Student Self-Care in the Sciences
A Self-Care Intervention in an Undergraduate Physiological Psychology Course

By Carly Yadon

Instructor support is associated with various positive outcomes for students. Self-care (taking care of one’s physical, mental, and emotional health) has become a mainstream concept. Self-care may be one way for students to increase wellness, particularly students enrolled in rigorous science courses. If self-care is facilitated or suggested by an instructor, it may lead to students’ feelings that they are supported by the instructor.

In the study discussed in this article, 45 students enrolled in a physiological psychology course (an upper-level online course) participated in a control group section or an experimental group section that included an integrated self-care blog and supporting communication. Across both groups, a sense of classroom community and professor-student rapport were related to a variety of positive perceptions about the course and instructor. Students in the self-care section rated the course more positively across several variables, but this rating only nearly reached significance for instructor warmth. The self-care blog was easy to implement and well received by students. Integrated discussions about self-care may help students connect with their instructor and can facilitate skills that will benefit students in future semesters.

Many students struggle with mental health issues, and the number of students who struggle may be increasing over time (Eleftheriades et al., 2020; Kitzrow, 2009). Poor self-care habits may be a source of stress for college students and can negatively impact their well-being (Fogle & Pettijohn, 2013). Despite the prevalence of this issue, few instructors regularly discuss well-being with students or acknowledge these sources of struggle. The role of the instructor in affecting student well-being is slowly becoming more widely recognized (Di Placito-De Rango, 2018), yet application and integration in the classroom setting is lacking. Hsu and Goldsmith (2021) shared several strategies that instructors can use in their science, technology, engineering, and mathematics (STEM) classrooms to attempt to reduce students’ stress and anxiety. Many of their suggestions focused on instructor delivery and academic strategies, but connection with students and sharing ways for students to get help were also included.

Self-care (i.e., taking care of one’s physical, mental, and emotional health) can be intentionally applied to increase wellness (Omisakin & Ncama, 2011). Many activities qualify as self-care. For instance, wellness could be promoted through physical exercise (Lin & Kuo, 2013; Penedo & Dahn, 2005), the fostering of social connection (Umberson & Montez, 2010), the practice of creative arts (Stuckey & Nobel, 2010), meditation (Sharma, 2015), mindfulness (Keng et al., 2011), or gratitude (Sansone & Sansone, 2010). Because the term “self-care” could include so many different activities, it may seem nebulous, even useless. However, the flexible nature of the term might particularly appeal to college students because they could select specific practices they are motivated to try. Another potentially useful aspect of the term is the focus on intentionality and ownership. That is, activities that are part of a self-care practice require self-generation and self-monitoring (even if students have considerable support from others as they complete self-care activities). “Self-care” provides an overarching, self-explanatory term that captures many self-help behaviors.

Relatively few studies have implemented interventions specifically framed as self-care initiatives with college students. A study by Coons and colleagues (1989) found that a self-care intervention helped college students take more control over their health. Moses and colleagues (2016) demonstrated that various types of self-care uniquely predicted well-being in a college student sample. Conceição and Lehman (2016) specifically studied self-care in the online learning environment. Students in their study voiced the importance of self-care and the need for support from their instructors and institutions in achieving their self-care goals. They argued that institutions have directed resources toward students who are physically present at universities but have mostly neglected the needs of online students. A flexible approach may be necessary, as students will likely differ on which aspects of self-care intervention may benefit them the most. One illustration of the need for different approaches can be seen in a study by Hermon and Davis (2004).
in which traditional and nontraditional students were surveyed on various self-care practices and health behaviors. Traditional students (ages 17 to 23) were more likely than nontraditional students (ages 24 to 51) to exercise, whereas nontraditional students were more likely to get proper sleep, limit drug and alcohol use, and engage in preventative health measures. These differences suggest that self-care strategies and interventions should be broad, especially in the online classroom, where students often come from quite different backgrounds.

Most self-care intervention studies in a college student sample have been at the university level rather than the classroom level. University-wide experiences such as first-year programs are important and useful (van der Zanden et al., 2018), but there may be additional opportunities to bring tools and student self-help concepts into our classrooms. Most instructors know all too well that students’ memory for past content is not as enduring as we would like (e.g., Bacon & Stewart, 2006); this phenomenon even exists in medical school (Weggemans et al., 2017). Therefore, even if students receive information about self-care during their adjustment to college, they likely could benefit from additional support as they continue their college careers. If this support is facilitated or suggested by an instructor, it may lead to greater feelings of instructor support for students and increase professor-student rapport. If self-care is presented to all students in a class, greater classroom community can develop as well. The purpose of the study discussed in this article was to examine how students would respond to a self-care blog (and related support tools) integrated into their online classroom.

Methods

Participants

There were 45 participants who met the criteria for inclusion in the study (ages 20–48, $M = 22.76$, $SD = 5.24$). Participants were enrolled in one of two fully online sections of a physiological psychology course taught by the same instructor (the author): 25 enrolled in what will be referred to as the self-care section, and 20 enrolled in the control section. Participants in the self-care section self-described their gender as agender ($n = 1$), cisgender male ($n = 8$), or cisgender female ($n = 16$) and self-described their race as biracial ($n = 1$), Asian ($n = 1$), or White ($n = 23$). The control section self-described their gender as cisgender male ($n = 3$) or cisgender female ($n = 17$) and self-described their race as biracial ($n = 3$) or White ($n = 17$). The average number of credit hours students were enrolled in at the beginning of the semester (including the current course) was 13.78 (one student who was taking more than 18 hours is not included in the average), and 77.78% of participants currently worked for monetary compensation outside their coursework. The average number of previous online classes completed by participants was 4.6, not including two participants who had never taken an online class and 11 who reported taking more than 10 online classes.

Participant exclusions

Some participants did not meet the criteria for inclusion in the study. These participants are not included in the 45 total participants and accompanying descriptive statistics that appear in the previous section. Participants were excluded (all based on a priori criteria) if they did not take the survey both at the start and end of the semester ($n = 7$) or if they were enrolled in a cross-listed section as graduate students ($n = 5$). Data were inspected for response quality, and participants were excluded if they took less than 5 minutes to complete the second survey ($n = 4$) or provided “straight-lined” responses (the very same numerical response) across multiple scales and did not adjust their response to reverse-coded items as would be expected ($n = 1$).

Materials

Questionnaires

All participants completed the Perceived Stress Scale (PSS-10; Cohen & Williamson, 1988), Classroom Community Scale (CCS; Rovai, 2002), and Professor-Student Rapport Scale (PSRS; Wilson et al., 2010) and answered demographic questions. Additionally, students in the self-care section completed first-day information sheets (Killpack & Melón, 2020) and answered specific questions about the blog.

Self-care blog

An entry in the self-care blog was published to Blackboard approximately once per week (not including the first week and holiday weeks). The instructor attempted to link the self-care topic to course content when possible (e.g., the sleep blog post was presented during the neurobiology of sleep section of the course). Students were informed of new blog posts in the weekly course newsletter (delivered via email) and reminded through announcements within the course platform. Self-care blog posts contained background information about the topic, links to articles (from both mainstream media and empirical journals), tools that allowed students to explore the topic in more depth (e.g., links to apps or support sites), and questions at the end that served as prompts for comments and discussion. The posts also included brief personal anecdotes and reflections from the instructor. The 12 blog post topics were meditation and mindfulness, cooking, finding calm before an exam, gardening, exercise and body movement, goal setting, podcasts that promote connection and well-being, sleep, social connection, time in nature, the power of music, and working with one’s hands (benefits of handicrafts).
Experimental design and procedure

Students were offered a small amount of extra credit for completing a short survey at the beginning of the semester and a slightly longer survey at the end of the semester (both in Qualtrics). The survey administered at the start of the semester contained the PSS and a few demographic questions (plus the first-day information sheet survey for the self-care section). The survey at the end of the semester contained the PSS, CCS, PSRS, demographic questions, and a few questions about the course and instructor. Students in the self-care section were also offered live Zoom chats and a class group in Blackboard, but those were not used like the self-care blog (no students used the groups, and few signed on to the Zoom chat), so student perceptions of those tools are not included.

Both sections of the course were designed with best practices in mind in terms of pedagogy and promoting inclusion. The instructor has taught physiological psychology online previously and received favorable feedback and evaluations. The two sections presented in this study were treated identically except for the specific intervention. Interaction with the blog was encouraged but optional. To the author's knowledge, students were not aware of the difference between the two course sections during the time of the study.

Results

Participant characteristics to ensure groups were not measurably different at the beginning of the study

Alpha was set at 0.05 for all statistical tests in this study. As expected, the two groups did not differ by age, t(43) = 0.29, p = 0.78; satisfaction with prior online classes, t(41) = 0.80, p = 0.43; sense of community in previous online classes, t(41) = 0.55, p = 0.58; number of credit hours enrolled, t(42) = 0.44, p = 0.67; average hours worked for monetary compensation per week, t(43) = 0.06, p = 0.95; or PSS scores at the beginning of the semester, t(43) = -0.37, p = 0.71. See Table 1 for descriptive statistics.

Perceived stress

Student stress levels in both sections (PSS scores) were descriptively higher than age-matched normed scores (based on the original normative data; Cohen & Williamson, 1988) when measured at the beginning of the semester and at the end. A two (time) by two (group) mixed-design analysis of variance (ANOVA) compared student stress levels across group and time. There was not a statistically significant main effect for group, F(1,43) = 0.20, p = 0.66, or an interaction, F(1,43) = 0.01, p = 0.92, but there was a main effect for time, F(1,43) = 9.6, p = 0.003, η²p = 0.18 (see Table 1). This result suggests that students were more stressed at the end of the semester than at the beginning of the semester.

Student ratings of course and instructor

Descriptive statistics for student ratings of the course and instructor appear in Table 2. Students in the self-care section had a higher rating for the statement “The instructor was warm and caring” than students in the control section, t(43) = 2.13, p = 0.039, d = 0.64, but the number was just above the 0.05 threshold for significance after being adjusted for unequal variances, t(29.41) = 2.01, p = 0.053, d = 0.62. For all statements in this section, ratings were higher for the self-care participants, yet they did not reach statistical significance on CCS total score, t(43) = 1.05, p = 0.30; PSRS, t(43) = 1.55, p = 0.13; the statement “The instructor created an inclusive learning environment,” t(43) = 0.60, p = 0.55; or the question “How would you...
rate the overall quality of this online learning experience?” $t(43) = 1.06$, $p = 0.30$.

**Students’ perceptions of self-care blog**

Students in the self-care section were asked to provide feedback about the self-care blog on the end-of-semester survey. The percentage of students who reported reading the self-care blog was 88%, and the self-reported average number of self-care blog posts read was 5.8 ($SD = 2.67$). Students who used the self-care blog reported satisfaction with the blog based on their ratings for the statements “I enjoyed having a self-care blog in this class” ($M = 4.32$, $SD = 0.57$; note that 5 was the maximum rating for all items included in this paragraph) and “I found the self-care blog posts to be helpful” ($M = 4.09$, $SD = 0.68$).

**TABLE 2**

Means and standard deviations of student ratings of course and instructor.

<table>
<thead>
<tr>
<th>Item</th>
<th>Section</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Self-care</td>
</tr>
<tr>
<td>Warm and caring instructor*</td>
<td>4.80 (0.41)</td>
</tr>
<tr>
<td>Classroom Community Scaleb</td>
<td>54.12 (10.49)</td>
</tr>
<tr>
<td>Professor-Student Rapport Scalea, c</td>
<td>4.60 (0.47)</td>
</tr>
<tr>
<td>Inclusive environmenta</td>
<td>4.52 (0.65)</td>
</tr>
<tr>
<td>Overall quality of coursea</td>
<td>4.56 (0.71)</td>
</tr>
</tbody>
</table>

Note. Standard deviations are presented in parentheses. *5 is highest rating on scale. b80 is highest score. cThis is the Teacher Perceptions subscale.

**TABLE 3**

Correlations for relationship between Classroom Community and Professor-Student Rapport Scales and student perceptions.

<table>
<thead>
<tr>
<th>Student perceptions</th>
<th>Classroom Community Scale</th>
<th>Professor-Student Rapport Scalea</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>r</td>
<td>p</td>
</tr>
<tr>
<td>Overall quality of course</td>
<td>0.534</td>
<td>&lt; 0.001b</td>
</tr>
<tr>
<td>Warm and caring instructor</td>
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<tr>
<td>Inclusive environment</td>
<td>0.562</td>
<td>&lt; 0.001b</td>
</tr>
<tr>
<td>Student views and beliefs respected by instructor</td>
<td>0.535</td>
<td>&lt; 0.001b</td>
</tr>
<tr>
<td>Student views and beliefs respected by classmates</td>
<td>0.572</td>
<td>&lt; 0.001b</td>
</tr>
</tbody>
</table>

Note. $n = 45$ ($df = 43$) for all comparisons. aTeacher-perceptions subscale. bSignificant even after a conservative Bonferroni correction adjusting a to 0.005.

**Relationships among sense of community, professor-student rapport, and outcome variables**

Studywide correlations were calculated across all participants to examine relationships among classroom community; professor-student rapport; and students’ perceptions of the course, the instructor, and their classmates. Strong relationships were found across every comparison, yielding large effect sizes for nearly all comparisons. This finding suggests that greater feelings of classroom community and stronger professor-student rapport are associated with several positive outcomes, including perceptions of the overall quality of course, instructor warmth, inclusivity of environment, and how well the professor and classmates respected students’ views (see Table 3 for correlation matrix).

**Discussion**

The self-care section consistently provided more favorable ratings about the course and instructor than the control section, but this difference only nearly reached significance when rating instructor warmth. The effect size was medium for this question, but power was low for this set of analyses due to the small sample size. Most students read and interacted with the blog. Students in the self-care section reported an appreciation for the self-care blog and related tools. Additional analyses explored the relationships among classroom community; professor-student rapport; and students’ perceptions about the course, their classmates, and the instructor. The pattern was clear that a sense of community and professor-student rapport were related to various positive perceptions, such as instructor warmth, inclusivity, and respect by the instructor and classmates. Sense of community and professor-student rapport were also strongly related to students’ ratings of the overall quality of the course. This finding is similar to results.
in past work such as McKinney et al. (2006), in which greater classroom community was positively correlated with course enjoyment.

Perceived stress did not distinguish the groups at the start or end of the study, but students were significantly more stressed at the end of the semester overall. It is not surprising that the last month of a semester would be more stressful than the month before a semester begins. Garrett et al. (2017) found that stress was higher during examination periods and peaked at the start of final exams. This finding suggests that students may be particularly vulnerable as they move toward final exams. Students may benefit from additional communication and encouragement from their instructors during this time, especially in science courses that typically require mastery of a large volume of information. Tools and study strategies that were shared by the instructor at the start of the semester might be worth repeating during the last quarter of the course.

Supporting students does not need to monopolize an instructor’s time. A modest effort may make a big difference in our students’ lives. Self-care does not have to be in the form of a blog; it could simply involve reminding students to take care of themselves or adding a few extra sentences in a class memo suggesting how students might destress before an upcoming test.

It is important to acknowledge that instructors are not (and should not attempt to be) mental health professionals for their students. Reminding students to practice self-care is not the same as attempting to provide mental health services. Considering student mental health is an important job of an educator (Di Placito-De Rango, 2018), but that is different from providing services or attempting to directly educate students about issues outside our areas of expertise. This study focused on pointing students to high-quality resources (e.g., providing links to empirical evidence that backed up the efficacy of the suggested self-care practices) and being intentional about supporting students.

**Limitations**

In addition to the small sample size, perhaps the biggest limitation of the study was the demographic homogeneity (the sample was predominantly White and female). Some evidence suggests that African American students are less likely to enroll in online classes (Shea & Bidjerano, 2014) and may be less comfortable engaging with instructors, particularly instructors of different race (Schwitzer et al., 1999). It is unclear how a more diverse sample would have viewed, valued, and responded to the present interventions, but it stands to reason that they would similarly benefit—or perhaps even benefit more from the extra resources and contact from an online instructor (Lundberg & Schreiner, 2004). Increased engagement in online learning might particularly benefit students from underrepresented populations, especially when tools are created through the lens of inclusion and equity (Beschorner, 2021) and should be explored in future studies.

**Summary and conclusions**

Science instructors may be uniquely suited to support and encourage students’ well-being. The self-care blog used in this study was simple to create and well received by students, and trends suggested that students in the self-care section may have had more favorable ratings of the instructor. Experiencing a greater feeling of warmth and caring from an instructor may mean that students would be more likely to contact their instructor in times of struggle, whether during the course or even after the course ends. Whether they teach online, blended, or seated courses, instructors can show support through dedicated, sincere acts that explicitly show students that we care about them.

**References**


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