Fall 2020

Predictors of Perceived Social Support During the COVID-19 Pandemic Among College Students at the University of South Carolina

Erin Godfrey
University of South Carolina - Columbia

Director of Thesis: Sayward Harrison, Ph.D.
Second Reader: Valerie Yelverton

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THESIS SUMMARY

  Similar to many college students, campus shutdowns in March of 2020 due to the

COVID-19 pandemic forced me to move back home with my parents. Early outbreaks within

New York City and areas of northern New Jersey led to drastic social distancing measures and

shut-downs in my hometown. Being thrown back home with a family of seven during this time

had its benefits and disadvantages. To say that my home environment was chaotic would be an

understatement; it was impossible to find a quiet place to be productive, get school work done, or

even just meditate without being intruded on. There were many moments where all I wanted was

some time to myself and some peace. On the other hand, however, with no other opportunities

for in-person social interaction, my family became an invaluable resource to me. Whenever I

found myself feeling emotionally unwell, I had six other people to turn to for advice or a hug.

Looking back, as frustrating as it was to never have "alone time", the support I had from my

family was a key factor to me remaining resilient to the seemingly devastating changes I was

facing. The present thesis was inspired by my own struggles with my mental health over the

course of the past year. I was curious to know how the transition to virtual learning and sudden

lack of avenues for socialization was affecting my peers, and whether or not there were

differences in these experiences across various student populations.

  After researching the concept of perceived social support and the buffering effect it has

on mental health during times of adversity, I felt confident that I might be able to find a way to

make a contribution to this area through a study with the population of my university. It was

interesting to see the consistently low levels of perceived support expressed by my peers.

Furthermore, it helped me to see that, yes, the pressures of the world may seem insurmountable

right now, but I am not alone in these feelings and I have many people experiencing the same

challenges as I am.

ABSTRACT

Introduction: The emergence of COVID-19 has rapidly transformed the framework of our world in immeasurable ways. Social distancing and online learning have seemingly had a negative effect on students' mental health amidst the rising stress of life during a global pandemic. Higher levels of perceived social support have been shown to have a buffering impact on the negative effects of stress. Therefore, the present study seeks to investigate how these effects differ among college students during their return to school in the Fall of 2020.

Method: A convenience sample of 257 students from the University of South Carolina was surveyed on demographic factors, their current academic enrollment experiences, their living situation, and their perceived support which was measured by a modified version of the Multidimensional Scale of Perceived Social Support (MSPSS). The MSPSS was modified to include questions about perceived social support from their professors, as well as from friends, family, and significant others.

Results: Female participants were significantly more likely than male participants to report high perceived social support (75% vs 50%) $p=0.002$. Female participants ($M=5.55$; $SD=.89$) reported significantly higher overall social support than males ($M=5.05$; $SD=1.03$), $p < .05$ as well as on the Significant Other subscale ($M=5.86$; $SD=1.40$). Participants who reported high course format satisfaction also reported higher perceived support (76% vs 63%) $p=0.034$. No significant differences were found between individual item responses and course format or living arrangement.

Discussion: COVID-19 has created unique challenges for learning and socialization among college students. The data in the present study poses that undergraduate men may be particularly

vulnerable, and extra efforts to ensure increased social connection among male students during the pandemic are warranted. In addition, our data shows that students' perceptions of their learning experiences are linked to their social support during the pandemic, particularly from their professors. Future research is needed to explore these findings.
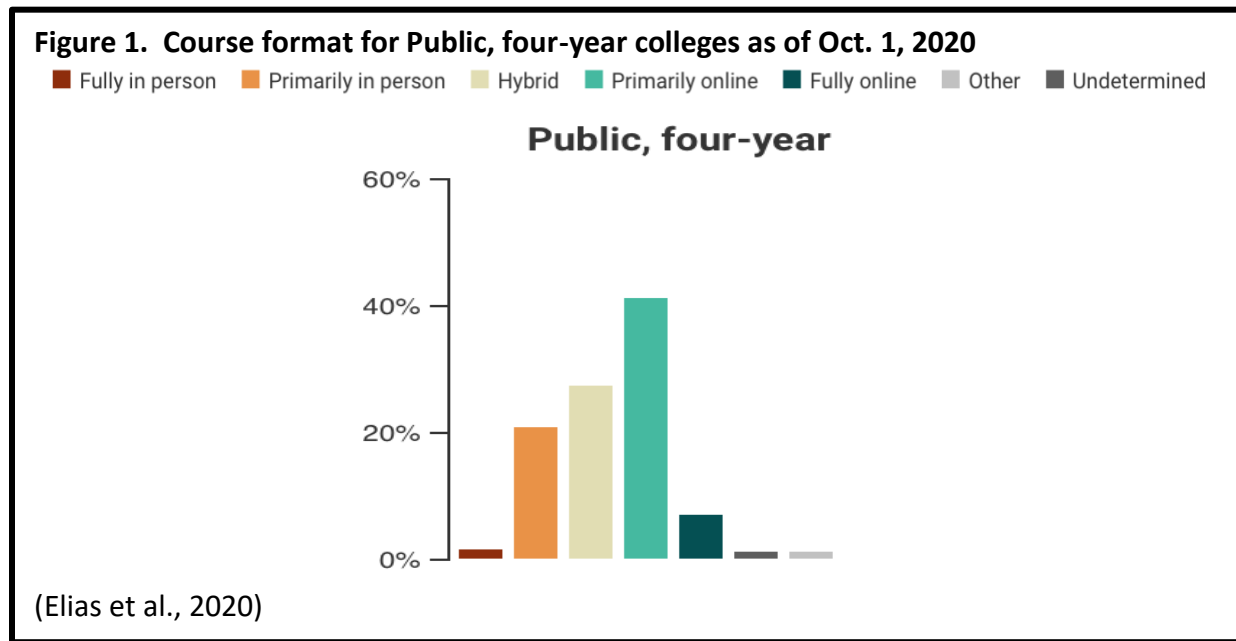
BACKGROUND

COVID-19 Pandemic and Higher Education

When the novel coronavirus, COVID-19, first struck the United States (US), citizens were forced to navigate the newfound challenges of mask mandates, curfews, closures of non-essential businesses and, for students, online learning. On March 6, 2020, a week before US government's declaration of a national emergency, the University of Washington in Seattle, was the first major university in the country to cancel in-person classes (Smalley, 2020; Whitehouse, 2020). Institutions of higher education across the country quickly followed suit in closing their campuses, asking students abroad to return home, and cancelling spring graduation ceremonies. By the end of March over 1,100 universities and colleges in the nation had transitioned to fully online classes or cancelled in-person classes altogether (Smalley, 2020).

As of the Fall 2020 semester, 44% of colleges in the United States operated fully online or primarily online, while only 4% of universities continued to operate fully in-person (Elias et al., 2020). Many universities (21%) introduced hybrid modes of instruction in which courses combined both online and face-to-face elements of instruction. Among public 4-year institutions, over 45% offered fully or primarily online modes of instruction, almost 30% offered hybrid, and approximately 25% offered either fully or primarily in-person (see Figure 1).

Like other major universities across the US, the flagship university of South Carolina—the University of South Carolina (UofSC)—had its Spring 2020 semester interrupted. However, UofSC released its "Campus Reopen and Risk Mitigation Plan" for the fall 2020 semester on June 26, 2020. The university announced that it would continue to offer in-person classes, as

Figure 1. Course format for Public, four-year colleges as of Oct. 1, 2020

■ Fully in person   ■ Primarily in person   ■ Hybrid   ■ Primarily online   ■ Fully online   ■ Other   ■ Undetermined

Public, four-year

(Elias et al., 2020)

well as online and hybrid courses. In order to provide safe in-person instruction, classes were

limited to 100 students, face coverings were mandated inside all campus buildings, students were

separated by a minimum of three feet in classrooms, and seating charts were made for contact-

tracing purposes. Furthermore, the university upgraded 480 campus classrooms to provide

recording devices, thus allowing professors to record and live-stream their lectures via

Blackboard Collaborate Ultra (UofSC, 2020). Nevertheless, many classes – even those with well

under 100 students – were rapidly converted to a fully virtual or hybrid class format.

Online Learning

Despite recent attention, online learning is not a new concept in the world of higher

education. According to the Babson Survey Research Group, online enrollment has been on a

steady incline in the US since 2012 (Seaman et al., 2018). As of 2016, 31.6% of all higher

education students were enrolled in at least one online or "distance education" course (Seaman et

al., 2018). Even more interesting is that the increase in online enrollment has remained stable

despite a consistent decline in overall enrollment in US institutes of higher education over the

past four years. Between 2012 and 2016, enrollment in distance education courses saw 17.2%

increase despite total higher education enrollment seeing a decrease of -3.8% in that same time

period. Of students taking online courses in 2016, 68.9% of them were at a public institution

(Seaman et al., 2018).

Various studies have been conducted to assess the effectiveness of online learning

formats as opposed to face-to-face learning and have yielded mixed results. Some researchers

have found that there is no significant difference between success outcomes in online versus in

person classes (Larson & Sung, 2019; Sitzmann et al., 2006), while others have reported

significantly lower exam and final grades for students enrolled in online courses (Bettinger et al.,

2017). It has also been found that factors such as race, gender and academic preparedness have a

moderating effect on student success in online courses (Xu & Jaggars, 2013).

Unfortunately, despite positive findings in terms of academic outcomes for online

learning, students in online classes report higher levels of loneliness than their peers in in-person

classes (Ali & Smith, 2015; Palloff & Pratt, 2004). This is possibly the result of decreases in

opportunities for the development of instructor-student rapport in the online classroom. Frisby

and Martin (2010) emphasize the important role an instructor plays in creating an environment

where students are able to interact freely among each other as well as with their instructor.

Rapport development between students and instructors has been found to contribute to perceived

affective learning (Frisby & Martin, 2010), as well as attitudes toward the course and student

motivation (Wilson & Ryan, 2013). The lack of face-to-face interaction in online courses

deprives students of the ability to have meaningful interactions (Priego & Peralta, 2013 as cited

in Ali & Smith 2015). Thus online-enrolled students may feel less connected with their peers and

their instructors, as well as experience higher levels of social isolation which will, in turn, negatively affect their physical and mental health (Driver, 2019; Wang et al., 2018).

Perceived Social Support and Mental Health

Mental health among students has been a rising concern on college campuses. Approximately one-third of college experience some sort of diagnosable mental health disorder, with the most common being depression and anxiety (Eisenberg et al., 2013). According to the Center for Collegiate Mental Health (CCMH) (2020), the past eight years have seen a steady increase in self-reported anxiety and depression among college students. Between 2010 and 2019, the number of college students seeking out counseling services at their university increased by 10% (CCMH, 2020).

With the emergence of COVID-19, these numbers are higher than ever. A recent study from the Student Experience in the Research University (SERU) Consortium revealed that, between May and July 2020, 35% of undergraduate students met criteria for major depressive disorder while 39% tested positive for generalized anxiety disorder (Chirikov et al., 2020). Even more concerning is data stating 25.5% of 18-24 year-olds had seriously considered suicide within the past 30 days (Czeisler et al., 2020).

Financial hardship is likely a contributing factor to the growing mental health crisis among young people. Due to the pandemic about 31% of working students have seen a decrease in wages, and 40% of students have lost a job, internship, or job opportunity (Aucejo et al., 2020). Many college students also anticipate a low likelihood of financial success post-graduation as indicated by a 20% decrease in students expecting to find a job by graduation and a 2.5% decrease in expected salaries at the age of 35 (Aucejo et al. 2020).

Another factor that may explain the drastic downfall in undergraduate mental health is the lack of opportunities for social interaction. Under normal circumstances, college life is filled with unlimited opportunities for social interaction. Whether in a student organization, on an intramural sports team, or at a Greek-life function, students are encouraged to mingle and socialize with their peers. In doing so, students build a social support network to fall back on for help in times of stress. Social distancing measures, as well as quarantine and isolation experiences, have restricted students' abilities to interact with each other and have deprived them of critical connections with their peers.

Social support can be divided into two major facets: perceived social support and received social support. Perceived social support, or the perception that friends and family will provide social support in times of stress, has been consistently linked to mental health (Lakey & Cronin, 2008). Perceived social support differs from received social support in that, while received social support is a form of social support that has actually occurred, perceived social support is simply the idea or belief that an individual would receive support from those around them should the need arise (Barrera, 1986 as cited in Norris & Kaniasty, 1996). Interestingly, studies have found *perceived* social support to be a more reliable predictor of mental and physical health outcomes than received social support (Norris & Kaniasty, 1996). The most common explanation for this is that perceived social support has a buffering effect that protects individuals from the negative effects of stress (Lakey & Orehek, 2011). Perceived social support may have many psychological benefits for individuals, providing them with confidence that their needs can be met during times of adversity and reducing concerns about their own well-being.

Perceived social support can come from a variety of different sources. *The Multi-Dimensional Scale of Perceived Social Support* (MSPSS) identifies three sources from which an

individual can receive social support: friends, family and a significant other (Zimet et al., 1988).

Identifying the quality of an individual's many different sources of perceived support may be

particularly interesting to investigate today—during the COVID-19 pandemic—as people are

now suddenly physically separated from their previously available support systems.

RESEARCH QUESTIONS AND HYPOTHESES

The present study seeks to investigate the impacts social distancing and online learning

have on feelings of perceived support in college students at the University of South Carolina.

The following hypotheses were developed to guide the analysis of data collected.

1.) Does format of education (traditional/in-person, hybrid or online) impact perceived social

support in students? Does satisfaction with format of education have a moderating effect

on perceived social support?

It is hypothesized that students who are enrolled in more traditional/in-person classes will

demonstrate higher levels of perceived social support. It is expected that this effect will be

particularly true for perceived support from professors as this will be the main avenue of social

support that has altered by the recent transition to primarily online learning. Furthermore,

students with higher satisfaction in the class format in which they are enrolled will report higher

levels of perceived social support; i.e. if they are in mostly online classes and desired to be in

online classes, they will report higher levels of perceived support.

2.) Does the number of extracurricular activities that college students are engaged in impact their

perceived social support? Does having a job predict perceived social support?

Extracurricular involvement and employment are alterative forums through which

students can develop and maintain interpersonal relationships. It is predicted that students with

higher quantities of extracurricular involvement and/or are employed in some capacity will report higher levels of perceived support.

3.) Does living on versus off campus affect perceived support?

Students living on campus are in closer proximity to their peers and have more opportunities for social interaction. In addition, students living off campus are at a higher risk of suffering mental disorders such as anxiety and depression than students living on campus (Eisenberg et al., 2013). Therefore, it is hypothesized that students living on campus will report higher levels of perceived support than students living off campus.

METHOD

Participants and Recruitment

A convenience sample of college students from the University of South Carolina was recruited to participate in this study. A description of the survey and a web-based survey link was disseminated to students via social media. The primary recruitment network that was used was Facebook. Figure 2 demonstrates an example of a message that was posted to the "University of South Carolina Class of 2024" Facebook group. Survey data was collected from Friday, October 9, 2020 though Tuesday, October 27, 2020.

Before beginning the survey, interested students were provided with a brief statement on the purpose and goals of the study and were asked to provide their consent before beginning the survey. If a participant did not provide consent, their survey was automatically submitted, and they were not asked any other questions. Students were incentivized to take the survey with the possibility of winning a $25 Amazon gift card. Two winners were picked randomly from the participants who opted to provide their emails at the end of their survey. Because this study was

Figure 2. Message posted in Facebook group to recruit participants.

Hi everyone!

I hope everyone's weekend is going well! If you have a moment (or want a reason to procrastinate whatever assignment you're working on right now), please take three minutes to complete this quick survey. It's for my senior thesis and I would really appreciate it if you helped me out. Also, you could enter to win one of two $25 Amazon gift cards that I will be giving out to people who complete the survey.

Thank you guys!

Erin Godfrey

classified as undergraduate student research, approval from the University of South Carolina Institutional Review Board was not required.

To ensure that participants were students at the University of South Carolina and to ensure that participants were capable of legally consenting to the study, they were asked two eligibility questions at the start of the survey:

1. Are you 18 or older? (Yes or No)

2. Are you currently enrolled at the University of South Carolina? (Yes or No)

If a participant answered "No" to either of these items, their survey was automatically submitted, and they were not allowed to answer any further questions on the survey.

In total, 257 students initiated the survey. Of these, 37 were excluded for the following reasons: rejecting consent ($n=1$), failing eligibility criteria ($n=5$), duplicate entries ($n=27$), and missing responses on key outcome variables ($n=4$). Thus the final data set contained 220 participants.

Measures

Demographic Characteristics. Participants provided information about demographics including age, year in school, college/school enrollment, gender, and religion/spirituality.

Furthermore, students were asked if they were a member of special programs at the university

such as the South Carolina Honors College, Capstone Scholars, or the Gamecock Gateway

Program.

   Coursework Information. To determine how many and what kind of courses participants

were enrolled in, participants were asked to indicate the following: number of current credit

hours, number of courses being taken, number of courses that were fully online, number of

courses that were fully in-person, and number of courses that were "hybrid" courses (i.e.,

partially online and partially in person). Furthermore, participants were asked to indicate their

satisfaction with the format of their courses on a Likert scale ranging from 1 (very unsatisfied) to

5 (very satisfied). Course satisfaction scores were categorized into the following categories: low

(1-2.99) and high (3-5).

   Support Systems. In order to assess students' social support systems, they were asked

questions regarding their living conditions and involvement in campus and social activities

outside of the classroom. To assess their living conditions, they were asked where they were

living (on or off campus) and the number of people they were living with. Participants were also

asked to indicate how many clubs/organizations they were actively involved in this semester,

how many clubs/organizations they were involved in last semester, what type of

clubs/organizations they were involved in, whether they are employed, and how many hours they

worked per week. Finally, they were asked whether or not currently had a significant other (i.e,

romantic partner).

  Perceived Social Support. Perceived quality of social support was measured using a modified

version of the MSPSS (Zimet et al., 1988). The original survey addressed three dimensions of

perceived social support: Friends, Family and Significant Other. The original MSPSS contained

12 items, with 4 items per dimension of support. Participants were asked to indicate the extent to

which they agreed with the statement made in each item on a Likert scale of 1 (very strongly

disagree) to 7 (very strongly agree).

For the present study, the MSPSS was expanded to include an additional dimension of

perceived social support from professors. The new items were adapted from Wilson and Ryan's

Professor-Student Rapport Scale (PSRS) (Wilson & Ryan, 2013) and included:

1. My professors are approachable. (PSRS item 13)

2. I can talk to my professors about problems and concerns[1].

3. My professors are eager to help me. (PSRS item 21)

4. My professors care about my success. (PSRS items 23 and 27)

The addition of these items yielded an adapted MSPSS that contained 16 total items and

assessed four domains (i.e., support from friends, family, significant other, and professors).

Mean scores for the adapted MSPSS were calculated for the full 16-item scale, as well as each of

the 4-item subscales for a total of five different scores for perceived social support. To assess

differences in perceived support by participant characteristics, mean MSPSS scores were

categorized into the following categories: low/medium (1-5) and high (5.01-7).

Statistical Analyses

We conducted statistical analysis using STATA. Initially, we tabulated descriptive

statistics for all variables. Chi-square tests were used to examine differences in demographic

variables, living conditions, number of classes fully in-person vs. online/hybrid, satisfaction in

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[1] This was a newly generated item. It was developed by modifying existing MSPSS items "I can talk about my problems with my friends" and "I can talk about my problems with my family" to address professors instead of friends and family.

course format, extracurricular involvement, employment status, and presence of a significant other.

To assess the reliability of the adapted total MSPSS and four subscales, Cronbach's alpha coefficients were calculated for the full sample and by gender. *t* Tests were used to compare gender and course satisfaction differences in adapted MSPSS mean scores as well as mean subscale scores for Friends, Family, Significant Other, and Professors. In addition, *t* tests (for binary variables) and *F* tests (for categorical variables with more than two categories) were used to compare mean scores of each of the 16 individual items in the adapted MSPSS scale by gender, course format, year in school, extracurricular involvement and living location. P-values < 0.05 were considered statistically significant.

RESULTS

A total of 220 college students from the University of South Carolina participated in the current study. Sociodemographic characteristics of participants are shown in Table 1. The majority of the sample was female (85%), in their senior year (33%), and self-identified as religious (61%). Furthermore, the most highly reported college or school for participants' majors were in the College of Arts and Sciences (38%), the Arnold School of Public Health (14%), and the Darla Moore School of Business (11%). Participants ranged from 18-25 years of age (M=19.7 SD=1.4). In terms of living situation, most students lived off campus (69%) and had two or more other people living with them (65%). In addition, a large portion of participants (42%) were involved in two or more clubs or organizations. Finally, most participants were not employed (55%) and did not have a significant other (58%).

About half of the participants (49%) reported taking no in-person classes this year (i.e., fully online). Meanwhile the other participants (51%) reported taking a combination of courses

that included at least some in-person classes. Most students (61%) reported that they were content or highly satisfied with the format of the courses they were taking (i.e., happy with their ratio of in-person to online classes).

Female participants were significantly more likely than male participants to report high perceived social support (75% vs 50%), $p=0.002$. There were no significant differences in total perceived social support when students with in-person courses were compared to those with no in-person courses; however participants who reported high course format satisfaction also reported higher perceived social support (76% vs 63%), $p=0.034$. No significant differences were found between total MSPSS by religion/spirituality (religious vs spiritual, but not religious vs not religious), living environment (on campus or Greek housing vs off campus), extracurricular involvement (no clubs/organizations vs one club/organization vs two or more clubs/organizations) or employment status (employed vs unemployed).

Table 2 presents the Cronbach's alpha as well as means and standard deviations for the adapted MSPSS and its four subscales. Total adapted MSPSS yielded significant internal consistency ($\alpha = .892$). Furthermore, the 4-item subscales also yielded significant internal consistency: Friends-subscale ($\alpha = .925$), Family-subscale ($\alpha = .908$), Significant Other-subscale ($\alpha = .945$), Professor-subscale ($\alpha = .878$). These findings were consistent among male ($\alpha = .885$) and female ($\alpha = .879$) participants.

The mean score for the adapted MSPSS for the full sample was 5.46 ($SD=.93$). Female participants ($M=5.55$; $SD=.89$) reported significantly higher social support than males ($M=5.05$; $SD=1.03$), $p < .05$. In addition, for the Significant Other subscale, females ($M=5.86$; $SD=1.40$) reported significantly higher scores than male participants ($M=4.97$; $SD=1.72$), $p < .05$. There were no significant differences between male and female participants in the total subscales for

social support from Friends (*M*=5.93; *SD*=1.15), Family (*M*=5.55; *SD*=1.44), or Professors

(*M*=4.66; *SD*=1.27).

Table 2b presents means and standard deviations for the adapted MSPSS and four

subscales by course satisfaction. Participants who reported medium-to-high course satisfaction

reported significantly higher total MSPSS scores (*M*=5.63; *SD*=.88) than those who reported low

course satisfaction (*M*=5.20; *SD*=.96), *p* =.001. Furthermore, participants with medium-to-high

course satisfaction reported higher levels of support from professors (*M*=5.00; *SD*=1.14) than

those with low course satisfaction (*M*=4.15; *SD*=1.30), *p* <0.001. There were no significant

differences found between course satisfaction ratings and Friends (*M*=5.93; *SD*=1.15), Family

(*M*=5.55; *SD*=1.44) or Significant Other (*M*=5.72; *SD*=1.51) subscales.

A summary of participant responses to each item by gender, course satisfaction, year of

study and number of extracurricular activities are presented in Tables 3a-d. Significant gender

differences (Table 3a) were found within the Friends subscale (i.e., Item 1); within the

Significant Other subscale (i.e., Items 1, 2, 3, and 4); and within the Professor subscale (i.e., Item

2). For each of these items, female participants reported significantly higher perceived support

than male participants, *p* < .05.

Participants with low levels of course satisfaction reported significantly lower scores on

each of the four items on the Professor subscale (see Table 3b), *p* < .001. Participants with low

course satisfaction also reported lower scores for the Friends subscale item 4, *p* < .05. No

significant differences were found between course satisfaction and any of the items from the

Family or Significant Other subscales.

Non-freshman participants (i.e., Sophomores, Juniors, and Seniors) scored significantly

higher on the Friends subscale item 1 than Freshmen participants (Table 3c), *p* <.05. Participants

who were currently involved in only one extracurricular activity[2] reported significantly higher

scores on the Family-subscale as well was on Family items 1, 2, and 4 (Table 3d); $p <.05$. No

significant differences were found between individual item responses and course format or living

arrangement (data not presented).

DISCUSSION

This study aimed to assess whether course format, extracurricular involvement, and

living environment had an association with perceived social support among students at the

University of South Carolina during the COVID-19 pandemic. It was hypothesized that students

in online classes, without extracurricular involvement, and living off campus would experience

lower levels of perceived social support. Furthermore, it was hypothesized that students who

expressed more satisfaction with their course format would report higher perceived support.

Although no significant differences were found between MSPSS scores for students in

online vs in-person classes, it is interesting to note that there was a significant difference between

MSPSS scores of students who reported high vs low satisfaction in their current course

enrollment. Students who reported low satisfaction in the format of courses they were enrolled in

reported significantly lower MSPSS scores than those who were satisfied with the courses in

which they were enrolled. This effect was particularly true for the professor subscale where

students with lower course satisfaction reported significantly lower scores for each of the four

items. This meant that students who were enrolled in their preferred format of courses felt more

supported by their professors in those respective courses.

A potential explanation for this outcome might be that students may be experiencing an

expectancy effect or self-fulfilling prophecy. The term "self-fulfilling prophecy" was first coined

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[2] As opposed to no extracurricular activities or two or more extracurricular activities.

in 1968 by Robert Merton as "a false definition of the situation evoking a new behavior which makes the originally false conception come true" (as cited in Ackerman, 2020). If a student preferred all in-person classes but was only offered online versions of their required courses, they might approach the course with an expectation that it will be a negative experience. These expectations will cause their study habits to worsen or they may make less of an effort to take advantage of interaction opportunities offered by their professor. As a result, the student might perceive less support from their professors. Likewise, if a student preferred (and successfully enrolled in) all online classes, their expectation of a positive outcome from this class format may result in their perception of higher professor support.

Furthermore, the survey found that female students reported significantly higher levels of overall perceived social support as well as in the Significant Other subscale. This result is consistent with findings from the original MSPSS study in which Zimet et al. found women reported significantly higher MSPSS scores for overall MSPSS, as well as the significant other and friends subscale (1988). These effects can be largely attributed to cultural gender differences. Biological women are socialized to take on more "feminine" characteristics such as being nurturing, demonstrating emotionally awareness, and supporting others. On the other hand, men are brought up to value self-reliance and competitiveness leading to an deficiency in their capacity for emotional intimacy (Reevy & Maslach, 2001). As a result, individuals who identify as female are more likely to seek out as well as provide social support than those who identify as male (Reevy & Maslach, 2001).

These findings indicate a possible need for interventions on college campuses to boost levels of perceived support in men – particularly during the current COVID-19 pandemic. If men naturally experience greater difficulty in perceiving social support, then the recent restrictions on

social gatherings put these individuals at a greater disadvantage. To combat this, universities might want to consider finding ways to facilitate safe in-person social gatherings geared towards the male demographic. Activities that don't require close physical contact such as disc-golf tournaments or video game competitions would provide an opportunity for male students to bond in a way that caters to their social predispositions – friendly competition.

Unfortunately, no significant results were found indicating a relationship between living on vs off campus, extracurricular involvement or employment status and MSPSS scores. Nevertheless, that does not necessarily mean an association does not exist. Further research should be conducted to investigate these variables within the undergraduate student population.

Limitations

When addressing the results of this study, it important to take note of its limitations. First of all, although a significant difference was found between MSPSS scores for male and female participants, the majority of the respondents to the survey were female, meaning that male students were underrepresented in the study. As of December 8, 2020, the University of South Carolina Office of Undergraduate Admissions reports that 47% of undergraduate students at the university are male. Therefore, a sample population consisting of only 14% male participants provides an inadequate representation of entirety of the university's male community.

Survey data was collected within a time frame of only 19 days and the only method of distribution of the survey was via social media. If given the opportunity to run this study again, I would try other, less biased outlets of distribution such as through University newsletters or by posting a QR code for the survey in high traffic areas of campus such as Russell House and the Thomas Cooper Library. Furthermore, I would leave the survey open for at least a month to optimize the availability to the survey to potential participants.

       Another potential limitation in the present study is that the survey was distributed within a month before the US 2020 presidential election. This past election cycle was a period of high stress for individuals of all ages and undergraduate students were no exception. Election stress has caused disruptions in social relationships between friends and family members and these factors may have also impacted student responses to the survey. This confounding variable was not accounted for when analyzing the data and could have played a major role in participant responses – particularly to items relating to perceived social support from friends and family.

       In addition, because the study relied solely on self-reported data, there was no way in which the credit hours or format of course enrollment could be verified. As a result, participants may have inaccurately reported the number of in-person, online and hybrid courses in which they were enrolled. Finally, the sample of participants was drawn from a convenience sample as opposed to a probability sample. Because of this, the sample may not accurately represent the overall population of UofSC students.

CONCLUSIONS

       The present study is a first step into understanding the ways in which academic and social changes on college campuses due to the COVID-19 pandemic are impacting students. Our findings confirm that the modified MSPSS effectively measures the intended variables. Zimet et al. established the validity of their original MSPSS survey and the three original subscales in their initial 1988 study. In the present study, the internal validity of the newly generated subscale for perceived social support from professors paralleled those of the preexisting items. Furthermore, the new subscale did not detract from the internal validity of the total MSPSS scale. Such findings demonstrate the modified MSPSS's potential for continued use in future studies.

Additionally, now that it has been established that course format satisfaction is correlated with higher MSPSS scores, research can be conducted to develop a deeper understanding of this relationship. For example, it might be interesting to examine how the interaction between perceived social support and course format satisfaction relates to student participation or course grades. This information may also be useful for professors. When designing their syllabus, professors of online and in-person classes alike may want to consider incorporating aspects of the opposite format into their course structure for students who prefer the alternative. For example, a professor for an online course might cater to students who prefer in-person interactions by offering optional in-person discussion seminars or group study sessions. Alternatively, an in-person professor could serve students who gravitate towards online courses by live-streaming lectures or creating online discussion-boards.

In conclusion, the present study provides promising insight into how undergraduate students have been experiencing perceived social support in the classroom amid the COVID-19 pandemic. It is my hope that this study, and the modified MSPSS, can be used as a model for future research involving college students – even well after the COVID-19 pandemic has passed.

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Table 1. Socio-demographic characteristics of study participants (n=220) by perceived social support quality

Demographic Variable		n (%)	Perceived social support level [a] n (%)		χ²	P
			Low/Medium	High		
Gender	Female	188 (85%)	47 (25%)	140 (75%)	12.7584	**0.002**
	Male	30 (14%)	15 (50%)	15 (50%)		
	Non-binary/Other	2 (1%)	2 (100%)	0		
Age (years old)	18-19	107 (48%)	31 (29%)	76 (71%)	0.1784	0.915
	20-21	95 (43%)	27 (28%)	68 (72%)		
	≥22	18 (8%)	6 (33%)	12 (67%)		
Year in School	Freshman	53 (24%)	16 (30%)	37 (70%)	3.2394	0.519
	Sophomore	46 (20%)	16 (30%)	30 (70%)		
	Junior	46 (20%)	9 (20%)	37 (80%)		
	Senior	73 (33%)	22 (30%)	51 (70%)		
	Other	2 (1%)	1 (50%)	1 (50%)		
School/College of Major	College of Arts and Sciences	83 (38%)	21 (25%)	62 (75%)	2.2031	0.698
	Arnold School of Public Health	30 (14%)	7 (23%)	23 (77%)		
	Darla Moore School of Business	23 (11%)	8 (35%)	15 (65%)		
	Other	71 (32%)	24 (34%)	47 (66%)		
	Dual Enrollments	13 (6%)	4 (31%)	9 (69%)		
Religion/ Spirituality	Religious	135 (61%)	37 (27%)	98 (73%)	2.2349	0.327
	Spiritual, but not religious	20 (9%)	4 (20%)	16 (80%)		
	Not religious	65 (29%)	23 (35%)	42 (65%)		
Course type[b]	No in-person classes	108 (49%)	31 (29%)	77 (71%)	0.0279	0.867
	One or more in-person classes	111 (51%)	33 (30%)	78 (70%)		
Course satisfaction[c]	Low course satisfaction	86 (39%)	32 (37%)	54 (63%)	4.5113	**0.034**
	High satisfaction	134 (61%)	32 (24%)	102 (76%)		

Housing situation	On-campus or Greek housing	69 (31%)	20 (30%)	49 (70%)	0.0005	0.981
	Off-campus housing	151 (69%)	44 (29%)	107 (71%)		
Number of other people in household	Zero (living on their own) or 1 roommate	77 (35%)	20 (26%)	57 (74%)	0.5579	0.455
	2 + roommates	143 (65%)	44 (31%)	99 (69%)		
Extracurricular Involvement[d]	No clubs/organizations	60 (27%)	23 (38%)	37 (62%)	3.6860	0.158
	1 club/organization	67 (31%)	19 (28%)	48 (72%)		
	2+ clubs/organizations	92 (42%)	22 (24%)	70 (76%)		
Significant Other[e]	Yes	90 (42%)	21 (23%)	69 (77%)	2.5631	0.278
	No	126 (58%)	42 (33%)	84 (67%)		
Currently employed	Yes	99 (45%)	25 (25%)	74 (75%)	1.2856	0.257
	No	121 (55%)	39 (32%)	82 (68%)		

[a] Perceived social support was measured with an adapted version of the *Multidimensional Scale of Perceived Social Support* (MPSS) consisting of 16 items; response options ranged from 1 (very strongly disagree) to 7 (very strongly agree). All items were summed and then divided by 16. Mean scores ranging from 1 to 2.99 were classified as low, scores 3 to 5 were classified as medium, and scores 5.01 to 7 were classified as high, respectively.

[b] One participant (n=1) chose not to respond to the item "How many of your courses are fully in-person?", so the total number for this item is n=219 participants

[c] Course satisfaction was measure on a 5-point Likert scale; response items ranged from 1 (very unsatisfied) to 5 (very satisfied). Scores ranging from 1 to 2.99 were categorized as low, scores of 3 to 5 were categorized as highly satisfied.

[d] One participant (n=1) chose not to respond to the item "How many clubs and organizations are you actively involved in this semester?", so the total number for this item is n=219 participants

[e] Participants who responded "Prefer not to answer" (n=3) were omitted from the data and one participant chose not to select any answer (n=1); the total observations for this item is n=216 participants

Table 2a. Cronbach alpha and Mean (SD) for adapted Multidimensional Scale of Perceived Social Support[a] and four subscales by gender.

SCALE/Subscale	Number of Items	Total Sample (N=220)	Gender		p-value[b]
			Female (n=188)	Male (n=30)	

Cronbach's alpha [c]					
FULL SCALE	16	0.892	0.887	0.898	N/A
Friends	4	0.925	0.928	0.919	N/A
Family	4	0.908	0.917	0.824	N/A
Significant Other	4	0.945	0.937	0.959	N/A
Professors	4	0.878	0.879	0.885	N/A
Mean (SD)					
FULL SCALE	16	5.46 (.93)	5.55 (.89)	5.05 (1.03)	**0.017**
Friends	4	5.93 (1.15)	6.00 (1.11)	5.58 (1.35)	0.120
Family	4	5.55 (1.44)	5.60 (1.45)	5.38 (1.24)	0.391
Significant Other	4	5.72 (1.51)	5.86 (1.40)	4.97 (1.72)	**0.011**
Professors	4	4.66 (1.27)	4.72 (1.24)	4.26 (1.45)	0.106

[a] Response options ranged from 1 (very strongly disagree) to 7 (very strongly agree).
[b] Determined using Student's t-test
[c] Threshold for high reliability: Cronbach's alpha ≥ 0.8 (Boateng et al., 2018)

Table 2b. Mean (SD) for adapted Multidimensional Scale of Perceived Social Support[a] and four subscales by course satisfaction.

SCALE/Subscale	Number of Items	Total Sample (N=220)	Course Satisfaction Low (n=86)	High (n=134)	p-value [b]
Mean (SD)					
FULL SCALE	16	5.46 (.93)	5.20 (.96)	5.63 (.88)	**0.001**
Friends	4	5.93 (1.15)	5.76 (1.24)	6.04 (1.08)	0.086
Family	4	5.55 (1.44)	5.32 (1.54)	5.69 (1.35)	0.071
Significant Other	4	5.72 (1.51)	5.56 (1.68)	5.81 (1.38)	0.256
Professors	4	4.66 (1.27)	4.15 (1.30)	5.00 (1.14)	**<0.001**

[a] Response options ranged from 1 (very strongly disagree) to 7 (very strongly agree).
[b] Determined using Student's t-test

Table 3a. Mean score differences by gender for adapted Multi-dimensional Scale of Perceived Social Support[a] and items

Subscale	Item	*M* (SD) Total Sample (N=220)	Female (n=188)	Male (n=30)	*p-value*[b]
Friends	1. My friends really try to help me.	5.86 (1.27)	5.89 (1.26)	5.70 (1.37)	0.484

	2. I can count on my friends when things go wrong.	5.94 (1.27)	5.97 (1.23)	5.80 (1.54)	0.573
	3. I have friends with whom I can share my joys and sorrows.	6.05 (1.27)	6.13 (1.21)	5.60 (1.52)	0.076
	4. I can talk about my problems with my friends.	5.89 (1.28)	6.00 (1.20)	5.23 (1.59)	**0.016**
Family	1. My family really tries to help.	5.92 (1.43)	5.93 (1.46)	6.00 (1.17)	0.757
	2. I get the emotional help and support I need from my family.	5.40 (1.72)	5.50 (1.70)	5.07 (1.57)	0.179
	3. I can talk about my problems with my family.	5.09 (1.85)	5.17 (1.80)	4.73 (2.08)	0.285
	4. My family is willing to help me make decisions.	5.78 (1.47)	5.81 (1.52)	5.73 (1.08)	0.741
Significant Other	1. There is a special person who is around when I am in need.	5.40 (1.67)	5.56 (1.60)	4.60 (1.67)	**0.005**
	2. There is a special person with whom I can share my joys and sorrows.	5.83 (1.58)	5.95 (1.47)	5.20 (1.86)	**0.042**
	3. I have a special person who is a real source of comfort to me.	5.73 (1.65)	5.88 (1.54)	4.97 (1.92)	**0.018**
	4. There is a special person in my life who cares about my feelings.	5.90 (1.62)	6.05 (1.52)	5.10 (1.85)	**0.011**
Professors	1. My professors are approachable.	4.71 (1.44)	4.78 (1.35)	4.23 (1.87)	0.136
	2. I can talk to my professors about problems and concerns.	4.13 (1.65)	4.26 (1.63)	3.27 (1.62)	**0.004**
	3. My professors are eager to help me.	4.70 (1.40)	4.73 (1.39)	4.57 (1.48)	0.578
	3. My professors care about my success.	5.11 (1.43)	5.13 (1.39)	4.97 (1.73)	0.631

[a] Response options ranged from 1 (very strongly disagree) to 7 (very strongly agree).
[b] Determined using Student's t-test

Table 3b. Mean score differences by course satisfaction for adapted Multi-dimensional Scale of Perceived Social Support[a] and items

		M (SD)		*p-value[b]*
Subscale	*Item*	*Low Course Satisfaction (n=188)*	*High Course Satisfaction (n=30)*	
Friends	1. My friends really try to help me.	5.72 (1.36)	5.95 (1.20)	0.209
	2. I can count on my friends when things go wrong.	5.80 (1.34)	6.02 (1.22)	0.222

	3. I have friends with whom I can share my joys and sorrows.	5.88 (1.36)	6.16 (1.19)	0.130
	4. I can talk about my problems with my friends.	5.64 (1.43)	6.04 (1.16)	**0.029**
Family	1. My family really tries to help.	5.70 (1.54)	6.06 (1.34)	0.076
	2. I get the emotional help and support I need from my family.	5.19 (1.84)	5.54 (1.64)	0.151
	3. I can talk about my problems with my family.	4.87 (1.96)	5.23 (1.76)	0.170
	4. My family is willing to help me make decisions.	5.54 (1.59)	5.94 (1.36)	0.053
Significant Other	1. There is a special person who is around when I am in need.	5.19 (1.83)	5.54 (1.54)	0.142
	2. There is a special person with whom I can share my joys and sorrows.	5.72 (1.73)	5.90 (1.47)	0.440
	3. I have a special person who is a real source of comfort to me.	5.52 (1.81)	5.87 (1.52)	0.148
	4. There is a special person in my life who cares about my feelings.	5.83 (1.78)	5.95 (1.52)	0.600
Professors	1. My professors are approachable.	4.20 (1.59)	5.04 (1.22)	**<0.001**
	2. I can talk to my professors about problems and concerns.	3.66 (1.68)	4.43 (1.57)	**0.001**
	3. My professors are eager to help me.	4.21 (1.36)	5.02 (1.33)	**<0.001**
	3. My professors care about my success.	4.52 (1.51)	5.48(1.26)	**<0.001**

[a] Response options ranged from 1 (very strongly disagree) to 7 (very strongly agree).
[b] Determined using Student's t-test

Table 3c. Mean scores and differences by year of study for items[a] from the adapted MSPSS

		M (SD)		
Scale/ Subscale	*Item*	*Freshmen (n=53)*	*Others (n=167)*	*p-value[b]*
FULL scale (16 items)		5.39 (.96)	5.49 (.92)	0.514
Friends subscale (4 items)		5.66 (1.45)	6.02 (1.03)	0.093
	1. My friends really try to help me.	5.49 (1.64)	5.98 (1.11)	**0.048**
	2. I can count on my friends when things go wrong.	5.72 (1.39)	6.01 (1.23)	0.179
	3. I have friends with whom I can share my joys and sorrows.	5.68 (1.68)	6.17 (1.08)	0.051
	4. I can talk about my problems with my friends.	5.74 (1.42)	5.93 (1.24)	0.363
Family subscale (4 items)		5.78 (1.29)	5.48 (1.48)	0.152

	No clubs (n=60)	1 club (n=67)	2+ clubs (n=92)	p-value
1. My family really tries to help.	6.06 (1.38)	5.87 (1.45)		0.410
2. I get the emotional help and support I need from my family.	5.76 (1.57)	5.29 (1.76)		0.070
3. I can talk about my problems with my family.	5.34 (1.64)	5.01 (1.90)		0.226
4. My family is willing to help me make decisions.	5.96 (1.37)	5.73 (1.50)		0.285
Significant Other subscale (4 items)	5.51 (1.44)	5.78 (1.53)		0.244
1. There is a special person who is around when I am in need.	5.19 (1.62)	5.47 (1.68)		0.282
2. There is a special person with whom I can share my joys and sorrows.	5.62 (1.55)	5.89 (1.58)		0.275
3. I have a special person who is a real source of comfort to me.	5.57 (1.58)	5.78 (1.67)		0.388
4. There is a special person in my life who cares about my feelings.	5.66 (1.59)	5.98 (1.63)		0.215
Professors subscale (4 items)	4.61 (1.15)	4.68 (1.31)		0.742
1. My professors are approachable.	4.79 (1.18)	4.68 (1.51)		0.584
2. I can talk to my professors about problems and concerns.	4.09 (1.58)	4.14 (1.68)		0.864
3. My professors are eager to help me.	4.57 (1.26)	4.74 (1.44)		0.394
4. My professors care about my success.	5.00 (1.44)	5.14 (1.44)		0.546

[a] Response options ranged from 1 (very strongly disagree) to 7 (very strongly agree).
[b] Determined using Student's t-test

Table 3d. Mean score differences by extracurricular activities for adapted Multi-dimensional Scale of Perceived Social Support[a], four subscales, and items

Scale/ Subscale	Item	M (SD)			p-value[b]
		No clubs (n=60)	1 club (n=67)	2+ clubs (n=92)	
FULL scale (16 items)		5.31 (1.05)	5.46 (.96)	5.56 (.82)	0.251
Friends subscale (4 items)		5.87 (1.21)	5.90 (1.23)	5.90 (1.06)	0.796
	1. My friends really try to help me.	5.83 (1.28)	5.79 (1.45)	5.91 (1.13)	0.828
	2. I can count on my friends when things go wrong.	5.88 (1.37)	5.94 (1.24)	5.96 (1.25)	0.940
	3. I have friends with whom I can share my joys and sorrows.	5.95 (1.29)	6.03 (1.33)	6.12 (1.21)	0.719
	4. I can talk about my problems with my friends.	5.82 (1.33)	5.82 (1.35)	5.97 (1.21)	0.701

Family subscale (4 items)	5.08 (1.77)	5.75 (1.17)	5.69 (1.32)	**0.013**
1. My family really tries to help.	5.48 (1.82)	6.09 (1.25)	6.07 (1.21)	**0.023**
2. I get the emotional help and support I need from my family.	4.87 (2.09)	5.64 (1.54)	5.55 (1.53)	**0.020**
3. I can talk about my problems with my family.	4.63 (2.05)	5.22 (1.94)	5.27 (1.59)	0.085
4. My family is willing to help me make decisions.	5.33 (1.72)	6.06 (1.18)	5.86 (1.43)	**0.016**
Significant Other subscale (4 items)	5.42 (1.66)	5.73 (1.57)	5.88 (1.34)	0.181
1. There is a special person who is around when I am in need.	5.13 (1.82)	5.55 (1.60)	5.45 (1.61)	0.340
2. There is a special person with whom I can share my joys and sorrows.	5.48 (1.74)	5.79 (1.66)	6.07 (1.37)	0.082
3. I have a special person who is a real source of comfort to me.	5.42 (1.81)	5.75 (1.71)	5.91 (1.47)	0.191
4. There is a special person in my life who cares about my feelings.	5.65 (1.79)	5.82 (1.67)	6.11 (1.46)	0.214
Professors subscale (4 items)	4.85 (1.17)	4.45 (1.45)	4.70 (1.18)	0.195
1. My professors are approachable.	4.97 (1.48)	4.45 (1.59)	4.75 (1.26)	0.121
2. I can talk to my professors about problems and concerns.	4 .37 (1.71)	3.81 (1.77)	4.21 (1.52)	0.137
3. My professors are eager to help me.	4.95 (1.20)	4.63 (1.57)	4.60 (1.39)	0.276
4. My professors care about my success.	5.13 (1.49)	4.93 (1.58)	5.23 (1.29)	0.419

[a] Response options ranged from 1 (very strongly disagree) to 7 (very strongly agree).
[b] Determined using Student's F-test