 23% White, 21% Asian, 8% multiethnic/multiracial, 6% Black or African American, 4% Native Hawaiian or other Pacific Islander, 2% other, and 1% American Indian or Alaskan Native). Most participants identified as female (75%; male 25%) and were at earlier stages in their college career (35% freshmen, 27% sophomores, 27% juniors, and 11% seniors). Ages ranged from 17 to 58 years (M = 20.30, SD =

3.68). See Table 1 for demographic information.

Table 1

Self-reported Demographics of College Student Sample

Characteristic	Descriptive Statistics		
	M	SD	%
Age	20.30	3.68	-
Ethno-racial identity			
Hispanic or Latinx	-	-	33.65
White	-	-	22.75
Asian	-	-	21.33
Multiethnic/multiracial	-	-	8.06
Black or African American	-	-	6.16
Native Hawaiian or other Pacific Islander	-	-	4.27
Other	-	-	2.37
American Indian or Alaskan Native	-	-	1.42
Gender			
Female	-	-	74.88
Male	-	-	25.12
Academic class level			
Freshman	-	-	35.07
Sophomore	-	-	27.48
Junior	-	-	26.54
Senior	-	-	10.90

Procedure

Participants were drawn from the Psychology Department's subject pool of students in lower-division psychology courses from fall 2017 to spring 2018. Participants were compensated with research credit. Each participant completed a packet of inventories composed of randomly ordered measures with the exception of the first page, which was always a demographics form. Participants completed a larger psychological assessment battery, and data from relevant variables were analyzed for the current study. Informed consent was provided by all participants, and all procedures involving human subjects were approved by the university's Institutional Review Board.

Measures

Social class alienation. To examine students' social class standing and their concerns about how others perceive their social status, two measures were used: the MacArthur Scale of Subjective Social Status (MacArthur SSS Scale; Adler et al., 2000) and the Class-Based Rejection Sensitivity Questionnaire (RSQ-Class; Rheinschmidt & Mendoza-Denton, 2014). The MacArthur SSS Scale is a one-item measure assessing subjective social class standing with good

demonstrated construct validity (Cundiff et al, 2013). Participants were instructed to select a rung on an image of a 10-rung ladder to indicate their socioeconomic place in society. This resulted in a score from 1 to 10 with higher scores representing higher perceived social status. The RSQ-Class is a 12-item measure assessing concern related to being rejected based on one's SES (e.g., "How concerned /anxious would you be that your classmate might reject you after seeing your parents' income?" and, "My friend would accept me after he/she saw my account balance"), and it has demonstrated good psychometric properties (Rheinschmidt & Mendoza-Denton, 2014). Both subscales of the RSQ-Class demonstrated good internal consistency in the current study: anxiety over rejection ($\alpha = .84$) and expected acceptance ($\alpha = .90$). To examine each subscale separately, responses were averaged, resulting in scores on a 1 to 6 scale for each subscale with higher scores indicating greater anxiety about the possibility of being rejected and greater likelihood that one would be accepted rather than rejected.

Supportive social environment. To examine the quality of students' social environments, both a specific measure of social relationships within an academic environment and a broad measure of social support were used: the cognitive school social capital items operationalized in previous research (De Clercq et al., 2014) and the Resilience Appraisals Scale (RAS; Johnson, 2010). Although social capital and social support are not interchangeable, they are overlapping constructs, and both may be important to examine in lower SES students because both contribute to their academic success (Mishra 2020). Previous researchers developed a 14-item measure to assess social capital accessible to students in a school environment, with good preliminarily demonstrated psychometrics (De Clercq et al., 2014). This scale is composed of four subscales assessing different dimensions of school social capital: horizontal (with peers), vertical (with teachers), trust (feeling at-ease at school), and participation (student involvement). For the purpose of assessing the level of social support in students' academic environment, the horizontal social capital (e.g., "Most classmates are friendly and helpful") and vertical social capital (e.g., "If necessary, I get extra help") subscales were used in the present study due to the relational aspects of these subscales. Both social capital subscales demonstrated acceptable internal consistency in the current study: horizontal ($\alpha = .74$) and vertical ($\alpha = .71$). Responses were summed, resulting in scores on a 3 to 15 scale for horizontal social capital and on a 4 to 20 scale for vertical social capital with higher scores indicating greater levels of social capital among peers and teachers, respectively. The RAS is a 12-item measure assessing psychological protective factors with good demonstrated psychometrics (Johnson, 2010). This scale is composed of three subscales assessing social support and coping abilities. The social support subscale was used for the purpose of assessing the quality of students' broader social environments (e.g., "If I were to have problems, I have people I could turn to"), and it demonstrated good internal consistency in the present study ($\alpha = .90$). Responses were summed, resulting in a score on a 4 to 20 scale with higher scores indicating greater levels of support.

Mental health difficulties. To examine students' psychological health, two measures were used: the aforementioned RAS (Johnson, 2010) and the Depression, Anxiety, and Stress Scales (DASS-21; Lovibond & Lovibond, 1995). The RAS coping subscales were used to assess students' general ability to cope with their emotional (e.g., "In difficult situations, I can manage my emotions") and situational (e.g., "When faced with a problem I can usually find a solution") experiences. Both of the RAS coping subscales demonstrated good internal consistency in the current study: emotion coping ($\alpha = .91$) and situation coping ($\alpha = .88$). Responses were summed, resulting in scores on a 4 to 20 scale for each subscale with higher scores indicating a greater ability to cope. The DASS-21 is a 21-item measure, with good demonstrated psychometrics, assessing specific symptoms of depression (e.g., "I couldn't seem to experience any positive feeling at all"), anxiety (e.g., "I felt I was close to panic"), and stress (e.g., "I found it hard to wind down") within the last week (Osman et al., 2012). Each of the three subscales demonstrated acceptable internal consistency in the

present study: depression (α = .89), anxiety (α = .77), and stress (α = .80). In compliance with scoring instructions, responses were summed and multiplied by two, resulting in scores on a 0 to 42 scale for each subscale with higher scores indicating greater symptoms (Psychology Foundation of Australia, 2018).

Planned Analyses

Statistical analyses were conducted with R v.4.0.2 (R Core Team, 2020). Descriptive statistics and Pearson correlations were calculated for all indicator variables (see Table 2).

Table 2

Means, Standard Deviations, and Correlations among the Indicator Variables

Variable	M	SD	1	2	3	4	5	6	7	8	9	10
Social Class Alienation												
1. Subjective social status	5.28	1.64	1.00									
2. Anxiety over rejection	2.04	1.02	-.22**	1.00								
3. Expected acceptance	4.50	1.15	.18	-.39***	1.00							
Supportive Social Environment												
4. Horizontal social capital	10.84	2.25	.17*	-.17*	.23***	1.00						
5. Vertical social capital	15.11	2.89	.12	-.16*	.22**	.36***	1.00					
6. Social support	17.73	3.05	.22**	-.16*	.26***	.29***	.33***	1.00				
Mental Health Difficulties												
7. Situation coping	17.73	3.05	.11	-.27***	.25***	.23***	.28***	.43***	1.00			
8. Emotion coping	15.01	3.89	-.02	-.03	.10	.14*	.17*	.20**	.61***	1.00		
9. Depression	10.43	10.18	-.24***	.33***	-.18**	-.21**	-.19**	-.45***	-.32***	-.25***	1.00	
10. Anxiety	11.26	8.77	-.13	.24***	-.18**	-.21**	-.21**	-.22**	-.23***	-.32***	.61***	1.00
11. Stress	14.64	9.07	-.13	.33***	-.08	-.19**	-.17*	-.21**	-.20**	-.39***	.66***	.73***

Note. N = 211. Situation coping was not included in the final structural regression model.

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

To test the hypothesis that social support explains the relationship between social class and mental health, we examined a simple mediation model with the hypothesized latent variables Social Class Alienation as the predictor, Mental Health Difficulties as the outcome, and Supportive Social Environment as the mediator. To examine the fit of the models, we used structural equation modeling (SEM) techniques via the lavaan package in R (Rosseel, 2012). Using SEM, we were able to account for measurement errors through the measurement model and allow for flexible relationships among psychological constructs through the structural model. To account for non-normal distributions among indicator variables, we used the robust maximum likelihood estimation method (Kline, 2016). Additionally, to account for the less than 1% of missing data observed, we used the full information maximum likelihood estimation method. Based on the two-step modeling approach recommended by Anderson and Gerbing (1988), we first examined the fit of the measurement model, and we then examined the structural relationships among the latent variables. This approach had the advantage of allowing us to assess whether the latent variables were adequately measured before testing the structural relationships. In the context of these planned analyses, a sample size range of 150 to 220 has been recommended for structural mediation models with three factors, three to four indicators per factor, moderate factor loadings, medium indirect effects sizes, and low amounts of missing data (Wolf et al., 2013). Therefore, our sample size (N = 211) was consistent with recommendations.

Results

First, we examined the measurement model using confirmatory factor analysis (CFA). We examined the statistical assumptions of CFA, and, according to Royston's multivariate normality test (Royston, 1983), the data were not multivariate normal (H = 342.43, p < .001). Therefore, we sought to fit the model using the robust maximum likelihood estimation method. We conducted a CFA for the hypothesized three-factor measurement model. We removed one indicator variable due to having a low standardized factor loading (situation coping = -.38). Following the recommendations of Kline (2016), we examined both the model exact-fit chi-square statistics and a series of approximate fit statistics: root mean square error of approximation (RMSEA), goodness-of-fit statistic (GFI), adjusted goodness-of-fit statistic (AGFI), standardized root mean square residual (SRMR), normed fit index (NFI), Tucker–Lewis index (TLI), Comparative Fit Index (CFI), parsimony goodness-of-fit index (PGFI), and parsimonious normed fit index (PNFI). Taken together, the fit indices of the resulting measurement model demonstrated reasonably fair fit according to guidelines outlined by Hooper et al. (2008): $\chi^2(32)$ = 64.915, p = .001; RMSEA = .073, 90% CI [.047, .099]; GFI = .998; AGFI = .995; SRMR = .051; NFI = .874; TLI = .901; CFI = .929; PGFI = .491; PNFI = .621.

Next, we examined the structural regression mediation model (see Figure 1), testing Supportive Social Environment as a mediator between Social Class Alienation and Mental Health Difficulties. The fit statistics of the mediation model were the same as those of the measurement model because the structural component of the model was just-identified. According to examinations of local fit (see Table 3), the total effect of the structural model was significant and positive, (β = .39, z = 2.83, p = .005), demonstrating that greater Social Class Alienation predicted higher levels of Mental Health Difficulties when accounting for both the direct and indirect effects from Social Class Alienation to Mental Health Difficulties. The direct paths from Social Class Alienation to Supportive Social Environment (β = -.61, z = -2.81, p = .005) and from Supportive Social Environment to Mental Health Difficulties (β = -.37, z = -2.54, p = .011) were significant, indicating that greater Social Class Alienation predicted a less Supportive Social Environment, which in turn predicted greater Mental Health Difficulties. Furthermore, the indirect effect from Social Class Alienation to Supportive Social Environment to Mental Health Difficulties was significant (β = .22, z = 2.01, p = .045), signifying that Supportive Social Environment significantly mediated the relationship

between Social Class Alienation and Mental Health Difficulties. In a reduced, unmediated model (i.e., with the path from Supportive Social Environment to Mental Health Difficulties constrained to zero), the direct effect from Social Class Alienation to Mental Health Difficulties was significant (β = .48, z = 3.12, p = .002). However, the direct effect from Social Class Alienation to Mental Health Difficulties was not significant in the mediated model (β = .17, z = 0.99, p = .322). Therefore, the combination of a significant indirect effect and a non-significant direct effect from Social Class Alienation to Mental Health Difficulties in the mediation model suggests that Supportive Social Environment fully mediated the relationship between Social Class Alienation and Mental Health Difficulties (Baron & Kenny, 1986). Overall, the model explained roughly 37% of the observed variance in Supportive Social Environment (R^2 = .37) and 24% of the observed variance in Mental Health Difficulties (R^2 = .24).

Figure 1
Structural Regression Mediation Model
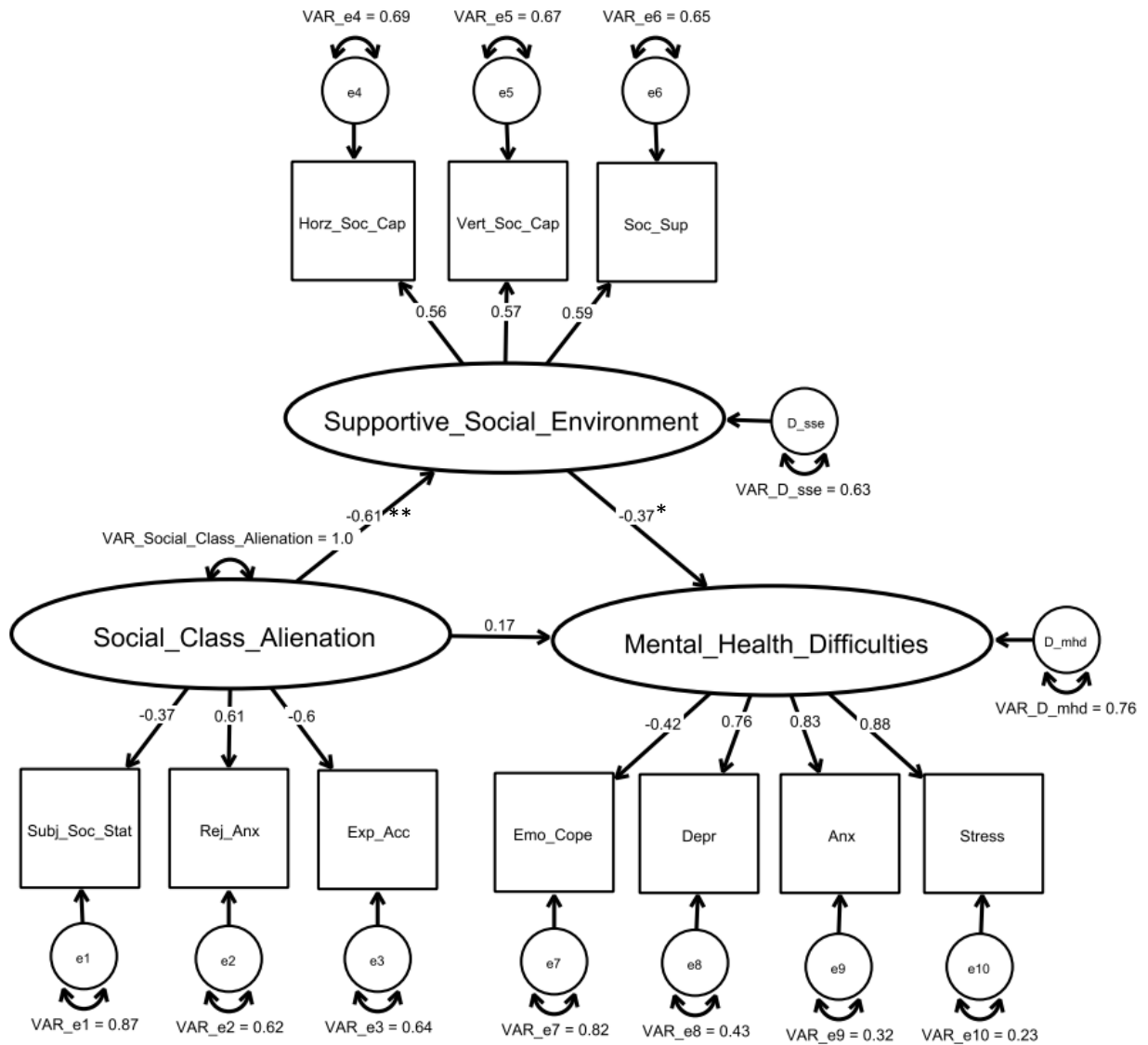
Note. Figure depicts structural regression model with standardized maximum likelihood estimates. Figure created with Ωnyx (von Oertzen et al., 2015).

*p < .05. **p < .01.

Table 3
Maximum Likelihood Estimates for the Structural Component of the Mediation Model

Causal latent variable	Endogenous latent variable							
	Supportive Social Environment				Mental Health Difficulties			
	Unst.	*SE*	St.	*p*	Unst.	*SE*	St.	*p*
Social Class Alienation								
Direct	-1.840	0.654	-.606	.005	2.242	2.265	.168	.322
Indirect	0	--	0	--	2.985	1.488	.223	.045
Total	-1.840	0.654	-.606	.005	5.227	1.849	.391	.005
Supportive Social Environment								
Direct	--	--	--	--	-1.622	0.639	-.368	.011
Indirect	--	--	--	--	0	--	0	--
Total	--	--	--	--	-1.622	0.639	-.368	.011
		$R^2 = .368$				$R^2 = .238$		

Discussion

The present study employed SEM to test the role of social support as a mechanism explaining how subjective SES or self-identified social class predicts mental health in a sample of university students. The measurement model included multiple indicators related to social class (e.g., subjective SES, fear of being rejected due to one's class identity), social support (e.g., general social support, help from teachers), and mental health (e.g., depression, anxiety) to provide a multi-faceted examination of these constructs. Results of a comparison between a mediated model and an unmediated model indicated that the factor Supportive Social Environment fully mediated the relationship between the factors Social Class Alienation and Mental Health Difficulties. The current study adds to the existing literature examining social support as a mechanism by highlighting the role of lower SES students' greater expectations of class-based rejection in predicting lower perceived social support and worse mental health as well as the role of support specifically from teachers in predicting mental health. Overall, these results add further evidence that lower social support is an important mechanism explaining how socioeconomic disadvantage predicts worse mental health outcomes in college students.

The present study's mediation model explained a substantial portion of the variance in Supportive Social Environment (37%) and Mental Health Difficulties (24%), emphasizing the important roles of subjective social class in predicting perceived social support and both in predicting mental health. Overall, these results suggest that university students who self-identify as having a lower SES compared to others and who are more concerned about being rejected due to their class status tend to perceive themselves as having less social support overall and view their relationships with peers and teachers as less supportive. This, in turn, explains higher levels of depression, anxiety, and stress symptoms as well as lower perceived ability to cope with their emotions. Results from the current study as well as previous research (e.g., Rubin & Kelly, 2015) demonstrate the role of social support as a mediator between subjective SES or social class and various aspects of mental health (e.g., depression, anxiety) in college students. These findings have important implications because worse mental health among college students is associated with lower academic functioning (Bruffaerts et al., 2018) and, thus, may contribute to perpetuating socioeconomic inequality by functioning as a barrier hindering lower SES college students' upward socioeconomic mobility. Therefore, an important next step is to consider how to best provide a socially supportive environment to lower SES students.

The current study's findings related to class-based rejection sensitivity highlight that lower SES students' perceptions of how others might react to them contribute to their experience of social support. It could be that lower SES students with higher class-based rejection sensitivity may simply perceive others as both more likely to reject them and, in turn, less supportive. Additionally, it could be that lower SES students are accurately detecting that they are more likely to experience discrimination and rejection based on their SES and, therefore, that they have less access to social support. However, it is also possible that higher class-based rejection sensitivity leads to avoidant interpersonal interactions that may increase lower SES students' likelihood of social rejection (Meehan et al., 2018) and, thus, less access to social support. This not only applies to avoidant social interactions with peers and teachers, but concerns about class-based stigma and rejection may also contribute to lower SES students avoiding accessing practical supports provided by educational institutions.

Many colleges have implemented programs designed to address lower SES students' unique needs by providing practical supports such as in the form of food pantries. However, support that is received by others is not always perceived as supportive (Haber et al., 2007). Additionally, received support is typically measured without considering its ratio to needed support, and support that does not appropriately address need may not be perceived as

supportive and, by extension, may not be a strong predictor of mental health (Melrose et al., 2015). Therefore, students from lower SES backgrounds may be receiving help from colleges, but, if it is not meeting their needs and is thusly not perceived as supportive, it may not be contributing to protecting their mental health. Furthermore, practical supports such as food pantries may be available but not accessible to lower SES students due to barriers such as inconvenient hours of operation (El Zein et al., 2018). In addition, there are important social elements to consider when addressing accessibility. Concerns about confidentiality and social stigma can also function as barriers interfering with students' willingness to seek assistance via food pantries (El Zein et al., 2018). Moreover, practical support such as food pantries made available through donation systems can have unintended harmful impacts on mental health by encouraging lower SES students to experience shame regarding their social standing compared to their peers (van der Horst et al., 2014). Fortunately, colleges have found success in eliciting feedback from students and destigmatizing food pantries by rebranding them as community resources that are part of a system of wellness resources available to students (El Zein et al., 2018). Additionally, successful approaches to addressing food insecurity among college students have incorporated socially supportive elements in addition to practical supports, such as regular meetings with a program representative to help motivate students to meet food security goals (Martin et al., 2013) and group discussions among students to give and receive support around stressors associated with food insecurity (Dewolfe & Greaves, 2003). Taken together, although it is undeniably important to address lower SES students' practical needs, current approaches such as traditional food pantries may not be contributing to lower SES students feeling like they belong to a supportive environment. Special care must be taken to ensure that attempts to provide practical support to lower SES students are meeting their level of need, are accessible, and are addressing the social context of lower SES being stigmatized to avoid the provision of practical supports backfiring in a way that adds to already higher levels of mental health difficulties experienced by lower SES students.

Outside of practical supports, colleges have also implemented programs to encourage students to feel more socially supported. Broadly speaking, social support interventions can effectively improve mental health (Hogan et al., 2002; Yusufov et al., 2019). Additionally, social support interventions have been found to be effective specifically among college students in increasing perceived social support from peers and reducing loneliness (Mattanah et al., 2010). In line with the current study's findings, it is important, however, to focus on increasing lower SES students' perceptions of support from both peers and teachers. Therefore, mentorship programs may be an applicable intervention for lower SES students. Such programs can foster mentorship from peers and faculty members, and previous research suggests that both types of mentorship relationships are perceived as important for student development (Webb et al., 2009) and that mentorship programs can effectively increase perceived social support (Skjevik et al., 2020). Mentorship programs may be particularly important for lower SES college students because evidence suggests that lower SES youths have less access to natural mentors during the transition to young adulthood compared to higher SES youths (Raposa et al., 2018). Additionally, the mentorship relationships that lower SES youths have access to have been shown to focus more on practical (e.g., financial) support than role modeling and career advice. This suggests that mentorship from teachers could serve an important role in the professional development of lower SES students and thus further their upward socioeconomic mobility in addition to the provision of social support.

As an exemplar of the type of mentorship program that may be helpful for lower SES students, researchers found that disadvantaged students (e.g., financially disadvantaged, nontraditional in age) who were mentored performed better academically than non-mentored students (Rayner & Beckman, 2019). This mentorship program focused on connecting students with an academic staff member as well as hosting mentee group meetings, thereby facilitating support from both peers and staff members. Although this study focused primarily on academic outcomes, qualitative data collected from mentees suggest that this mentorship program may

have also increased their sense of social support (e.g., made them feel less alone in the process of adjusting to college) and benefited their mental health (e.g., made them feel less overwhelmed). Overall, mentorship programs could be especially beneficial for lower SES students not only by encouraging academic engagement and contributing to their professional development, but also by evoking a sense of social support which, according to the current study's findings, has the added benefit of protecting students' mental health.

The present study has noteworthy strengths and limitations. Due to the use of a convenience sample of undergraduates in psychology courses, we cannot conclude that the present results are generalizable to all college students. However, the current study contributes to the existing literature, in part, due to its use of an ethno-racially diverse sample derived from a university with a highly diverse student body (Sacramento State, 2021). Moreover, future research should further examine social support as a mediator explaining why various college student populations are more at-risk of experiencing mental health difficulties (e.g., underrepresented ethno-racial minority students; Assari, 2018) and whether students existing at the intersection of multiple marginalized identities are at greater risk of experiencing lower social support and would benefit more from socially supportive interventions. In addition, despite the implication of causal relationships by use of SEM, the data used in the current study were collected cross-sectionally, so neither temporal precedence nor causality could be determined. Nonetheless, SEM has notable strengths. The use of SEM allows researchers to assess relationships between latent variables, as opposed to analyses being restricted to observed variables. Therefore, in the current study, we were able to assess social class, social support, and mental health as multi-faceted constructs using multiple indicators. This allowed us to consider, for example, students' relationships with peers and teachers together as indicators of social support. Outside of cross-sectional research, future studies should use experimental manipulations and longitudinal data collection to test the effectiveness of socially oriented academic (e.g., mentorship programs) and practical support (e.g., food insecurity programs featuring support groups) interventions specifically among lower SES college students. In addition, future research should test whether increased social support functions as a contributing mechanism explaining the benefits that such programs might have on lower SES students' psychological and academic functioning.

Conclusion

In combination with the existing body of literature (e.g., Rubin & Kelly, 2015), the results of the current study contribute to a foundation for future research examining social support as a mechanism explaining the relationship between subjective SES or self-identified social class and mental health. Results suggest that students of lower SES with concerns of class-based rejection perceive their relationships as less supportive in their academic context; this, in turn, predicts psychological difficulties. Given that social support is a modifiable protective factor, the current findings support future research examining the development of socially supportive interventions specifically for students of lower SES to promote their psychological functioning.

References

Adler, N. E., Epel, E. S., Castellazzo, G., & Ickovics, J. R. (2000). Relationship of subjective and objective social status with psychological and physiological functioning: Preliminary data in healthy, white women. *Health Psychology, 19*(6), 586-592. https://dx.doi.org/10.1037/0278-6133.19.6.586

Anderson, J. C., & Gerbing, D. W. (1988). Structural equation modeling in practice: A review and recommended two-step approach. *Psychological Bulletin, 103*(3), 411-423. https://dx.doi.org/10.1037/0033-2909.103.3.411

Assari, S. (2018). Parental educational attainment and mental well-being of college students; Diminished returns of blacks. *Brain Sciences, 8*(11), 193. https://doi.org/10.3390/brainsci8110193

Baron, R. M., & Kenny, D. A. (1986). The moderator-mediator variable distinction in social psychological research: Conceptual, strategic, and statistical considerations. *Journal of Personality and Social Psychology, 51*(6), 1173-1182. https://dx.doi.org/10.1037/0022-3514.51.6.1173

Bruffaerts, R., Mortier, P., Kiekens, G., Auerbach, R. P., Cuijpers, P., Demyttenaere, K., Green, J. G., Nock, M. K., & Kessler, R. C. (2018). Mental health problems in college freshmen: Prevalence and academic functioning. *Journal of Affective Disorders, 225*, 97-103. https://doi.org/10.1016/j.jad.2017.07.044

Colarossi, & Eccles, J. S. (2003). Differential effects of support providers on adolescents mental health. *Social Work Research, 27*(1), 19–30. https://doi.org/10.1093/swr/27.1.19

Cundiff, J. M., Smith, T. W., Uchino, B. N., & Berg, C. A. (2013). Subjective social status: Construct validity and associations with psychosocial vulnerability and self-rated health. *International Journal of Behavioral Medicine, 20*(1), 148-158. https://dx.doi.org/10.1007/s12529-011-9206-1

De Clercq, B., Pfoertner, T.-K., Elgar, F. J., Hublet, A., & Maes, L. (2014). Social capital and adolescent smoking in schools and communities: A cross-classified multilevel analysis. *Social Science & Medicine, 119*(7), 81-87. https://dx.doi.org/10.1016/j.socscimed.2014.08.018

Dewolfe, & Greaves, G. (2003). The Basic Shelf Experience: a comprehensive evaluation. *Canadian Journal of Dietetic Practice and Research, 64*(2), 51–57. https://doi.org/10.3148/64.2.2003.51

El Zein, A., Mathews, A. E., House, L., & Shelnutt, K. P. (2018). Why are hungry college students not seeking help? Predictors of and barriers to using an on-campus food pantry. *Nutrients, 10*(9), 1163. https://doi.org/10.3390/nu10091163

Freudenberg, N., Goldrick-Rab, S., & Poppendieck, J. (2019). College students and SNAP: The new face of food insecurity in the United States. *American Journal of Public Health, 109*(12), 1652-1658. https://doi.org/10.2105/AJPH.2019.305332

Gao, Assink, M., Cipriani, A., & Lin, K. (2017). Associations between rejection sensitivity and mental health outcomes: A meta-analytic review. *Clinical Psychology Review, 57*, 59–74. https://doi.org/10.1016/j.cpr.2017.08.007

Gariépy, G., Honkaniemi, H., & Quesnel-Vallée, A. (2016). Social support and protection from depression: Systematic review of current findings in western countries. *British Journal of Psychiatry, 209*(4), 284-293. https://doi.org/10.1192/bjp.bp.115.169094

Haber, M. G., Cohen, J. L., Lucas, T., & Baltes, B. B. (2007). The relationship between self-reported received and perceived social support: A meta-analytic review. *American Journal of Community Psychology, 39*(1), 133-144. https://doi.org/10.1007/s10464-007-9100-9

Harandi, T. F., Taghinasab, M. M., & Nayeri, T. D. (2017). The correlation of social support with mental health: A meta-analysis. *Electronic Physician, 9*(9), 5212-5222. https://doi.org/10.19082/5212

Hefner, J., & Eisenberg, D. (2009). Social support and mental health among college students.

American Journal of Orthopsychiatry, 79(4), 491-499. https://doi.org/10.1037/a0016918

Hogan, B. E., Linden, W., & Najarian, B. (2002). Social support interventions: Do they work? *Clinical Psychology Review, 22*(3), 381-440. https://doi.org/10.1016/S0272-7358(01)00102-7

Hooper D., Coughlan J., & Mullen M. R. (2008). Structural equation modeling: Guidelines for determining model fit. *Electronic Journal of Business Research Methods, 6*(1), 53-60.

Johnson, J., Gooding, P. A., Wood, A. M., & Tarrier, N. (2010). Resilience as positive coping appraisals: Testing the schematic appraisals model of suicide (SAMS). *Behaviour Research and Therapy, 48*(3), 179-186. https://dx.doi.org/10.1016/j.brat.2009.10.007

Kline, R. B. (2016). *Methodology in the social sciences: Principles and practice of structural equation modeling* (4th ed.). Guilford Press.

Lipson, S. K., Lattie, E. G., & Eisenberg, D. (2019). Increased rates of mental health service utilization by U.S. college students: 10-year population-level trends (2007–2017). *Psychiatric Services, 70*(1), 60-63. https://doi.org/10.1176/appi.ps.201800332

Lovibond, S.H. & Lovibond, P.F. (1995). *Manual for the depression anxiety stress scales*. (2nd ed.). Psychology Foundation.

Martin, K. S., Wu, R., Wolff, M., Colantonio, A. G., & Grady, J. (2013). A novel food pantry program: Food security, self-sufficiency, and diet-quality outcomes. *American Journal of Preventive Medicine, 45*(5), 569–575. https://doi.org/10.1016/j.amepre.2013.06.012

Mattanah, J. F., Ayers, J. F., Brand, B. L., Brooks, L. J., Quimby, J. L., & McNary, S. W. (2010). A social support intervention to ease the college transition: Exploring main effects and moderators. *Journal of College Student Development, 51*(1), 93-108. https://doi.org/10.1353/csd.0.0116

Meehan, Cain, N. M., Roche, M. J., Clarkin, J. F., & De Panfilis, C. (2018). Rejection sensitivity and interpersonal behavior in daily life. *Personality and Individual Differences, 126*, 109–115. https://doi.org/10.1016/j.paid.2018.01.029

Melrose, K. L., Brown, G. D. A., & Wood, A. M. (2015). When is received social support related to perceived support and well-being? when it is needed. *Personality and Individual Differences, 77*, 97-105. https://doi.org/10.1016/j.paid.2014.12.047

Mishra, S. (2020). Social networks, social capital, social support and academic success in higher education: A systematic review with a special focus on 'underrepresented' students. *Educational Research Review, 29*, 100307. https://doi.org/10.1016/j.edurev.2019.100307

Osman, A., Wong, J. L., Bagge, C. L., Freedenthal, S., Gutierrez, P. M., & Lozano, G. (2012). The depression anxiety stress scales-21 (DASS-21): Further examination of dimensions, scale reliability, and correlates. *Journal of Clinical Psychology, 68*(12), 1322-1338. https://dx.doi.org/10.1002/jclp.21908

Pourmotabbed, A., Moradi, S., Babaei, A., Ghavami, A., Mohammadi, H., Jalili, C., Symonds, M. E., & Miraghajani, M. (2020). Food insecurity and mental health: A systematic review and meta-analysis. *Public Health Nutrition, 23*(10), 1854-1854. https://doi.org/10.1017/S1368980020001512

Psychology Foundation of Australia. (2018, July 26). *DASS faq (frequently asked questions)*. DASS. http://www2.psy.unsw.edu.au/dass/DASSFAQ.htm

R Core Team. (2020). *R: A language and environment for statistical computing*. The R Foundation for Statistical Computing. https://www.R-project.org/

Rahal, D., Chiang, J. J., Fales, M., Fuligni, A. J., Haselton, M. G., Slavich, G. M., & Robles, T. F. (2020). Early life stress, subjective social status, and health during late adolescence. *Psychology & Health, 35*(12), 1531-1549. https://doi.org/10.1080/08870446.2020.1761977

Raposa, E. B., Erickson, L. D., Hagler, M., & Rhodes, J. E. (2018). How economic disadvantage affects the availability and nature of mentoring relationships during the transition to adulthood. *American Journal of Community Psychology, 61*(1-2), 191–

203. https://doi.org/10.1002/ajcp.12228

Rayner, G. M., & Beckman, J. (2019). The Use of an Academic Mentorship Model to Enhance the Transition, Retention, and Success of Disadvantaged Students in Higher Education. In *Strategies for Facilitating Inclusive Campuses in Higher Education: International Perspectives on Equity and Inclusion* (Vol. 17, pp. 117–130). Emerald Publishing Limited. https://doi.org/10.1108/S2055-364120190000017009

Rosseel, Y. (2012). lavaan: An R package for structural equation modeling. *Journal of Statistical Software, 48*(2), 1-36. https://dx.doi.org/10.18637/jss.v048.i02

Royston, J. P. (1983). Some techniques for assessing multivarate normality based on the Shapiro-Wilk W. *Applied Statistics, 32*(2), 121-133. https://dx.doi.org/10.2307/2347291

Rheinschmidt, M. L., & Mendoza-Denton, R. (2014). Social class and academic achievement in college: The interplay of rejection sensitivity and entity beliefs. *Journal of Personality and Social Psychology, 107*(1), 101-121. https://dx.doi.org/10.1037/a0036553

Rubin, M., Evans, O., & McGuffog, R. (2019). Social class differences in social integration at university: Implications for academic outcomes and mental health. In J. Jetten & K. Peters (Eds.), *The social psychology of inequality* (pp. 87-102). Springer. https://doi.org/10.1007/978-3-030-28856-3_6

Rubin, M., Evans, O., & Wilkinson, R. B. (2016). A longitudinal study of the relations among university students' subjective social status, social contact with university friends, and mental health and well-being. *Journal of Social and Clinical Psychology, 35*(9), 722-737. https://doi.org/10.1521/jscp.2016.35.9.722

Rubin, M., & Kelly, B. M. (2015). A cross-sectional investigation of parenting style and friendship as mediators of the relation between social class and mental health in a university community. *International Journal for Equity in Health, 14*(1), 87-87. https://doi.org/10.1186/s12939-015-0227-2

Sacramento State. (2021, February 7). Sac State fact book: 2020 facts, figures & information. https://www.csus.edu/experience/fact-book/

Silva, M. R., Kleinert, W. L., Sheppard, A. V., Cantrell, K. A., Freeman-Coppadge, D. J., Tsoy, E., Roberts, T., & Pearrow, M. (2017). The relationship between food security, housing stability, and school performance among college students in an urban university. *Journal of College Student Retention: Research, Theory & Practice, 19*(3), 284-299. https://doi.org/10.1177/1521025115621918

Skjevik, Boudreau, J. D., Ringberg, U., Schei, E., Stenfors, T., Kvernenes, M., & Ofstad, E. H. (2020). Group mentorship for undergraduate medical students—A systematic review. *Perspectives on Medical Education, 9*(5), 272–280. https://doi.org/10.1007/s40037-020-00610-3

van der Horst, H., Pascucci, S., & Bol, W. (2014). The "dark side" of food banks? Exploring emotional responses of food bank receivers in the Netherlands. *British Food Journal, 116*(9), 1506-1520. https://doi.org/10.1108/BFJ-02-2014-0081

von Oertzen, T., Brandmaier, A. M., & Tsang, S. (2015). Structural equation modeling with Ωnyx. *Structural Equation Modeling, 22*(1), 148-161. https://dx.doi.org/10.1080/10705511.2014.935842

Webb, Wangmo, T., Ewen, H. H., Teaster, P. B., & Hatch, L. R. (2009). Peer and faculty mentoring for students pursuing a PhD in gerontology. *Educational Gerontology, 35*(12), 1089–1106. https://doi.org/10.1080/03601270902917869

Wolf, E. J., Harrington, K. M., Clark, S. L., & Miller, M. W. (2013). Sample size requirements for structural equation models: An evaluation of power, bias, and solution propriety. *Educational and Psychological Measurement, 73*(6), 913–934. https://doi.org/10.1177/0013164413495237

Yusufov, M., Nicoloro-SantaBarbara, J., Grey, N. E., Moyer, A., & Lobel, M. (2019). Meta-analytic evaluation of stress reduction interventions for undergraduate and graduate students. *International Journal of Stress Management, 26*(2), 132-145.

https://doi.org/10.1037/str0000099

Zell, E., Strickhouser, J. E., & Krizan, Z. (2018). Subjective social status and health: A meta-analysis of community and society ladders. *Health Psychology, 37*(10), 979-987. https://doi.org/10.1037/hea0000667

Biographical Notes

Mollie McDonald earned an M.S. in clinical psychology from the University of Nevada, Reno, in 2021, and a B.A. in psychology with a minor in statistics from California State University, Sacramento, in 2018. She is currently continuing her studies at University of Nevada, Reno, to earn a Ph.D. in clinical psychology. Her research interests include examining predictors of psychological resilience to stressors.

Jeniece Cordova received a Master of Social Work and a Master of Public Health from the University of Georgia in 2021, and a bachelor's in psychology from California State University, Sacramento, in 2018. Their research interests involve social determinants of health, and disparities in health and education. They currently work for the Georgia Health Policy Center at Georgia State University, where they conduct program evaluation and implementation for school-based mental health and youth with substance use treatment programs.

Dr. Lawrence Meyers earned his Ph.D. in experimental psychology from Adelphi University. He was a Professor of Psychology at California State University, Sacramento, for many years. He taught and mentored students in the areas of research design and advanced statistical methods before his passing in October of 2022. He will be greatly missed.