The Relationship Between the COVID-19 Pandemic and Levels of Mental Health Symptoms Among Clemson University Students

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PSYC 3100/3101

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December 2, 2020

Abstract

The COVID-19 outbreak was declared a global pandemic by the World Health Organization on March 11, 2020 (Cucinotta et al., 2020) and existing research has referred to it as a traumatic event, causing disruption in individuals' everyday lives. The present correlational study investigates the relationship among Clemson University students' levels of mental health symptoms during the COVID-19 pandemic. It is important to study this topic because college students are already prone to developing mental health problems with the academic demands that are put on them, and this unprecedented time has the potential to negatively affect students' mental health even more (Kecojevic et al., 2020). 86 students participated in this study by completing an online survey designed to measure levels of psychological distress, loneliness, psychological wellbeing, and resilience. The questionnaire consisted of 19 items from the American College Health Association's National College Health Assessment III and all had a Likert response scale. All items were scored using the same methods the ACHA used in their Fall 2019 assessment (2019, pp. 35-40). This study's results showed a positive correlation between loneliness and psychological distress ($r = 0.56$, $p = 1.87e\text{ -}8$), such that lower levels of loneliness were associated with lower levels of psychological distress. A positive correlation was also shown between resilience and psychological wellbeing ($r = 0.48$, $p = 1.65e\text{ -}6$), such that higher levels of resilience were associated with higher levels of psychological wellbeing. The results revealed a negative correlation between the following: psychological wellbeing and psychological distress, psychological distress and loneliness, psychological distress and resilience, and resilience and loneliness.

Keywords: COVID-19 pandemic, mental health, traumatic event, college student, psychological distress, loneliness, psychological wellbeing, resilience

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Behavioral health professionals have defined trauma "as resulting from an event, series of events, or set of circumstances that is experienced by an individual as physically or emotionally harmful or life threatening and that has lasting adverse effects on the individual's functioning and mental, physical, social, emotional, or spiritual well-being" (Substance Abuse and Mental Health Services Administration [SAMHSA], 2012, p. 7). On March 11, 2020, the World Health Organization (WHO) declared the novel COVID-19 outbreak as a global pandemic (Cucinotta et al., 2020), and it can be considered a traumatic event because it has caused major disruptions in individuals' everyday lives and mental health (Ettman et al., 2020). The COVID-19 pandemic, which was declared by the World Health Organization, has been an unpredictable time for college students. Students are already prone to developing mental health problems due to the pressure they are under to perform well academically, and this pandemic has the potential to negatively affect college students even more, academically and psychologically. (Kecojevic et al., 2020).

This research aims to shed a light on the relationship between the COVID-19 pandemic and the levels of psychological distress, loneliness, psychological well-being, and resilience among Clemson University students. It is necessary to recognize and understand the negative effects on college student's mental states during this challenging, traumatic, and unusual time. This is a very important topic to study and examine because it will help us to better understand the relationship between the COVID-19 pandemic and college student's levels of different mental health variables. Psychological distress is a very common mental health issue and has

been defined as “a state of emotional suffering typically characterized by symptoms of depression and anxiety” (Arvidsdotter et al., 2016, p. 687). Adverse effects of prolonged loneliness include feelings of isolation, not belonging, and disconnectedness. Social distancing, online school, statewide stay at home orders, and many other modifications to day-today life as a result of the pandemic have increased the rate at which students experiences social isolation and disconnect from important social networks, which is a significant threat to mental health (Hughes et al., 2004, p. 657). According to Richard Burns, psychological well-being refers to “inter- and intraindividual levels of positive functioning that can include one’s relatedness with others and self-referent attitudes that include one’s sense of mastery and personal growth” (2016, p. 1). Resilience can be defined as the personal qualities that enable individuals to thrive during hardships and is also viewed as a measure of someone’s successful stress coping abilities (Vaishnavi et al., 2007).

Evidence from multiple published studies suggest that the COVID-19 pandemic is associated with negative mental health symptoms. A systematic review and meta-analysis done by Salari et al. (2020) on the prevalence of stress, depression, and anxiety symptom levels among the general public during COVID-19 reported an association between the COVID-19 pandemic and a decrease in individuals’ mental health including depression, stress, anxiety, and emotional distress symptom levels. The COVID-19 pandemic since March 2020 and the newly arising stressors associated with this crisis have the potential to negatively affect college students’ overall mental health. The results of a study done on the comparisons of student’s mental health before and during the COVID-19 pandemic in Switzerland showed that students’ levels of stress, loneliness, anxiety, and depressive symptoms worsened, compared to students’ measures before the COVID-19 pandemic. The study’s analyses suggest that the lack of interaction, emotional

support, and physical isolation were positively associated with lower levels of students' mental health (Elmer et al., 2020). According to the results of a survey study on the prevalence of depression symptoms in US adults before and during the COVID-19 pandemic, "prevalence of depression symptoms in the US increased more than 3-fold during the COVID-19 pandemic, from 8.5% before the pandemic to 27.8% during the pandemic" (Ettman et al., 2020). The findings of this study also suggest that individuals' overall mental health declines during and after traumatic events, such as the COVID-19 pandemic.

To better understand the relationship between the COVID-19 pandemic since March 2020 and the levels of psychological distress, loneliness, psychological well-being, and resilience among Clemson University students, I compared my data to the American College Health Association National College Assessment III Fall 2019 reference group data report (2020, pp. 38-42) and used the same measures used in the mental health section of their National College Health Assessment III. (American College Health Association, 2019, pp. 35-40). I predicted that the COVID-19 pandemic since March 2020 is positively correlated with higher levels of psychological distress and loneliness, and positively correlated with lower levels of psychological well-being and resilience among Clemson University students. My approach corresponds with the survey study conducted by Ettman et al. (2020) because they also compared their data to a nationally representative group, the National Health and Nutrition Examination Survey (NHANES). In their research, they compared the prevalence of depression symptoms in US adults before and during the COVID-19 pandemic. Although, my approach is different because I assessed multiple mental health symptom levels in college students. It is important to study the COVID-19 pandemic and these mental health concepts in college students because I

believe it is very beneficial information that will add to the limited existing literature regarding this topic.

Method

Participants

The participants in this correlational study were all Clemson University undergraduate students who were at least 18 years old. Participants' demographic data such as gender were not collected besides student's age (18+). The sampling method used to obtain participants was a convenience sample recruited from my course list in Canvas. A link to the online Qualtrics survey was delivered to students via Canvas e-mail and participants provided informed consent to participate in this anonymous survey by completing and submitting the questionnaire electronically in Qualtrics software. All the data was self-reported and a total of 86 students completed the survey. There was no compensation provided for the participants in this study.

Design and Materials

To better understand the relationship between the COVID-19 pandemic since March 2020 and the levels of psychological distress, loneliness, psychological well-being, and resilience among Clemson students, the American College Health Association NCHA III survey questions regarding mental health (2019, pp. 35-40) were used in my online Qualtrics survey in order to compare the two levels of the predictor variable in this study, the COVID-19 pandemic. Level one of the predictor variable is the pre COVID-19 NCHA-ACHA III Fall 2019 college student reference group and level two of the predictor variable is my current 2020 Clemson student sample. The online Qualtrics survey was designed to measure the constructs of psychological distress, loneliness, psychological well-being, and resilience. The online questionnaire consisted

of 19 items in four separate sections and all had a Likert response scale. All items were scored using the same methods the NCHA-ACHA III used in their Fall 2019 survey.

Psychological Distress

Levels of psychological distress were measured by the Kessler (K6) Nonspecific Psychological Distress Scale (Prochaska et al., 2012). This measure contains 6 questions on a 5-point scale ranging from 4 (all of the time) to 0 (none of the time), regarding the frequency of experiencing each feeling during the past 30 days. A sample item includes “During the past 30 days, how often did you feel nervous?”. This measure generates a score between 0 and 24 by adding up scores for each question, with higher scores reflecting higher levels of psychological distress. The score is then collapsed into one of three categories: a score of 0-8 = no or low psychological distress, 9-12 = moderate psychological distress, and 13-24 = serious psychological distress (American College Health Association, 2019). The scale has demonstrated excellent internal consistency and reliability in previous studies with a Cronbach's alpha of 0.89 (Prochaska et al., 2012).

Loneliness

Levels of loneliness were measured by the UCLA Three-Item Loneliness Scale (Hughes et al., 2004). This measure contains 3 questions on a 3-point scale ranging from 1 (hardly ever) to 3 (often), regarding the frequency of experiencing each feeling. A sample item includes “Indicate how often each of the statements below is descriptive of you: How often do you feel that you lack companionship?”. This measure generates a score between 3 and 9 by adding up scores for each question, with higher scores reflecting higher levels of loneliness. The score is then collapsed into one of two categories: a score of 3-5 = negative screening for loneliness and 6-9 = positive screening for loneliness. According to Hughes (2004), “The alpha coefficient of

reliability is .72 … the internal consistency for a three-item scale is quite good and indicates that the items reliably measure loneliness" (p. 667)

Psychological Well-being

Levels of psychological well-being were measured by the Diener Flourishing Scale – Psychological Well-Being (PWB) (Diener et al., 2010). This measure contains 8 questions on a 7-point scale ranging from 1 (strongly disagree) to 7 (strongly agree), regarding participant's agreement with each item. A sample item includes "Indicate your agreement with each item… I lead a purposeful and meaningful life." This measure generates a score between 8 and 56 by adding up scores for each question, with higher scores reflecting a higher level of psychological well-being and a person with many psychological resources and strengths. According to Diener (2010), this brief Flourishing Scale performed well, with high convergence and high reliabilities with similar scales. It also strongly correlated with the summed scores from the other psychological well-being scales referenced in this article at .78 and .73. Therefore, the Diener Flourishing Scale provides a good assessment of overall self-reported psychological wellbeing levels.

Resilience

Levels of resilience were measured by the Connor-Davison Resilience Scale (CD-RISC2) (Vaishnavi et al., 2007). This measure contains 2 questions on a 5-point scale ranging from 0 (not true at all) to 4 (true nearly all the time), regarding participant's agreement with each statement, A sample item includes "Indicate your agreement with each item… I am able to adapt when changes occur." This measure generates a score between 0 and 8 by adding up scores for each question, with higher scores reflecting greater resilience. Like the CD-RISC2's longer originator measure, "the two-item scale shows good test-retest reliability, convergent validity,

and divergent validity … the CD-RISC2 shows significant correlation with the overall CD-RISC score as well as with each item of the CD-RISC, suggesting that the two items of the CD-RISC2 are good representatives of the overall scale and can be used in lieu of the CD-RISC" (Vaishnavi et al., 2007, p. 296).

Procedures

Data from Clemson University students regarding their levels of different mental health aspects since March 2020, when the COVID-19 pandemic was declared, was collected during the COVID-19 pandemic for this study through an online Qualtrics survey. The data was then compared to a prior pre COVID-19 survey, the National College Heath Assessment III, administered by the American College Heath Association in the Fall of 2019 (American College Health Association, 2019, pp. 35-40). Participants were recruited by a convenience sample method from my course list in Canvas. Participants were sent a participant recruitment email through Canvas that included information regarding my research stud and the online Qualtrics survey. The participant recruitment email also served as participants' informed consent to participate in my study. Clemson University students were provided with a link to Qualtrics for the online survey and submission of the survey was considered consent to participate. The survey took approximately 1-3 minutes to complete and included four sets of statements and/or questions to answer. At the end of the online survey, participants were thanked for their time in participating in my research study. All of the data was self-reported, and participants took the online survey on their own time. This study was a correlational experimental design and participants were not assigned to a condition. The predictor variable, the COVID-19 pandemic since March 2020, was measured by comparing the data from my current 2020 Clemson University student sample to the National College Health Association's data from their Fall 2019

college student reference group (pre COVID-19 sample) (American College Health Association, 2019, pp. 35-40). This gave me a great comparison condition because my sample and the NCHA's sample are both college students and I used the same questions as the NCHA in the online survey. The outcome variables, levels of psychological distress, loneliness, psychological well-being, and resilience among Clemson students, were measured using the NCHA-ACHA's Codebook III survey questions regarding mental health. The mental health section of their survey questionnaire (American College Health Association, 2019, pp. 35-40) consists of: The Connor-Davison Resilience Scale (CD-RISC2), Diener Flourishing Scale – Psychological Well-Being (PWB), Kessler 6 (K6) Nonspecific Psychological Distress Scale, and The UCLA Three-Item Loneliness Scale. I plan on measuring student's (1) levels of psychological distress using the Kessler 6 (K6) Nonspecific Psychological Distress Scale with 5 levels, from 5 (all the time) to 0 (none of the time), (2) levels of loneliness using The UCLA Three-Item Loneliness Scale with 3 levels, from 1 (hardly ever) to 3 (often), (3) levels of psychological well-being using the Diener Flourishing Scale – Psychological Well-Being (PWB) with 7 levels, from 1 (strongly disagree) to 7 (strongly agree), and (4) levels of resilience using The Connor-Davison Resilience Scale (CD-RISC2) with 5 levels, from 0 (not true at all) to 4 (true nearly all of the time).

Results

The results of this current correlational study revealed that the scores on the Kessler 6 (K6) Nonspecific Psychological Distress Scale section were relatively low for the sample (M = 8.56, SD = 5.03, on a 0-5-point scale generating a score between 0 and 24), the scores on the UCLA 3 Loneliness Scale section were relatively low for the sample (M = 5.75, SD = 1.82, on a 1-3-point scale generating a score between 3 and 9), the scores on the Flourishing Scale – Psychological Wellbeing (PWB) section were relatively high for the sample (M = 44.42, SD =

7.41, on a 1-7-point scale generating a score between 8 and 56), and the scores on the CD-RISC 2 for resilience were relatively high for the sample (M = 5.78, SD = 1.67, on a 0-4-point scale generating a score between 0 and 8) (Appendix A). Results also showed a positive correlation between loneliness and psychological distress (r = .56, p = 1.87e -8), such that lower levels of loneliness were associated with lower levels of psychological distress, and a positive correlation between resilience and psychological wellbeing (r = .48, p = 1.65e -6), such that higher levels of resilience were associated with higher levels of psychological well-being. The correlation between psychological well-being and psychological distress was r = -.55, p = 1.00, such that higher levels of psychological well-being were associated with lower levels of psychological distress. The correlation between psychological well-being and loneliness was r = -.45, p = 1.00, suggesting that higher levels of psychological well-being were associated with lower levels of loneliness. The results revealed a negative correlation between resilience and psychological distress (r = -.44, p = 1.00), suggesting that higher levels of resilience were associated with lower levels of psychological distress, and a negative correlation between resilience and loneliness (r = -.36, p = 1.00), such that higher levels of resilience were associated with lower levels of loneliness (Appendix A-G).

Discussion

This correlational study focused on the relationship between the COVID-19 pandemic since March 2020 and the levels of psychological distress, loneliness, psychological well-being, and resilience among Clemson University students. My hypothesis that the COVID-19 pandemic is positively correlated with higher levels of psychological distress and loneliness, and positively correlated with lower levels of psychological wellbeing and resilience among Clemson students, was not supported by my study's results. The results show a positive correlation between

loneliness and psychological distress ($r = 0.56$, $p = 1.87e\text{ -}8$), suggesting that students showed lower levels of loneliness and psychological distress during this time. The positive correlation between levels of psychological wellbeing and resilience ($r = 0.48$, $p = 1.65e\text{ -}6$) among students suggest that students showed higher levels of psychological wellbeing and resilience during this pandemic.

Most evidence from existing literature and research have revealed that the COVID-19 pandemic has affected certain mental health outcomes, and individuals affected by this major event exhibit several symptoms of mental trauma such as psychological distress, depression, anxiety, and anger. (Salari et al., 2020). According the meta-analysis done by Salari et al. (2020), "the results of existing studies show that during the pandemic, the levels of anxiety, depression, and stress are significantly higher in the age group of 21-40 years" (p. 5). In one study, the results revealed that university students' levels of anxiety, stress, loneliness, and depressive symptoms got worse compared to their measures before the COVID-19 pandemic due to isolation from others (Elmer et al., 2020). In contrast, the results of my study showed that students' levels of psychological distress and loneliness were relatively low, and their levels of resilience and psychological wellbeing were relatively high during the COVID-19 pandemic. Clemson students' levels of these mental health outcomes did not vary as much as the ACHA's Fall 2019 sample.

My results show that there is insufficient evidence to conclude that the COVID-19 pandemic since March 2020 is positively correlated with higher levels of psychological distress and loneliness, and lower levels of psychological wellbeing and resilience among Clemson University students. Although, there is sufficient evidence to conclude that there is a significant linear relationship between psychological distress and loneliness ($r = 0.56$, $p = 1.87e\text{ -}8$), as well

as resilience and psychological wellbeing ($r = 0.48$, $p = 1.65e\text{ -}6$). Students showed lower levels of loneliness and psychological distress, and higher levels of psychological wellbeing and resilience during the COVID-19 pandemic. Compared to the National College Health Association's Fall 2019 data report, the percentages of students who selected a certain answer choice are relatively close to the percentages reported by the NCHA in their Fall 2019 student sample (2020, pp. 38-42), indicating the pandemic had little effect on students' choices.

This current study has a few limitations; demographic data such as gender, age, and class rank were not collected. This data could have brought more of an understanding between the levels of certain mental health outcomes across various demographics. Inconsistencies in prevalence could have been driven by differences in participants' demographic characteristics. I compared my data to another cross-sectional data source, the NCHA-ACHA, which means that I assessed different individuals from their study. I did not survey the same individuals over time, so my data can only provide a minor representation of the true levels of different mental health outcomes. My comparison sample (N = 38,679) might have been too large to compare to my sample (N = 86), and the data provided by the NCHA in their Fall 2019 ACHA III only included the percentages and frequencies of participants' responses for each question, so I was unable to get as much detailed information as needed on the results. Individuals' psychological states change over time and with the adjustments in everyday life. Therefore, it is important to show the psychological impacts of the COVID-19 pandemic over a longer period of time. However, using the same measures and scoring methods as the NCHA's ACHA III survey was a strength of this study because they have high reliability and validity.

The findings of this current study suggest that there needs to be more research done on the relationship between the COVID-19 pandemic and college students' levels of different

mental health outcomes. Research in this area is important to help us better understand the effects major life events have on students' mental health in order to better help them. Follow up studies can be useful in clarifying the mental state of the college student population in the future.

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Appendix A

Table A1

Descriptive Statistics and Correlations Among Measured Variables

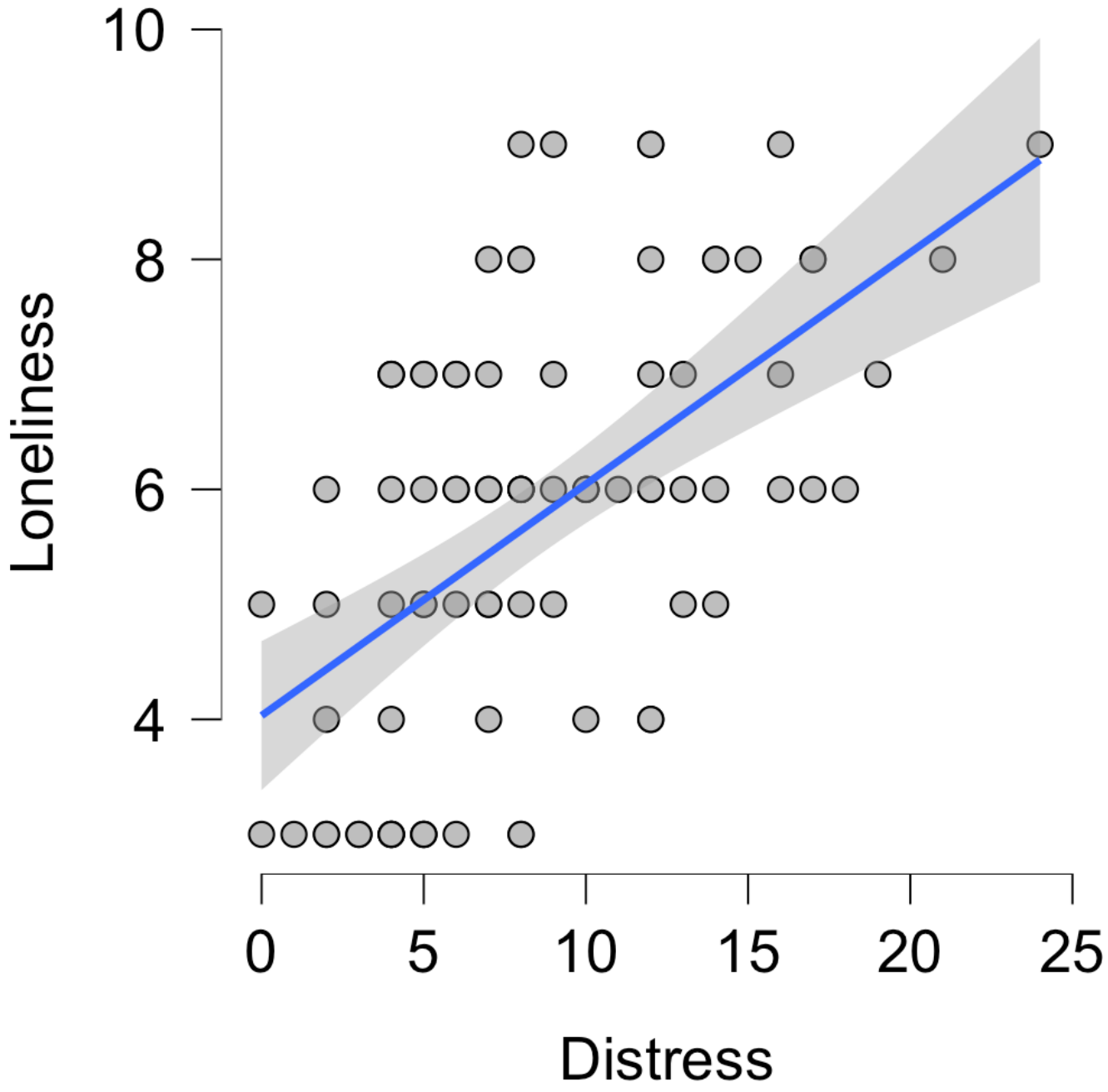
			NCHA-ACHA III mental health survey score			
Variable	*M*	*SD*	1	2	3	4
Psychological Distress	8.56	5.03	--	--	--	--
Loneliness	5.76	1.82	.56***	--	--	--
Psychological Wellbeing	44.42	7.41	-.55	-.45	--	--
Resilience	5.78	1.67	-.44	-.36	.48***	--

Note. All tests one-tailed, for positive correlation, *** $p < .001$

Appendix B

Figure 1

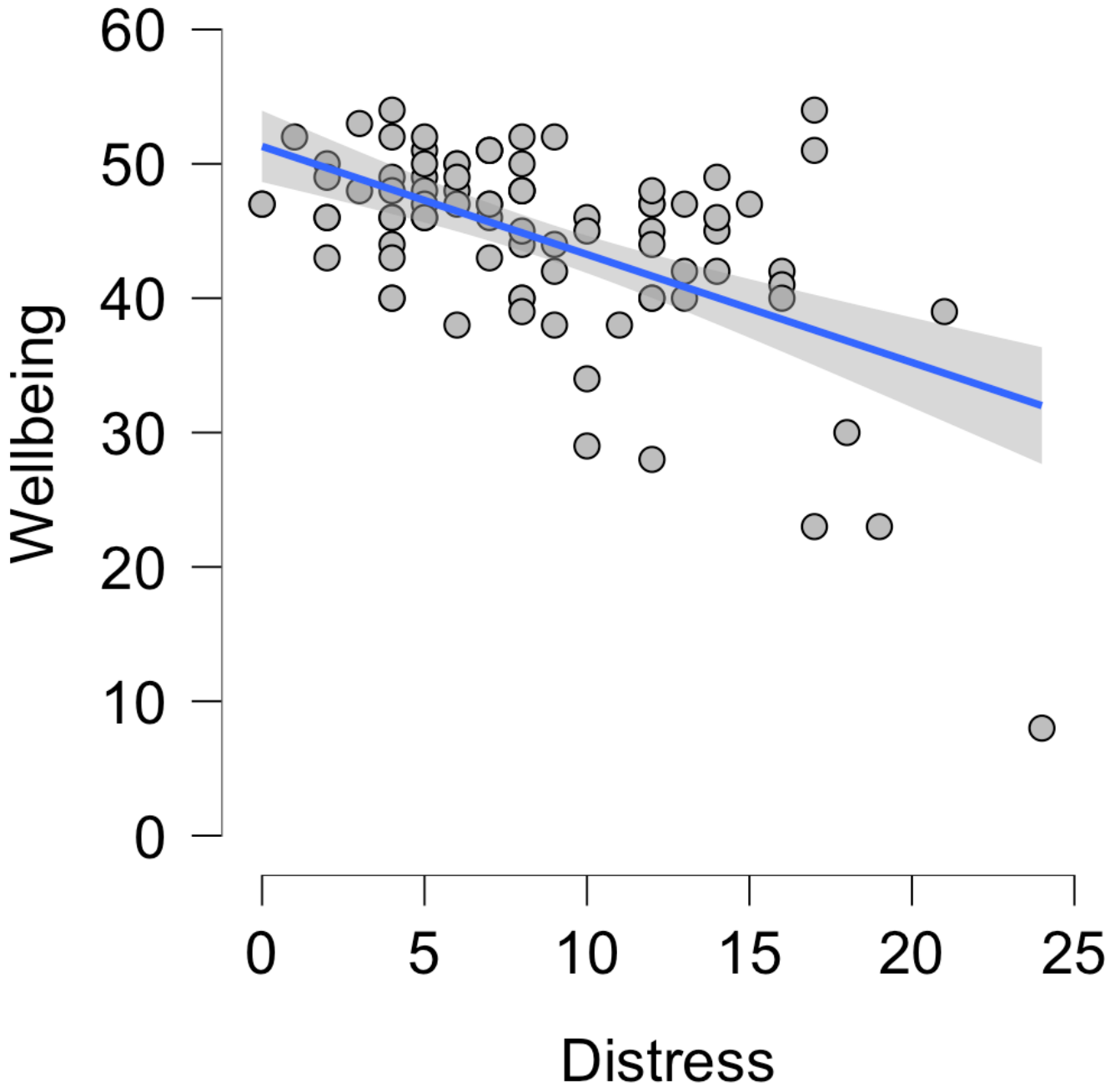
Distress – Loneliness Correlation Scatter Plot



Appendix C

Figure 2

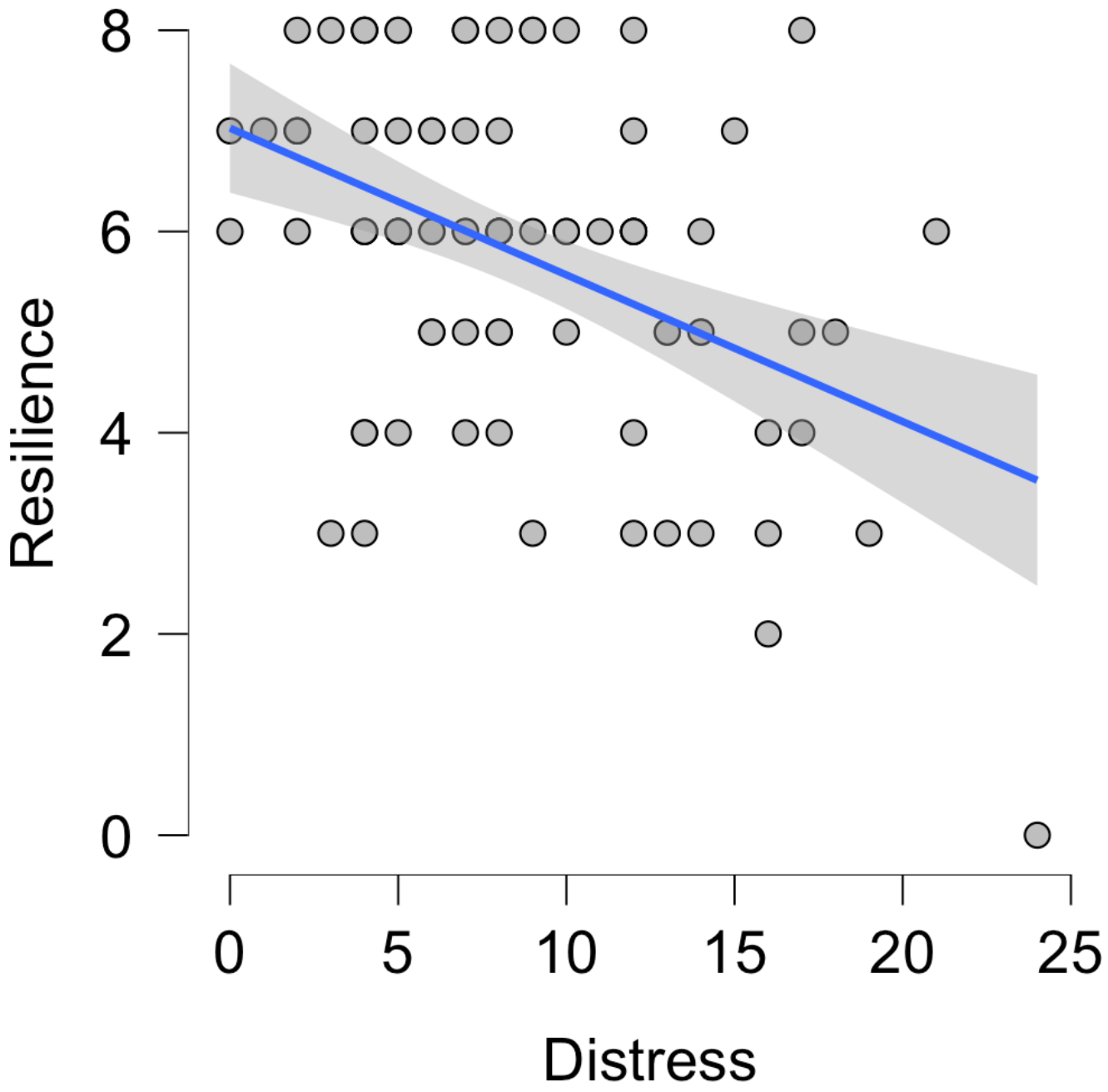
Psychological Distress – Wellbeing Correlation Scatter Plot



Appendix D

Figure 3

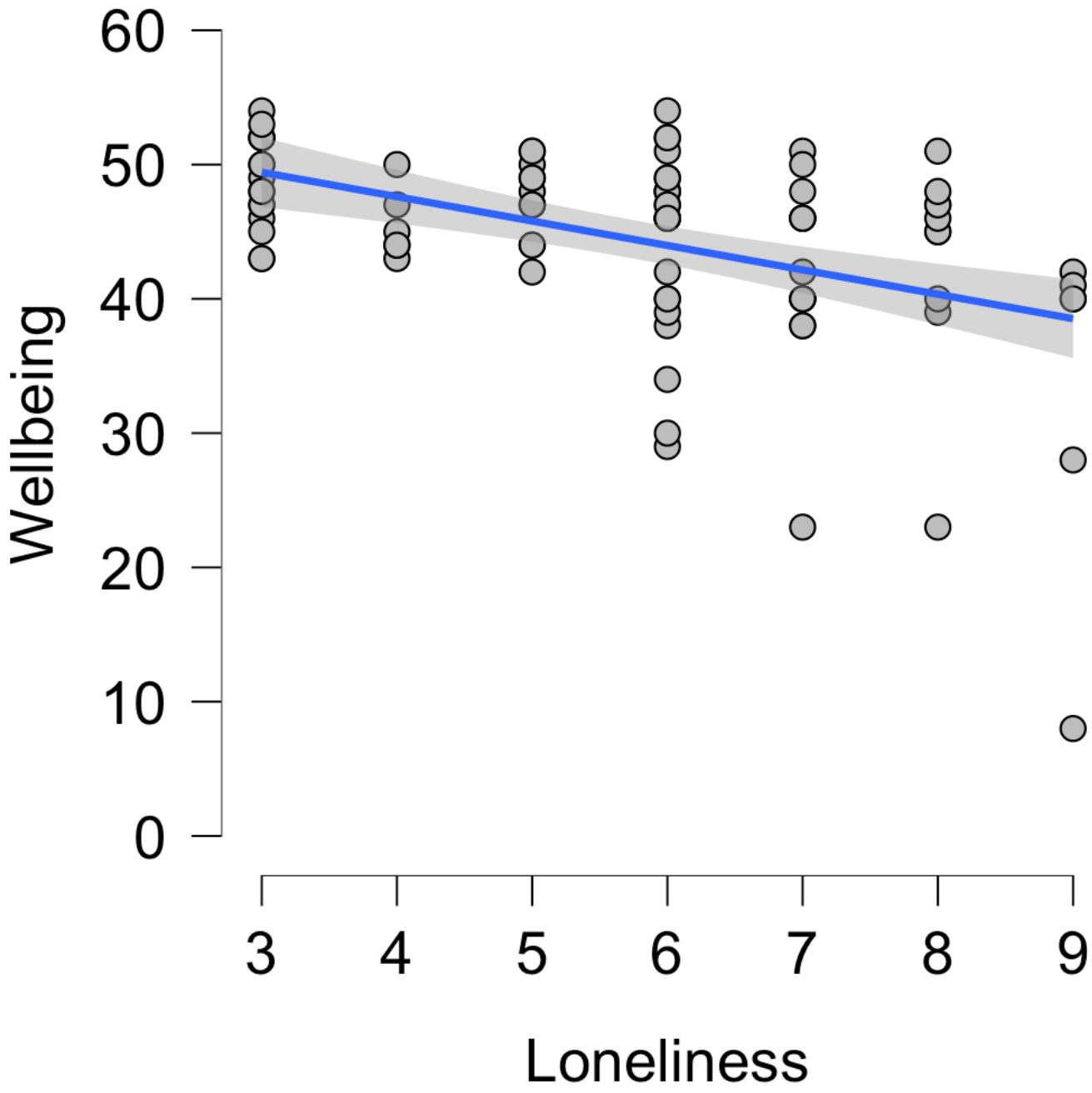
Psychological Distress – Resilience Correlation Scatter Plot



Appendix E

Figure 4

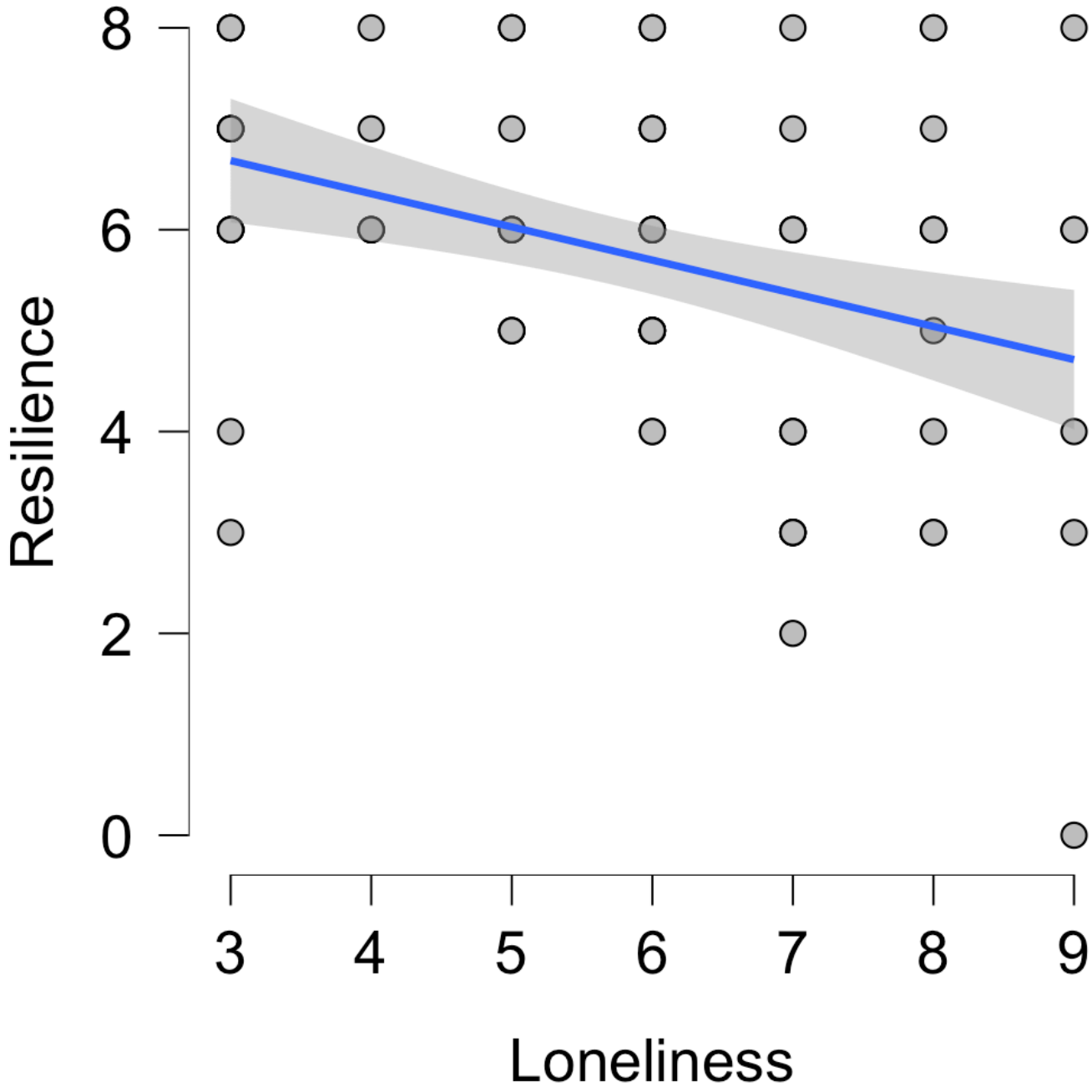
Loneliness – Psychological Wellbeing Correlation Scatter Plot



Appendix F

Figure 5

Loneliness – Resilience Correlation Scatter Plot



Appendix G

Figure 5

Psychological Wellbeing – Resilience Correlation Scatter Plot