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God Attachment, Health Locus of Control, Anxiety, and Health Behaviors During Covid-19 Among College Undergraduates at a Religious University

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God Attachment, Health Locus of Control, Anxiety, and Health Behaviors During Covid-19 Among College Undergraduates at a Religious University

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Abstract

This study investigated the relationship between attachment to God, health locus of control (HLOC), perceived stress, and COVID-19-related attitudes and health behaviors among undergraduate students. Undergraduates from George Fox University were sampled, and data were collected from December 2021 to May 2022. Participants ranged from ages 18 to 36 years old (M = 19.1, SD = 2.1). The majority identified as female (68.3%) and European-American (70.2%). A K-cluster analysis revealed two groups utilizing attachment to God and HLOC scores: 81 healthy (43%) and 109 distressed (57%) individuals. The healthy group reported lower scores on anxious and avoidant attachment to God and chance health locus of control. An analysis of covariance examined the relationship between cluster membership and generalized anxiety and COVID-19-related mental health outcomes, attitudes, and health behaviors after controlling for age, gender, grade point average, ethnicity, and current education level.

Cluster membership strongly predicted compliance with social distancing, COVID-19-related substance use, positive coping–keeping a daytime structure, positive coping–inner strength, and moderately predicted Generalized Anxiety Disorder-7 scale scores. Ethnicity was significantly related to anxiety buying, compliance with political restrictions, and adherence to COVID-19-related health behaviors. Gender was significantly related to compliance with hygiene measures, compliance with political restrictions, COVID-19 stressor impact, and Generalized Anxiety Disorder-7 scale scores.

Results suggested that anxious and avoidant attachment to God and Chance HLOC were associated with higher anxiety, substance use, sleep disturbances, and beliefs that compliance with COVID-19-related health behaviors was necessary. Those who identified as female and minority ethnicities reported higher anxiety, greater impacts of COVID-19-related stressors, and higher belief and compliance with COVID-19-related health behaviors.

In clinical settings, assessing for undergraduate students' attachment to God and HLOC may be beneficial, as higher scores on the internal HLOC and lower scores on avoidant or anxious attachment to God were related to better mental health outcomes and less maladaptive coping strategies. Assessing for mental health needs of those who identify as female and minority ethnicities may also be beneficial for clinicians, as these populations reported greater negative mental health impacts and subjective stressors during the pandemic.

Keywords: COVID-19, health locus of control, attachment to God, mental health, anxiety, coping

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Chapter 1

Emerging adulthood is characterized by a period of immense change and growth for individuals aged 18–25 years in Western societies (Arnett, 2007). Recent high school graduates who enter college experience identity exploration and growth as students declare degrees, endure changing routines and novel living environments, enter romantic partnerships and budding friendships, and learn how to effectively care for their own physical and mental health. Currently, these emerging adults have faced additional changes due to fluctuating global circumstances after the discovery of the novel coronavirus disease 2019 (COVID-19).

COVID-19 has impacted the mental and physical health of individuals across the lifespan. As of April 2021, at the outset of this study, COVID-19 was the reported cause of death listed for over 2 million deaths globally, with over 149 million cases worldwide (Johns Hopkins University of Medicine, 2021). As of 2023, within the United States, over 1 million deaths were attributed to COVID-19 (Centers for Disease Control, 2023). Among adults, stay-at-home orders implemented during the initial stages of COVID-19 discovery led to changes in eating behaviors, increased sedentary behaviors, and decreased time allotted to physical activity (Flanagan et al., 2020). Naughton et al. (2021) discovered adults were engaging in less healthy eating behaviors, increased alcohol consumption, and a decreased rate of physical activity compared to pre-COVID levels. Moreover, rates of emotional eating during the pandemic have been associated with maladaptive coping strategies and COVID-specific health anxiety, while healthy eating choices have been associated with adaptive coping strategies (Coulthard et al., 2021).

Recent changes in daily behaviors due to efforts to contain the spread of COVID-19 have largely been impacted by increases in psychological distress (Usher et al., 2020). Adults with greater emotional regulation abilities engaged in more protective behaviors regardless of perceived risk of contracting COVID-19, while those with less emotional regulation abilities engaged in protective behaviors only if the perceived risk was high (Rubaltelli et al., 2020), but engaged in less protective behaviors when perceived risk was low (Rubaltelli et al., 2020).

Additionally, increases in anxiety among adults are documented across countries (Flanagan et al., 2020; Papandreou et al., 2020). A national sample of adults within the United States, surveyed in the height of the pandemic, were 3 times more likely to fit criteria for moderate or severe mental distress compared to a sample surveyed in 2018 (Twenge & Joiner, 2020). Fear related to COVID-19 increased adults' motivation to search for health-related information and increased panic buying throughout the pandemic (Du et al., 2020), and adults experienced more negative affect and less mindfulness in daily life (Brose et al., 2020). Adults experienced decreased social contact due to social distancing and stay-at-home orders, and decreased psychosocial well-being and lack of social support were implicated in more difficulties with maintaining social distancing requirements and less motivation to sustain preventative health behaviors (Beeckman et al., 2020).

Like other adults, college students also experienced changes in behaviors and emotional well-being due to circumstances surrounding COVID-19. First year college students reported increased externalizing and attention problems, and negative daily wellness and mood (Copeland et al., 2021). Perceived increases in body weight, eating, screen time, decreases in physical activity, and concerns related to perceived body changes and eating behaviors were recently documented among female university students in the United States (Keel et al., 2020). Undergraduate students also reported increased stress about COVID-19,

mood disorder symptoms, perceived stress, alcohol use, and overall poorer well-being throughout the pandemic (Charles et al., 2021). Wang et al. (2020) found that college students generally reported significant levels of depressive and anxious symptoms during the pandemic, with female students indicating higher levels of symptoms compared to males. Specifically, students reported experiencing higher levels of anxiety due to the pandemic, with specific concerns about academic difficulties and changes in class routines (Wang et al., 2020). College students also reported higher levels of fear and worry about their health and the health of loved ones, difficulties coping with current stressful life events, and perceived additional barriers to mental healthcare, including financial difficulties (Wang et al., 2020).

The World Health Organization expressed concern over the long-term impact of COVID-19 on mental health and well-being (Kumar & Nayar, 2020). The research discussed above gives insight into the impact of COVID-19 restrictions and circumstances, including increased psychological distress, decreased adaptive health behaviors, and difficulties coping with the current stress caused by the pandemic. Research has minimally discussed protective factors for emerging adults during the COVID-19 pandemic, or how perceptions of health locus of control and religiosity or spirituality have impacted emerging adults as they witnessed and experienced negative physical consequences associated with the COVID-19 pandemic. Specifically, we are unaware of the extent religious beliefs or locus of health control impact pandemic-related behavior or perceived psychological distress among emerging adults.

Relationship between Health Locus of Control, Mental Health, and Health Behaviors

Health locus of control (HLOC) refers to the belief of how health is controlled (Winefield, 1982; Wallston et al., 1978). An internal HLOC (IHLOC) indicates the individual believes they have power to control their health-related behaviors and outcomes, while having an external HLOC (EHLOC) indicates a belief that their health is regulated externally

(Winefield, 1982; Wallston et al., 1978). Within the EHLOC, health is perceived to be controlled either by powerful others, such as doctors or caregivers, or influenced by random chance (Winefield, 1982; Wallston et al., 1978).

Studying HLOC during the time of COVID-19 is essential because HLOC has been inversely correlated with both maladaptive health behaviors and mortality (Lindstrom & Rosvall, 2020). Among college and university students, higher IHLOC is associated with healthier psychological and physical health across settings and countries. Higher IHLOC is associated with positive health behaviors through health-related self-efficacy (Açikgöz Çepni & Kitis¸ 2017) and perceived social support (Marr & Wilcox, 2015), and those with IHLOC were more likely to partake in preventive health behaviors (Strudler Wallston & Wallston, 1978) to bolster overall well-being. University students who reported an IHLOC in Germany participated in more health-maintenance behaviors (Helmer et al., 2012). Additionally, an IHLOC among college students in India was correlated with more physical exercise, warm relationships and affective interactions, ability to manage stress, awareness of diet, and spiritual growth (Sangeeta & Rana, 2015), and IHLOC was correlated with specific healthier behaviors such as having a healthy diet and tooth-brushing for university students across 18 countries (Steptoe & Wardle, 2001).

Having a powerful other HLOC (PHLOC) is correlated with university students' willingness to monitor their health with digital apps and online trackers (Bennett et al., 2017) and engagement in less risk behaviors, while those with chance HLOC (CHLOC) engaged in more risk behaviors, including alcohol use and a higher frequency of smoking (Helmer et al., 2012).

The impact of HLOC on physical and psychological health has inconsistent findings in research literature. Multiple studies reported weak or no correlations between HLOC and health behaviors or outcomes (Pourhoseinzadeh et al., 2017; Callaghan, 1998; Roddenberry

& Renk, 2010; Steptoe & Wardle, 2001), while some studies have found robust associations between HLOC and alcohol or drug use among emerging adults (Steptoe & Wardle, 2001). Additionally, the definitions of health behaviors vary widely across studies, eliminating a comprehensive understanding of which health behaviors are consistently impacted by HLOC. Moreover, studies have primarily focused on health outcomes correlated with an IHLOC; less research has considered the impact of external forms of HLOC. However, some evidence suggests certain individual factors may be related to inconsistent results across studies. A meta-analysis completed by Cheng et al. (2016) revealed age, gender, and cultural dimensions of individualism and power distance were moderators in the relationship between HLOC and specific health behaviors. Cheng et al. (2016) hypothesized that differences in perceptions of power and control among individuals with different ages and genders may contribute to varying results, as well as differences in individual beliefs about personal control among cultural dimensions of individualism and power distance.

Inconsistencies in current literature invite continued research to bolster understanding of the potential impact of HLOC on health behaviors and physical and mental well-being among emerging adults, particularly college and university students. Studying how HLOC may contribute to COVID-related health behaviors among university-attending emerging adults will be useful to identify potential points of intervention, or to determine if interventions should be targeted elsewhere as we understand the long-term psychological and physical impact of COVID-19 pandemic.

Relationship Between Attachment to God, Mental Health, and Health Behaviors

Attachment to God may also be an important factor to consider for psychological and physical well-being during COVID-19. In a meta-analysis conducted on a large population of adolescents and emerging adults, spirituality or religious affiliation was associated with less substance use, including underage alcohol, tobacco, and marijuana use; less participation in

illegal activities; less depression; greater self-esteem; and more personality traits of Agreeableness, Conscientiousness, and Openness from the Big 5 Trait theory of personality (Yonker et al., 2012). Although spiritual or religious affiliation is implicated in less risky health behaviors and psychological health among emerging adults, research suggests personal relationships with God, specifically attachment to God, can impact health behaviors and psychological well-being.

Attachment research indicates early bonds with caregivers substantially impact relationship patterns throughout the lifespan, and specifically lay the foundation for healthy and fulfilling relationships (Stanton & Campbell, 2013). Those who are securely attached to close individuals draw closer to attachment figures during times of stress, protecting against increased psychological and physiological distress (Stanton & Campbell, 2013). When faced with a potential threat or a stressful encounter, those who have insecure attachments become preoccupied with fears of rejection or abandonment or deny needs and avoid relational support (Stanton & Campbell, 2013). Additionally, those with insecure attachment styles have an impaired ability to regulate negative emotions, experience more negative emotions in relationships, and display greater cortisol reactivity, subsequently decreasing both mental and physical health (Stanton & Campbell, 2013).

Individuals can form attachment relationships to God (Beck & McDonald, 2004), much like they would to a traditional caregiver as first studied by Ainsworth in 1979 Research indicates secure attachment to God, the indicator of a sense of security and emotional closeness with God (Beck & McDonald, 2004), can be protective amid a variety of stressful circumstances. A secure attachment to God is associated with a greater sense of control and agency, even amid social or economic deprivation (Liu & Froese, 2020). Conversely, belief in a judgmental God is correlated with less personal agency regardless of access to social or economic resources (Liu & Froese, 2020). Research indicates a secure

attachment to God is associated with lower psychological distress in response to major stressful life events, while an anxious attachment to God is associated with higher levels of psychological distress (Bradshaw et al., 2010). Moreover, when an individual reported an anxious attachment to God, they perceived more overall stress in response to daily life situations than those with a secure or avoidant relationship (Reiner et al., 2010).

Apart from psychological stress, those with a secure attachment to God reported more contentment and more physical health, and those with an insecure attachment reported greater anxiety, loneliness, and depression (Kirkpatrick & Shaver, 1992). Additionally, secure attachment to God is associated with more positive affect via emotion-focused coping, while anxious or avoidant attachment is associated with increased levels of depression and both positive and negative affect via dysfunctional coping strategies (Parenteau et al., 2019). Regarding health behaviors, those with a secure attachment to God reported less alcohol use and more adaptive coping strategies than those with insecure attachments to God (Hernandez et al., 2010).

Relationship Between Health Locus of Control and God

Within religious and/or spiritual populations, research sought to determine the role of God relationships on health behaviors and health-related beliefs. There are mixed research findings about the relationship between faith in God and HLOC, with some studies finding those with higher levels of faith are associated with also having an IHLOC, some studies finding no association, and others finding a negative association between IHLOC and faith and religion (Boyd & Wilcox, 2020). In response to the question of God's potential influence on health control beliefs, Wallston et al. (1999) created the God Locus of Health Control (GLHC) scale to measure the belief that God controls health and health-related outcomes. Research indicates that GLHC is correlated with the external sources (i.e., CHLOC and PHLOC) from the original Multidimensional Health Locus of Control scale (Boyd & Wilcox,

2020). However, some researchers have found a relationship between the GLHC and the IHLOC scales and theorize that individuals who believe God will protect and guide them report more confidence in personal abilities to control health behaviors and outcomes (Boyd & Wilcox, 2020).

Variations in research findings on the relationship between belief in God and the original Multidimensional Health Locus of Control scales invite the opportunity to continue researching how a belief in God impacts health related beliefs and behaviors, and whether a belief in God impacts an orientation toward Powerful Other, Chance, or Internal HLOC scales.

The Importance of Studying Health Behaviors During COVID-19

Research regarding long-term impacts of COVID-19 continues as political restrictions were lifted globally. Researchers identified changes in health behaviors and psychological well-being due to global circumstances caused by COVID-19, and there is still growing research on the long-term impact of COVID-19 on emerging adults whose typical pattern of education, social relationships, and daily routines were altered amid the pandemic. Additionally, there is little research on specific behaviors or psychological factors to target as we determine interventions to promote psychological and physical well-being and resilience in the aftermath of these life changes, or to target should a similar pandemic occur in the future.

The Purpose of the Present Study

Emerging adults from religious undergraduate institutions faced a variety of changing circumstances during the COVID-19 pandemic, including changes in housing, finances, social relationships, educational experiences, and living standards due to mask and social-distancing requirements. There is continued need for research regarding health behaviors and perceptions during COVID-19 among emerging adults and individuals in university

environments, within the context of prior research on attachment to God and HLOC as potential protective factors for mental health and wellness amid global changes. This study aims to explore the power of God attachment and HLOC in predicting perceived anxiety and health behaviors during the COVID-19 pandemic.

Chapter 2

Methods

Participants

Participants were recruited through undergraduate psychology courses at George Fox University and were given class credit for participating in the study. To participate in the study, individuals were required to speak English, be students at George Fox University, be able to operate a computer, be over the age of 18 years and have adequate vision to read electronic materials. Participants ranged from ages 18 to 36 years old (M = 19.1, SD = 2.1). The majority of the sample identified as female (68.3%) and European-American (70.2%). Demographics are presented in Table 1.

Table 1

Sociodemographic Characteristics of Participants

Sample characteristic	*n*	%
Gender		
Male	63	30.7
Female	140	68.3
Transgender	1	0.5
Other	1	0.5
Missing	0	0.0
Ethnicity		
Bi/multi-racial	8	3.9
White/European American	144	70.2
Asian/Asian American	14	6.8
Latino/a/x or Spanish Origin	22	10.7
American Indian, Alaska Native, and/or Indigenous	3	1.5
Native Hawaiian or Other Pacific Islander	3	1.5
Black or African American	6	2.9
Arab American, Middle Eastern, or North African	1	0.5
Another Race or Ethnicity not listed above	1	0.5
Missing	3	1.5
Year of undergraduate education		
Freshman/1st year	164	80.0
Sophomore/ 2nd year	16	7.8
Junior/ 3rd year	10	4.9
Senior/ 4th year	13	6.3
Missing	2	1.0
GPA		
1.5–1.99	3	1.5
2.0–2.49	10	4.9
2.5–2.99	22	10.7
3.0–3.49	43	21.0
3.5–4.0	116	56.6
None (first semester freshman)	3	1.5
Missing	8	3.9
Major		
Health and medical sciences	112	54.6
Engineering and technology	11	5.4

Sample characteristic	*n*	%
Social and behavioral studies	28	13.7
Business	30	14.6
The arts	10	4.9
Undecided	3	1.5
Communication and language	3	1.5
Education and teaching	1	0.5
Missing	7	3.4

Note. $N = 205$. Participants were on average 19.1 years old ($SD = 2.1$). GPA = grade point average.

Materials

Measures included a demographic questionnaire, Attachment to God Inventory, Multidimensional Health Locus of Control Scale, Generalized Anxiety Disorder-7, and the Covid-19 Pandemic Mental Health Questionnaire. Demographic information, including age, gender, current education level, grade point average (GPA), undergraduate major, and ethnicity was collected. The informed consent, demographics form, Attachment to God Questionnaire, Multidimensional Health Locus of Control Scale, Generalized Anxiety Disorder–7 Questionnaire, and the COVID-19 Pandemic Mental Health Questionnaire were distributed through the George Fox University SONA System.

Attachment to God Inventory

The Attachment to God Inventory (AGI; Beck & McDonald, 2004) assesses student's attachment to God. The AGI is a 28-item questionnaire that utilizes a 7-point Likert scale from 1 (*strongly disagree*) to 7 (*strongly agree*). It is utilized for research to determine attachment to God and identifies the degree of anxious and avoidant attachment (Beck & McDonald, 2004). Those with low scores on anxious and avoidant dimensions are considered securely attached. The AGI was normed on two college samples (n = 507; n = 118) and one community sample (n = 109). The sample of undergraduate and graduate students attended a small, private, Christian University in Texas. The college sample mean age was 20 years old and the majority of the sample was Caucasian and female. Religious affiliations included Churches of Christ, Baptist, non-denominational, Catholic, and Methodist. Two factors were discovered: Avoidance and Anxiety. The alpha coefficient measuring internal consistency was .86 and .84 for Avoidance and .80 and .87 for Anxiety across the two college samples. Avoidance is the sum of even numbered items and Anxiety is the sum of odd numbered items. Scores could range from 7 to 98 on each subscale. Seven items are reverse scored: 4, 8,

13, 18, 22, 26, and 28. In the present sample, alphas were .91 for Avoidance and .92 for Anxiety.

Multidimensional Health Locus of Control Scale

The Multidimensional Health Locus of Control Scale (MHLC; Wallston et al., 1978) Form A was used to determine students' locus of health control. Form A and B determine if an individual perceives their health to be controlled internally, by powerful others, or by chance. Internal locus of health control (IHLOC) describes those who believe they control the outcome of their health, powerful others locus of health control (PHLOC) describes those who believe their health is regulated by powerful others such as doctors or family members, and chance locus of health control (CHLOC) describes those who believe their health is influenced by random chance or luck. Both forms are 18 questions and utilize a 6-point response continuum from 1 (*strongly disagree*) to 6 (*strongly agree*). Alpha reliabilities on Form A and B alone range from .67 to .77 in the original normed sample (Wallston et al., 1978). In a sample of 370 undergraduates, Cronbach's alpha reliability for Form A was .71 for internality, .72 for Powerful Others, and .69 for Chance. For form B, Cronbach's alpha reliability for Form B was .66 for Internality, .72 for Powerful Others, and .69 for Chance. The average age was 19.5 years, 86% were Caucasian, and 80% were female (Ross et al., 2015).

For the purpose of this study, given the recent psychometric analyses using undergraduate students, only Form A was utilized to determine HLOC. IHLOC is determined by summing the scores of items 1, 6, 8, 12, 13, and 17. CHLOC is determined by summing the responses to items 2, 4, 9, 11, 15, 16, and PHLOC is determined by summing items 3, 5, 7, 10, 14, 18. Scores could range from 6 to 36 for each subscale. Alphas in the current sample were .74 for internality, .79 for powerful others, and .59 for chance.

Generalized Anxiety Disorder-7

The Generalized Anxiety Disorder scale (GAD-7; Spitzer et al., 2006) is a widely used 7-item symptom checklist that measures generalized anxiety disorder symptoms in accordance with the *Diagnostic and Statistical Manual of Mental Disorders* (5th ed.; *DSM-5* American Psychiatric Association, 2013) criteria. Responses are measured using a 4-point continuum from 0 (*not at all*) to 3 (*nearly every day*). Scores could range from 0–21. The GAD-7 was normed on a sample of 1,805 undergraduate students across the United States (Byrd-Bredbenner et al., 2020). The sample was 41% White and 65% female. Factor loadings among the seven items ranged from 0.758 to 0.896 (Byrd-Bredbenner et al., 2020). Generalized anxiety is determined by summing responses to all 7 items. Score ranges from 0–4 indicate minimal anxiety, 5–9 indicate mild anxiety, 10–14 indicate moderate anxiety, and 15–21 indicate severe anxiety (PAR Staff, 2020).

COVID-19 Pandemic Mental Health Questionnaire

The COVID-19 Pandemic Mental Health Questionnaire (CoPaQ; Rek et al., 2020) was utilized to assess the impact of the pandemic on broad indicators of a participant's mental health and compliance with COVID-19-related health behaviors. The questionnaire was created by a team of psychologists and psychiatrists based on the *DSM-5* and retained after administering the original questionnaire to a group of 511 non-clinical adults from Germany and 113 psychiatric inpatients. The adult sample was recruited online and was predominately identified as students and female, with a mean age of approximately 30. Internal consistency across factors ranged from *acceptable* to *excellent* (Rek et al., 2020). Responses use a 5-point response continuum, ranging from 0 (*not at all*) to 4 (*very much*). Item responses are summed to derive scores for sections measuring contamination anxiety, necessity and compliance with countermeasures, mental health impact, specific stressors impact, positive coping, conspiracy beliefs, and social cohesion.

In this study, subscales were identified for scoring participant responses. Subscales included: Contamination Anxiety, Compliance with Hygiene Measures, Compliance with Social Distancing, Anxiety Buying, Compliance with Political Restrictions, Solidarity Based Behaviors, Adherence to COVID-19-Related Health Behaviors, COVID-19 Post-Traumatic Stress Disorder (PTSD) Symptoms , COVID-19-Related Sleep Disturbance, Trauma Symptom Composite, COVID-19-Related Substance Use, COVID-19-Related Health Anxiety, COVID-19-Related Stressors Impact, Positive Coping–Keeping a Daytime Structure, Positive Coping–Social Contacts, and Positive Coping–Inner Strength. Scoring of Subscales are shown in Appendix A.

Due to the time frame for this study, four questions were excluded from the survey before disseminating to participants: “Because of the COVID-19 pandemic, over the past 14 days I have felt stressed or burdened a lot by thoughts that it would be better to be dead”, “Because of the COVID-19 pandemic, over the past 14 days I have experienced becoming a victim of verbal abuse (e.g., threats, humiliations) with people close to me”, “Because of the COVID-19 pandemic, over the past 14 days I have had more physical arguments (e.g., beating, boxing, kicking) with people close to me”, and “Because of the COVID-19 pandemic, over the past 14 days I have experienced becoming a victim of physical abuse (e.g., beating, boxing, kicking) by people close to me.”

Procedure

All participant responses were collected via the George Fox University SONA System between December 2021 and May 2022. No personally identifying information was collected to protect the confidentiality of participants. All data points collected are listed in the materials and variable sections. Federal guidelines for human subject protections were followed throughout the study and institutional review board approval was obtained (#2211005) from George Fox University.

Analysis

A cluster analysis was conducted to identify distinct groups of participants within the variables of attachment to God and HLOC. Analysis of covariance (ANCOVA) was utilized to determine how the identified clusters are related to level of perceived anxiety and COVID-19-related attitudes and health behaviors when controlling for confounding variables of age, ethnicity, gender, education level, and GPA.

Chapter 3

Results

The data were analyzed using IBM SPSS Statistics (version 27). Data were cleaned and prior to analysis descriptive statistics were calculated for all variables of interest and distributional information was inspected (see Table 2). A K-cluster analysis was conducted to identify groups of participants based on responses to the attachment to God (anxious and avoidant) and HLOC (internal, powerful others, and chance) scales. Next, a series of ANCOVAs was conducted to determine the relationship between the clusters and GAD-7 scores, COVID-19-related mental health outcomes, COVID-19-related attitudes, and COVID-19-related health behaviors utilizing the CoPaQ subscales. Participants with missing data were excluded listwise during analyses.

Table 2

Descriptive Statistics for Predictor and Dependent Variables

Dependent variable	*N*	*M*	*SD*	Skewness[#]	Kurtosis[#]
Contamination Anxiety	205	8.86	6.79	0.76	0.12
Healthy	68	8.32	5.73	--	--
Distressed	84	10.21	7.74	--	--
Total	152	9.37	6.95	--	--
Compliance with Hygiene Measures	203	15.34	6.16	-0.59	-0.13
Healthy	68	15.37	4.99	--	--
Distressed	84	14.55	6.53	--	--
Total	152	14.91	5.89	--	--
Compliance with Social Distancing	199	5.78	5.77	0.78	-0.52
Healthy	68	3.91	5.30	--	--
Distressed	84	6.56	5.49	--	--
Total	152	5.38	5.55	--	--
Anxiety Buying	202	8.07	6.36	0.28	-1.13
Healthy	68	8.59	6.04	--	--
Distressed	84	7.48	6.47	--	--
Total	152	7.97	6.29	--	--
Compliance with Political Restrictions	199	6.01	5.84	0.68	-0.61
Healthy	68	4.59	5.14	--	--
Distressed	84	6.37	5.85	--	--
Total	152	5.57	5.60	--	--
Solidarity-Based Behavior	197	12.48	5.41	-0.61	-0.31
Healthy	68	12.46	5.04	--	--
Distressed	84	12.15	5.76	--	--
Total	152	12.29	5.43	--	--
Adherence to Health Behaviors	200	2.81	3.36	0.38	-0.65
Healthy	68	4.49	3.02	--	--
Distressed	84	4.67	3.29	--	--
Total	152	4.59	3.16	--	--
PTSD Symptoms	198	2.81	4.29	1.74	2.76
Healthy	68	2.06	3.94	--	--
Distressed	84	3.30	4.48	--	--
Total	152	2.74	4.28	--	--
COVID-19-Related Sleep Disturbance	203	2.47	4.44	2.00	3.43
Healthy	68	1.53	3.60	--	--

Dependent variable	*N*	*M*	*SD*	Skewness[#]	Kurtosis[#]
Distressed	84	3.23	4.86	--	--
Total	152	2.47	4.41	--	--
Trauma Symptom Composite	195	6.71	10.06	1.95	3.98
Healthy	68	4.53	8.71	--	--
Distressed	84	8.30	10.70	--	--
Total	152	6.61	10.01	--	--
COVID-19-Related Substance Use	202	0.75	2.24	3.25	9.86
Healthy	68	0.15	0.63	--	--
Distressed	84	1.27	2.94	--	--
Total	152	0.77	2.90	--	--
COVID-19-Related Health Anxiety	190	1.23	2.32	2.07	3.51
Healthy	68	0.79	1.73	--	--
Distressed	84	1.32	2.47	--	--
Total	152	1.09	2.18	--	--
COVID-19-Related Stressors Impact	201	9.18	11.43	1.42	1.16
Healthy	68	8.35	10.23	--	--
Distressed	84	10.13	12.13	--	--
Total	152	9.34	11.32	--	--
Positive Coping–KDS	204	6.84	3.09	-0.44	-0.50
Healthy	68	7.76	2.63	--	--
Distressed	84	6.23	3.09	--	--
Total	152	6.91	2.98	--	--
Positive Coping–SC	202	8.19	3.32	-0.35	0.24
Healthy	68	8.65	3.02	--	--
Distressed	84	7.67	3.33	--	--
Total	152	8.11	3.22	--	--
Positive Coping–IS	205	8.85	4.16	-0.42	-0.36
Healthy	68	10.46	3.77	--	--
Distressed	84	7.79	3.97	--	--
Total	152	8.98	4.09	--	--
GAD-7	201	7.58	5.83	0.66	-0.49
Healthy	68	5.24	4.61	--	--
Distressed	84	8.94	5.84	--	--
Total	152	7.28	5.62	--	--
IHLOC	198	24.99	4.57	0.05	-0.25
Healthy	68	25.25	4.60	--	--
Distressed	84	24.89	4.51	--	--

Dependent variable	*N*	*M*	*SD*	Skewness[#]	Kurtosis[#]
Total	152	25.05	4.54	--	--
CHLOC	199	19.56	4.39	0.41	0.19
Healthy	68	18.49	4.11	--	--
Distressed	84	20.31	4.56	--	--
Total	152	19.49	4.45	--	--
PHLOC	198	17.82	5.59	0.03	-0.25
Healthy	68	16.28	5.55	--	--
Distressed	84	18.54	5.28	--	--
Total	152	17.53	5.50	--	--
Attachment to God–Anxious	199	45.31	16.45	0.05	-0.41
Healthy	68	34.46	12.70	--	--
Distressed	84	52.80	15.65	--	--
Total	152	44.59	17.03	--	--
Attachment to God–Avoidance	200	45.81	17.04	0.11	-0.21
Healthy	68	31.47	11.85	--	--
Distressed	84	55.88	13.77	--	--
Total	152	44.96	17.74	--	--

Note. PTSD = post-traumatic stress disorder; GAD-7 = Generalized Anxiety Disorder scale; IHLOC = internal health locus of control; CHLOC = chance health locus of control; PHLOC = powerful others health locus of control; KDS = Keeping Daytime Structure; SC = Social Contacts; IS = Inner Strength.

[#]SE-Skew = 0.17–0.18; SE-Kurtosis = 0.34–0.35.

K-Cluster Analysis

A K-cluster analysis was used to determine whether participants could be grouped into meaningful clusters. Clustering was based on total scores for the predictor measures: IHLOC, CHLOC, PHLOC, anxious attachment to God, and avoidant attachment to God. A total of 190 participants provided data for all variables. Convergence was achieved for two clusters after eight iterations. A total of 81 (42.6%) participants were grouped together in Cluster 1 and 109 (57.4%) participants were grouped together in Cluster 2. Preliminary examination showed the first group as healthy and the second group as distressed, with the second group displaying higher scores for anxious attachment to God, $F_{(1,188)} = 78.3$, $p < .001$, avoidant attachment to God, $F_{(1,188)} = 158.2$, $p < .001$, and CHLOC, $F_{(1,188)} = 7.2$, $p = .008$.

ANCOVA Analysis

Cluster Comparisons

A set of one-way ANCOVAs was conducted to explore the relationship between cluster membership (healthy vs. distressed) and generalized anxiety during the COVID-19 pandemic, and COVID-19-related mental health outcomes and adherence to health behaviors when controlling for age, gender, GPA, ethnicity, and current education level.

Preliminary checks were completed to assess for the assumptions of normality and homogeneity of variances. Descriptive analyses were conducted to examine the distribution of data across variables and are shown in Table 2. The assumption of normality was not met across variables. No steps were taken to remedy departure from assumption of normality given the robustness of ANCOVA analysis in large sample sizes (Scheffé, 1959).

Assumption of homogeneity of variances was not satisfied for the following variables: Contamination Anxiety, $F_{(1,150)} = 10.93$, $p < .001$; COVID-19-Related Sleep Disturbance, $F_{(1,150)} = 9.07$, $p = .003$; COVID-19-Related Substance Use, $F_{(1,150)} = 43.14$, $p < .001$;

COVID-19-Related Health Anxiety, $F_{(1,150)} = 4.45$, $p = .004$; COVID-19 Stressor Impact, $F_{(1,150)} = 5.41$, $p = .02$; Trauma Symptom Composite, $F_{(1,150)} = 5.48$, $p = .02$; and GAD-7, $F_{(1,150)} = 10.27$, $p = .002$.

Assumption of homogeneity of variances was satisfied for the following variables: Compliance with Hygiene Measures, $F_{(1,150)} = 2.79$, $p = .10$; Compliance with Social Distancing, $F_{(1,150)} = 1.38$, $p = .24$; Anxiety Buying, $F_{(1,150)} = 0.17$, $p = .69$; Compliance with Political Restrictions, $F_{(1,150)} = 1.34$, $p = .25$; Solidarity-Based Behavior, $F_{(1,150)} = 0.31$, $p = .58$; Adherence to COVID-19-Related Health Behaviors, $F_{(1,150)} = 0.89$, $p = .35$; COVID-19-Related PTSD Symptoms, $F_{(1,150)} = 3.46$, $p = .07$; Positive Coping–Keeping Daytime Structure, $F_{(1,150)} = 3.19$, $p = .08$; Positive Coping–Social Contacts, $F_{(1,150)} = 0.12$, $p = .73$; Positive Coping–Inner Strength, $F_{(1,150)} = 0.19$, $p = .67$; IHLOC, $F_{(1,150)} = 0.58$, $p = .45$; CHLOC, $F_{(1,150)} = 1.44$, $p = .23$; PHLOC, $F_{(1,150)} = 0.81$, $p = .37$; anxious attachment to God, $F_{(1,150)} = 2.28$, $p = .13$; and avoidant attachment to God, $F_{(1,150)} = 1.04$, $p = .15$. No steps were taken to remedy the departure from homogeneity of variances for the relevant dependent variables and results are interpreted accordingly.

After assessing assumptions, a set of one-way ANCOVAs was performed. After listwise removal of cases with missing data, Cluster 1 (healthy) contained 68 individuals (45%) and Cluster 2 (distressed) contained 84 individuals (55%), with a total of 152 participants. Results of the ANCOVA analyses are displayed in Table 3.

After controlling for age, ethnicity, gender, education level, and GPA, there was not a significant effect of cluster membership on Contamination Anxiety, $F_{(1,145)} = 3.64$, $p = .06$, $\eta p^2 = .02$; Compliance with Hygiene, $F_{(1,145)} = 0.08$, $p = .77$, $\eta p^2 = .001$; Anxiety Buying, $F_{(1,145)} = 1.72$, $p = .19$, $\eta p^2 = .012$; Solidarity Based Behaviors, $F_{(1,145)} = 0.24$, $p = .62$, $\eta p^2 = .002$; Adherence to COVID-19-Related Health Behaviors, $F_{(1,145)} = 0.26$, $p = .61$, $\eta p^2 = .002$; COVID-19-Related PTSD Symptoms, $F_{(1,145)} = 2.13$, $p = .15$, $\eta p^2 = .01$; Trauma

Symptom Composite, $F_{(1,145)} = 3.50$, $p = .06$, $\eta p^2 = .02$; Health Anxiety, $F_{(1,145)} = 0.74$, $p = .39$, $\eta p^2 = .01$; COVID-19 Stressor Impact, $F_{(1,145)} = 0.84$, $p = .36$, $\eta p^2 = .01$; and Positive Coping–Social Impacts, $F_{(1,145)} = 2.86$, $p = .09$, $\eta p^2 = .02$.

Estimated marginal means showed individuals in the healthy cluster reported lower scores for the dependent variables of Contamination Anxiety (Cluster 1: $M = 8.32$, $SD = 5.73$; Cluster 2: $M = 10.21$, $SD = 7.74$), COVID-19-Related PTSD Symptoms (Cluster 1: $M = 2.06$, $SD = 3.94$; Cluster 2: $M = 3.30$, $SD = 4.48$), Trauma Symptom Composite (Cluster 1: $M = 4.53$, $SD = 8.71$; Cluster 2: $M = 8.30$, $SD = 10.70$), COVID-19-Related Health Anxiety (Cluster 1: $M = 0.79$, $SD = 1.73$; Cluster 2: $M = 1.32$, $SD = 2.47$), and COVID-19 Stressor Impact (Cluster 1: $M = 8.35$, $SD = 10.23$; Cluster 2: $M = 10.13$, $SD = 12.13$).

Conversely healthy individuals reported higher scores for the dependent variables of Compliance with Hygiene Measures (Cluster 1: $M = 15.37$, $SD = 5.00$; Cluster 2: $M = 14.55$, $SD = 6.53$) and Positive Coping–Social Contacts (Cluster 1: $M = 8.65$, $SD = 3.02$; Cluster 2: $M = 7.67$, $SD = 3.33$).

Finally, estimated marginal means were similar between cluster membership for the dependent variables of Solidarity Based Behaviors (Cluster 1: $M = 12.46$, $SD = 5.04$; Cluster 2: $M = 12.15$, $SD = 5.76$) and Adherence to COVID-19-Related Health Behaviors (Cluster 1: $M = 4.49$, $SD = 3.02$; Cluster 2: $M = 4.67$, $SD = 3.29$).

After controlling for age, ethnicity, gender, education level, and GPA, there was a significant effect of cluster membership for several dependent measures, including Compliance with Social Distancing, $F_{(1,145)} = 8.43$, $p = .004$, $\eta p^2 = .06$; Compliance with Political Restrictions, $F_{(1,145)} = 4.19$, $p = .04$, $\eta p^2 = .03$; COVID-19-Related Sleep Disturbance, $F_{(1,145)} = 3.76$, $p = .05$, $\eta p^2 = .03$; COVID-19-Related Substance Use, $F_{(1,145)} = 8.33$, $p = 0.01$, $\eta p^2 = .05$; Positive Coping–Keeping a Daytime Structure, $F_{(1,145)} = 7.27$, $p = .01$, $\eta p^2 = .05$; Positive Coping–Inner Strength, $F_{(1,145)} = 14.03$, $p < .001$, $\eta p^2 = .09$; and GAD-

7, $F_{(1,145)} = 17.12$, $p < .001$, $\eta p^2 = .11$. Effects were small except for a moderate effect for GAD-7.

Estimated marginal means indicated individuals in the healthy cluster reported lower scores for dependent variables of Compliance with Social Distancing (Cluster 1: *M* = 3.91, *SD* = 5.30; Cluster 2: *M* = 6.56, *SD* = 5.49), Compliance with Political Restrictions (Cluster 1: *M* = 4.59, *SD* = 5.14; Cluster 2: *M* = 6.37, *SD* = 5.85), COVID-19-Related Sleep Disturbance (Cluster 1: *M* = 1.53, *SD* = 3.60; Cluster 2: *M* = 3.23, *SD* = 4.86), COVID-19-Related Substance Use (Cluster 1: *M* = 0.15, *SD* = 0.63; Cluster 2: *M* = 1.27, *SD* = 2.94), and GAD-7 (Cluster 1: *M* = 5.24, *SD* = 4.61; Cluster 2: *M* = 8.94, *SD* = 5.84). Cluster 1, the healthy participants, also reported higher scores on the dependent variables of Positive Coping–Keeping a Daytime Structure (Cluster 1: *M* = 7.76, *SD* = 2.63; Cluster 2: *M* = 6.23, *SD* = 3.09) and Positive Coping–Inner Strength (Cluster 1: *M* = 10.46, *SD* = 3.77; Cluster 2: *M* = 7.79, *SD* = 3.97).

Analyses of Demographic Covariates

Ethnicity. Ethnicity was significantly related to Compliance with Social Distancing $F_{(1,145)} = 4.18$, $p = .04$, $\eta p^2 = .03$; Anxiety Buying, $F_{(1,145)} = 7.15$, $p = .01$, $\eta p^2 = .05$; Compliance with Political Restrictions, $F_{(1,145)} = 8.60$, $p = .004$, $\eta p^2 = .06$; and Adherence to COVID-19-Related Health Behaviors $F_{(1,145)} = 5.51$, $p = .02$, $\eta p^2 = .04$; Effects were generally small.

Comparison of means reveals individuals who identified as bi/multiracial (*M* = 8.86, *SD* = 5.78), Asian or Asian American (*M* = 9.69, *SD* = 5.75), Latino/a/x or Spanish Origin (*M* = 9.56, *SD* = 5.52), American Indian, Alaska Native, and/or Indigenous (*M* = 9.67, *SD* = 10.02), Black or African American (*M* = 8.00, *SD* = 5.62), and Another race or ethnicity (*M* = 8.00, *n* = 1) reported higher scores for Compliance with Political Restrictions than those identifying as White or European American (*M* = 4.89, *SD* = 5.45), Native Hawaiian or Other

Pacific Islander (*M* = 5.33, *SD* = 5.11), and Arab American, Middle Eastern, or North African (*M* = 5.00, *n* = 1).

Estimates of means also reveals individuals who identified as Asian American (*M* = 11.75, *SD* = 5.79), American Indian, Alaska Native, and/or Indigenous (*M* = 9.33, *SD* = 5.13), and Black or African American (*M* = 8.50, *SD* = 7.18) reported higher scores for Compliance with Social Distancing than individuals identifying as bi/multiracial (*M* = 6.75, *SD* = 5.52), Latino/a/x or Spanish Origin (*M* = 6.32, *SD* = 6.16), Native Hawaiian or Other Pacific Islander (*M* = 5.33, *SD* = 9.24), Arab American, Middle Eastern, or North African (*M* = 4.00, *n* = 1), Another race or ethnicity (*M* = 5.00, *n* = 1), and White or European American (*M* = 4.93, *SD* = 5.35).

Estimates of means for Anxiety Buying indicate those who identify as Arab American, Middle Eastern, or North African (*M* = 15.00, *n* = 1), Asian or Asian American (*M* = 12.21, *SD* = 6.09), Latino/a/x or Spanish Origin (*M* = 11.76, *SD* = 5.86), American Indian, Alaska Native, and/or Indigenous (*M* = 10.33, *SD* = 8.51), and Black or African American (*M* = 10.39, *SD* = 6.98) reported higher means than individuals identifying as White or European American (*M* = 7.15, *SD* = 6.01), bi/multi-racial (*M* = 5.63, *SD* = 7.03), Native Hawaiian or Other Pacific Islander (*M* = 6.00, *SD* = 10.39), and another race or ethnicity (*M* = 5.00, *n* = 1).

Estimates of means for Adherence to COVID-19-Related Health Behaviors revealed individuals who identified as Asian or Asian American (*M* = 7.57, *SD* = 2.79), Black or African American (*M* = 7.17, *SD* = 4.36), and Latino/a/x or Spanish Origin (*M* = 6.71, *SD* = 3.52) reported the higher scores than those who identified as bi/multi-racial (*M* = 5.75, *SD* = 2.96), White or European American (*M* = 4.19, *SD* = 3.09), American Indian, Alaska Native, and/or Indigenous (*M* = 4.00, *SD* = 4.00), Native Hawaiian or Other Pacific Islander (*M* =

2.00, *SD* = 2.65), Arab American, Middle Eastern, or North African (*M* = 4.00, *n* = 1), and another race or ethnicity (*M* = 6.00, *n* = 1).

Gender. Gender was significantly related to Compliance with Hygiene Measures $F_{(1,145)} = 7.41$, $p = .01$, $\eta p^2 = .05$; Compliance with Political Restrictions, $F_{(1,145)} = 10.80$, $p = .001$, $\eta p^2 = .07$; Solidarity-Based Behaviors, $F_{(1,145)} = 3.76$, $p = .05$, $\eta p^2 = .03$; COVID-19 Stressor Impact, $F_{(1,145)} = 5.25$, $p = .02$, $\eta p^2 = .04$; and GAD-7 scores, $F_{(1,145)} = 14.33$, $p < .001$, $\eta p^2 = .09$.

Comparison of means for Compliance with Hygiene Measures revealed individuals who identify as female (*M* = 16.45, *SD* = 5.57) and transgender (*M* = 16.00, *n* = 1) reported higher scores than those who identified as males (*M* = 12.89, *SD* = 6.80) or those who would prefer to self-describe (*M* = 13.00, *n* = 1).

Comparison of means for Compliance with Political Restrictions revealed females (*M* = 6.70, *SD* = 6.01) and those who preferred to self-describe (*M* = 18.00, *n* = 1) reported higher scores than those who identify as male (*M* = 4.35, *SD* = 4.90) and transgender (*M* = 4.00, *n* = 1).

Comparison of means for Solidarity Based Behavior revealed those who identify as female (*M* = 13.36, *SD* = 4.88) reported higher scores than those identifying as male (*M* = 10.71, *SD* = 6.11), transgender (*M* = 10.00, *n* = 1), or those who preferred to self-describe (*M* = 7.00, *n* = 1).

Comparison of means for COVID-19 Stressor Impact revealed those who identified as transgender (*M* = 25.00, *n* = 1) reported higher scores than females (*M* = 9.72, *SD* = 11.72) and those who prefer to self-describe (*M* = 10.00, *n* = 1), and males (*M* = 7.73, *SD* = 10.76) reported the lowest scores.

Comparison of means for GAD-7 scores, those who identified as transgender (*M* = 12.00, *n* = 1) reported the highest scores, followed by females (*M* = 8.55, *SD* = 5.96) and

those who prefer to self-describe (M = 9.00, n = 1), with males (M = 5.30, SD = 4.92) reporting the lowest scores.

GPA. GPA was significantly related to Solidarity Based Behavior, $F_{(1,145)} = 7.75$, $p = .01$, $\eta p^2 = .05$. Comparison of means revealed GPA was positively related to Solidarity Based Behavior overall, but those who identified as having no GPA (first semester freshman) reported the highest scores for COVID-19-related solidarity-based behaviors. (1.5–1.99: M = 3.33, SD = 5.77; 2.0–2.49: M = 10.70, SD = 6.31; 2.5–2.99: M = 12.34, SD = 6.58; 3.0–3.49: M = 11.27, SD = 6.05; 3.5–4.0: M = 13.18, SD = 4.77; None (first year freshman): M = 14.67, SD = 2.08).

Table 3

ANCOVA Analysis of the Relationship of Cluster Differences in Scores on Study Measures After Controlling for Demographics

Dependent variable & source	*SS*	*df*	*MS*	*F*	*Sig.*	ηp^2
Contamination Anxiety						
Corrected	327.32	6	54.55	1.14	0.35	0.05
Intercept	0.18	1	0.18	<0.01	0.95	0.00
Age	47.57	1	47.57	0.99	0.32	0.01
Ethnicity	0.33	1	0.33	0.01	0.93	0.00
Gender	110.04	1	110.04	2.29	0.13	0.02
Education	24.96	1	24.96	0.52	0.47	<0.01
GPA	19.61	1	19.61	0.41	0.52	<0.01
Cluster	174.96	1	174.96	3.64	0.06	0.02
Error	6972.05	145	6972.05			
Compliance with Hygiene Measures						
Corrected	478.01	6	79.67	2.43	0.03	0.09
Intercept	0.24	1	0.24	0.01	0.93	0.00
Age	58.00	1	58.00	1.77	0.19	0.01
Ethnicity	101.54	1	101.54	3.09	0.08	0.02
Gender	243.29	1	243.39	7.41	0.01	0.05
Education	4.87	1	4.87	0.15	0.70	<0.01
GPA	2.32	1	2.32	0.08	0.11	0.02
Cluster	2.76	1	2.76	0.08	0.77	<0.01
Error	4761.88	145	4761.88			
Compliance with Social Distancing						
Corrected	509.42	6	84.90	2.98	0.01	0.11
Intercept	12.39	1	12.39	0.43	0.51	<0.01
Age	49.88	1	49.88	1.75	0.19	0.01
Ethnicity	119.31	1	199.31	4.18	0.04	0.03
Gender	77.99	1	77.99	2.73	0.10	0.02
Education	40.84	1	40.84	1.43	0.23	0.01

Dependent variable & source	*SS*	*df*	*MS*	*F*	*Sig.*	ηp^2
GPA	2.32	1	2.32	0.08	0.79	<0.01
Cluster	240.51	1	240.51	6.43	<0.01	0.06
Error	4136.21	145	4136.21			
Anxiety Buying						
Corrected	399.48	6	66.58	1.73	0.12	0.07
Intercept	31.08	1	31.08	0.81	0.37	0.01
Age	0.18	1	0.18	0.01	0.95	0.00
Ethnicity	274.00	1	274.00	7.15	0.01	0.05
Gender	44.81	1	44.81	1.17	0.28	0.01
Education	3.68	1	3.68	0.10	0.76	<0.01
GPA	9.64	1	9.64	0.25	0.62	<0.01
Cluster	65.90	1	65.90	1.72	0.19	0.01
Error	5568.42	145	5568.42			
Compliance with Political Restrictions						
Corrected	645.08	6	107.51	3.82	0.001	0.14
Intercept	58.82	1	58.82	2.09	0.15	0.01
Age	58.27	1	58.27	2.07	0.15	0.01
Ethnicity	242.00	1	242.00	8.60	<0.01	0.06
Gender	304.11	1	304.11	10.80	<0.01	0.07
Education	5.11	1	5.11	0.18	0.67	<0.01
GPA	3.99	1	3.99	0.14	0.71	<0.01
Cluster	117.88	1	117.88	4.19	0.04	0.03
Error	4082.13	145	4082.15			
Solidarity-Based Behavior						
Corrected	386.13	6	63.35	2.29	0.04	0.09
Intercept	0.55	1	0.55	0.02	0.89	0.00
Age	17.01	1	17.01	0.61	0.44	<0.01
Ethnicity	0.56	1	0.56	0.02	0.88	0.00
Gender	105.49	1	105.49	3.76	0.05	0.03
Education	2.29	1	2.29	0.08	0.78	<0.01
GPA	217.50	1	217.50	7.75	0.01	0.05

Dependent variable & source	*SS*	*df*	*MS*	*F*	*Sig.*	ηp^2
Cluster	6.83	1	6.83	0.24	0.62	<0.01
Error	4067.14	145	4067.14			
Adherence to Health Behaviors						
Corrected	102.55	6	17.09	1.76	0.11	0.07
Intercept	2.97	1	2.97	0.31	0.58	<0.01
Age	16.21	1	16.21	1.67	0.20	0.11
Ethnicity	53.50	1	53.50	5.51	0.02	0.04
Gender	30.66	1	30.66	3.16	0.08	0.02
Education	12.52	1	12.52	1.29	0.26	0.01
GPA	3.56	1	3.56	0.37	0.55	<0.01
Cluster	2.54	1	2.54	0.26	0.61	<0.01
Error	1408.33	145	1408.33			
PTSD Symptoms						
Corrected	119.19	6	19.87	1.09	0.37	0.04
Intercept	34.51	1	34.51	1.89	0.17	0.01
Age	15.98	1	15.98	0.88	0.35	0.01
Ethnicity	18.91	1	18.91	1.04	0.31	0.01
Gender	3.31	1	3.31	0.18	0.67	<0.01
Education	0.07	1	0.07	0.00	0.95	0.00
GPA	4.12	1	4.12	0.23	0.55	<0.01
Cluster	38.88	1	38.88	2.13	0.14	0.01
Error	2643.80	145	2643.80			
Sleep Disturbance						
Corrected	212.20	6	355.37	1.88	0.09	0.07
Intercept	15.90	1	15.90	0.85	0.36	0.01
Age	0.58	1	0.58	0.03	0.86	0.00
Ethnicity	9.19	1	9.19	0.50	0.49	<0.01
Gender	24.03	1	24.03	1.28	0.26	0.01
Education	10.05	1	10.05	0.54	0.47	<0.01
GPA	36.03	1	36.01	1.92	0.17	0.01
Cluster	70.64	1	70.64	3.76	0.05	0.03

Dependent variable & source	*SS*	*df*	*MS*	*F*	*Sig.*	ηp^2
Error	2723.64	145	2723.64			
Trauma Symptom Composite						
Corrected	1067.22	6	177.87	1.84	0.09	0.07
Intercept	193.24	1	193.24	1.99	0.16	0.01
Age	44.41	1	44.41	0.46	0.50	<0.01
Ethnicity	63.61	1	63.61	0.66	0.42	0.01
Gender	80.50	1	80.50	0.83	0.36	0.01
Education	20.09	1	20.09	0.21	0.65	<0.01
GPA	146.70	1	146.70	1.51	0.22	0.01
Cluster	338.70	1	338.70	3.50	0.06	0.02
Error	14052.89	145	14052.89			
Substance Use						
Corrected	58.54	6	9.76	1.93	0.08	0.07
Intercept	0.31	1	0.31	0.06	0.81	0.00
Age	2.39	1	2.39	0.47	0.49	<0.01
Ethnicity	4.83	1	4.83	0.96	0.33	0.01
Gender	0.00	1	0.00	0.00	0.99	0.00
Education	0.02	1	0.02	0.00	0.95	0.00
GPA	4.25	1	4.25	0.84	0.36	0.01
Cluster	42.05	1	42.05	8.33	0.01	0.05
Error	732.40	145	732.40			
Health Anxiety						
Corrected	40.89	6	6.82	1.46	0.20	0.06
Intercept	10.09	1	10.09	2.16	0.14	0.02
Age	0.20	1	0.20	0.04	0.84	0.00
Ethnicity	1.88	1	1.88	0.40	0.53	<0.01
Gender	0.01	1	0.01	0.00	0.96	0.00
Education	5.03	1	5.03	1.08	0.30	0.01
GPA	16.85	1	16.85	3.61	0.06	0.02
Cluster	3.44	1	3.44	0.74	0.39	0.01
Error	678.00	145	678.00			

Dependent variable & source	*SS*	*df*	*MS*	*F*	*Sig.*	ηp^2
Stressors Impact						
Corrected	877.66	6	146.28	1.15	0.34	0.05
Intercept	7.72	1	7.72	0.06	0.81	0.00
Age	0.12	1	0.12	0.00	0.98	0.00
Ethnicity	29.31	1	29.31	0.23	0.63	<0.01
Gender	667.83	1	667.83	5.25	0.02	0.04
Education	2.21	1	2.21	0.02	0.90	0.00
GPA	39.63	1	39.63	0.31	0.58	<0.01
Cluster	107.30	1	107.30	0.84	0.36	0.01
Error	18456.22	145	18456.22			
Positive Coping – Keeping Daytime Structure						
Corrected	115.79	6	19.30	2.28	0.04	0.09
Intercept	24.83	1	24.83	2.93	0.09	0.02
Age	5.9E-5	1	5.9E-5	0.00	1.00	0.00
Ethnicity	0.02	1	0.02	0.00	0.96	0.00
Gender	1.25	1	1.25	0.15	0.70	<0.01
Education	2.71	1	2.71	0.32	0.57	<0.01
GPA	21.16	1	21.16	2.50	0.12	0.02
Cluster	61.55	1	61.55	7.27	0.01	0.05
Error	1228.10	145	1228.10			
Positive Coping–Social Contacts						
Corrected	85.17	6	14.19	1.39	0.22	0.05
Intercept	15.58	1	15.58	1.52	0.22	0.01
Age	20.93	1	20.93	2.05	0.15	0.01
Ethnicity	0.14	1	0.14	0.01	0.91	0.00
Gender	19.12	1	19.12	1.87	0.17	0.01
Education	21.38	1	21.38	2.09	0.15	0.01
GPA	0.00	1	0.00	0.00	1.00	0.00
Cluster	29.24	1	29.24	2.86	0.01	0.02
Error	1481.15	145	1481.15			

Dependent variable & source	*SS*	*df*	*MS*	*F*	*Sig.*	ηp^2
Positive Coping–Inner Strength						
Corrected	339.29	6	56.55	3.75	<0.01	0.13
Intercept	24.09	1	24.09	1.60	0.21	0.01
Age	3.82	1	3.82	0.25	0.62	<0.01
Ethnicity	1.13	1	1.13	0.08	0.79	<0.01
Gender	29.01	1	29.01	1.92	0.17	0.01
Education	9.32	1	9.32	0.62	0.43	<0.01
GPA	19.70	1	19.70	1.31	0.26	0.01
Cluster	211.44	1	211.44	14.03	<0.01	0.11
Error	2185.65	145	2185.65			
GAD-7						
Corrected	972.00	6	162.00	6.18	<0.01	0.31
Intercept	12.11	1	12.11	0.46	0.50	<0.01
Age	0.84	1	0.84	0.03	0.86	0.00
Ethnicity	3.40	1	3.40	0.13	0.72	<0.01
Gender	375.30	1	375.30	14.33	<0.01	0.09
Education	0.11	1	0.11	0.00	0.95	0.00
GPA	62.03	1	62.03	2.37	0.13	0.02
Cluster	448.28	1	448.28	17.12	<0.01	0.47
Error	3796.83	145	3796.93			

Note. N = 152; Cluster 1 N = 68; Cluster 2 N = 84. GPA = grade point average; PTSD = post-traumatic stress disorder.

Chapter 4

Discussion

Cluster analysis revealed that more participants identified as distressed than healthy among a sample of undergraduate students attending a religious institution during the COVID-19 pandemic. Individuals that identified as distressed reported higher scores on anxious attachment to God, avoidant attachment to God, and CHLOC. This was expected as these measures were used for clustering.

Results also indicated distressed members reported significant differences in the following characteristics related to COVID-19-related mental health measures: more (a) generalized anxiety, and less (b) engagement in the positive coping strategy of relying on inner strength and (c) engagement in the positive coping strategy of relying on social contacts. They also reported significantly more COVID-19-related beliefs of the following: (a) compliance with hygiene measures is necessary during the COVID-19 pandemic, and (b) compliance with political restrictions are necessary during the COVID-19 pandemic; and reported more of the COVID-19-related behaviors including: (a) experiencing sleep disturbances, and (b) engaging in substance use. These results demonstrate that undergraduate students' attachment style to God and belief in their ability to control their health outcomes were related to their COVID-19-related health compliance beliefs, coping behaviors, and mental health outcomes.

Attachment to God and Attitudes Toward Compliance Behaviors

Specifically, those in the healthy cluster reported lower levels of belief in the necessity of adherence to social distancing requirements and political restrictions. Attachment to God in the context of religious beliefs could be influencing attitudes regarding compliance with COVID-19-related health behaviors. In research regarding religious affiliation and

health behaviors during the pandemic, Perry et al. (2020) found Christian nationalism among the general population was correlated with lower regard for mandated government restrictions and increased engagement in behaviors that opposed political restrictions. Similarly, Adler Jr. et al. (2021) demonstrated that religious nationalism and Evangelical Protestant affiliations among frontline officials predicted lower regard of social distancing and hygiene measures (e.g., masking) and a desire to lift political restrictions, while Catholic affiliation predicted a stronger support for political restrictions, hygiene measures, and social distancing. Lower scores on anxious and avoidant attachment to God in the healthy cluster could be related to a greater sense of security or to less belief in the necessity of complying with COVID-19-related health behaviors of social distancing and political restrictions. Further research is needed to explore how attachment to God among undergraduate students may be related to other religious beliefs, affiliations, and attitudes, and subsequently how these factors may be impacting attitudes toward COVID-19-related compliance behaviors.

Chance Health Locus of Control and Attitudes Toward Compliance Behaviors

Additionally, distressed cluster membership, whose members reported higher scores for CHLOC, was correlated with higher scores for beliefs about compliance with COVID-19-related behaviors. These results contradict prior research in which a higher score for CHLOC is correlated with less beliefs about the necessity of and compliance with health behaviors, particularly for health behaviors related to hypertension (Afsahi & Kachooei, 2020), pap smears (Saei Ghare Naz et al., 2019), and back pain (Harkapaa et al., 1991). The contradiction in this study could be related to the COVID-19 pandemic being a novel experience for undergraduate population and global systems, in which at the time of this study there may have been less health literacy and understanding among undergraduate populations regarding the necessity of compliance with COVID-19-related health behaviors. Overall, this study found that undergraduate students with higher scores in anxious and

avoidance attachment to God and CHLOC demonstrated higher scores for belief in the necessity of complying with COVID-19 behaviors.

Cluster Membership and Anxiety, Sleep, and Coping Strategies

Individuals in the healthy cluster also reported lower scores for generalized anxiety and sleep disturbances during the pandemic, less frequent substance use, and more engagement in positive coping strategies such as keeping a daily routine and relying on inner resources (i.e., leaning on their faith or religious beliefs, acknowledging and accepting the reality of the pandemic, and focusing on personal values, abilities, strengths, and attitudes).

Results suggest those with greater scores on anxious and avoidant attachment to God and CHLOC reported more distress in the form of greater generalized anxiety, sleep disturbances, and maladaptive coping strategies such as alcohol use. Horton et al. (2012) found similar results in which undergraduate students who reported anxious and avoidant attachment to God reported higher levels of drinking, particularly among male students. This is also consistent with research indicating that individuals with lower scores on anxious and avoidant attachment to God engaged in more positive coping strategies and reported lower stress (Parenteau et al., 2019). These results indicate it may be beneficial to assess attachment to God and the belief in one's ability to impact their own health when considering health behaviors, as this is correlated with increased positive coping, reduced generalized anxiety, less sleep disturbances, and less substance use behaviors and could contribute to overall health and well-being.

Ethnicity and Attitudes Toward and Compliance with Health Behaviors

Ethnicity was significantly related to the following COVID-19-related attitudes: (a) believing it is necessary to comply with social distancing requirements, and (b) believing it is necessary to comply with political restrictions; and to the following COVID-19-related behaviors: (a) buying increased amounts of essential products (e.g., food, toilet paper), and

(b) adhering to COVID-19-related hygiene measures, social distancing, and political restrictions. Those who did not identify as White or European American reported increased belief in the need to comply with political restrictions, buying increased essential products, and increased adherence to behavioral guidelines. Current research indicates minorities are disproportionately impacted by COVID-19, and higher rates of mortality are reported in Black, Latinx, and Asian populations compared to White populations (Trammell et al., 2023). Thus, greater concern and behavioral compliance among these groups may be at least partly reality-based. Additionally, research has indicated among undergraduate students those who identify as Black engage in more COVID-19-related health behaviors, Latinx populations experienced more economic impacts, and Asian and Latinx students reported higher scores for COVID-19-related threat and mental health impacts (Trammell et al., 2023). Present results are similar, with White or European Americans reporting less anxiety regarding buying necessary items, less beliefs about the necessity of complying with health behaviors, and less overall adherence to prescribed health behaviors.

Gender, GPA, and Attitudes Toward Compliance Behaviors

Similarly, those who identified as females reported higher scores for belief in the necessity to comply with COVID-19-related health behaviors, belief in the necessity to comply with COVID-19-related political restrictions, belief in engaging is solidarity-based behaviors, anxiety related to COVID-19 stressors (e.g., childcare, finances, etc.), and generalized anxiety. These findings are consistent with research indicating female undergraduate students reported poorer mental health and increased stress during the pandemic (Liu et al., 2022) and engaged in more prevention behaviors compared to males (Lee et al., 2022). Undergraduate female students in this study also reported a greater number of COVID-19-related stressors and greater belief in adhering to health behaviors and compliance behaviors compared to male students.

GPA was significantly positively associated with beliefs in solidarity-based behaviors, with freshman and those with higher GPAs reporting the greatest beliefs that engaging in behaviors to support the community were necessary during the COVID-19 pandemic. Results suggest that novelty to college community and increased academic success are related to beliefs that it is important to engage in solidarity-based behaviors during the pandemic.

Potential Impact of Contextual Factors and Further Considerations

Results of this study suggest that attachment to God and IHLOC or EHLOC among undergraduate students attending a religious university are not related to the following COVID-19-related mental health outcomes: (a) fear of contracting or dying of COVID-19, (b) development of PTSD symptoms, and (c) feeling stressed or burdened by COVID-19-related stressors (e.g., childcare, education changes, worries about health, worries about personal safety and finances, etc.); COVID-19-related attitudes of believing that maintaining hygiene measures (e.g., washing hands) are necessary during the COVID-19 pandemic; and COVID-19-related behaviors of the following: (a) buying increased amounts of essential products (e.g., food, toilet paper), (b) engaging in community activities to bolster health (e.g., donating blood, donating to community services, shopping for others or staying home to protect individuals who are at risk), (c) attendance of medical appointments or excessively washing hands, (d) maintaining social contact during the pandemic, and (e) adhering to COVID-19-related hygiene measures, social distancing, and political restrictions.

Results are inconsistent with research indicating attachment to God is related, whether positive or negative, to perceived stress when faced with additional stressors (Liu & Froese, 2020; Bradshaw et al., 2010; Reiner et al., 2010) or engagement in meaningful social relationships or activities (Stanton & Campbell, 2013).

Results from this study add to the literature regarding the impact of internal and external HLOC on specific health behaviors and beliefs. The literature continues to

demonstrate inconsistent results in findings on the impact of HLOC and health beliefs and behaviors, and further research is needed to determine which factors influence how internal or external HLOC impacts beliefs and engagement in health-related behaviors.

Contextual factors apart from the covariates, HLOC, and attachment to God may be impacting the lack of relationship between cluster membership and COVID-19-related mental health, attitudes, and behaviors. During the pandemic, undergraduate institutions often provided sources of social contact and community, which may indicate access to social interactions remained consistent throughout the pandemic regardless of attachment to God or type of HLOC for certain undergraduate populations. Consistently, a study conducted in Albania among undergraduate students revealed that the intensity and frequency of social interactions among undergraduate students increased during the pandemic (Galle et al., 2021), and a qualitative study among 70 undergraduate students revealed that students utilized emotion-focused coping by seeking emotional support from friends, peers, and family members to ease stressful communication related to COVID-19 educational changes (Apker, 2022).

Continued access to social support may be an area for future research to assess if social engagement may be related to COVID-19-related mental health outcomes and behaviors, specifically trauma-related symptoms, anxiety related to health, and compliance with health behaviors. Further, research has supported the importance of social relationships on mental health and behaviors during the pandemic. A study conducted among undergraduates in Switzerland amid the pandemic demonstrated decreases in social interactions, increased studying alone, and poorer mental health outcomes were associated with increased physical isolation, lack of emotional support, and worries regarding health and relationships (Elmer et al., 2020).

Attitudes Toward Compliance vs Engagement in Health Behaviors

The analysis did not reveal a relationship between healthy or distressed cluster membership and overall heath behaviors, despite the analysis revealing relationships between cluster membership and attitudes regarding compliance with political restrictions and social distancing. Research indicates that attitudes have an inconsistent influence on behaviors (Guyer & Fabrigar, 2015), and habits are often better predictors of behaviors than attitudes or intentions (Ouellette & Wood, 1998; Verplanken & Wood, 2006). This could explain why cluster membership was correlated with COVID-19-related attitudes but was not related to compliance behaviors. Overall, results suggest that scores for HLOC and attachment to God influenced these undergraduates' attitudes toward COVID-19-related compliance behaviors but did not influence their behavioral compliance with COVID-19-related restrictions.

Limitations

This study explored the relationship between cluster membership utilizing attachment to God and HLOC among undergraduate students at a religious university during the COVID-19 pandemic. One limitation is that this study provides correlational relationships and not causal relationships among cluster membership and COVID-19-related mental health outcomes, attitudes, and health behaviors. Additionally, this study utilized a limited population of students at one private religious institution, and respondents were primarily White or European American and identified as female. Results may not generalize well to other populations of undergraduate students, those with varying demographic characteristics, or other populations of emerging adults in the United States. Future studies should be conducted using a broader and more diverse sample of undergraduate students or young adults to ascertain if findings are similar among other populations. An additional limitation is this study was conducted at one point in time during the pandemic, so potential changes in

COVID-19-related attitudes, behaviors, and mental health outcomes and how cluster membership is related to well-being over the long-term were not identified.

Conclusion and Future Directions

Results suggest that undergraduate students attending a private, religious institution with lower scores on anxious and avoidant attachment to God and CHLOC engaged in more positive coping strategies of keeping a daytime structure and relied on inner strengths, reported less sleep disturbances, engaged in less alcohol use, and experienced less generalized anxiety. Although attachment to God and HLOC were related to mental health outcomes and coping strategies, they were not related to COVID-19-related health behaviors. Further research is needed to determine the factors contributing to undergraduate student attitudes toward COVID-19 and factors that contribute to adherence to COVID-19-related health behaviors to ensure general health and well-being. Further research should also be conducted to determine if the results of this study are similar among varying populations of students and if attitudes or behaviors have changed throughout the course of the pandemic.

Attachment to God and HLOC may be beneficial to assess among undergraduate students, as higher scores on IHLOC and lower scores on avoidant or anxious attachment to God were related to improved mental health outcomes and less maladaptive coping strategies amid a global health crisis. Additionally, individuals who identified as White or European American reported less belief in the necessity of COVID-19-related compliance behaviors, engaged less frequently in COVID-19-related health behaviors, and engaged in less anxiety buying behaviors. Participants who identified as female reported greater stress related to COVID-19-related stressors, greater belief in solidarity-based behaviors and COVID-19-related compliance behaviors, and greater generalized anxiety. It is important to consider the impact of gender and ethnicity on long-term mental health impacts of the COVID-19 pandemic, as those with minority ethnic identities and female gender reported greater

negative mental health impacts and subjective stressors during the pandemic. Future research should explore the factors that may contribute to improved mental health outcomes amid global crises and the COVID-19 pandemic among these populations.

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APPENDIX A

CoPaQ Scoring

COVID-19 Contamination Anxiety

I have no means of control over the COVID-19 pandemic.	
I will infect myself with COVID-19.	
Please indicate how likely you think it is that you will be infected with COVID-19.	
people close to me are infected with COVID-19.	
I will infect other people with COVID-19.	
the consequences of the COVID-19 pandemic will greatly affect me personally.	
in case of infection with COVID-19 the consequences for my health will be severe.	
I will die of COVID-19.	
people close to me will die of COVID-19.	
Create sum score	

COVID-19 Compliance with Hygiene Measures

How necessary and useful do you consider the following behaviour since the COVID 19 pandemic?	
a) keeping at least 1.5 metres distance from other people	
b) coughing or sneezing into the crook of your arm or into a handkerchief	
c) not touching mouth, eyes or nose with hands	
d) regular washing of hands	
e) washing hands extensively (for at least 30 seconds)	
f) increased disinfection of hands and objects.	
Create sum score	

COVID-19 Compliance with Social Distancing

How necessary and useful do you consider the following behaviour since the COVID 19 pandemic?
a) cancelling private meetings and family visits
b) cancelling trips to other cities
c) avoiding visits to canteens and restaurants
d) avoiding touching (e.g. shaking hands or hugging) when greeting or saying goodbye to other people
e) moving your work to home office
Create sum score

Anxiety Buying

How necessary and useful do you consider the following behaviour since the COVID 19 pandemic?
a) soap, detergent, cleaning products, washing powder, etc.
b) food (vegetables, lentils, rice, pasta...)
c) water (20 litres per person)
d) toilet paper
e) cash
Create sum score

COVID-19 Compliance with Political Restrictions

How necessary and useful do you consider the following behaviour since the COVID 19 pandemic?

a) temporary closures of kindergartens, schools and universities	
b) temporary border closures	
c) temporary closures of playgrounds	
d) temporary closure of bars, pubs, theatres, cinemas, etc.	
e) temporary curfews	
Create sum score	

COVID-19 Solidarity-Based Behavior

How necessary and useful do you consider the following behaviour since the COVID 19 pandemic?	
a) donating blood	
b) supporting people at risk, such as shopping for them or staying at home to protect people at risk to protect people at risk	
c) supporting people who are experiencing existential hardship due to the current situation	
d) offering help to close friends and family members	
e) getting involved in neighbourhood assistance	
Create sum score	

Adherence to COVID-19 Health Behaviors

To what extent have you adhered to the following COVID-19 pandemic measures over the past two weeks?
a) Hygiene measures
b) Reduction of social contacts

c) Curfews
Create sum score

COVID-19 Post-Traumatic Stress Disorder Symptoms

1. have had upsetting dreams that replay part of the experience of the COVID-19 pandemic or are clearly related to it.	
2. have had powerful images or memories that sometimes come into my mind in which I feel the experience of the COVID-19 pandemic is happening again in the here and now.	
3. have avoided internal reminders of the experience of the COVID-19 pandemic (e.g. thoughts, feeling, or physical sensations).	
4. have avoided external reminders of the experience of the COVID-19 pandemic (e.g. people, places, conversations, objects, activities, or situations).	
5. have been “super-alert”, watchful, or on guard.	
6. have been feeling jumpy or easily startled.	
Create sum score	

COVID-19 Sleep Disturbance

8. have suffered from sleep problems, such as
a) difficulty falling asleep (< 30 minutes)
b) difficulty sleeping through the night
c) early morning awakening
Create sum score

COVID -19 Trauma Composite

1. have had upsetting dreams that replay part of the experience of the COVID-19 pandemic or are clearly related to it.
2. have had powerful images or memories that sometimes come into my mind in which I feel the experience of the COVID-19 pandemic is happening again in the here and now.
3. have avoided internal reminders of the experience of the COVID-19 pandemic (e.g. thoughts, feeling, or physical sensations).
4. have avoided external reminders of the experience of the COVID-19 pandemic (e.g. people, places, conversations, objects, activities, or situations).
5. have been “super-alert”, watchful, or on guard.
6. have been feeling jumpy or easily startled.
7. have suffered from unforeseeable severe anxiety attacks (panic) with physical symptoms (e.g. palpitations, chest pain, dizziness).
8. have suffered from sleep problems, such as
d) difficulty falling asleep (< 30 minutes)
e) difficulty sleeping through the night
f) early morning awakening
9. fearful dreams or nightmares not about the COVID-19 pandemic
10. fearful dreams or nightmares about the COVID-19 pandemic
11. felt or behaved in a more irritable, rageful, angry
Create sum score

COVID-19 Health Anxiety

17. have had the excessive urge to wash and/or disinfect my hands again and again so that I do not become ill from germs or contamination.

18. have had the excessive urge to wash and/or disinfect my hands again and again so that I do not pass on germs or contamination to other people.
19. have visited my GP more often.
20. have avoided visits to my GP.
Create sum score

COVID-19 Stressors Impact

"Because of the COVID-19 pandemic, **over the past 14 days** I have felt stressed or burdened a lot by…"
1. the current pandemic.
2. living in a small accommodation.
3. being in quarantine.
4. childcare.
5. taking over school lessons.
6. the curfew.
7. being in home office.
8. customer service.
9. worries about my health.
10. worries of not being able to get medical care.
11. worries about being sick with COVID-19 when I noticed first signs of symptoms such as fever, dry cough, breathing problems, sore throat, loss of smell/taste, headache or diarrhea.
12. increased conflicts with people close to me.
13. financial worries.

14. uncertainties regarding my job, training place, studies or school.
15. concerns for my own personal safety.
16. concerns for the integrity of family members or friends.
17. fears of what the future will bring, or that I won't be able to cope with everything.
18. thoughts that it would be better to be dead.
Create sum score

COVID-19 Positive Coping – Keeping a Daytime Structure

"**Over the past 14 days** I..."
have maintained a regular daily routine.
have planned the day as detailed as possible.
have integrated sports and exercise into my daily life.
Create sum score

COVID-19 Positive Coping – Social Contacts

"**Over the past 14 days** I..."
have had the opportunity to retreat to a private place.
have reduced any contact with fellow human beings.
have maintained my social contacts (telephone, visits or video chats).
have enjoyed the time together with people close to me.
Create sum score

COVID-19 Positive Coping – Inner Strength

"**Over the past 14 days** I..."

have sought stability in faith and/or religion.	
have focused on my inner strengths, resources, abilities and talents.	
have changed my attitudes about what is really important to me in life.	
have acknowledged and accepted the COVID-19 pandemic as reality.	
Create sum score	

APPENDIX B

JESSICA WILBUR CURRICULUM VITAE

CONTACT INFORMATION

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EDUCATION

PsyD in Clinical Psychology **05/2024**
George Fox University, Newberg, OR
Track: Primary Care Track
APA Accredited Program
Dissertation*: God Attachment, Health Locus of Control, Anxiety, and Health Behaviors During Covid-19 Among College Undergraduates at a Religious College*
Preliminary Defense Completed; Final Defense exp. January 2024

Master of Arts in Clinical Psychology **05/2021**
George Fox University, Newberg, OR

Bachelor of Arts in Psychology **05/2019**
Gonzaga University, Spokane, WA
Academic Advisor: Anna Marie Medina, PhD

Bachelor of Arts in Biology **05/2019**
Gonzaga University, Spokane, WA
Academic Advisor: Nancy Staub, PhD

CLINICAL EXPERIENCE

Internship at Allina Mental Health and Addiction Services **08/2023 – Present**
Mercy Hospital – Unity Campus, Fridley, MN; Allina Health Mental Health at Mercy Hospital – Unity Campus, Fridley, MN; Allina Health Champlain Clinic, Champlain, MN
Director of Clinical Training: Tonya Freeman, PsyD, LP
Supervisors: Sarah Beckham, PsyD, LP (Inpatient Mental Health Unit – 1 hr/week);
Kara Goldmann, PsyD, LP (Inpatient Co-occurring Disorders Unit – 1 hr/week);
Kimberly Szajner, PsyD, LP (Hospital-Based Outpatient Clinic – 1 hr/week);
Heather Crabtree, PhD, LP, ABPP (Group Supervision – 2 hrs per week);
Brian Kovach, PsyD, LP (Hospital-Based Outpatient Clinic – 1 hr/wk)
Ryan Egan, PhD, LP (Primary Care Medical Clinic – 1 hr/wk)

Inpatient Psychology: Mercy Hospital – Unity Campus

- Work at the inpatient mental health unit and inpatient co-occurring disorders unit at the Mercy Hospital – Unity Campus. Clients are above the age of 18 and are of diverse backgrounds, sexual orientation, age, race, religion, and socioeconomic status

from Minnesota and surrounding states. Clients are experiencing acute and persistent mental health diagnoses, complex medical diagnoses, and/or substance use disorders.

- Group psychoeducational therapy is provided for clients on the inpatient mental health units and group process and psychoeducational therapy are provided for clients on the inpatient co-occurring disorders unit. Psychology interns co-facilitate co-morbid mental health and chemical dependency service (MCID) groups. Psychology interns lead groups on the inpatient mental health unit and help create psychoeducational group topics and materials, including client handouts.
- Brief psychotherapy is provided for those above the age of 18 who are experiencing severe and persistent psychological diagnoses and/or substance use disorders who are being treated in the inpatient mental health unit or inpatient co-occurring disorders unit.
- Case conceptualization and therapy is provided in-person from a Cognitive-Behavioral, Dialectical-Behavioral, or Acceptance and Commitment Therapy lens depending on patient diagnosis and presenting concerns.
- Psychologists conduct behavioral chain analyses as indicated for substance use disorders, self-harm, and suicidal ideation or behaviors. Psychologists complete and test crisis stabilization plans for all patients on the inpatient mental health unit to ensure safety and client well-being upon discharge.
- Personality assessments are completed with MCMI-IV and MMPI-2-RF for clients on inpatient mental health unit and inpatient co-occurring disorder unit for diagnostic clarification and treatment planning related to client discharge.
- Duties are conducted within an interdisciplinary team, including psychiatrists, nursing staff, social workers, pharmacists, clinical psychologists, nurse practitioners, substance use counselors, occupational therapists, and recreational therapists. Daily meetings are conducted with nursing staff, psychologists, occupational therapists, and recreational therapists to determine behavioral plans and update team members on relevant aspects of care for individual patients. Daily rounds occur with psychiatrists, nursing staff, social workers, pharmacists, recreational therapists, occupational therapists, and clinical psychologists on the inpatient mental health unit to discuss care plans with patients.
- One hour of supervision is provided on the inpatient mental health unit per week.
- One hour of supervision is provided on the inpatient co-occurring disorders unit per week.
- Rotation concluded in February of 2024.

Outpatient Hospital-Based Clinic: Mercy Hospital – Unity Campus Clinic

- Work at a hospital-based outpatient clinic, the Allina Health Mental Health Mercy Hospital – Unity Campus Clinic. Clients are above the age of 18 and are of diverse backgrounds, sexual orientation, age, race, religion, and socioeconomic status within an urban setting. Clients have a range of psychological diagnoses and presenting concerns, including severe and persistent mental illnesses. Clients in this setting have a high level of mental health acuity and may benefit from longer-term therapy and additional collaboration with members of the treatment team. Treatment team includes psychiatrists, psychologists, RNs, and certified medical assistants.
- Long-term psychotherapy is provided and case conceptualization and therapy are conducted from a second and third wave cognitive behavioral theoretical framework. In-person and telehealth appointments are provided to increase access to menta health services.

- Experiences include providing long-term psychotherapy for adults, completing diagnostic assessments, creating treatment plans for clients based on diagnosis and goals, administering and completing comprehensive assessments and writing psychological reports for adults for diagnostic clarification and treatment recommendations, including ADHD evaluations, and completing feedback visits with clients.
- Coordination of care conducted with psychiatrists, intensive outpatient services, and inpatient services to ensure appropriate level of care based on individual needs.
- Supervisor provides one hour of supervision per week.

Primary Care Psychology: Allina Health Champlain Clinic

- Work in an integrated primary care clinic at the Allina Health Champlain Clinic. Clients are adults of diverse backgrounds, sexual orientation, age, race, religion, and socioeconomic status within an urban setting.
- Brief and long-term psychotherapy is provided for individuals with a variety of psychological diagnoses, medical diagnoses, and presenting concerns.
- Experiences include brief and long-term psychotherapy, completing diagnostic assessments, treatment plans with clients based on diagnosis and treatment goals, administering and completing comprehensive assessment reports for diagnostic clarification and treatment recommendations, and providing feedback to clients.
- Case conceptualization and therapy is provided from a second and third wave cognitive behavioral framework. Both in-person and telehealth services are provided to increase access to patient care.
- Duties are conducted within an interdisciplinary team, including consulting with physicians, medical assistants, nurses, and social workers. Coordination of care is conducted with outpatient therapists, psychiatrists, intensive outpatient services, and inpatient services to ensure appropriate level of care based on individual needs.
- Supervisor provides one hour of supervision per week.
- Rotation began in February 2024.

Practicum III Primary Care Behavioral Health Provider **08/2022 – 05/2023**
Providence Medical Group Bethany Clinic, Newberg, OR
Supervisors: Jesse Chase, PsyD; Meredith Gabriel, MA

- Work as a Behavioral Health Provider for the Providence Bethany Medical Center within the Family Medicine Department. Clients are of diverse backgrounds, sexual orientation, age, race, religion, and socioeconomic status within an urban setting.
- Brief psychotherapy is provided for those who have limited access to therapy services, those with complex medical conditions, and individuals across the lifespan with a variety of psychological disorders and presenting concerns.
- Case conceptualization and therapy is provided from a second and third wave cognitive behavioral theoretical framework. Both in-person and telehealth services are provided to increase patient access to care.
- Duties are conducted within an interdisciplinary team, including consultation with physicians, medical assistants, nurses, case managers, and coordination of care with therapists, psychiatrists, or intensive outpatient services within the community to facilitate holistic care for patients and ensure appropriate level of care based on individual needs.
- Experiences include providing brief individual psychotherapy, same-day visits, and warm hand-offs to facilitate immediate access to behavioral and psychological

services, treatment planning, cognitive functioning assessments using MOCA screeners, and diagnostic clarification evaluations using both clinical and collateral interviews and screeners to develop appropriate treatment plan for relevant diagnoses.
- Attend monthly clinic huddles with medical team to provide consultation, develop treatment plans to ensure holistic and appropriate care, and provide education to medical staff regarding essential duties and roles of behavioral health providers to benefit patient's overall health and wellness.
- Supervisors provide one-hour individual and group supervision once weekly.

Practicum II Primary Care Behavioral Health Provider **08/2021 – 07/2022**
Providence Newberg Medical Center, Newberg, OR
Supervisor: Jeri Turgesen, PsyD, ABPP, MSCP

- Work as a Behavioral Health Provider for the Providence Newberg Medical Center within the Family Medicine and Internal Medicine Departments.
- Clients are of diverse backgrounds, sexual orientation, age, race, religion, and socioeconomic status within a rural setting. Brief psychotherapy is provided for those who have limited access to therapy services, those with complex medical conditions, and individuals across the lifespan with a variety of psychological disorders and presenting concerns.
- Case conceptualization and therapy is provided from a person-centered and second and third wave cognitive behavioral theoretical framework. Both in-person and telehealth services are provided to increase patient access to care.
- Duties are conducted within an interdisciplinary team, including consultation with psychiatrists, physicians, social workers, medical assistants, case managers, and coordination of care with outpatient services or intensive outpatient services within the community to facilitate holistic care for patients and ensure appropriate level of care based on individual needs.
- Providing comprehensive psychological assessments for patient with complex psychological and symptom presentations to ensure appropriate diagnosis and treatment.
- Experiences include providing brief individual psychotherapy, same-day visits, and warm hand-offs to facilitate immediate access to care, administering comprehensive and neuropsychological assessments for further diagnostic clarification and treatment planning, cognitive functioning assessments using MoCA screeners, psychiatric evaluations to ensure appropriate referrals for medication management for those with severe and persistent mental illness, and ADHD evaluations using both clinical and collateral interviews and screeners for diagnostic clarification.
- Skill acquisition includes competency with short-term, solution-focused therapy models, navigating interdisciplinary systems, communicating with a variety of professionals, coordination with community services, refining professional writing skills, and providing interdisciplinary feedback sessions for ADHD and cognitive functioning evaluations and neuropsychological assessments.
- Providing behavioral health care services within an outpatient Chemical Dependency setting. Experiences include individual substance use treatment for those completing medication-assisted treatment, consultation with medical professionals and medical assistants for appropriate next steps in care, and coordination with community services.
- Providing training for medical staff related to trauma-informed care, substance use, and working with Native-American populations.

- Supervisors provide one-hour individual and group supervision once weekly.

Behavioral Health Crisis Consultant **01/2021 – 05/2023**
Providence Newberg Medical Center, Newberg, OR and Willamette Valley Medical Center, McMinnville, OR
Supervisors: Luann Foster, PsyD; Mary Peterson, PhD

- Respond to calls and conduct risk assessments in the emergency departments of two medical centers in a rural setting.
- Use the Columbia-Suicide Severity Rating Scale (C-SSRS) and clinical interviews to assess risk of harm to self or others of individuals in the emergency department.
- Contact collateral sources of information to ensure holistic understanding of the patient's symptom presentation, level of risk, and relevant support systems.
- Consult with and provide recommendations to medical staff regarding the unique needs of the patient.
- Create and implement treatment plan and coordination of services for outpatient discharge, inpatient hospitalization, and respite care for patients to ensure access to appropriate level of care for stabilization.
- Clients are of diverse backgrounds and identity factors. Diagnoses encountered include severe and persistent mental illness, including but not limited to Bipolar Disorders, Autism Spectrum Disorders, Major Depressive Disorder, Schizophrenia Spectrum Disorders, Anxiety Disorders, and Trauma and Stressor Related Disorders.
- Supervisors provide 1.5-hour group supervision once weekly and individual supervision as needed during shifts.

Practicum I Therapist and Assessment Specialist for Rural Child and Adolescent Psychological Services **09/2020 – 06/2021**
Yamhill Carlton School District, Yamhill, Oregon
Supervisors: Elizabeth Hamilton, PhD; Christabel Leonce, PsyD

- Work as a clinical psychologist consultant for the Yamhill Carlton School District in rural Oregon.
- Clients are students of diverse socioeconomic status, sexual orientation, race, and religion. Long-term and brief psychotherapy services are provided for high school students and comprehensive psychological assessment services are conducted with children and adolescents from K-12.
- Case conceptualization and therapy is provided from person-centered and second- and third-wave cognitive behavioral orientations. In-person and tele-health services are provided.
- Work is conducted within an interdisciplinary team, including contacting teachers, administrators, families, and students to determine unique learning, behavioral, emotional, and psychological needs.
- Experiences include providing long-term and brief individual psychotherapy, administering cognitive, achievement, personality, and broad band assessments, writing psychoeducational reports, refining professional writing skills, and providing interdisciplinary feedback sessions to determine if students are eligible for Individualized Education Plans, 504-plans, or other educational services.
- Supervisors provide one-hour individual and group supervision once weekly.

Practicum I Supplemental Therapist for Behavioral Health Clinic **09/2020 – 07/2021**
Behavioral Health Clinic, Newberg, Oregon

Supervisors: Elizabeth Hamilton, PhD; Christabel Leonce, PsyD

- Work as a clinical psychologist for the community Behavioral Health Clinic in a rural environment.
- Clients include children and adolescents of low socioeconomic status with a variety of diagnoses and symptom presentations.
- Case conceptualization and therapy is provided from a person-centered or second-wave cognitive behavioral orientation. Play therapy is utilized with children. In-person and tele-health services are provided.
- Experiences include providing long-term individual psychotherapy and parent training, contacting and scheduling clients, and coordinating care with other specialists in the community based on patient needs.

Pre-Practicum Therapist for Undergraduate Clients **02/2020 – 05/2020**
George Fox University, Newberg, OR
Supervisors: Glena Andrews, PhD; Priscilla Shim, MA

- Practice as a pre-practicum simulated therapist for two volunteer undergraduate clients.
- Conducted intake interviews, developed intake reports, documented sessions, and reviewed recorded session for continued education and improvement in skill.
- Case conceptualization and therapy is conducted from a person-centered theoretical orientation. Each client participates for 10 sessions.
- Weekly supervision (3 hours) provided by supervisors.

RELATED PROFESSIONAL EXPERIENCE

Medical Receptionist for Standard and After-Hours Clinic **08/2015 – 08/2018**
Columbia Medical Associates, Spokane, WA
Worked as a front desk receptionist at multiple Primary Care Physician clinics. Duties performed and skills acquired included:

- Checking-in patients, scheduling appointments and taking phone calls daily.
- Performing as a liaison for confidential messages from patients to medical assistants, physicians, or relevant medical staff.
- Learning the nuances of each primary care office and each physician's unique schedule and preferences.
- Understanding and proficiently navigating electronic medical records.
- Ensuring proper handling and faxing of medical records to maintain confidentiality and effective information transfer.
- Developed good multi-tasking, communication, and social skills.

Student Observer **07/2017**
Kaiser Permanente Riverfront Medical Center, Spokane, WA
Observed and inquired about the daily professional duties of:

- Outpatient psychiatrist, MD - 8 hours
- Clinical psychologist, PhD - 4 hours
    - Specialized in psychological assessment
- Outpatient clinical psychologist, PhD - 4 hours
    - Conducted long-term and brief psychotherapy
- Three licensed clinical social workers (LICSW): 1) in an integrated care setting, 2) in a clinic operations position, and 3) as a Consultant Specialty Services for Behavioral Health Services Administration position – 16 hrs

ASSESSMENT EXPERIENCE

See Appendix B **11/2019 – Present**

EVIDENCE-BASED TREATMENTS

Person-centered Therapy (PCT): Theoretical Orientation
Training Supervision: George Fox University, Rural Child and Adolescent Psychological Services in Yamhill Carlton School District, Behavioral Health Center in Newberg, OR

Cognitive Behavioral Therapy (CBT): Theoretical Orientation
Training Supervision: George Fox University, Rural Child and Adolescent Psychological Services in Yamhill Carlton School District, Behavioral Health Center in Newberg, OR, Providence Newberg Medical Clinic, Providence Bethany Medical Clinic

Trauma-Focused Cognitive Behavioral Therapy (TF-CBT): Evidence-Based Training
Training Supervision: Rural Child and Adolescent Psychological Services in Yamhill Carlton School District

Acceptance and Commitment Therapy (ACT): Theoretical Orientation
Training Supervision: Behavioral Health Center in Newberg, OR, Providence Newberg Medical Clinic, Providence Bethany Medical Clinic

Focused Acceptance and Commitment Therapy (FACT): Evidence-Based Training
Training Supervision: George Fox University; Providence Newberg Medical Clinic, Providence Bethany Medical Clinic

RESEARCH EXPERIENCE

Doctoral Dissertation Research **February 2024**
George Fox University, Newberg, OR
Work with a team of individuals to collaborate on dissertation research. Develop a research design and create and conduct experimental procedures.
Dissertation Leader: Rodger Bufford, PhD
Committee Members: Michael Vogel, PsyD; Amber Nelson, PsyD
Dissertation Title: *The relationship between attachment to God, health locus of control, and covid-19 related health behaviors and mental health outcomes among religious undergraduate students*

Research Vertical Team Member **02/2020 – 04/2023**
George Fox University, Newberg, OR
Work with a team of individuals to collaborate on dissertation research and other research projects.
Current Dissertation Leader: Rodger Bufford, PhD
Past Dissertation Leaders: Mary Peterson, PhD; Marie-Christine Goodworth, PhD

Rural Child and Adolescent Research Member **06/2020 – 04/2023**

George Fox University, Newberg, OR
Principal Investigator: Elizabeth Hamilton, PhD
Cleaned and analyzed archival assessment datasets within three rural school districts, completed IRB submissions for research projects, engaged in writing and creation of professional presentations, and collaborated with other research team members.

Research Assistant **01/2020 – 05/2020**
George Fox University, Newberg, OR
Volunteered as a research assistant for a student completing their dissertation. Performed assessments and aided with scoring. Learned and performed the following DKEFS subscales: Trails, Color-Word, and Tower.

Research Assistant for Washington State University's Initiative for Research and Education to Advance Community Health (IREACH) Department **09/2017 – 07/2019**
Washington State University, Spokane, WA
Performed duties listed below for five unique research experiments. The primary studies evaluated the effectiveness of contingency management for decreasing alcohol use in individuals with substance use disorders who were also diagnosed with a severe mental health disorder.

- Received certification in Human Research Participants Training
- Helped recruit and schedule participants, conducted literature reviews, and collected, organized, and reviewed data. Became proficient in using the online data storage system, REDcap.
- Ran urinalysis using the Indiko machine and provided trainings for colleagues on use and maintenance. Helped maintain and update the Indiko Instruction Manual.
- Taught other Research Assistants about relevant responsibilities and created/updated the Research Assistant Manual.
- Managed weekly schedules, meetings, and data collection for a team of colleagues. Became proficient at navigating and communicating with Basecamp, a secure electronic system for communication and information storage.

Research Coordinator **01/2017 – 05/2019**
Gonzaga University, Spokane, WA
Participation included:

- Designing a research study, performing a literature review, writing application for the Institutional Review Board (IRB), recruiting participants using Gonzaga's SONA system, and collecting and analyzing data using Excel and SPSS.
- Writing a concise handout summarizing the literature review, research question, hypotheses, methods, statistical results, and applicability and importance of research.
- Creating a poster and a PowerPoint presentation to effectively present our findings to an audience.
- Presenting results at two conferences:
    - The Association of Psychological Science (APS) Convention in Washington D.C. -2019
    - Spokane Inter-Collegiate Research Conference (SIRC) at Gonzaga University in Spokane, Washington - 2019

PUBLICATIONS

Bufford, R. K., Cantley, J., Hallford, J., Vega, Y., & **Wilbur, J.** (2022). Spiritual Well-Being Scale (SWBS): Happiness and Well-Being. In F. Irtelli & F. Gabrielli (Eds.), *Happiness - Biopsychosocial and Anthropological Perspectives.* Intech Open.

PROFESSIONAL PRESENTATIONS

George Fox University Graduate Students of Clinical Psychology (Wilbur, J., Hogan, L., Peterson K., Fritz, M., Powers, S.) (2022, September). *Trauma-Informed Treatment of Opioid Use Disorders in Racial Minorities.* Presented within Providence Medical Group as part of the HRSA grant.

Wilbur, J., Larson, K., Young, D., & Hamilton, E. (2022, August). *Relationship between Roberts-2 Responses and Cognitive Domains*. Presented at American Psychological Association 2022 Annual Conference.

Young, D., Larson, K., **Wilbur, J.**, & Hamilton, E. (2022, August). *An Exploratory Examination of Correlations between the BASC-3 and Roberts-2 Scales across Multiple Raters*. Presented at the American Psychological Association 2022 Annual Conference.

Hanks, B., Bufford, R., Young, D., & **Wilbur, J**. (2022, March). *Political polarization: Organized religion, spiritual practices, beliefs, and other factors*. Poster presented at the Christian Association for Psychological Studies 2022 Annual Conference.

Larson, K., **Wilbur, J.**, Hamilton, E. (2021, November). *Parent Responses on the Behavioral Rating Inventory of Executive Functions -2 are more Reflective of Child Cognitive Functioning than Teacher Responses*. Presentation at National Association of Neuroscience 2021 Virtual Conference.

Hamilton, E., Leonce, C., **Wilbur, J.**, Carlson, K., Franks, D., Larson, K., Van Leuven, T., Wingerter, R., & (2021, May). *Trauma-Informed Approach to Working with Youth in Rural School Districts.* Presented at the Yamhill Carlton Elementary School to the elementary school teachers as part of a trauma training.

Hamilton, E., Leonce, C., **Wilbur, J.**, Larson, K., Wingerter, R., Van Leuven, T., Carlson, K., & Franks, K. (2021, April). *Trauma-Informed Approach to Working with Youth in Rural School Districts.* Presented at the Yamhill Carlton Intermediate School to the middle school and high school teachers as part of a trauma training.

Stoeber, A., & **George Fox University Graduate Students of Clinical Psychology** (November and December 2020, and January 2021). *Transforming Education by Targeting Childhood Adversity through Resilience Building & Compassionate Connection*. Presented at the Chemawa Indian School.

Wilbur, J., & Van Leuven, T. (2020, November and December). *Historical Trauma in Native American Communities*. PowerPoint slides presented two times at the Chemawa Indian School as part of a trauma training *Transforming Education by Targeting Childhood Adversity through Resilience Building & Compassionate Connection* conducted by Amy Stoeber, PhD.

Ramirez, S., Spencer, C., Drake, G., **Wilbur, J.**, & Peterson, M. (2020, August). *Longitudinal Multi-disciplinary Chronic Pain Treatment in Rural Behavioral Health*. Poster presented at the American Psychological Association 2020 Virtual Conference.

Wilbur, J. K., & Bernert, C. M. (2018, December; 2019, April). *Perceived parental control on reckless alcohol use in college students*. Paper and PowerPoint presentation conducted at the Winter Symposium at Gonzaga University in Spokane, Washington and the Spokane Inter-Collegiate Research Conference (SIRC) at Gonzaga University in Spokane, Washington.

Wilbur, J. K., & Bernert, C.M. (2019, May). *Perceived parental control on reckless alcohol use in college students*. Poster presented at the Association for Psychological Science (APS) Convention in Washington, D.C.

TEACHING EXPERIENCE

Teaching Assistant for PSYD 552 – Cognitive Behavioral Therapy 08/2021 – 12/2021

George Fox University, Newberg, OR
Duties include:

- Establishing weekly office hours and times for in-person oral assignment completion. This includes in-vivo grading of simulated therapy experiences with the triple column exercise and defining the essential components of Cognitive Behavioral Therapy.
- Provide personalized feedback regarding student demonstration of therapeutic techniques in both written and in-person assignments.
- Attending and collaborating in monthly TA meetings to discuss student progress, rubrics, consistent standards of grading, and assignment descriptions.
- Email students in a timely and professional manner.
- Being proficient in course material and application and utilization of first, second, and third wave CBT in clinical practice.
- Having in-depth knowledge of CBT techniques to answer questions based on students' unique learning needs, developing remediation plans, and providing additional resources based on students' level of comprehension of course materials.

Teaching Assistant for PSYD 517 – Ethics for Psychologists 08/2020 – 01/2021
George Fox University, Newberg, OR
Duties included:

- Establishing weekly office hours to provide time for questions and personalized feedback.
- Grading weekly assignments, the midterm, and the final exam.
- Attending and collaborating in once-weekly TA meetings to discuss student progress, rubrics, consistent standards of grading, and answer guides.
- Email students in a timely and professional manner.
- Being proficient with course materials and ethical standards of psychologists at federal, state, administrative, and organizational levels to answer questions based on students' unique learning needs and level of understanding.

Teaching Assistant/Tutoring and Proctoring 09/2017 – 05/2019
Gonzaga University, Spokane, WA

Courses: Introduction to Psychology; Scientific Principles in Psychology
Duties included:

- Establishing set office hours for students to provide time for questions and personalized feedback.
- Grading weekly quizzes.
- Being proficient in the material and devising multiple teaching strategies to assist students with unique learning abilities and obstacles.

PROFESSIONAL TRAININGS

Health Psychology Consultation Group **08/2023 - Present**
Allina Health Mental Health and Addiction Services, Fridley, MN
Once monthly meeting with a consultation team of psychologists to discuss relevant clinical work and cases related to health psychology to promote development of clinical skills.

Trauma Consultation Group **08/2023 - Present**
Allina Health Mental Health and Addiction Services, Fridley, MN
Once monthly meeting with a consultation team of psychologists to discuss relevant clinical work and cases related to treating trauma-related diagnosis in clinical practice to promote development of clinical skills.

Journal Club **08/2023 – Present**
Allina Health Mental Health and Addiction Services, Fridley, MN
Once monthly meeting with psychology trainees at the internship and post-doctoral level to discuss evidence-based practices and up-to-date clinical research to promote clinical knowledge and skills.
Topics: *A.I. in Psychological Practice, Culturally Responsive Care for Diverse Populations in Clinical Practice, Mindfulness and Meditation in Clinical Practice*

Clinical Strategies for Whole Person Care: Integrative Medicine for You and Your Patients **12/2023**
Allina Health Penny George Institute for Health and Healing, MN
Nicholas Dougherty, LAC; Diane Dunlevy, RN, BA, NBC-HWC;
Erin Erickson, DNP; Gail Ericson, MS, PT, CPT; Janelle Fuchs, MS, RDN, LDN;
Susan Masemer, MS; Kathleen Otremba, DNP; Blakey Peterson, MA, NBC-HWC;
Laura Sandquist, DNP; Asma Siddiqi, MD

Examining Healthcare Bias through Clinician Communication **11/2023**
Allina Health Mental Health and Addiction Services, Fridley, MN
Monica E. Peek MD, MPH

Sleep and Circadian Prosses – Identifying Disruptions and Resilience Strategies **11/2023**
Allina Health Mental Health and Addiction Services, Fridley, MN
Michael V. DeSanctis, PhD, LP, ABPP, DBSM

Self-Care: The Process of Caring for Yourself Before, During, and After the Work We Do **11/2023**
Allina Health Mental Health and Addiction Services, Fridley, MN
Heather Crabtree, PhD, LP, ABPP

The 5 S's: A Conceptual Framework of Perinatal Mental Health **11/2023**
Allina Health Mental Health and Addiction Services, Fridley, MN
Katie Thorsness, MD

MAPPIC Fall Training Workshop: Supervision in Psychological Practice **10/2023**
University of Minnesota, Minneapolis, MN
Signe Nestingen, PsyD, LP, LMFT

Motivational Interviewing Training **10/2023**
Allina Health Mental Health and Addiction Services, Fridley, MN
Shannon Woulfe, PhD, LP

Suicide-Focused Assessment and Treatment: An Update for Professionals **10/2023**
Allina Health Mental Health and Addiction Services, Fridley, MN
Alan Schatzberg, MD; Douglas Jacobs, MD; Caren Noel Sulzer, MD; Gillian Murphy, PhD; William Bunney, MD; Dost Ongur, MD, PhD; Michele Berk, PhD; Donna Vanderpool, MBA, JD; David Jobes, PhD, ABPP

The State of Science and Fetal Alcohol Spectrum Disorder **10/2023**
Allina Health Mental Health and Addiction Services, Fridley, MN
Jeffery Wozniak, PhD, LP

Mandated Reporting in Psychological Practice **09/2023**
Allina Health Mental Health and Addiction Services, Fridley, MN
Tonya Freeman, PsyD, LP

Outpatient Suicide Risk and Safety Planning **09/2023**
Allina Health Mental Health and Addiction Services, Fridley, MN
Jaime Zander, PsyD

Providing Ethical Care to Transgender and Gender Diverse Youth **09/2023**
Allina Health Mental Health and Addiction Services, Fridley, MN
Katy Miller, MD, FAAP

Introduction to the TOVA Report **09/2023**
Allina Health Mental Health and Addiction Services, Fridley, MN
Christopher Holder, MA, LMHC

Treating Trauma: Using Best Practices **08/2023**
Allina Health Mental Health and Addiction Services, Fridley, MN
Sarah Beckham, PsyD, LP

Food for Health and Healing **08/2023**
Allina Health Mental Health and Addiction Services, Fridley, MN
Janelle Fuchs, LDN, RDN

Clinical Team Member **08/2019 – 05/2023**
George Fox University, Newberg, OR
Current Supervisor: Daniel Rodriguez, PsyD

Past supervisors: Kenneth Logan, PsyD (2021-2022); Luann Foster, PsyD (2020-2021); Celeste Jones, PsyD, ABPP (2019-2020)
Weekly meetings with a consultation team of students and a licensed psychologist to discuss relevant clinical work and cases to promote development and refinement of clinical skills.

American Psychological Association 2022 Annual Convention **08/2022**

Intractable Conflict in Families and Society: What Do We Know About Healing the Rifts **02/2022**
George Fox University, Newberg, OR
Wendy Bourg, PhD

May it Be Well with Your Soul: Anti-Racism, Spiritual Freedom, and Wellness **11/2021**
George Fox University
Brandy Liebscher, PsyD, & Pastor Liz Viaz

Erotic Transcendence: Integrating Faith with What's New in Sex Research **10/2021**
George Fox University, Newberg, OR
Elisabeth Esmiol Wilson, PhD

American Psychological Association 2021 Virtual Convention **08/2021**

Gender Diverse Clients: Therapy and Intervention Readiness Assessments **03/2021**
George Fox University, Newberg, Oregon
Chloe Ackerman, PsyD

Saying 'Yes' to Your Embodied Life: An Invitation for Psychotherapists **02/2021**
George Fox University, Newberg, OR
Janelle Kwee, PsyD

Diverse Students: Engaging in Difficult Dialogue for Understanding Myself and Diverse Others **01/2021**
Panel of Diverse Faculty Webinar
Dr. Vickey Maclin, Dr. Amber Nelson, Dr. Shon Smith, Dr. Elisabeth Suarez, Dr. Sonja Sutherland

Complex PTSD: Advanced Case Conceptualization, Assessment, and Treatment Approaches in Trauma Populations **11/2020**
George Fox University, Newberg, OR
Jason Steward, PhD

Examining the Role of Neuropsychology within Pediatric Cancer Setting **10/2020**
George Fox University, Newberg, OR
Justin Lee, PhD

Focused Acceptance and Commitment Therapy (FACT) Training **08/2018**
George Fox University, Newberg, OR
Kirk D. Strosahl, PhD

Psychological Tele-Assessment During COVID-19: Ethical and Practical Considerations **04/2020**
American Psychological Association Zoom Continuing Education
A. Jordan Wright, PhD, ABAP

Mitigating the Effects of ACES & Transforming Primary Care through Resilience Building & Compassionate Connection **02/2020**
George Fox University, Newberg, OR
Amy Stoeber, PhD

Intercultural Communication and Cultural Intelligence (CQ) **10/2019**
George Fox University, Newberg, OR
Cheryl Forster, PsyD

Promoting Forgiveness in Therapeutic Practice **09/2019**
George Fox University, Newberg, OR
Everette L. Worthington, Jr., PhD

ADVACED CLINICAL TRAINING & CERTIFICATES

Crisis Consultation and Trauma Treatment In Clinical Practice Certificate **12/2022**
Instructor: Kenneth Logan, PsyD
In-person course including weekly lectures, case presentations, and 20 hours of clinical supervision.

Trauma-Focused Cognitive Behavioral Therapy **04/2020**
Web-based Training: 10 hours of CE
Weekly 6-month collaborative online training with certified TF-CBT therapist.

SERVICE AND INVOLVEMENT

Member, Oregon Psychological Association Student Committee **10/2021 – 06/2023**
George Fox University, Newberg, OR
Involvement includes:

- Attending monthly meetings to discuss relevant topics in psychological graduate training in Oregon, including advocacy for student training goals/needs, outreach to students across graduate programs in Oregon, and coordinating research opportunities.

Leader, Health Psychology SIG **12/2020 – 05/2023**
George Fox University, Newberg, OR
Leadership responsibilities include:

- Coordinating and conducting one event for students each semester for further education and understanding of health psychology related topics.
- Communicating effectively with other professionals, leaders, faculty, students, and guest speakers to coordinate the events.
- Creating and disseminating presentation details to students and faculty.
- Meeting with other leaders to collaboratively discuss ideas, coordinate responsibilities, and execute plans.
- Determining the educational needs and goals of George Fox University graduate students interested in health psychology to foster greater understanding and practical application of knowledge related to health psychology.

Member, Student and Wellness Committee **09/2019 – 05/2021**
George Fox University, Newberg, OR
Involvement includes:

- Cleaning and tidying the community space shared by PsyD graduate students.
- Restocking snacks and drinks monthly.
- Creating a list of needed or requested items to purchase at the end of the month.
- Ensuring that the community space is well stocked, aesthetically pleasing, and clean to promote a comfortable space for graduate students.

Member, JED Campus Team **03/2016 – 05/2019**
Gonzaga University, Spokane, WA
Participation includes:

- Promoting and hosting discussions designed to facilitate mental health awareness on Gonzaga University's campus.
- Creating/organizing events to promote increased mental health awareness and student well-being.

PROGRAM DEVELOPMENT & EVALUATION

Program Consultation and Evaluation **10/2022**
George Fox University, Newberg, OR
Evaluation of financial transparency within a graduate student program and student's understanding of financial resources at their institution. Consulted with the director the graduate school program, developed and disseminated survey to student population, and plan to provide results and findings to the director of the graduate school program and relevant faculty.

AWARDS AND HONORS

Psi Chi **2017 – Present**

National Society of Collegiate Scholars **2015 – 2019**

Gonzaga University Trustee Scholarship **2015 – 2019**

Gonzaga University President's List **Fall 2015, 2016, Spring 2018**

Gonzaga University Dean's List **Spring 2016, 2017**

PROFESSIONAL MEMBERSHIPS

Oregon Psychological Association **2021 – Present**

American Psychological Association **2019 – Present**

Association for Psychological Science **2018 – Present**

REFERENCES

Jeri Turgesen, PsyD, ABPP, MSCP
Clinical Psychologist
Relationship: Former practicum supervisor
Contact: jturgesen@providence.org

Elizabeth Hamilton, PhD
Clinical Psychologist
Former Professor of Psychology, George Fox University
Relationship: Former practicum supervisor
Contact: ehamilton@georgefox.edu

Mary Peterson, PhD, ABPP/CL
Dean of Behavioral Health Sciences
Professor of Psychology, George Fox University
Relationship: Former practicum supervisor
Contact: mpeterso@georgefox.edu

Rodger Bufford, PhD
Professor of Psychology, George Fox University
Relationship: Dissertation Chair
Contact: rbufford@georgefox.edu

Appendix B

COGNITIVE/MEMORY/EXECUTIVE FUNCTIONING/ACHIEVEMENT ASSESSMENTS

Boston Naming Test (BNT)
Delis-Kaplan Executive Function System (D-KEFS)
California Verbal Learning Test – 3rd Edition (CVLT-3)
Conners Continuous Performance Test – 3rd Edition (CPT-III)
Controlled Oral Word Association Test (COWAT)
Grey Oral Reading Test (GORT)
Jordan Left-Right Reversal Test (JLRRT)
NEPSY-II
Rey Complex Figure Test (RCFT)
Test of Memory Malingering (TOMM)
Tests of Premorbid Functioning (ToPF)
Test of Variables of Attention (TOVA)
Weschler Adult Intelligence Scale – 4th Edition (WAIS-IV)
Weschler Individual Achievement Test – 4th Edition (WIAT-IV)
Weschler Intelligence Scale for Children – 5th Edition (WISC-V)
Weschler Memory Scale – 4th Edition (WMS-IV)
Weschler Nonverbal Scale of Ability (WNV)
Wide Range Achievement Test (WRAT)
Wide Range Intelligence Test (WRIT)
Woodcock Johnson Tests of Achievement – 4th Edition (WJ-IV ACH)
Woodcock Johnson Tests of Cognitive Abilities – 4th Edition (WJ-IV COG)

PERSONALITY/BROADBAND ASSESSMENTS

Adaptive Behavioral Assessment System – 3rd Edition (ABAS-3)
Behavior Assessment System for Children – 3rd Edition (BASC-3)
Behavior Rating Inventory of Executive Function – 2nd Edition (BRIEF-2)
Child Bipolar Questionnaire (CBQ)
Minnesota Multiphasic Personality Inventory – 2nd Edition (MMPI-2)
Minnesota Multiphasic Personality Inventory – 2nd Edition, Restructured Form (MMPI-2-RF)
Millon Adolescent Clinical Inventory – 2nd Edition (MACI-II)
Millon Clinical Multiaxial Inventory – 4th Edition (MCMI-IV)
Personality Assessment Inventory (PAI)
Trauma Symptom Checklist for Children (TSCC)

PROJECTIVE ASSESSMENTS

Roberts Apperception Test – 2nd Edition (Roberts-2)

SCREENING TOOLS

Alcohol Use Disorders Identification Test (AUDIT)
Autism Spectrum Rating Scale (ASRS)
Conners Adult ADHD Rating Scale (CAARS)
Columbia-Suicide Severity Rating Scale (C-SSRS)

Generalized Anxiety Disorder 7 (GAD-7)
Life Events Checklist (LEC)
Patient Health Questionnaire - Extended (PHQ - Extended)
Patient Health Questionnaire – 9 (PHQ-9)
Pediatric Symptom Checklist (PSC)
PTSD Checklist for DSM-5 (PCL-5)
Mini Mental Status Exam (MMSE)
Montreal Cognitive Assessment (MoCA)
Outcome Rating Scale (ORS)
Session Rating Scale (SRS)
Vanderbilt ADHD Diagnostic Rating Scale (VADRS)
Weiss Functional Impairment Rating Scale (WFIRS)
Wender Utah Rating Scale (WURS)