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## Exploring the benefits of psychoeducation on college students' mental health during the COVID-19 pandemic

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### Abstract

**Objective:** The present study examines the effects of a scalable psychoeducation intervention to improve students' mental health during the COVID-19 pandemic.

**Participants:** In a sample of racially diverse undergraduates from a highly selective university ( $N=66$ ), students in the control group (mostly women) participated in courses as usual and students in the intervention group (only women) participated in a psychoeducation course on evidence-based strategies for coping, designed for college students living through the pandemic.

**Methods:** Rates of psychological distress were measured through online surveys at baseline and follow-up assessment.

**Results:** Students in both the intervention and control groups had clinically elevated depressive symptoms. Consistent with hypotheses, students in the intervention group had lower levels of academic distress and more positive perceptions regarding mental healthcare than students in the control group. Contrary to hypotheses, students in both groups had similar levels of depressive symptoms, feelings of being overwhelmed, and coping. Preliminary findings suggest that the intervention primarily improved help-seeking and may have reduced stigma.

**Conclusions:** Psychoeducation in the academic setting may be one means by which to decrease academic distress and reduce mental health stigma at highly selective institutions.

### Keywords

psychoeducation; academic distress; mental health; college students; COVID-19 pandemic

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The media portrays college as being the best four years of one's life, but what happens when students' experience does not look or feel like this portrayal or even the students' own expectations? College is a time of transitioning away from home and family, often for the first time, and this transition often comes with hardship. Further, difficulties with this transition are compounded by the fact that the typical college years (ages 18–22) are also the most common ages for the onset of a variety of mental health disorders.<sup>1</sup> In a study

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by Auerbach et al.,<sup>2</sup> one-third of college freshmen at 19 colleges across eight countries suffered from at least one DSM–IV anxiety, mood, or substance use disorder. Another study by Eisenberg and colleagues<sup>3</sup> showed that out of over 14,000 students who participated in a survey measuring rates of mental illness, 17.3% screened positive for depression, 4.1% for panic disorder, 7.0% for generalized anxiety, 6.3% for suicidal ideation, and 15.3% for nonsuicidal self-injury. Mental health concerns are a salient and pressing issue on college campuses, as students must adjust not only to the academic workload, but also to the adult responsibilities.<sup>4</sup> These unique stressors and risk factors shed light on potential reasons for why the third leading cause of death in young adults is suicide.<sup>4</sup>

College students' mental health issues have also been exacerbated by COVID-19; preliminary evidence suggests that the number of college students who suffer from mental health disorders has increased during the pandemic.<sup>5,6</sup> Students are now struggling with additional stressors such as remote learning, social isolation, health-related and financial anxiety, and, for some, being confined to toxic home environments. National data suggest that anxiety has increased from 18.1% to 25.3% and depression has increased from 21.5% to 31.7% since the beginning of the pandemic.<sup>7</sup>

As the data suggest, many college students are struggling with mental health issues that they have not experienced before and are struggling to cope. We seek to address these recent shifts in the prevalence of mental health concerns among young adults by examining the potential benefit of psychoeducation as a method of expanding access to treatment. The present study provides a preliminary investigation of a pilot psychoeducation intervention on using principles of clinical psychology in everyday life for stress and anxiety management designed specifically for the college student population during the COVID-19 pandemic.

## Barriers to Mental Health Treatment Among College Students

While it is clear that students are struggling, unfortunately, many are not reaching out for help for a variety of reasons. Many colleges do not have the resources to provide professional help to all students who need it, and oftentimes the mental health resources they have are not enough. Some of the issues students encounter include: a limited number of therapy sessions, inconsistent medication management, and few opportunities for psychiatric consulting.<sup>1</sup> In addition, students and the individuals in their lives rarely receive education about mental illness; they are often not aware of risk, prevention, symptoms, benefits of treatment, and resources for obtaining help.<sup>1</sup> Some students do not have the information and knowledge to be able to identify the mental health symptoms they are experiencing and therefore do not know how to seek professional help.<sup>4</sup>

Beyond the lack of mental health resources and information provided by colleges, other barriers to therapy for students include the perceived ineffectiveness of treatment, inconvenience, lack of providers from diverse racial/ethnic backgrounds and lack of culturally competent providers, a fear of psychological treatment being documented on their academic records, stigma, and cost.<sup>8,9</sup> According to Jennings et al.,<sup>9</sup> stigma is an especially salient barrier on college campuses; students struggling with mental health issues may be scared to reach out for help due to the stereotypes associated with mental illness. Students

may have many preconceived notions about what it means to seek mental health treatment, such as believing that no one will understand their problems, that they will be labeled as “crazy,” or that therapy does not work. Such preconceptions may explain why 10–20% of students have negative attitudes about mental health treatment. These negative attitudes keep students from seeking help and also can result in lower self-esteem, self-efficacy, and self-confidence.<sup>9</sup>

## Psychoeducation Approaches

One way to overcome these barriers and treat students on a larger scale is through group psychoeducation. For this study, psychoeducation is defined as teaching through various readings, discussion, structured activities, and coursework on topics related to mental illness and treatment (e.g., coping strategies). Brief psychoeducation has been shown to reduce symptoms of depression and is an effective way to engage a wide range of non-treatment-seeking individuals; for this reason, psychoeducation often serves as a gateway into more intensive treatments and interventions.<sup>10</sup> In clinical populations, multiple studies have highlighted the positive effect of psychoeducation. Lewinsohn et al<sup>11</sup> offered a 12-week psychoeducation course on the theory of depression; after 6 months, only 25% of the participants in the three treatment groups still met criteria for depression.<sup>12</sup>

Psychoeducation has also been shown to be effective for college student populations. For example, cognitive-behavioral psychoeducational approaches to preventing depression and anxiety in college-aged populations resulted in lower symptoms of anxiety and depression and higher scores on measures of well-being.<sup>12</sup> In a study by Deckro et al,<sup>13</sup> 63 college students that participated in a psychoeducational course on stress management had lower levels of psychological distress, anxiety, and perceptions of stress compared to students in the control group following their six-week program.<sup>13</sup> Research supports the effectiveness of psychoeducation in treating depression and anxiety common among college students and encourages tools such as mindfulness, assertiveness skills, and challenging cognitive distortions,<sup>12</sup> which all included the present study’s psychoeducation course. Prior work emphasizes the importance of future research in the field of psychoeducation, especially for college students, because psychoeducation is considered a cost-effective resource that can be delivered on a large scale.<sup>14</sup>

A potentially effective delivery method for psychoeducation in a non-treatment seeking student population is through a recommended or required college course. Psychoeducation coursework on issues related to mental wellbeing can increase knowledge and access to care, reducing risk for complications from psychopathology while also reducing mental health stigma through greater awareness and knowledge. Additionally, a psychoeducation course on mental health issues has the potential to act as a gateway to more intensive treatment. Recent research has shown that there are greater levels of treatment retention if psychoeducation material related to cognitive behavioral methods and effectiveness is given before the start of treatment.<sup>15</sup> According to Beshai et al,<sup>16</sup> a reason for this may be the fact that learning about mental illness and treatments in an academic setting gives the treatments more credibility in the eyes of participants. In addition, this study showed that brief psychoeducation can increase participants’ positive feelings about the effectiveness of

cognitive behavioral strategies and decrease stigma attached to mental healthcare.<sup>16</sup> Marrero et al<sup>17</sup> found that in a college population, psychoeducation combined with Cognitive Behavioral Therapy (CBT) led to greater well-being than those in the control group. Further, group psychoeducation in an academic setting not only targets mental health issues, but also counteracts the stigma related to mental health treatment by making mental illness easier to talk about and by demonstrating that many individuals suffer from mental illness, conveying the message that it is not something to be ashamed of or hide.<sup>18</sup>

The current literature has shown that psychoeducation seems particularly helpful for college students, but few studies have targeted students from a competitive, large, research university. Although psychoeducation shows incredible promise in filling treatment gaps, few studies have explored the effect of psychoeducation in non-treatment seeking college student populations at highly selective institutions. The current study addresses these gaps by following participants in both the intervention and control groups at a highly selective research university in the mid-Atlantic. Importantly, participants were not recruited based on clinical diagnosis, which represents an extension of prior work to a non-treatment seeking population.

## The Present Study

To our knowledge, very little research has examined the effects of group psychoeducation in non-treatment-seeking populations, especially college students. The aim of the present study is to explore whether a psychoeducation course may decrease feelings of academic distress, levels of depressive symptoms, and feelings of being overwhelmed, and increase the ability to cope with stress and positive perceptions college students have about mental health services. The present study targets non-treatment-seeking students, an important next step in psychoeducation research, because most previous studies have targeted patients diagnosed with mental illnesses at crisis level.<sup>12</sup> With group psychoeducation, students have the opportunity to learn from each other's experiences. These courses can help reduce stigma related to mental illness, as participants see that others deal with these issues, too, giving them the strong sense that they are not alone.<sup>19</sup> The context of these psychoeducation courses is also important in reducing stigma, as students are learning about mental illness and treatment in an academic setting.<sup>20</sup> This setting can highlight to students that mental health is as important as the other academic material required of them to graduate. Through this context, students will be able to engage in conversations about mental health in the same way that they engage in conversations surrounding topics like math, science, and history. Just as students are taught to prioritize their academic success, learning about mental illness in an academic setting will hopefully encourage students to prioritize their mental wellbeing. Group psychoeducation may reach a wider audience of students – even students who are not willing to seek help — and the peer support group psychoeducation offers may lead to greater feelings of community among college students.<sup>21</sup>

Further, the present study was conducted in the unique context of a global pandemic. There are very few studies to date examining the effect of psychoeducation on mental health in college students during the COVID-19 pandemic.<sup>22</sup> The current literature identifies a problem — that there are not enough mental health resources for college students — but

does not yet offer financially realistic options for addressing it.<sup>12</sup> Our study addresses this gap (a) by analyzing data taken from a time where negative impacts of COVID-19 were high, in the Fall of 2020 and Summer of 2021, causing financial, academic, and emotional distress for college students; and (b) by investigating the effectiveness of psychoeducation on college student mental health as a possible wide-scale intervention that can target many college students at a relatively low cost.

Based in the literature described above, we hypothesized that students in the intervention group, compared to those in the control group, following the intervention period will report (1) lower levels of academic distress; (2) a higher perceived ability to cope with stress; (3) lower levels of feeling overwhelmed with the difficulties in their lives; (4) lower levels of depressive symptoms; (5) greater agreement that taking a course on mental health care can change individuals' perspectives about mental health.

## Materials and Methods

### Participants

In this single-blind study, participants ( $N = 66$ ) were college students at a large research university in the mid-Atlantic region of the United States. The average age of college students at this four-year institution is 19.8.<sup>23</sup> Participants were asked to describe their racial and ethnicity identity as well as their gender identity in an open-ended fashion, given recent research with adolescents and emerging adults on the best research practices for inclusivity, which suggest moving away from categorical response options when possible.<sup>24</sup> At this four-year institution, fifty-three percent identify as female students and 46.9% identify as male students.<sup>25</sup> Additionally, at this four-year institution, fifty-six percent of students identify as White, 16.16% identify as Asian American, 6.74% identify as African American, 6.73% identify as Hispanic American, and 5.16% identify as Multiracial American.<sup>26</sup> Further, at this four-year institution, the average mean family income for students is \$35,446.<sup>23</sup> For demographic characteristics of the study sample see Table 1.

Students in the control group participated in courses as usual and students in the intervention group participated in a psychoeducation course on evidence-based strategies for coping designed for college students living through the pandemic. Participants were not randomly assigned to these conditions, because they chose to enroll in these classes, but participants were unaware of the study's hypotheses. A trained research assistant conducted the recruitment and consent process for participating in the present study. The data presented is from the follow-up assessment of data taken from when this psychoeducation course was taught in Fall 2020 and Summer 2021.

Participants in the intervention group ( $n = 20$ ) were enrolled in a seminar class on the science of cognitive-behavioral principles<sup>27</sup> for managing symptoms of mental illness within the biopsychosocial model of mental illness.<sup>28</sup> They received information on five core themes from the cognitive-behavioral framework for addressing mental health concerns which included: barriers to change, changing unhelpful thinking, changing behaviors to support wellbeing and taking care of yourself through mindfulness and relaxation techniques as well as stress and time management techniques, the influence of family and social

support on mental health, and the influence of the environment (e.g., social and political systems as well as physical environment) on mental health and well-being. Within these themes, students received information about the stigma against mental illness, changing unhelpful behavior, the importance of social support, and self-care techniques, among many other topics. For example, one class was devoted to relaxation and physiological anxiety management strategies which included assigned readings and an assigned reading reflection assignment prior to class on several research articles providing evidence for the efficacy of diaphragmatic breathing and progressive muscle relaxation in randomized-controlled trials. In class, following the lecture on science behind relaxation strategies and other physiological anxiety management techniques, students were introduced to and practiced both diaphragmatic breathing and progressive muscle relaxation in addition to grounding techniques and other mindfulness-based relaxation strategies (e.g., focusing on the breath). Further, class included a discussion as a full class and in small group discussions of the student's perspectives and reactions to the readings and to the in-class practice of such strategies. See Supplemental Materials for more details and excerpts from the psychoeducation course syllabus. This psychoeducation course met in the Fall of 2020 on Tuesdays and Thursdays for 1.25 hours per class for 17 weeks, and the second class met in the Summer of 2021 on Monday through Friday for 2.25 hours per class for four and a half weeks.

In our data collection procedure, we took steps to ensure that the professor of the course was not aware of which students elected to participate in the study (blinded). It is important to note that in a formal academic course there is pressure to perform; however, a formal course also offers the opportunity for students to receive credit for learning about mental health and engaging in course content that seeks to introduce to students strategies for managing mental health concerns and to reduce bias about mental illness. Offering formal courses on mental health and content that explicitly introduces strategies for managing mental health concerns in the curriculum also allows the university to signal to students how important learning about mental healthcare is rather than it only being something that students pursue learning about on their own in their free time. A formal course provides the structure and space for students to practice strategies for managing mental health concerns learned in class while simultaneously receiving credit hours towards their degree.

Participants in the control group ( $n = 46$ ) were recruited in different ways for the Fall 2020 and Summer 2021 samples. For the Fall 2020 sample, participants in the control group ( $n = 26$ ) were recruited from the university's participant pool for students in psychology courses. For the Summer 2021 sample, participants in the control group ( $n = 20$ ) were recruited by emailing department major listservs and undergraduate coordinators. These students were taking a course over the summer that ran at the same time as the intervention group's course, but they did not receive psychoeducation in their courses. Participants in the control group were not limited to psychology majors.

## Procedure

All procedures were approved by the University's Institutional Review Board (IRB-SBS #3845). Students in both groups were invited to complete two surveys: a baseline survey at

the beginning of the course and a follow-up survey a few weeks into the course. Participants had an open enrollment period of 2 weeks to respond to the invitation to participate. To ensure anonymity, participants were told to think of a secret phrase and instructed to use the secret phrase to link their surveys together for data analysis, so that no identifiable information was collected. Participants in the control and intervention groups completed identical Qualtrics surveys measuring academic distress, feelings of being overwhelmed, and levels of depression at the same points in time. For those participating in Fall term of 2020, students in the intervention received two points of extra credit in the course for reading the consent form for the study and considering participation, and students in the control group received three credit research hours required for their courses for participating. For those participating in the Summer term of 2021, both students in the intervention and control groups received \$17 per survey for baseline and follow-up assessment. For the present study, we are comparing intervention and control group scores at only the follow-up assessment to maximize power to detect effects given the small sample size.

## Measures

**Academic Distress and Overwhelmed.**—Participants responded to the College Student Stress Scale (CSSS),<sup>29</sup> which assesses stress pertaining to academic matters, among other college stressors. The CSSS is a prime scale to use with undergraduates, especially incoming freshmen, since it can help administrators identify students who are particularly overwhelmed with stress regarding the transition to college.<sup>29</sup> Participants respond to 11 items on a five-point scale ranging from *never* to *very often*. Questions range from students' perceived ability to maintain control in their lives to the frequency of anxiety and depression related to academic stressors.<sup>29</sup> Cronbach's alpha for the items on this measure was .90, indicating excellent internal consistency. We utilized the three items that assessed academic distress, feeling overwhelmed, and feeling a loss of control. The present study utilized the item: "How often have you felt anxious or depressed about academic matters?" to examine student academic distress. The present study utilized an average score of two items: "How often do you feel as though you are no longer in control of your life?" and "How often do you feel overwhelmed by difficulties in your life?" to examine student levels of being overwhelmed.

**Ability to Cope with Stress.**—Students' coping was calculated from participants' total scores on the Perceived Stress Scale (PSS).<sup>30</sup> This scale measures students' perception of how stressful life events are, as well as students' current levels of stress. Responses to this 10-item survey are measured on a 5-point scale from 0 (*never*) to 4 (*very often*). Questions include "in the last month, how often have you felt that you were unable to control the important things in your life?" and "in the last month, how often have you been able to control irritations in your life?". This scale is widely used with undergraduate participants; the subscales have little overlap regarding the domains of perceived stress, making it a good measure to detect mental illness.<sup>31</sup> Cronbach's alpha for the PSS in this study was .69, indicating acceptable internal consistency.

**Depressive Symptoms.**—Symptoms of depression were calculated based on the participants' total scores on the Center for Epidemiological Studies Depression Scale

(CES-D).<sup>32</sup> This scale is designed to measure current symptoms of depression in the general population and has been found to be a good detector of subthreshold depression in non-clinical university populations.<sup>33</sup> Responses to this 10-item survey measure how often participants showed emotional or behavioral symptoms of depression in the past week on a four-point scale ranging from *rarely or none of the time (less than one day)* to *most of all of the time (5–7 days)*. Sample items include “I had felt hopeful about the future” and “I thought my life had been a failure.” In this study, Cronbach’s alpha was .86, which indicates good internal consistency.

**Perspectives about Mental Health.**—Students responded to a single item assessing their belief that psychoeducation about mental health can reduce mental health stigma. The item was: “taking a course on mental health care can change individuals’ perspectives about mental health,” with a response scale that ranged from *strongly disagree* (1) to *strongly agree* (7).

**Demographics.**—We also collected demographic information as potential covariates, including: race/ethnicity, gender identity, and hours worked per week. Race and gender identity were collected in open-ended question format. The responses were grouped and then coded to create numeric variables for regression analyses. The number of hours working per week was included to account for whether or not students were working to support themselves as a partial measure of SES. This would add a factor of financial stress since these participants are working to put themselves through college in addition to keeping up with their academic course load.

### Data Analytic Plan

All analyses were pre-registered via Open Science Framework (OSF) before accessing the data (<https://osf.io/5y67t>). The exclusion criteria for this data analysis were: answers in response sets and skipping more than 10% of questions. Based on the exclusion criteria, 0% of participants were excluded. Note that because we were concerned about adequate power to detect effects with the sample of students from solely the summer session, we elected to include students from the Fall session of the course to increase sample size, which deviates from our plan in the preregistration. Of the 66 participants who completed the initial survey, all met study criteria for inclusion. We first ran unadjusted linear regression models, given the small sample size. Next, we ran adjusted linear regression models with a priori covariates as a sensitivity analysis; however, these analyses were underpowered. Although equal sample sizes between intervention and control groups is typically pursued, it is often the case in research that unequal sample sizes arise for a variety of reasons (e.g., cost, limitations, nature of the study); further, recent research suggests that there are potential benefits in regards to power in having a larger control group than intervention group,<sup>34</sup> as is the case in the present study. However, the results should be interpreted with caution in light of the unequal sample sizes for intervention and control groups.

**Attrition and Missing Data**—For the Control Group, 26 participants were recruited in the Fall of 2020 and 20 participants were recruited in the Summer of 2021. All participants completed the follow-up assessment. For the Intervention Group, nine participants (82%



of the class) consented and participated in the initial assessment in the Fall of 2020, with four participants (36.36%) participating in the follow-up assessment, and 16 participants consented and participated in both initial assessment and follow-up assessment in the Summer of 2021. Overall, 71 participants completed the initial survey with 66 participants completing the follow-up assessment for a final analytic sample of 66. There were no significant differences ( $p > .05$ ) in the retained and attrited sample for gender identity, racial identity, or socioeconomic status, nor for any key outcome indicators at baseline assessment. There was only missing data from the demographic information which was noted in Table 1; the present study did not have missing data from any of the key outcome variables.

## Results

Descriptive statistics within each group for all outcome variables of interest are summarized in Table 2. To determine whether a course on psychoeducation was associated with decreased academic distress, a simple regression was used to predict academic distress from intervention status. Consistent with our hypothesis, participating in a psychoeducation course (intervention group) was associated with lower levels of academic distress at follow-up as compared to participating in non-psychoeducation courses (control group),  $F(1, 64) = 4.21$ ,  $B = -.49$ ,  $p = .04$ ,  $R^2 = .06$  (see Figure 1).

To determine whether a course on psychoeducation was associated with students' increased perceived ability to cope with stress, a simple regression was used to predict perceived ability to cope with stress from intervention status. Our hypothesis regarding participants' perceived ability to cope with stress was not supported. Participating in a psychoeducation course did not result in a statistically significant decrease in perceived ability to cope with stress at follow-up, compared to participating in non-psychoeducation courses,  $F(1, 64) = 2.35$ ,  $B = 2.45$ ,  $p = .13$ ,  $R^2 = .04$ .

A simple regression was used to investigate whether feelings of being overwhelmed differed by intervention status. Contrary to our hypothesis, participating in a psychoeducation course did not result in a statistically significant decrease in feeling overwhelmed at follow-up, compared to participating in other courses,  $F(1, 64) = .20$ ,  $B = -.14$ ,  $p = .66$ ,  $R^2 = .003$ .

A simple regression was used to investigate whether levels of depressive symptoms varied by intervention status. Contrary to our hypothesis, participating in a psychoeducation course did not result in a statistically significant decrease in levels of depression at follow-up, compared to participating in other courses,  $F(1, 63) = 2.35$ ,  $B = -1.21$ ,  $p = .46$ ,  $R^2 = .009$ . Importantly, in this study, mean scores for students in both the intervention group ( $M = 10.79$ ;  $SD = 5.22$ ) and control group ( $M = 12$ ;  $SD = 6.20$ ) were above the clinical cutoff for the 10-item CES-D. Any score equal to or above 10 is considered to meet clinical criteria for depression.<sup>35</sup>

A simple regression was used to investigate whether there were differences in student perceptions that taking a course on psychoeducation can change individuals' perspective about mental health across the treatment and control group. Consistent with our hypothesis, participating in a psychoeducation course was associated with more positive perceptions of

mental health services at follow-up, compared to participating in other courses,  $F(1, 64) = 4.21$ ,  $B = -.71$ ,  $p = .02$ ,  $R^2 = .08$  (see Figure 2).

### Sensitivity Analysis

Sensitivity analyses were performed with adjusted linear regression models with a priori covariates to examine the influence of key demographic characteristics on the associations described above. When accounting for gender identity, racial identity, and socioeconomic status, there was no longer a significant association between intervention status and academic distress,  $B = -.16$ ,  $t = -1.16$ ,  $p = .25$ . In addition, when accounting for gender identity, racial identity, and socioeconomic status, there was no significant association between intervention status and perceived ability to cope,  $B = .09$ ,  $t = .72$ ,  $p = .475$ . Further, when accounting for gender identity, racial identity, and socioeconomic status, the association between intervention status and feelings of being overwhelmed remained non-significant,  $B = -.03$ ,  $t = -.19$ ,  $p = .852$ . Similarly, the association between intervention status and depressive symptoms remained non-significant when accounting for gender identity, racial identity, and socioeconomic status,  $B = -.06$ ,  $t = -.40$ ,  $p = .691$ . Finally, when accounting for gender identity, racial identity, and socioeconomic status, there was no longer a significant effect of intervention status on academic distress,  $B = -.16$ ,  $t = -1.23$ ,  $p = .223$ .

### Discussion

The present pilot study examined the effects of psychoeducation on non-treatment-seeking college students in the context of a global pandemic. Consistent with our hypotheses, we found that taking a course on psychoeducation reduced levels of academic distress and increased positive perceptions of mental health services. Contrary to our hypotheses, however, we did not find any significant effects of psychoeducation on depressive symptoms, feelings of being overwhelmed, and ability to cope with stress. The findings suggest that the intervention may have primarily improved help-seeking and may have reduced stigma.

The impact that the global pandemic had on college students is particularly evident in the finding that for both intervention and control groups the mean depressive symptom score on the CES-D was above the clinical cutoff, indicating that, on average, college students were experiencing clinically elevated depressive symptoms during the study period. Our findings are in line with previous studies that have noted an increase in depressive symptoms in college students during the COVID-19 pandemic.<sup>5</sup> In addition, a study conducted by Wang et al. found that out of 2,000 undergraduate and graduate students, almost half of them reported moderate-to-severe levels of depression as a result of challenges associated with the COVID-19 pandemic.<sup>36</sup> These preliminary findings contribute to current literature on mental health interventions for college students, as recent data has shown that college students are struggling with high levels of anxiety, stress, and depression.<sup>12,13,37</sup>

College students taking the course on psychoeducation reported significantly lower levels of academic distress than those in the control group, in line with prior work on the effects of psychoeducation.<sup>13,14</sup> This may indicate that students in the intervention group implemented

the skills they learned in the psychoeducation course about coping and time management into their everyday lives, which in turn decreased their levels of stress. Another potential reason for the reduction of academic distress in the intervention group is that students reached out for mental health support after learning about the support options they had on their campus. Finally, decreased levels of academic stress could also be due to the group setting that participants were in; this allowed them to not only learn from one another but also to recognize that they were not alone in their experience of facing different academic stressors. The data from this study were collected from a highly selective and competitive institution and, as such, the finding that psychoeducation about ways to manage academic distress was related to lower levels of academic distress in students is an important finding that can provide administrators at universities with a scalable method to increase the mental wellbeing of students. At the same time, we caution against over-interpretation of the findings and encourage researchers to evaluate the effectiveness of psychoeducation in more diverse college settings (e.g., community colleges) and with more gender diversity across intervention and control groups.

Similar to the findings of Beshai et al.<sup>16</sup> students in the intervention group reported significantly higher ratings of positive perceptions of mental health services than those in the control group after taking the psychoeducation course. Students in the psychoeducation course learned about the importance of reaching out for help if they were dealing with mental health issues; this lesson is vital for college students to understand since many students deal with mental illness, but report being too afraid to seek help due to the stigma surrounding mental illness.<sup>6</sup> This points to the idea that taking a psychoeducation course can reduce the stigma attached to seeking mental health treatment and encourage students to seek help if they need it, which is particularly important given the increasing rates of student mental health issues in recent years.<sup>5</sup>

Previous studies regarding the effects of psychoeducation on college students' mental health have found that psychoeducation reduces levels of perceived stress and depression; however, we did not find significant associations between intervention status and levels of stress and depression in the present study.<sup>12,13</sup> Instead, levels of depressive symptoms were above the CES-D clinical cutoff for students in both the control and intervention groups; although we did not measure levels of depressive symptoms in these students before the pandemic, this finding provides converging evidence for the increased levels of depressive symptoms in the context of the additional stressors caused by COVID-19.<sup>7</sup>

In addition, feelings of being overwhelmed were not significantly associated with intervention status. There are a few possible reasons for these non-significant results; for example, the sample size of the present study was relatively small, limiting power to detect effects. In addition, these non-significant results may be an indicator of just how severe and disruptive pandemic related stress was for college students. The context of the global pandemic is a considerable difference from previous studies utilizing psychoeducation, and, thus, it is possible that non-significant effects were found regarding levels of anxiety, depression, and feelings of being overwhelmed because more intense intervention was needed to address these specific concerns during the pandemic. It may be that psychoeducation delivered in a formal course was only able to buffer increased academic

distress during the pandemic and the effects did not extend into more general mental well-being outside of the academic context. Finally, the last contributor to these non-significant results may be that the psychoeducation course was taught online, perhaps lowering the dose of the intervention that is beneficial to the success of psychoeducation. However, it is also possible that the benefits of psychoeducation on depressive symptoms and other aspects of well-being were not felt by students immediately following psychoeducation but were helpful the next semester. Future research would benefit from prospective, longitudinal research to examine possible long-term benefits of psychoeducation.

## Limitations and Future Directions

There were a few limitations to the present study that should be addressed in future research. First, all of the key outcome indicators were based on participants' self-reports. Future research would benefit from the collection of observed behavior and multiple informants (e.g., peers, clinicians). Second, the present study sample size was also quite small, consisted of mostly female students (only females in the intervention group), and was only collected from one university. Of note, the sensitivity analyses revealed that the significant association between intervention status and academic distress and the association between intervention status and perceptions of mental healthcare did not hold when accounting for gender identity, racial identity, and socioeconomic status, likely due to lower statistical power. Future studies should aim for greater gender diversity by collecting data from a larger sample, ideally from multiple universities to replicate findings across context with more power to detect effects. Relatedly, most participants were traditionally aged college students ( $M = 20$ -years-old), and future studies would benefit from recruiting participants from a wider age range to examine developmental and age cohort effects. Participants were also in their junior or senior year of college. Future research would benefit from the implementation of psychoeducation intervention with students in their first year of college so that longitudinal data could be collected regarding mental health and wellbeing throughout students' entire college career. The present study's sample was diverse in terms of race and ethnicity, and future work should continue to strive for inclusive samples. Psychoeducation as a form of intervention also has its limits; it is designed to be utilized on a wide-scale basis and, thus, there are not many options for personalizing the content to the individual. With this model of psychoeducation as a preventative measure instead of primary intervention, students in psychoeducation courses may reflect on their own mental health as they learn about the symptoms and treatment of mental disorders and be motivated to seek professional help.

## Implications

A central implication of this study is that there is a need for greater intervention for mental illness in college student populations. If positive results are replicated in larger samples, a next step may be to consider avenues for broader implementation. One recommendation for universities looking to offer a psychoeducation course like this in the future is to target the course towards freshmen to reduce stress and anxiety regarding the transition to college. Psychoeducation in an academic setting can reassure students that they are not alone in their struggles and validate the feelings of confusion and fear surrounding college.

This course can decrease some of the responsibility associated with seeking mental health treatment as it provides young adults with a stepping stone towards managing stress, anxiety, and depression. A mandatory psychoeducation course for incoming college students could potentially lead to greater retention and graduation rates as prior research suggests that contributors to student dropout include stress and feeling disconnected from the school community.<sup>4</sup>

There have been several universities that have implemented psychoeducation courses as a method of decreasing the mental health treatment gap and serving as a protective factor for college students' mental wellbeing.<sup>38,39</sup> Hobbs et al.<sup>38</sup> found that college students who took a psychoeducation course offered on the "Science of Happiness" experienced and maintained positive mental health effects in comparison to students who did not take this course. Another study conducted by Young et al.<sup>39</sup> established that university students who received a positive psychology intervention through a psychology course saw improvements in their wellbeing, positive affect, negative affect and that this course acted as a buffer against stress. A psychoeducation course like the one described in the current study can introduce students to tools backed by research that they can use to flourish; by discussing mental health in an academic setting students may develop greater advocacy for their mental wellbeing in knowing that they do not have to suffer in isolation. In addition, psychoeducation is a relatively cost-effective resource that universities can implement to lessen the influx of students that college counseling services are struggling with and also target non-treatment-seeking students as a preventative measure against a mental health crisis. Providing students with a free, accessible, and informative mental health resource could reduce the current trend of rising rates of mental illness in young people.

## Conclusion

In the present pilot study, we found that a course in psychoeducation was associated with lower levels of academic distress and more positive perceptions of mental health services. In addition, on average, participants in both the control and intervention group had clinically elevated symptoms of depression, which highlights the mental health crisis on college campuses. Additional work is needed to assess the generalizability of the findings; however, there is preliminary evidence that psychoeducation is one potential means of mitigating this crisis by providing information about effectively managing mental health and treatment options to students.

## Supplementary Material

Refer to Web version on PubMed Central for supplementary material.

## Data availability statement.

The data that support the findings of this study are available on request from the corresponding author. The data are not publicly available due to their containing information that could compromise the privacy of research participants.

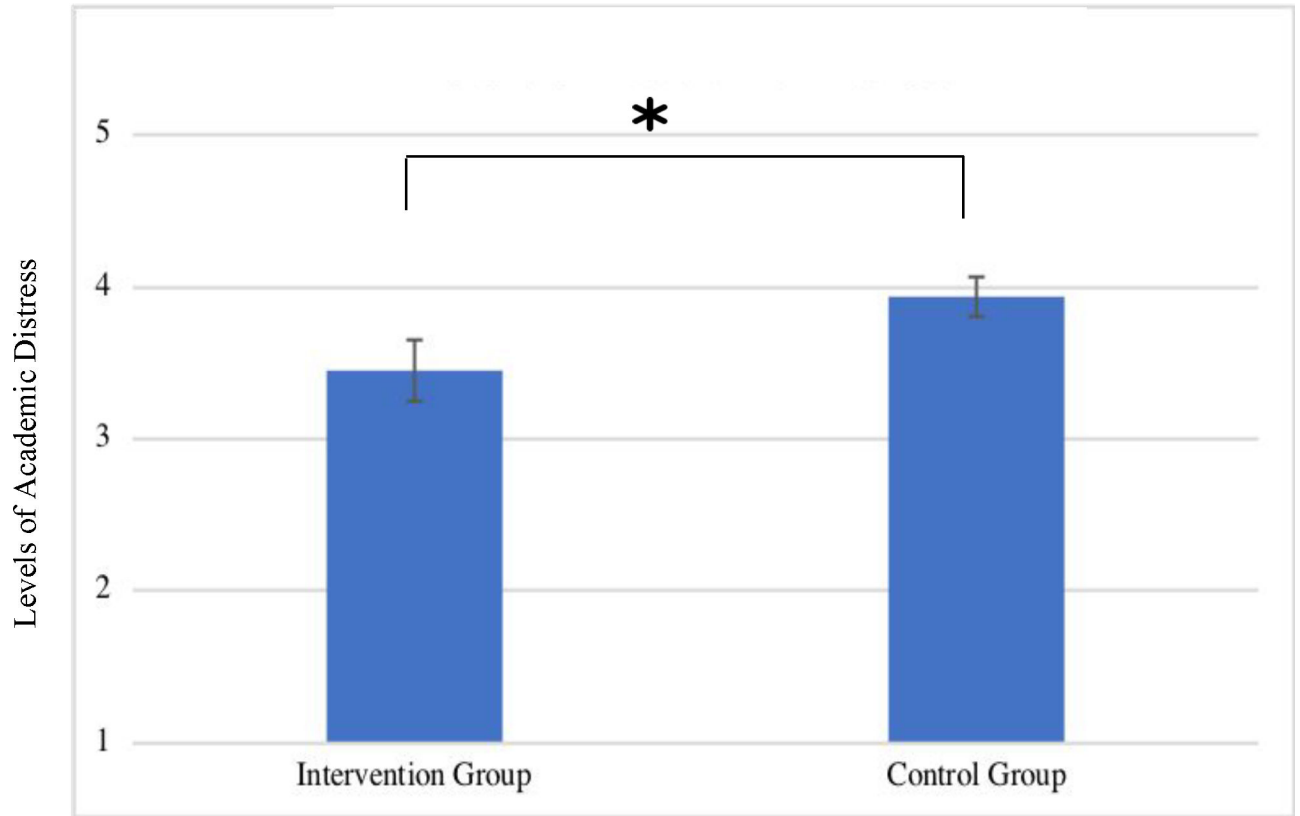
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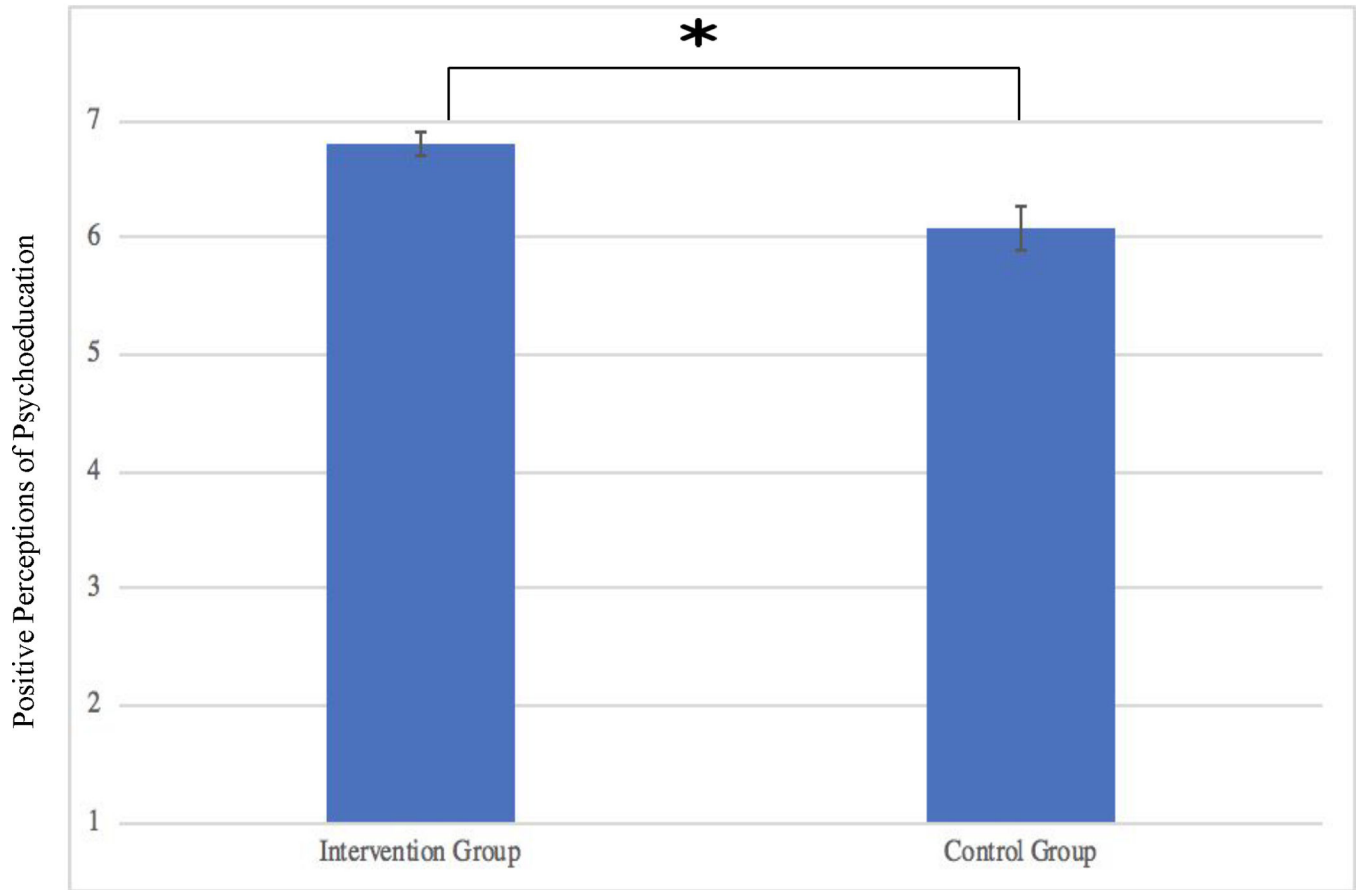
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**Figure 1.**  
Levels of Academic Distress by Group  
*Note.* \* indicates  $p < .05$



**Figure 2.**  
Positive Perceptions of Psychoeducation by Group  
*Note.* \* indicates  $p < .05$

Table 1

## Demographic Information

	Intervention Group		Control Group	
	N	%	N	%
<b>Gender Identity</b>				
Female	18	100.00	33	71.74
Male	0	0.00	13	28.26
<b>Racial Identity</b>				
White	10	43.48	21	45.65
Asian	6	31.58	21	45.65
Hispanic	2	10.53	2	4.35
Black	0	0.00	2	4.35
Multiracial	1	5.26	0	0.00
<b>Age</b>				
19	2	10.53	8	17.39
20	8	42.11	16	34.78
21	7	36.84	20	43.38
22	1	5.26	0	0.00
23	0	0.00	1	2.22
26	0	0.00	1	2.22
29	1	5.26	0	0.00

**Table 2**

## Descriptive Statistics of Study Variables

Variable Name	Intervention Group ( <i>n</i> = 20)			Control Group ( <i>n</i> = 46)		
	Mean ( <i>SD</i> )	Range	Range	Mean ( <i>SD</i> )	Mean ( <i>SD</i> )	Range
Academic Distress	3.45 (0.89)	2–5	2–5	3.93 (0.88)	3.93 (0.88)	2–5
Ability to Cope with Stress	28.75 (6.22)	18–39	18–39	26.30 (5.83)	26.30 (5.83)	11–37
Feelings of Being Overwhelmed	2.85 (1.19)	1.5–5	1.5–5	3.00 (1.16)	3.00 (1.16)	1–5
Depressive Symptoms	10.79 (5.22)	4–22	4–22	12.00 (6.20)	12.00 (6.20)	1–25
Perspectives about Mental Health	6.80 (0.41)	1–5	1–5	6.08 (1.30)	6.08 (1.30)	1–7
Age	20.84 (2.12)	19–29	19–29	20.46 (1.19)	20.46 (1.19)	19–26