

**Personal and University Online Social Support helping students during the COVID-19
pandemic: A moderation analysis.**

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Abstract

Social supports can provide physical and/or emotional support, in which the student receiving the support will benefit from it. Using the stressor-strain model and the Negativity Buffer Theory I answer: does perceived online social support (university offered and personal use) moderate the relationship between financial and illness threat (stressors) and well-being and anxiety (strains) specifically in the context of the COVID-19 pandemic? Using survey methodology, 167 participants were asked about perceived social support, stressors, anxiety, and well-being. Results indicate personal and university online social support moderated the relationship between perceived financial threat and well-being, however not in the way hypothesized. These results were replicated with anxiety. Results also showed that online social support (personal and university-provided) did not moderate the relationships between illness threat and both well-being and anxiety. I discuss potential recommendations to universities regarding what resources students are finding useful and where additional efforts could be beneficial.

Key Words: social support; perceived social support; online social support; well-being; stress; COVID-19; university students; negativity buffer

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Introduction

Social support has been defined as a dyadic exchange where one person attempts to offer physical and/or emotional support and the other person (receiver) benefits from such efforts (Dunkel-Schetter & Skokan, 1985). In traditional university settings, students gain access to social support via things like clubs/teams, social gatherings, counselling services. Social support has been reliably shown to have positive effects on people (Cohen & Wills, 1985), including students (Wilcox et al., 2005). However, when the COVID-19 began, many of these options were either no longer available or were moved to online formats (Savarese et al., 2020). In response to the pandemic, many universities had to act quickly to move all aspects of university life and programming to an online format (Supriyanto et al., 2020), including students access to social support. As such, many schools have not yet assessed whether the move to online social supports has affected students. With restricted access to in-person social support due to the pandemic, it is important to study whether online social support is providing the same benefits that in-person social support has been shown to have.

Data and research on the COVID-19 global pandemic have primarily focused on frontline and healthcare workers as they are arguably the most affected by the pandemic. More specifically, research has focused on mental health (Hall, 2020; Greenberg, Docherty, Gnanapragasam, & Wesely, 2020; Spoorthy, Pratapa & Mahant, 2020), psychosocial support (Tomlin et al., 2020) and resiliency strategies of healthcare workers (Heath et al., 2020). Turning our attention to research in the university/college setting with teacher or student participants, most of the current COVID-19 research focuses on the effectiveness of moving classroom teaching online (Nambiar, 2020) and how that has affected teaching (Adnan, 2020) and student

performance (Yen, 2020). Overall, the focus of the pandemic research related to students has been on how universities teach and student outcomes in terms of their learning. However, how can one expect favourable student outcomes if many students are feeling anxious, tired, and psychological and physical discomfort in response to being in lockdown due to the COVID-19 pandemic (Savarese et al., 2020)?

Previous work demonstrates that in 'normal' times, post-secondary students are likely to experience stressors and subsequent strain (i.e., lowered well-being, increased mental challenges; Denovan & MacaSkill, 2013; Denovan, 2017). Looking at studies that examine student's mental health in the context of the pandemic, Hamza et al., (2020) measured student mental health pre and post COVID and results indicate a decline in mental health over the last year. Further, this study demonstrated these effects were stronger for students who did not have pre-existing mental health concerns (Hamza et al., 2020). The main takeaway was the need to not only continue to help students with pre-existing mental health concerns but also early interventions to help prevent students from developing mental health concerns (Hamza et al., 2020); one of these early interventions could be students' access to online social support. While the provision of effective online social support could be an effective intervention to assist students, there is a gap in research focused on student social support and on how well students' needs are being met in this new online environment.

While studies assessing the effects of the COVID-19 pandemic and social support are relatively new, there is a great deal of previous research on social support and the use of online support services such as social networking sites. Previous studies have shown that students who reported higher levels of perceived social support from friends via Facebook also reported higher well-being (Gilmour et al, 2020; Gray et al., 2013). Studies have also highlighted the fact that

online social support from friends and family can buffer the relationship between various stressors and well-being (Cole et al., 2017; Mazzoni, Baiocco, Cannata & Dimas, 2015). For example, in a survey study with 231 undergraduate students, Cole et al., (2017) was able to show that online social support weakened the relationship between victimization (stressor) and depressive thoughts and feelings (strain). In other words, social support from family and friends has been shown to reduce the amount of strain experienced when dealing with stressors. However, one question that has not been answered yet is whether this relationship will be the same when students are receiving online social support from their universities?

Based on theory and previous empirical work, students are experiencing strains (i.e., lower mental health, anxiety, etc.) due to perceived stress and recent stressful experiences during the pandemic (Hamza et al., 2020). Also due to the pandemic, many universities have had to move activities/social supports (not just academics) online (Ali, 2020). Lastly, social support is a resource that helps people handle stressors to reduce strains. However, there has been very little research on how effective universities and colleges' efforts to move social support online for students have been or whether there are additional ways universities can assist students in terms of online social support (Zhuo et al., 2021). Drawing on theory such as the Negativity Buffer Theory (Cohen & Wills, 1985) (defined later on in the paper), I investigate whether online activities/social supports been effective in helping students deal with stressors to reduce strains associated with the pandemic. The stressors that have been chosen for the current study are financial threat and illness threat. These were chosen as they both relate specifically to the COVID-19 pandemic, the worst pandemic in roughly 100 years (Tang & Wang, 2020). Many students have been reported to be concerned with living expenses and tuition costs (Tsurugano et al., 2021). Further, studies have also shown that many people are worried about contracting the

disease (Roy et al., 2020). Many individuals have also reported experiencing increased anxiety and decreased well-being (Hamza et al., 2020) which are the strains investigated in the current study. Moreover, these outcomes are important to study as past research suggests many students experience anxiety and a decrease in their overall well-being regardless of the COVID-19 pandemic (Wilcox et al., 2005). More details on each of the variables are provided in subsequent sections.

More specifically, I investigate whether online social support will predict a change in the relationship between stressors that students are experiencing and resultant strains. Further, I am interested in which online social supports (both university and personal) have been the most helpful for students. Investigating these questions has the potential to provide recommendations to universities regarding resources students are finding useful and where additional efforts could be beneficial. To address the research questions, a survey methodology was used. In the subsequent sections, I review the literature on student stressors, strains and social support leading to the hypotheses.

Applying the Stressor-Strain Model to Student Well-being

Stress has been defined as a perception of discrepancy between demands and resources or a perception that one's ability to cope is less than the pressures that one is experiencing (Lazarus & Folkman, 1984). Thoits (1995) defined *stressors* as internal, social, or environmental demands that trigger changes in behaviour. Life events, chronic strains and daily hassles are three types of stressors that have been identified (Thoits, 1995). Strains are defined as responses to experiencing stressors, which can manifest behaviourally, psychologically or physically (Westman, 2001).

The stressor-strain model explains how various conditions (stressors) are associated with outcomes (strains) for individuals (Richardson et al., 2008). How one perceives the situation and available resources for handling it (i.e., social support), may determine how the situation or stressor affects individuals. In other words, perception of the stressor, and the resources to address it, may change the relationship between particular stressors and strains (Russell-Pinson & Harris, 2019). Typically, the more stressors that are dealt with in a given period the more strain that will be experienced. The terms stress and stressors are used in very similar ways in the literature, even though conceptually they are different. Some studies examine stress and the relationship between stress and well-being/strains (Moore et al., 2021; Watson et al., 2015), while other studies look at specific stressors and the relationship between these specific conditions/stressors and strains (Extremera & Rey, 2015; LePine et al., 2007). Both stress and stressors in these cases are used as predictor variables; as such I will draw from this type of research to support the current study hypotheses. In the current study, I examine specific stressors and the relationship between these and outcomes/strains. More specifically, I measure financial threat and illness threat as stressors and anxiety and lowered well-being as strains.

The global COVID-19 pandemic can be classified as a life event, defined as acute changes involving large behavioural modifications in a relatively short period of time (Wakeel & Njoku, 2021). Due to these large changes, students may be experiencing stressors of the potential threat of financial loss and illness in the face of the COVID-19 pandemic (Watson et al., 2015). With multiple city-wide lockdowns, many students have lost working opportunities, and many students are concerned with living expenses and tuition costs (Tsurugano et al., 2021). Financial threat can be defined as fear and uncertainty regarding one's current and future financial security (Alcover et al., 2020). Financial stress has been reported as a major stressor for students. Fisher

et al., (2017) reported that 80% of students are responsible for some or all tuition and living costs. It has been shown that student financial stress can have large negative impacts on well-being, such that students who reported financial stress subsequently reported more depressed mood and lower life satisfaction (Robb, 2017; Watson et al., 2015). More recently, Mohd Nasir et al., (2021) conducted a study in Malaysia with 606 post-graduate students via an online survey through google forms. The study demonstrated that the majority of students are experiencing financial threat in the context of the COVID-19 pandemic (Mohd Nasir et al., 2021). In addition to financial threat, the current global pandemic introduces another relevant stressor.

In response to the COVID-19 pandemic specifically, there is the added stressor of potentially contracting the virus and transmitting it to others. Roy et al., (2020), in a survey study with 662 Indian adults, found that 80% of participants were preoccupied with feelings about COVID-19. Studies have shown this fear increases for adults when it coincides with isolation (Kowalczyk & Gębski, 2021). Based on this research, illness threat (or fear of COVID-19) will be examined as a second relevant stressor for students.

Strains include common ways of responding to various stressors. Some examples include anxiety, anger, depression, and lowered well-being (Richardson et al., 2008). There has been support from the literature for stressors being associated with decreased mental health such that when more stress is reported decreased mental health (Durand-Bush et al., 2015) and increased anxiety (Kumari & Jain, 2014) have also been reported.

Strains are most often conceptualized as the addition of something negative (i.e., depression or anxiety) but can also be the removal (or decrease) of something positive (i.e., well-being) (LePine et al., 2007; Mazzola & Disselhorst, 2019; Tang, 2014; Widmer et al., 2012). For example, Widmer et al, (2012), in a study of 162 employee participants, measured well-being

and distinguished between positive well-being as a measure of positive attitudes towards life and negative well-being as a measure of strain. In a systematic literature review on the stressor-strain model conducted by Tang (2014), one measure of strain discussed and accepted was worker well-being. For the current study, I examine two strains: a decrease in well-being and an increase in anxiety.

As a single, concrete definition of well-being does not exist in the literature, there is also not one agreed-upon scale for measurement (Ong, 2021). Well-being has differing scales of measurement which vary based on what definition is used. Studies in organizational behaviour may define subjective well-being in three ways. Evaluation (global assessments), experience (feelings over a period of time) and ‘eudemonic’ (purpose and meaning from worthwhile things in life) (Dolan & Metcalfe, 2011). In this study I define well-being as a state “in which the individual realizes his or her abilities, can cope with the normal stresses of life, can work productively and fruitfully, and is able to contribute to his or her community” (WHO, 2005 p. 2). This definition of well-being fits a eudemonic conceptualization, as it relates to people finding purpose and meaning in life. Within the literature, a relationship between stressors and well-being has been reported, such that when large amount of stressors are experienced, reduced well-being is often reported (Extremera & Rey, 2015; Denovan, 2017; Xavier & Wesley, 2018). Studies have shown support for this relationship in children (18 and under; Pascoe et al., 2020) and in students, the population of interest in the current study (Denovan, 2017; He et al., 2018).

Anxiety is defined as an emotion that is often characterized by worried thoughts, feelings of strain and can be accompanied by physical changes such as increased heart rate and/or blood pressure (Bodie, 2010). In response to stressors many individuals feel anxious, thus, it is a commonly measured strain (Aseltine et al., 2000; Bandyopadhyay et al., n.d.; Dijkstra-Kersten et

al., 2015; Ruscio et al., 2017; Sangalang & Gee, 2012; Saravanan & Wilks, 2014; Vittengl, 2017). The relationship between stressors and anxiety has also been shown in the context of COVID-19 (Roy et al., 2020). Studies investigating stressors and strains derived from family and friends have shown that stressors were associated with increased odds for General Anxiety Disorder (GAD) for both men and women (Sangalang & Gee, 2012).

As shown in Figure 1 (see Appendix B), financial and illness threat are conceptualized as stressors and anxiety and a reduction in well-being are conceptualized as strains. Below I further outline the predicted relationships between these constructs.

Financial Threat & Well-Being

Financial threat has been associated with lowered well-being (Bernardo & Resurreccion, 2018; Lange & Byrd, 1998). Lange and Byrd (1998) measured financial distress and well-being in 237 first-year students using a survey methodology. Findings showed that financial distress had a significantly negative relationship with well-being. Moreover, also using survey methodology, Bernardo and Resurreccion (2018) demonstrated that student financial threat had a negative relationship with well-being with 274 student participants. Lastly, in a qualitative focus group study of 30 students, financial stress was found to negatively affect student well-being and peer relationships (Moore et al., 2021). Based on the previous literature and the stressor-strain model, I hypothesize:

H1: Financial threat and well-being will be negatively associated.

Illness Threat & Well-Being

As mentioned previously, illness threat refers to the threat of contracting the COVID-19 virus. Past research has shown that fear of illness is negatively associated with well-being. For example, Yang et al., (2021) conducted a three-wave survey with 3187 participants that assessed

college students via self-report measures of stress, fear of contagion and health in the context of COVID-19. Fear of contagion was shown to be negatively associated with student health and positively associated with perceived stress (Yang et al., 2021). Student health was measured via psychological and physical health using the Chinese Health Questionnaire (CHQ-12) and perceived stress using the 10-item perceived stress scale measure (Yang et al., 2021). In addition, a Russian sample of 939 adults demonstrated that those who reported higher fear levels of COVID-19 also reported being more depressed, angry, exhausted, lonely and nervous; in other words, not well (Gritsenko et al., 2020). As can be seen from previous research the fear of contracting the COVID-19 virus is a stressor for students that may result in lowered well-being. Hence, I hypothesize:

H2: Threat of COVID-19 (Illness threat) and well-being will be negatively associated.

Financial Threat & Anxiety

The relationship between financial threat and anxiety has been the subject of past research. This work generally finds a positive relationship between this stressor and strain. For example, Saravanan and Wilks (2014) found anxiety to be a common response to stressors for students. Moreover, Dijkstra-Kersten et al., (2015) conducted a study with 1525 participants who did not have depressive or anxious symptoms at baseline to assess whether financial strain had an effect of new onset of symptoms over four years. Anxiety was shown to be a common response to financial stress over time (Dijkstra-Kersten et al., 2015). Jones et al. (2018), collected data from Collegiate Centre for Mental Health (CCMH) 2013-2014 database in an attempt to deliver understanding on how academic stress, financial stress, and social support affect anxiety in students reported by students and their counsellors. A total of 80 509 student participants were used in their analysis. Financial stress was shown to be significantly positively

correlated with academic stress and anxiety (Jones et al., 2018). Overall, as students experience higher levels of financial threat, they are more likely to feel anxious. Therefore:

H3: Financial threat and anxiety will be positively associated.

Illness Threat & Anxiety

While studies in the context of COVID-19 are relatively new, there have been studies published highlighting the relationship between illness threat (fear of contracting COVID-19) and anxiety. In a study of health care persons (n=160), those who had more fear of COVID-19 showed symptoms of anxiety, were more likely to wash their hands, wear masks and use personal protection equipment (PPE) (Apisarnthanarak et al., 2020). Further, Perz et al., (2020) conducted a cross-sectional survey study with 237 students, measuring fear of COVID-19 (FCV-19s) and anxiety (GAD-7). It was demonstrated that scores on FCV-19 were positively correlated with scores on the GAD-7, suggesting an association between the two variables (Perz et al., 2020). Therefore, I hypothesize:

H4: Threat of COVID-19 (Illness threat) and anxiety will be positively associated.

The previous sections provided support for the proposed relationships between financial and illness threat and well-being and anxiety. The proposed model guiding the current research also posits a role for online social support. A great deal of research has been done to examine how social support has moderated the relationship between stressors and strains (Richardson et al., 2008), however very little research has examined this relationship in the context of the COVID-19 pandemic.

Social Support

As humans, we tend to live in groups rather than in isolation, making social support a basic human need (Kaplan et al., 1977). Social support has been defined as a dyadic exchange

where one person attempts to offer physical and/or emotional support and the other person (receiver) benefits from such efforts (Dunkel-Schetter & Skokan, 1985). Social support has been reliably shown to have positive effects on people and this relationship has been demonstrated with several sources including partners (Cohen & Wills, 1985), family (Day & Livingstone, 2003), friends (Sheets & Mohr, 2009), and co-workers (Himle et al., 1991). This has also been demonstrated for online social support. Gilmour et al., (2020), conducted a literature review of 27 different studies that used Facebook as a measure of social support with either general health, mental health, or well-being as the outcome. The overall results indicated that social support via Facebook friends generally had a positive effect on all measures (Gilmour et al. 2020). In some cases, it has been shown that *perceived* social support has stronger positive effects on physical and mental health than actual social support and *perceived* social support is a better buffer against stress and other mental health issues than *actual* social support (Cohen & Wills, 1985; Gilmour et al., 2020). While social support has been shown to have a direct relationship with various strains (depression, anxiety, lowered well-being) (Durand-Bush et al., 2015.; Moore et al., 2021; Richardson et al., 2008), it also has been examined as a factor that can change the relationship between stressors and strains.

Moderating Role of Social Support

As a psychological resource, social support has been shown to buffer or change the effects of stressful events on one's well-being; such that when social support is present, the negative effects of the stressful event on one's well-being is less than when social support is not present (Cole, 2017; Lee et al., 2004; Mazzoni et al., 2015; Park & Jang, 2013; Wilcox et al., 2005). Further, even support in a single social niche can be sufficient to offset the adverse effects of victimization or rejection in another social niche (Cole et al., 2017). For example, Cole et al.,

(2017) were able to show that online social support weakened the relationship between victimization (stressor) and depressive thoughts and feelings (strain), in a survey study with 231 undergraduate students.

One theory that supports the moderating role of social support is the Negativity Buffer Theory which argues that social support acts as a buffer that reduces the negative outcomes associated with stress and strain (Cohen & Wills, 1985). In the context of the current study, online social support from personal and university sources is conceptualized as a resource to help buffer against strains when experiencing stressors (Cohen & Will, 1985; Lin et al., 1999; Taylor, 2007; Viseu et al., 2018). A healthy mindset is important to students as it allows an overall better student and life experience. Many students are experiencing strains (i.e., anxiety and lowered well-being) associated with stressors that have arguably worsened due to (financial threat), or are unique to, the pandemic (illness threat). Social support may be a resource to help buffer these strains allowing for a continued healthy mindset. Overall, online social support may buffer or reduce the negative outcomes such as anxiety and well-being that are the results of stressors associated with the pandemic in the form on financial and illness threat. In addition, as outlined by this theory, online social support may act as a buffer, changing the relationship between these stressors and strains.

In-Person Social Support and the Negativity Buffer Theory (Pre-COVID-19)

Early studies have shown support for this buffering effect such that perceived social support from friends and family significantly moderated the relationship between stress and well-being (Cohen & Will, 1985). A literature review conducted by Cohen and Wills (1985) found significant stress and social support interactions supporting the buffering hypothesis (Cohen & Will, 1985). Research has also shown that social support from friends can be a factor that helps

manage or reduce anxiety in times of stress and depression (Lin et al., 1999; Taylor, 2007; Viseu et al., 2018). In a study conducted in Portugal with 729 individuals, Viseu et al., (2018) were able to show that social support moderated the relationship between stress and anxiety; when social support was present, the relationship between stress and anxiety was lessened.

Research specific to the student population has shown that social support buffers against stressful situations (Wilcox et al., 2005). In a qualitative study with 34 first-year university students, social support from friends helped students deal with stressful situations better (for example choosing to stay and pursue secondary education beyond the first year) than students who did not have adequate social support (Wilcox et al., 2005). This relationship was further supported by Gray et al. (2013), showing that social support increased willingness to stay in school beyond the first year and was a moderator between stress and choosing to stay beyond the first year of university. Using a two-way ANCOVA with 226 students Glozah (2013) demonstrated that social support from friends and family buffered the relationship between stress and well-being. Stress was measured via the student-life stress inventory (SSI), well-being was measured via general health measure (GHQ) and social support measured via perceived social support from family (PSS-FA) and friends (PSS-FR) (Glozah, 2013). Park and Jang (2013) also found moderating effects of social support from friends when examining the relationship between depression and stress in 445 students by analyzing self-report measures via ANOVA and stepwise multiple regression in SPSS.

Furthermore, Lee et al., (2004) showed that social support from friends and family buffered the relationship between mental health symptoms and stress (strains) in students with large life changes, in this case, acculturation (stressor), using a sample of Korean international students. Acculturation is the process of adapting to a new culture. While not directly related,

similarities might be argued between adapting to a different country culture to the world having to adapt to the new “COVID-19” culture.

In-Person Social Support and the Negativity Buffer (During COVID)

Alcover et al., (2020) conducted a study examining how perceived social support from friends buffers the relationships between financial threat and a decline in overall mental health with a Chilean adult population. This study was comprised of 591 working adults who completed a survey measuring financial threat (via the same financial threat scale used in the current study translated to Spanish), mental health (via the general health questionnaire) and social support (via a single-item measure). Findings demonstrated that high social support from friends buffered the effects of financial threat on general mental health (Alcover et al., 2020) such that when social support was high the relationship between financial threat and mental health was weaker than when social support was low.

In response to the COVID-19 pandemic, a cross-sectional survey study conducted in Wuhan showed that social support from friends buffered the relationship between intolerance of uncertainty and anxiety in 1017 students (Zhuo et al., 2021). Intolerance of uncertainty was measured as a stressor using the IUC-12 scale and anxiety was measured as a strain via the GAD-7 scale (the same scale used in the current study) (Zhuo et al., 2021). All of the studies looked at thus far in this section have been focused on in-person social support. The next section outlines previous research investigating online social support and how this type of support might change the relationship between stressors and strains.

Online Personal Social Support

The buffering effects outlined above have been demonstrated not only for face-to-face interactions (Cohen & Wills, 1985; Lee & Goldstein, 2016) but also for online interactions

(Gilmour et al, 2020; Stuart et al, 2021; Zhang, 2017). As the above studies demonstrate, in-person social support can buffer the relationship between stressors and strains such that higher social support weakens the strength of these relationships. However, social support can also be provided in an online environment. Zhang (2017) found that online social support from friends moderated the relationship between stressful life events and both depression and satisfaction of life in 573 Chinese students.

In similar ways to in-person social support, social support from online sources still requires one person attempting to offer physical and/or emotional support and the other person (receiver) benefitting from such efforts (Dunkel-Schetter & Skokan, 1985). In online social support, however, confirming social support sources can be more ambiguous. Many studies examining online social support have used objective measures such as the number of friends on Facebook to indicate online social support. For example, in studies using first-year university students, those who had a greater number of Facebook friends had higher levels of perceived social support, which also helped adjustment to college and willingness to stay beyond the first year (Gray et al., 2013). Other studies related to Facebook and social support showed that those with a higher number of friends had higher subjective well-being but no difference in perceived social support (Gilmour et al., 2020). While the number of friends is a concrete number that can be easily measured, it has since been shown that the quality of relationships is a driving factor in what increases perceived social support (Gilmour et al., 2020). Thus, the current study aims to measure the amount of perceived social support from online sources regardless of the number of online Facebook friends. Overall, social support (both in-person and online) can play a buffering role between various stressors and strains, weakening these relationships, and this is

demonstrated in studies using adult populations, student populations, in pre-pandemic times and during the COVID-19 pandemic.

Due to the pandemic and subsequent home lockdowns, many people do not have as much access to in-person social support as they would prior to the pandemic. Therefore, it is logical to conclude that many sources of social support would be found and utilized online. While online social support has been shown as a buffer in traditional settings, thus far it remains unclear if these results would be consistent during the pandemic.

One study that did look at social support in the context of COVID-19 examined the relationship between health anxiety and depression in 473 students during the initial isolation phase of COVID-19 (April-May 2020) using survey methodology (Stuart et al., 2021). It was found that online social support from friends and family buffered the relationship between health anxiety and depression (Stuart et al., 2021). While this shows that online social support buffers between health anxiety and depression, anxiety has not yet been examined as an outcome variable with financial or illness threat as predictors.

Therefore, I hypothesize:

H5a: Online personal social support will moderate the relationship between financial threat and well-being such that when perceived online social support is high, the negative relationship between financial threat and well-being will be weaker than when perceived online social support is low.

H5b: Online personal social support will moderate the relationship between illness threat and well-being such that when perceived online social support is high, the negative relationship between illness threat and well-being will be weaker than when perceived online social support is low.

H5c: Online personal social support will moderate the relationship between financial threat and anxiety such that when perceived online social support is high, the positive relationship between financial threat and anxiety will be weaker than when perceived online social support is low.

H5d: Online personal social support will moderate the relationship between illness threat and anxiety such that when perceived online social support is high the positive relationship between illness threat and anxiety will be weaker than perceived online social support is low.

University-Provided Online Social Support

Many of the studies examining online social support focus on support from friends and family. However online social support may also be provided by universities. For example, universities offer many other types of services in an attempt to benefit students, such as counselling, sports teams, academic support, mentoring and more. Furthermore, many of these unique student social support services cannot always be received from friends or family.

One study that did look at social support from universities focused on support from course instructors and other staff members (Collins et al., 2010). Results from Collins et al., (2010) study indicated that students found course instructors helpful, but not other staff members. In addition, during the current COVID-19 pandemic, social support from the university would need to be provided in an online format. However, university-provided online social support has not been the subject of many academic studies and thus its role in student well-being has not been assessed. Therefore, whether university-provided online social support can help students is a question that has not been answered. Previous research has reliably shown that personal online social support moderates the relationship between various stressors and strains. However, it is still unknown if universities are providing adequate social support to their

students, and if so, whether similar effects would be found. But based on findings from online personal social support studies I hypothesize:

H6a: Online university social support will moderate the relationship between financial threat and well-being such that when perceived online social support is high, the negative relationship between financial threat and well-being will be weaker than when perceived online social support is low.

H6b: Online university social support will moderate the relationship between illness threat and well-being such that when perceived online social support is high, the negative relationship between illness threat and well-being will be weaker than when perceived online social support is low.

H6c: Online university social support will moderate the relationship between financial threat and anxiety such when perceived online social support is high, the positive relationship between financial threat and anxiety will be weaker than when perceived online social support is low.

H6d: Online university social support will moderate the relationship between illness threat and anxiety such that when perceived online social support is high the positive relationship between illness threat and anxiety will be weaker than perceived online social support is low.

Types of Online Social Support

Within the realm of online social support, a distinction needs to be made between types of online social support (i.e., family, friends, counselling, sports teams) versus platforms that are used to access these types of social support (i.e., Facebook, Instagram, Zoom).

Much of the previous work examining online social support focuses on social support from family and friends (types) and Facebook as the main platform for receiving that social support. The current study not only examines alternative platforms in addition to Facebook but

also different types of social support – mainly those from the university, for example, counselling. However, there is not enough previous research to hypothesize which platforms or types of social support will be most helpful and why. As such, I examine the following exploratory research questions:

- (1) What types of online social support (university-provided and personal) are the most used and most helpful for students?
- (2) What online platforms are most used and most helpful for students for receiving university-provided social support?
- (3) How often are these types of services and platforms used?

In sum, access to online social support from both personal and university sources may have a buffering effect on the relationship between stressors experienced during the COVID-19 pandemic and strains (Gilmour et al., 2020), such that those who perceive higher social support will have less anxiety and higher well-being. In the following sections, I describe the methodology of the current study, analysis, results, discussion, and conclusions.

Methodology

Materials and Design

To answer the research questions and test the hypotheses, a survey methodology was used. Individual perceptions are best accessed using a questionnaire methodology (Zhang, 2017; Zywicki & Danowski, 2008). Self-report measures are often criticized for potentially being biased from social desirability and negative affect (Podsakoff et al., 2012). However, a study completed by Conway and Lance (2010) shows that negative outcomes (i.e., less reliable results) associated with common method bias do not have strong consistent effects. Furthermore, Conway and Lance (2010) show construct validity of self-reports and explain that self-report measures are

appropriate for private matters; in this case, perceived online social support would appear to be a private matter that individuals are in the best position to accurately assess. Therefore, while common method bias may be an issue, there is no better way to measure the constructs of interest in the current study. Further, manipulating social support in an experimental environment would be very difficult to achieve accurately and could be unethical as it is a sensitive topic for many people. A cross-sectional design was chosen as I am investigating perceived social support or lack thereof as a moderator between stressors (perceived financial threat and perceived illness threat) and strains (anxiety and well-being) (Levin et al., 2018). In other words, I am testing whether online social support predicts a change in the relationship between stressors and strains such that those who perceive more online social support will experience less strain than those who perceive low online social support when faced with similar stressors.

The first page of the questionnaire informed participants that ethical approval was obtained by the Interdisciplinary Committee on Ethics in Human Research (ICEHR) before collecting data (See Appendix C for initial ethics approval and Appendix D for the amendment ethics approvals). The second part of the questionnaire had participants read through a letter of consent and then agree or disagree to continue filling out the questionnaire (see Appendix E). Once consent was obtained, demographic information was collected including, age, student type, area of study, country of study, school name, gender, year of study, and international student status (see Appendix F for a copy of the full measures used in the current study).

Sample and Procedure

All participants were recruited using Prolific. Prolific is an online British survey platform that pays people to complete surveys (<https://www.prolific.co>). This platform was able to pre-screen for student status (based on profile information) allowing access to a convenient, yet

relevant sample. Only Prolific accounts identified as students were able to complete the survey. While using online platforms such as Prolific could potentially recruit participants who misrepresent themselves (e.g., lie about being a student), are inattentive or use English as a second language (Aguinis et al., 2021), Prolific also has many benefits. For example, this panel service allows access to a large and diverse sample, a flexible research design and quick data collection (Aguinis et al., 2021). The purpose of this study was to collect information regarding students' access to personal and university online social support to assess whether these social supports moderated the relationships between financial and illness threat and anxiety and well-being. Panel data was chosen specifically as any one university could have specific online social support services (or lack thereof) which could skew the results positively or negatively. Using panel data gave a broader sample of students allowing for the potential of greater generalizability. The questionnaire was delivered through Qualtrics an online questionnaire platform that is widely used for academic studies. Other than the demographic questions, scales were presented in random order to avoid biased responding.

A total of 167 students were recruited for this study. One participant was removed for incorrectly answering the attention check question (please answer 'sometimes' to this question). On average, the questionnaire took participants 15 minutes ($SD = 7.5$ minutes) to fill out. The median time to complete the survey was 13.2 minutes and participants who completed the survey in less than 40% (5.28 minutes) of the median time were removed (McGonagle et al., 2016). This resulted in one participant being removed from the data set. The total number of participants in the final data set was 165.

Overall, the mean age was 22 years, ($SD = 3.45$, range = 18 – 41). 118 (70%) were undergraduate students, 43 (26%) were graduate students and 5 (3%) said they were studying in

other categories, such as post-graduate and programming Bootcamp. Looking at gender, 72 (43.6%) identified as female, 87 (52.7%) identified as male, 1 (0.06%) identified as a transgender male, 3 (1.8%) identified as gender-conforming and 3 (1.8%) chose not to disclose their gender. Types of students included 148 (89.6%) participants studying in their residential countries and 17 (10.3%) studying as international students. Location of studies included 9 (5.45%) participants studying in North America, 2 (1.2%) studying in South America, 5 (3.0%) in Africa, 2 (1.2%) in Asia, 140 (84.8%) in European Union and 6 (3.6%) were from other locations; 4 (2.4%) of the 6 from 'other' locations were from the UK (United Kingdom). Living situations included 111 (67.3%) participants living at home, 21 (12.7%) participants living with roommates, 10 (6.0%) living in residence, 15 (9.0%) living alone, and 5 (3.0%) were living with a partner.

Measures

Perceived financial threat: This measure was adapted from Marjanovic (2013) Financial Threat Scale in the context of the great recession. Items were answered on a 5-point Likert scale ranging from 1 = never to 5 = very often. An example item is "I am uncertain about my financial situation". Reliability was measured using Cronbach alpha ($\alpha = 0.867$). The mean of all 5 items formed the perceived financial threat measure.

Perceived illness threat (Fear of COVID-19): A five-item measure was adapted from Marjanovic (2013) Financial Threat Scale. Instead of asking questions related to financial threat, the items tapped into the perceived threat from COVID-19 illness. The scale was answered on a 5-point Likert scale ranging from 1 = never to 5 = very often. An example item is "I feel that COVID-19 puts me at risk". Reliability was measured using Cronbach's Alpha ($\alpha = 0.802$). The mean of the five items formed the perceived illness threat measure.

Perceived online university social support. I adapted the Online Social Support Scale (Nick et al., 2018) to assess how often students perceive they are receiving online social support from their post-secondary institutions. An example item is, “Online, the university provides me with helpful information”. Questions were answered on a 5-point Likert scale ranging from 1 = never to 5 = a lot. Reliability was measured with Cronbach’s Alpha ($\alpha = 0.946$). The mean of the 20 items formed the perception of university-provided online social support measure.

Perceived online personal social support. I adapted the Online Social Support Scale (Nick et al., 2018) to assess how often students perceive they are receiving personal online social support (i.e., from friends and family) concerning various aspects of their lives. An example item is: “Online, people make me feel like I belong.” Questions were answered on a 5-point Likert scale ranging from 1 = never to 5 = a lot. Reliability was measured using Cronbach’s Alpha ($\alpha = 0.931$). The mean of the 20 items formed the perception of personal online social support measure.

Well-being. To measure well-being, the Short Well-Being Scale developed by Bech and Johansen, (1996) was used. Questions were answered on a 5-point Likert scale ranging from 1 = never to 5 = very often. Students were asked which is closest to how one has been feeling over the past four weeks. An example from this scale is “I have felt calm and relaxed.” Reliability was measured using Cronbach’s Alpha ($\alpha = 0.759$). The mean of these 5 items formed the well-being measure.

Anxiety. To measure anxiety the 7-item General Anxiety Disorder-7 Scale developed by Spitzer et al., (2006) was used. Responses ranged from 1 = Not at all to 4 = Nearly every day. Students were asked how often they have been bothered by the following problems over the past eight weeks. An example from this scale is “feeling nervous, anxious or on edge”. Reliability was

measured using Cronbach's Alpha ($\alpha = 0.89$). The mean of the 7 items formed the anxiety measure.

Online university social support services. To address the exploratory research question, participants were asked which types of online services they used most frequently, and which were most helpful (Lin & Lu, 2011). For both frequency and helpfulness questions, drop-down menu options for services of online social support included counselling, Facebook, sports teams (university offered), Trivia nights/writing workshops, athletic and recreational services, peer tutoring and other (with room for open text to write in other options). Types of social support services were included based on knowledge of types of university provided online services current students experience. I included an open ended "other" text box to ensure students had the opportunity to include any options that were not presented in the list. Frequency was measured by asking participants how often they used services. Options included: everyday, several times a week, about once a week, 2-3 times a month, once a month, and less than once a month. Lastly, students were asked to choose which service was the most helpful. These services were then grouped according to type (e.g., counselling, recreational services) and platform (e.g., Facebook, Zoom).

Results

Analysis was conducted using IBM SPSS 27. Descriptive statistics and zero-order correlations among all the study variables are provided in Table 1 (All tables can be found in Appendix A). As can be seen in Table 1, well-being was significantly positively related to university online social support ($r = 0.27, p < 0.01$), and personal online social support ($r = 0.17, p < 0.05$). Well-being was not significantly negatively correlated with financial ($r = -0.15, n.s.$) or

illness threat ($r=-0.15$, n.s.) therefore, Hypotheses 1 and 2 are not supported. Anxiety was significantly positively correlated to financial threat ($r=0.34$, $p<0.01$) and illness threat ($r=0.039$, $p<0.01$), supporting Hypotheses 3 and 4.

Hypotheses 5(a-d) and 6(a-d) were tested using ordinary least squares regression analysis with Model 1 of the PROCESS macro (www.afhayes.com; version 2.16.3). To test hypothesis 5a, perception of financial threat was entered as the predictor variable, well-being as the outcome variable and personal online social support as the moderator. The interaction between financial threat and personal online social support was significant (see Table 2; $b = -0.22$, $t = -2.85$, $p=0.00$; $\Delta R^2 = .04$, $F(1, 161) = 8.15$, $p = .00$). To probe the form of the moderation, a graph was produced (see Figure 2 in Appendix B). A simple slope analysis revealed that the relationship between financial threat and well-being was not significant when personal online social support was low ($p>0.05$), however, it was significant when personal online social support was high ($b = -0.23$, $t = -3.49$, $p = 0.00$). Personal online social support was found to moderate the relationship between perceived financial threat and well-being, however not in the direction that was predicted. It was predicted that when perceived online social support was high, the negative relationship between financial threat and well-being would be weaker than when perceived online social support is low. However, it was found that when social support was high, the relationship between financial threat and well-being was stronger, thus partially supporting hypothesis 5a (i.e., significant moderation, but not in the way predicted).

Hypothesis 5b predicted that personal online social support would moderate the relationship between illness threat and well-being. Perception of illness threat was entered as the predictor variable, well-being as the outcome variable and personal online social support as the moderator. The interaction between illness threat and personal social support was not significant

($p > 0.05$), hence Hypothesis 5b was not supported. Hypothesis 5c predicted that personal online social support would moderate the relationship between financial threat and anxiety. Perception of financial threat was entered as the predictor variable, anxiety as the outcome variable and personal online social support as the moderator. The interaction between financial threat and personal social support was not significant ($p > 0.05$), hence Hypothesis 5c was not supported. Hypothesis 5d predicted that personal online social support would moderate the relationship between illness threat and anxiety. Perception of illness threat was entered as the predictor variable, anxiety as the outcome variable and personal online social support as the moderator. The interaction between illness threat and personal social support was not significant ($p > 0.05$), hence Hypothesis 5d was not supported. Overall, Hypotheses 5b, 5c and 5d were not supported.

To test Hypothesis 6a, perception of financial threat was entered as the predictor variable, well-being as the outcome variable and university online social support as the moderator. The interaction between financial threat and university online social support was significant (see Table 3; $b = -0.16$, $t = -2.34$, $p = 0.05$; $\Delta R^2 = .03$, $F(1, 161) = 5.63$, $p = .02$). Hence, university online social support was found to moderate the relationship between perceived financial stress and well-being, however not in the direction that was predicted. To probe the form of the moderation, a graph was produced (see Figure 3 in Appendix B). A simple slope analysis revealed that the relationship between financial threat and well-being was not significant when university online social support was low ($p > 0.05$), however, it was significant when university online social support was high ($b = -0.25$, $t = -3.35$, $p = 0.00$). It was predicted that when perceived online social support was high, the negative relationship between financial threat and well-being would be weaker than when perceived online social support was low. However, it was found that when social support was high, the relationship between financial threat and well-being was

stronger, thus only partially supporting Hypothesis 6a (i.e., significant moderation, but not in the way predicted).

To test Hypothesis 6c, perception of financial threat was entered as the predictor variable, anxiety as the outcome variable and university online social support as the moderator. The interaction between financial threat and university online social support was significant (see Table 4; $b = 0.19$, $t = 2.43$, $p = 0.05$; $\Delta R^2 = .03$, $F(1, 161) = 5.92$, $p = 0.01$). To probe the form of the moderation, a graph was produced (see Figure 4 in Appendix B). A simple slope analysis revealed that the relationship between financial threat and anxiety was not significant when university online social support was low ($p > 0.05$), however, it was significant when university online social support was high ($b = 0.42$, $t = 4.92$, $p = 0.00$). University online social support was found to moderate the relationship between perceived financial stress and anxiety, however not in the direction that was predicted. It was predicted that when perceived online social support is high, the positive relationship between financial threat and anxiety will be weaker than when perceived online social support is low. However, it was found that when social support is high, the relationship between financial threat and anxiety was actually stronger than when online university social support was low, thus partially supporting Hypothesis 6c (i.e., significant moderation, but not in the way predicted).

Hypothesis 6b and 6d were not supported. Hypothesis 6b predicted that university online social support would moderate the relationship between illness threat and well-being. Perception of illness threat was entered as the predictor variable, well-being as the outcome variable and university online social support as the moderator. The interaction between illness threat and university social support was not significant ($p > 0.05$). Hypothesis 6d predicted that university online social support would moderate the relationship between illness threat and anxiety.

Perception of illness threat was entered as the predictor variable, anxiety as the outcome variable and university online social support as the moderator. The interaction between illness threat and university social support was not significant ($p > 0.05$).

Types of Social Support Used

To investigate the exploratory research questions, participants were asked to identify which type of online social support were most used and which they thought was most helpful (Exploratory research question 1). Twenty-seven percent (45) said they use counselling, 4.2% (7) identified using sports teams, 12.7% (21) said peer tutoring, 2.4% (4) said trivia and 3.0% (5) said athletic recreational services. Looking at types of services, it was found that 42.2% (70) participants identified counselling as most helpful, 20% (33) said peer tutoring, 13.3% (22) said trivia nights and writing workshops, 12% (20) identified athletic and recreational services and 10.9% (18) identified university offered sports teams.

Next, participants were asked which platforms they used most often and which they found most helpful (Exploratory question 2). With regards to how often, 41.8% (69) of participants said they used Facebook most often, 5% (9) identified using video chat platforms (Zoom, Moodle, Microsoft Teams, and Webex), 1.8% (3) said Instagram, 1.2% (2) identified using WhatsApp most often, 0.06% (1) identified using Discord, 0.06% (1) identified Google, and 0.06% (1) identified using Email. Analyzing responses to which platforms were most helpful, 37.5% (62) participants identified Facebook being most helpful, 5% (9) identified video chat platforms (Zoom, Moodle, Microsoft Teams, and Webex) as the most helpful, 1.8% (3) identified Instagram, 0.06% (1) identified Discord, 0.06% (1) identified Google, and 0.06% (1) identified Email as the most helpful.

Lastly, participants were asked to identify how often they used those types of services (Exploratory research question 3). 24.7% (41) participants said they used these types of services less than once a month, 11.4% (19) said using services about once a month, 16.3% (27) said they use these services 2 or 3 times a month, 16.3% (27) said they use these services about once a week, 16.9% (28) said they used these services several times a week and 13.9% (23) said they used the service every day.

Discussion

Direct Hypotheses

The current study found that financial and illness threat were both significantly positively associated with anxiety. This seems to make logical sense as if participants are worried about their finances and health then anxiety would increase. However, it was also predicted that financial and illness threat would be negatively associated with well-being, however non-significant findings were found.

One possible explanation for this focuses on whether there might be a qualitative difference between anxiety and well-being. If so, perhaps different predictors are associated with negative outcomes (i.e., anxiety) versus positive ones (i.e., well-being). Future research might consider these differences and investigate specific outcomes accordingly.

Supported Moderation Hypotheses

This study found that online social support moderated some of the relationships between various stressors and strains. Personal online social support moderated the relationship between perceived financial threat and well-being, however not in the way hypothesized. Personal online social support moderated the relationship between financial threat and well-being such that when online support was high the negative relationship between financial threat and well-being was

stronger than when online support was low. In the presence of high social support and low financial threat, well-being was highest.

These results were replicated with university online social support as the moderator. University online social support moderated the relationship between perceived financial threat and well-being such that when online support was high the negative relationship between financial threat and well-being was stronger than when online support was low. These results were further replicated with financial threat and anxiety. University online social support moderated the relationship between financial threat and anxiety such that when online support was high the positive relationship between financial threat and anxiety was stronger than when online support was low. High financial threat seemed to affect students above and beyond what online social support could buffer. In other words, when students had low perceived financial threat and high perceived personal or university provided online social support their well-being was significantly higher (or anxiety was significantly lower) than students who reported high financial threat. When students had high financial threat, they reported low well-being (or high anxiety) regardless of the amount of personal or university provided online social support received.

Unsupported Moderation Hypotheses

It was also found that social support (university or personal) did not moderate the relationships between perceived illness (COVID-19) threat and anxiety or well-being. There are several possible reasons why the hypotheses on illness threat (fear of COVID-19) were not supported. First, this was a new and unvalidated measure, as it was adapted from the (Marjanovic et al., 2013) financial threat scale. It could have been that this scale did not accurately capture what participants were feeling. If this study is to be replicated, it recommended that a different

measure of perceived illness threat be used. Second, it seems that young adults have been the least affected by the threat of the illness (Barber & Kim, 2021). Barber and Kim (2021) found that older adults perceived the risk of COVID-19 as higher than younger adults. Therefore, perhaps the fear of COVID-19 was not as operative for students of this age group. Lastly, while the fear of having COVID-19 is a real threat for some people, it can be speculated that students may feel so threatened by their financial situations that there is no room to fear contracting COVID-19; in other words, the financial threat may overwhelm the fear of getting sick. For example, many students are dependent on getting placements and summer work to afford school. While COVID-19 has affected many people physically, it has also largely put a strain on many people financially. The job market is unusually tough, and many have lost their jobs (Collie et al., 2020). Collie et al., (2020) also reported that individuals who lost their job were experiencing more psychological distress than those who were still working, and this was even more prevalent in individuals aged 18-65. These results were replicated in Nelson et al., (2020)'s cross-sectional study of 2066 participants in North America and Europe. Students may be more stressed financially than physically, lending some further explanation for the findings related to financial threat.

Exploratory Research Questions

Investigation into the types of social support found that 42.4% (70) said that counselling was the *most helpful* type of university-provided online social support. In studies examining students use of counselling prior to the pandemic, studies have found that many students underutilize these types of services (Raunic & Xenos, 2008). Further, studies have shown students are more likely to seek out counselling only when they are experiencing more stress than is normal for them (Russell et al., 2008). In addition to increased stressors due to the

pandemic, being able to use these types of services from the comfort of their homes may also be a reason the use of counselling services was highest. Previous research has demonstrated that online counselling can be an effective tool and can increase student engagement (Glasheen et al., 2016). If students are more comfortable with the option of counselling online and are more likely to use counselling when offered online, this suggests to universities that it may be wise to continue to offer these types of services online, even post-COVID-19. It could have been that many students are using online counselling options to discuss the added financial stress from the COVID-19 pandemic, however, there is no way to know for certain from the results of the current study. This could be an area for future research.

Past research establishes that daily stressors are experienced by students in general (Ruscio et al., 2017; Zhang, 2017). The results of the current study as well as others demonstrate that during the pandemic, stay-at-home measures and online classes, students are experiencing strain. Exploring which services are preferred online post-COVID-19 would be an interesting future research direction as findings from this type of extension to the current study could lead to concrete evidence, insight, and recommendations for universities moving forward from the pandemic.

Participants also reported *how frequently* they used types of online social support services. Compared to all other questions, it was interesting to find a more even variation amongst how often students use types of online social support services. Twenty-four percent (41) said they used these types of services less than once a month, while 13.9% (23) said they use these types of services every day.

When examining questions related to both types of services and platforms together it is important to reiterate, within the realm of online social support, a distinction needs to be made

between types of online social support (i.e., counselling, sports teams, trivia nights) versus platforms that are used to access these types of social support (i.e., Facebook, Instagram, Zoom). Although I did not have the data to directly report the link between how helpful and how frequently these types of services were used, it can be speculated that students may not use counselling every day, while other services such as accessing support via sports teams and recreational services, for example, the gym, could be used much more frequently. When looking at how often the various platforms are used, 41.8% of participants said they used Facebook most often while only 5% said they used video chat platforms (Zoom, Moodle, Microsoft Teams, and Webex) most often. If we link these findings to the types and frequency of use of the various types of services, we can begin to speculate on a more comprehensive picture. It was mentioned that counselling was the most helpful service, followed by peer tutoring, trivia nights, recreational services (i.e., the gym) and sports teams. Next, we found Facebook was the most frequently used platform, followed by video chat platforms, Instagram, WhatsApp, Discord, Google, and Email.

To summarize, while online counselling is noted as the most helpful type of service, it is likely that this is not used every day. Furthermore, online counselling is more likely to be done via platforms such as video chat lending possible explanation as to why these platforms are used much less than Facebook. However, if students are only using online counselling less than once a month, it would be interesting to know if this is due to the availability of appointments. More counsellors may be necessary to ensure the needs of the students are being met. This may also be an area of future research.

On the other hand, recreational services and sports teams may not be as helpful as counselling, however, they are easier to access every day via Facebook, Instagram, etc. Many

student groups are formed on Facebook, and we see more universities using social media platforms (Ahern et al., 2016). As many students and young adults are ‘tech-savvy’, it comes as no surprise that this type of service was widely used. However, it is important to recognize that this type of service was widely used before the pandemic and continues to be widely used. This indicates that this will still be largely used post-COVID-19. Moreover, it tells universities that this may be an area worth developing or looking into how to better their social media (i.e., Facebook) presence as this is where many students are seeking out social support.

Limitations & Future Directions

As with any study, there are limitations to the current research. In this case, a cross-sectional study design was used. One limitation of a cross-sectional study is common method bias (Podsakoff et al., 2012). Conway and Lance (2010) show construct validity of self-reports and explained that self-report measures are quite appropriate for private matters; in this case, perceived online social support. In a further attempt to limit common method bias, many validated scales, anonymous responses and attention check questions were used (Podsakoff et al., 2012). Future studies could use a time-lagged study to address this limitation.

While this study captured many types of online social support (i.e., counselling, Facebook, sports teams etc.), it is likely that I did not capture all possible sources of online social support. For example, peer mentoring was used to assist medical students during the global pandemic (Kazerooni, Amini, Tabari, Moosavi, 2020). Moreover, university online counselling was discussed, but students could have also sought counselling from outside sources. Although, no participants mentioned using these services in the open-ended text “other” response option. Future research could study how often students use online counselling provided through the university versus through outside sources (such as betterhelp.com).

The measures for university-provided online support were adapted from those used for online social support from friends and family. While these measures demonstrated adequate reliability and correlated in expected ways with other study variables, had different scales been used different results could have been found. Future research could further validate these measures and adaptations.

Social support has been widely studied in the past and many different conceptions have been used. While in the current study, we predicted social support to act as a moderator between various stressors and strains, it could also have been investigated as having a direct relationship with the stressors. Future research could investigate this type of relationship related to online social support.

While this study found evidence of moderation, it was not in the way the hypotheses predicted. While many explanations were offered, future research could look into why this would be the case and how to better predict moderations such as this.

The current sample size could also be considered a limitation as a larger sample could have more power to detect significant relationships. However, the fact that some significant relationships were found indicates that the sample size was probably sufficient. Finally, this data was collected prior to the wide availability of Covid-19 vaccines. Future research conducted now that vaccines are available should take this into account as this would have a probable effect on stressors particularly those related to contracting Covid-19.

The scope of the current study was to assess the relationship between stressors, strains, and online social support for students during the COVID-19 pandemic. It would be interesting to know if these results would be replicated post-pandemic. Other interesting routes to take for future studies would be to investigate these questions in different populations. For example,

Zeijen et al., (2020) showed that receiving social support can increase employee engagement in work settings when received properly. It would be interesting to see if similar results would be found if the current study was replicated with online social support and employees who are working from home. Moreover, younger populations such as a high-school student sample could also be studied. Lastly, it would be interesting to see if these effects are consistent across universities or if some schools are addressing online social support more effectively than others. Overall, this study has contributed to the growing body of literature on online social support stressors, and strains.

Practical Implications

The results found in the current study provide important information for universities as it suggests that when students are experiencing high financial threat, the amount of online social support provided does not make a difference to their well-being or anxiety. However, when financial threat is low, higher levels of university-provided online social support resulted in students experiencing higher well-being and less anxiety than when lower levels of university-provided online social support are perceived. This suggests that there are ways universities can help to reduce the strains students experience during the global pandemic. First, universities should continue to focus on supporting their students online. When financial threat is low, universities can help increase student's well-being and lower their anxiety by providing adequate online social support.

These unexpected moderation findings suggest that universities could investigate how to help their students feel less financially threatened. This does not necessarily have to be in the form of scholarships. While those are very helpful, non-monetary options could include workshops helping students with how to look for summer jobs and when they should start

looking. Resume and cover letter workshops offered in January or February (before midterms start) could be very beneficial. Even simpler options such as posters or emails reminding students to apply for jobs, scholarships and other incentives could help to alleviate some financial threat for students. There are many other avenues universities could take to help students feel less financially threatened and this could also be an important area of future research: what helps students feel less financially threatened?

Scholarly Implications

This study has contributed to the growing body of literature on online social support, stressors, and strains. Further, this study offers unique contributions about university-provided online social support, different platforms for accessing this type of social support, and how this is associated with student well-being and anxiety. This study has contributed to our knowledge related to the Negativity Buffer Theory and the stressor-strain relationship for students.

This study was able to demonstrate that online social support did moderate the relationship between various stressors and strains in a student population. This highlights the importance of studying the effects of online social support in student populations. Many areas of future research arise from the findings of this study.

Conclusion

This study found that online social support moderated the relationship between financial threat and well-being and financial threat and anxiety. This might have important implications for universities as it suggests that when their students are stressed financially, the social support they provide online may not have a large impact. It also demonstrates that online social support

provided by universities does have a positive impact when financial threat is low, hence universities should attempt to provide avenues for students to ensure financial security and at the same time effective online social support. Lastly, while the online world was widely used before the pandemic, COVID-19 has seen a transition to an even greater shift to the online world. It is highly speculated that we may not fully shift back to how things were. Leaning into this, many organizations (including universities) will need to adjust to this new reality. Universities will need to understand and utilize their online presence to support their students. While COVID-19 will not last forever, the findings from this study could be used as an indicator of what universities can do to support students online.

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Appendices

Appendix A: Tables

Table 1: Descriptive statistics and zero-order correlations for all study variables (N = 165 participants in total)

Variables	M	SD	1.	2.	3.	4.	5.
1.Percieved Financial Threat	3.11	0.95					
2. Perceived Illness Threat	3.48	0.88	0.28**				
3University Online Social Support	2.64	0.73	0.04	0.47			
4.Personal Online Social Support	3.28	0.64	-0.00	0.11	0.21**		
5.Well-Being	2.84	0.62	-0.15	- 0.15	0.27**	0.17*	
6.Anxiety	2.31	0.73	0.34**	0.039**	-0.1	- 0.05	0.46**

Note: * = $p < 0.05$, ** = $p < 0.01$

Table 2: Ordinary Least Squares Regression Analysis using PROCESS Model 1 examining personal online social support as a moderator of the perceived financial threat and well-being relationship

	<i>b</i>	<i>SE</i>	<i>t</i>	<i>p</i>
Constant	0.36	0.89	0.40	0.69
Perceived Financial Threat (PFT)	0.62	0.26	2.40	0.17
Personal Online Social Support (POSS)	0.85	0.26	3.21	0.00
PFT x POSS	-0.22	.07	-2.86	0.00

Notes. N = 145, listwise deletion. Model summary: $R^2 = .08$, $F(3, 161) = 5.23$, $p < .01$. R^2 increase due to interaction: $\Delta R^2 = .04$, $F(1, 161) = 8.15$, $p = .00$.

Table 3: Ordinary Least Squares Regression Analysis using PROCESS Model 1 examining university online social support as a moderator of the perceived financial threat and well-being relationship

	<i>b</i>	<i>SE</i>	<i>t</i>	<i>p</i>
Constant	1.23	0.62	1.98	0.05
Perceived Financial Threat (PFT)	0.30	0.18	1.66	0.09
University Online Social Support (POSS)	0.76	0.23	3.27	0.00
PFT x UOSS	-0.16	0.07	-2.34	0.05

Notes. N = 145, listwise deletion. Model summary: $R^2 = .13$, $F(3, 161) = 7.98$, $p < .01$. R^2 increase due to interaction: $\Delta R^2 = .03$, $F(1, 161) = 5.63$, $p = .02$.

Table 4: Ordinary Least Squares Regression Analysis using PROCESS Model 1 examining university online social support as a moderator of the perceived financial threat and anxiety relationship

	<i>b</i>	<i>SE</i>	<i>t</i>	<i>p</i>
Constant	3.41	0.72	4.76	0.00
Perceived Financial Threat (PFT)	-0.23	0.21	-1.10	0.28
University Online Social Support (POSS)	0.74	0.27	-2.74	0.00
PFT x UOSS	0.19	0.07	-2.43	0.05

Notes. N = 145, listwise deletion. Model summary: $R^2 = .16$, $F(3, 161) = 10.05$, $p < .00$. R^2 increase due to interaction: $\Delta R^2 = .03$, $F(1, 161) = 5.92$, $p = 0.01$.

Appendix B: Figures

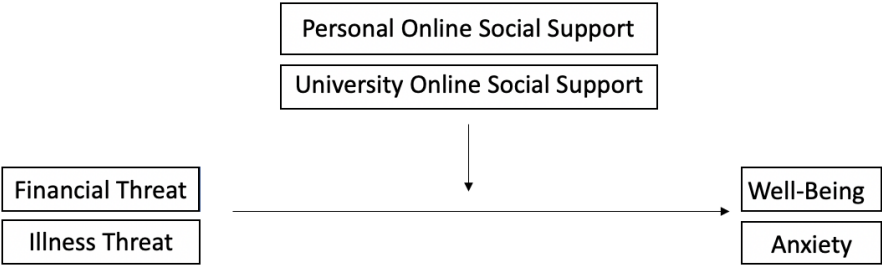


Figure 1: Visual Representation of Hypotheses

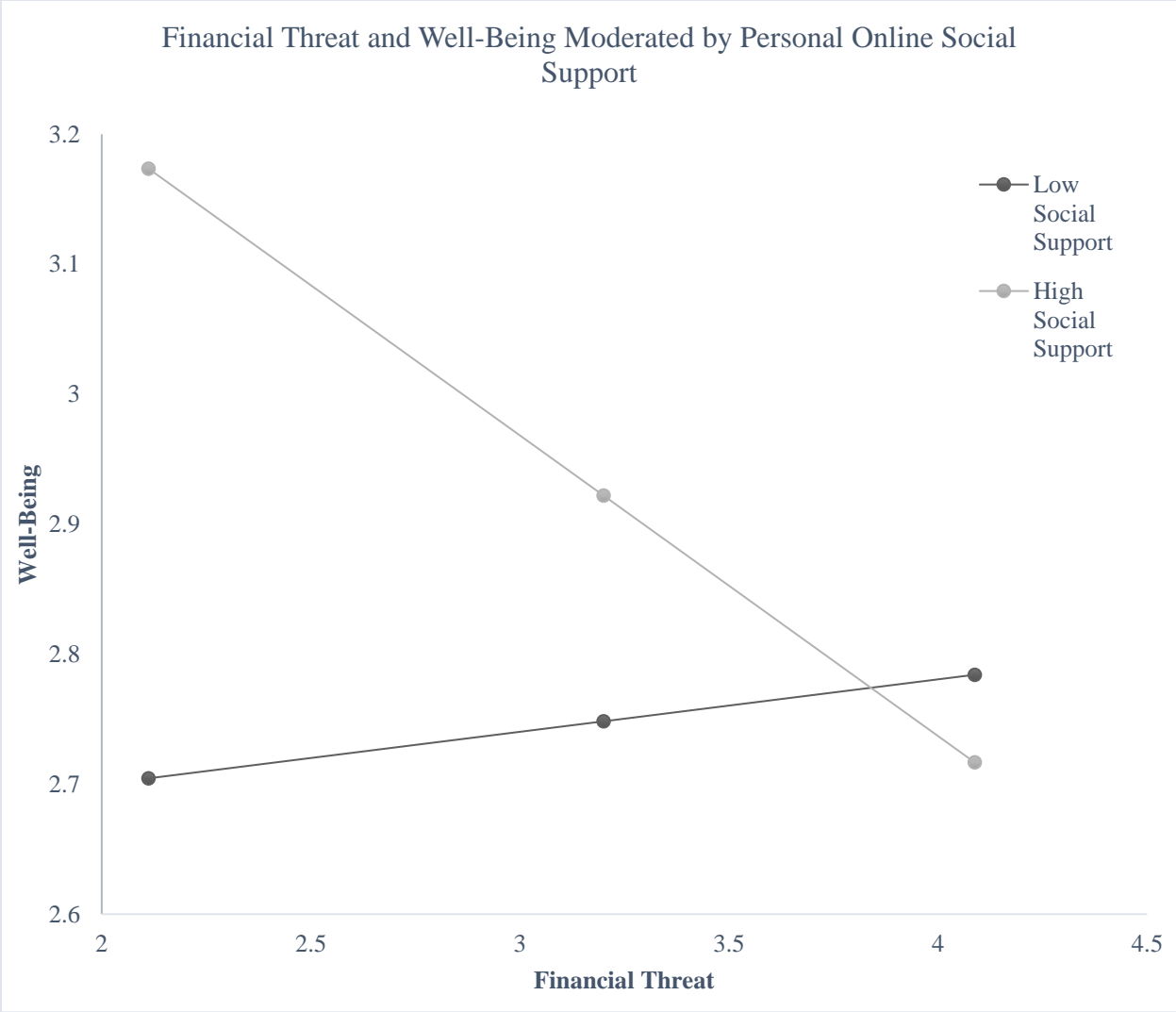


Figure 2: Moderating Effect of Personal Online Social Support on the Relationship between Financial Threat and Well-Being

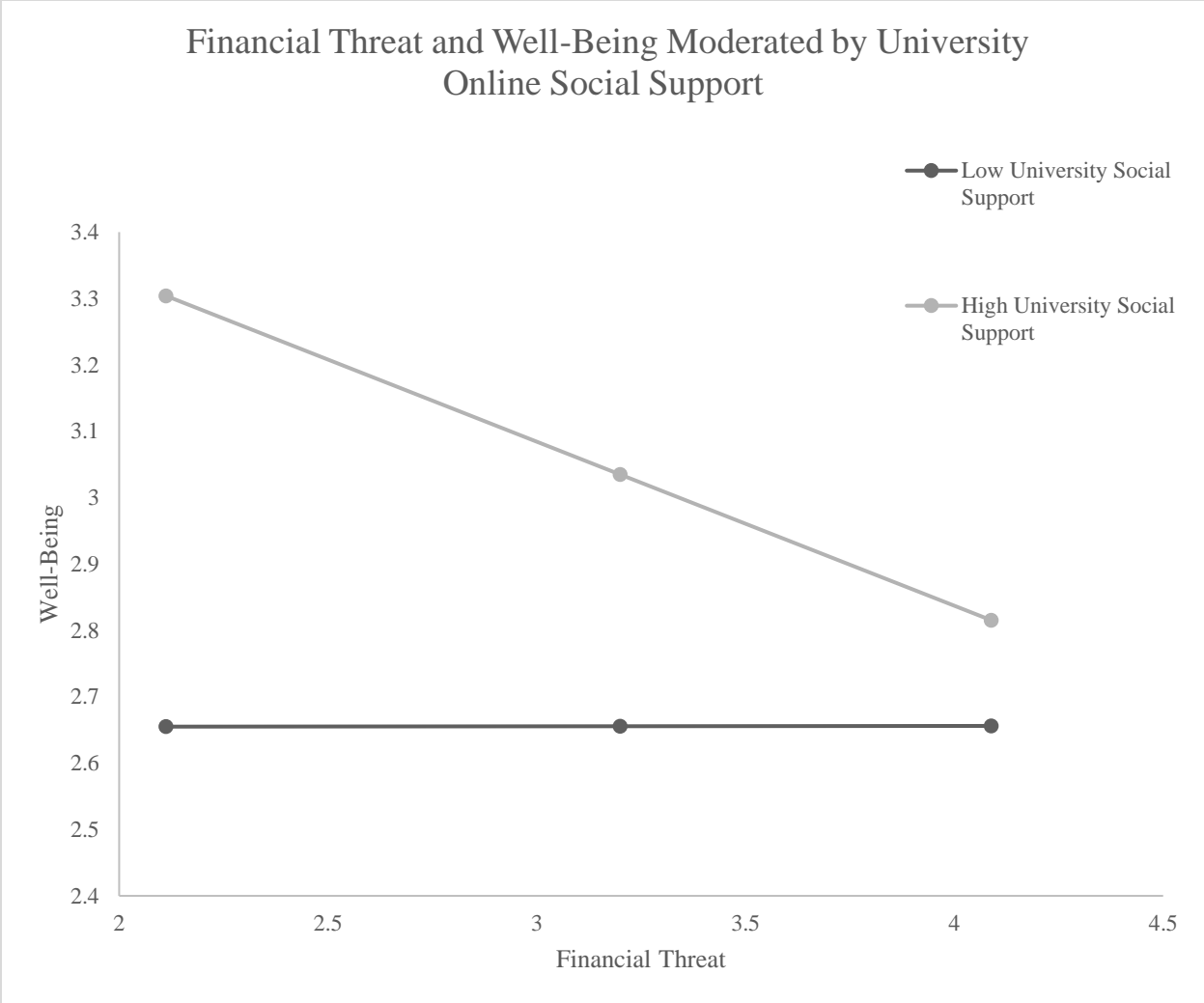


Figure 3: Moderating Effect of University Online Social Support on the Relationship between Financial Threat and Well-Being

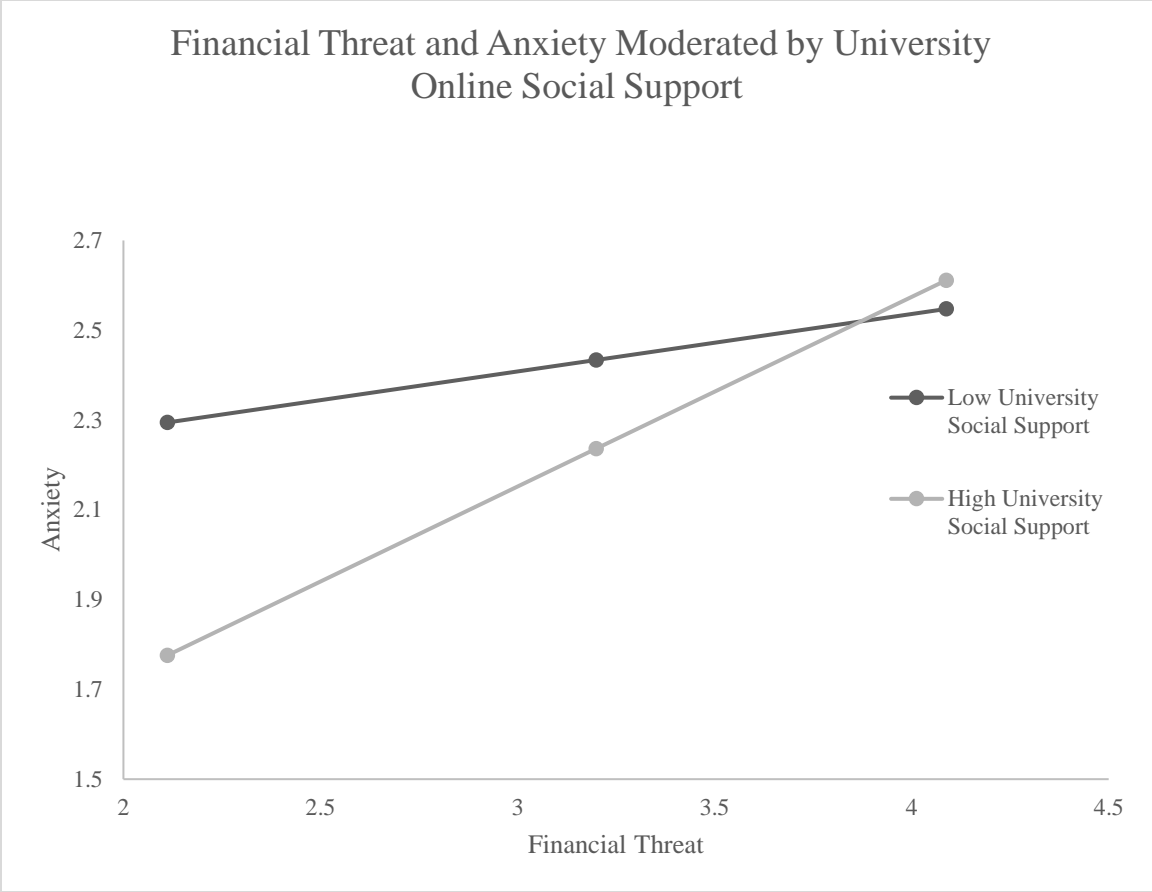


Figure 4: Moderating Effect of University Online Social Support on the Relationship between Financial Threat and Anxiety

Appendix C: Ethics Approval Letter



Interdisciplinary Committee on
Ethics in Human Research (ICEHR)

St. John's, NL Canada A1C 5S7
Tel: 709 864-2561 icehr@mun.ca
www.mun.ca/research/ethics/humans/icehr

ICEHR Number:	20210713-BA
Approval Period:	November 3, 2020 – November 30, 2021
Funding Source:	
Responsible Faculty:	Dr. Kara Arnold Faculty of Business Administration
Title of Project:	<i>Online Social Support and University student well-being</i>

November 3, 2020

Ms. Sarah-Kay Walker
Faculty of Business Administration
Memorial University of Newfoundland

Dear Ms. Walker:

Thank you for your correspondence addressing the issues raised by the Interdisciplinary Committee on Ethics in Human Research (ICEHR) concerning the above-named research project. ICEHR has re-examined the proposal with the clarification and revisions submitted, and is satisfied that the concerns raised by the Committee have been adequately addressed. In accordance with the *Tri-Council Policy Statement on Ethical Conduct for Research Involving Humans (TCPS2)*, the project has been granted *full ethics clearance* to November 30, 2021. ICEHR approval applies to the ethical acceptability of the research, as per Article 6.3 of the *TCPS2*. Researchers are responsible for adherence to any other relevant University policies and/or funded or non-funded agreements that may be associated with the project.

The *TCPS2* **requires** that you submit an Annual Update to ICEHR before November 30, 2021. If you plan to continue the project, you need to request renewal of your ethics clearance and include a brief summary on the progress of your research. When the project no longer involves contact with human participants, is completed and/or terminated, you are required to provide an annual update with a brief final summary and your file will be closed. If you need to make changes during the project which may raise ethical concerns, you must submit an Amendment Request with a description of these changes for the Committee's consideration prior to implementation. If funding is obtained subsequent to approval, you must submit a Funding and/or Partner Change Request to ICEHR before this clearance can be linked to your award.

All post-approval event forms noted above can be submitted from your Researcher Portal account by clicking the *Applications: Post-Review* link on your Portal homepage. We wish you success with your research.

Yours sincerely,

Kelly Blidook, Ph.D.
Vice-Chair, Interdisciplinary Committee on
Ethics in Human Research

KB/bc

cc: Supervisor – Dr. Kara Arnold, Faculty of Business Administration

Appendix D: Ethical Amendment Approval



Interdisciplinary Committee on
Ethics in Human Research (ICEHR)

St. John's, NL Canada A1C 5S7
Tel: 709 864-2561 icehr@mun.ca
www.mun.ca/research/ethics/humans/icehr

ICEHR Number:	20210713-BA
Approval Period:	November 3, 2020 – November 30, 2021
Funding Source:	
Responsible Faculty:	Dr. Kara Arnold Faculty of Business Administration
Title of Project:	<i>Online Social Support and University student well-being</i>
Amendment #:	<i>01</i>

March 26, 2021

Ms. Sarah-Kay Walker
Faculty of Business Administration
Memorial University of Newfoundland

Dear Ms. Walker:

The Interdisciplinary Committee on Ethics in Human Research (ICEHR) has reviewed the proposed addendum for the above referenced project, as outlined in your amendment request dated March 12, 2021, and is pleased to give approval to recruit participants and collect data using Prolific, as described in your request, provided all other previously approved protocols are followed.

If you need to make any other changes during the conduct of the research that may affect ethical relations with human participants, please submit an amendment request, with a description of these changes, via your Researcher Portal account for the Committee's consideration.

Your ethics clearance for this project expires November 30, 2021, before which time you must submit an annual update to ICEHR. If you plan to continue the project, you need to request renewal of your ethics clearance, and include a brief summary on the progress of your research. When the project no longer requires contact with human participants, is completed and/or terminated, you need to provide an annual update with a brief final summary, and your file will be closed.

Annual updates and amendment requests can be submitted from your Researcher Portal account by clicking the *Applications: Post-Review* link on your Portal homepage.

The Committee would like to thank you for the update on your proposal and we wish you well with your research.

Yours sincerely,

Kelly Blidook, Ph.D.
Vice-Chair, Interdisciplinary Committee on
Ethics in Human Research

KB/bc

cc: Supervisor – Dr. Kara Arnold, Faculty of Business Administration

Appendix E: Informed Consent Form for Prolific Participants Recruited

Title: Online University Student Social Support and Well-being.

Researcher: Sarah-Kay Walker
Memorial University of Newfoundland
Faculty of Business Administration

Supervisor: Dr. Kara Arnold
Memorial University of Newfoundland
Faculty of Business Administration
arnoldk@mun.ca

You are invited to take part in a research project entitled *Online University Student Social Support and Well-being*.

This survey is part of an investigation into what types of online support (university offered and personal use) are associated with positive outcomes for students.

This form is part of the process of informed consent. It should give you the basic idea of what the research is about and what your participation will involve. It also describes your right to withdraw from the study. In order to decide whether you wish to participate in this research study, you should understand enough about its risks and benefits to be able to make an informed decision. This is the informed consent process. Take time to read this carefully and to understand the information given to you. Please contact the researcher, Sarah-Kay Walker, if you have any questions about the study or for more information not included here before you consent.

It is entirely up to you to decide whether to take part in this research. If you choose not to take part in this research or if you decide to withdraw from the research once it has started, there will be no negative consequences for you, now or in the future.

Introduction:

My name is Sarah-Kay Walker and I am a graduate student in the Faculty of Business Administration at Memorial University. As part of my Masters thesis, I am conducting research under the supervision of Dr. Kara Arnold.

This study aims at understanding the relationship between use of online social supports and student well-being. We are also interested in which types of online social supports have benefitted students the most. By understanding about the use of university provided online social supports (for example, social events, counselling services, teams and clubs) we hope to make

recommendations about how universities can best support students' needs when offering online social support.

By completing this survey, you will allow us to measure your trust and use of certain online social support services (both university/college provided and personal), stress, well-being, your personality, anxiety, and general demographics.

Purpose of study:

The first purpose of this study is to assess how students stress and well-being has been affected during the COVID-19 pandemic. The second purpose of this study to assess students' use of university/college online social support and to assess if this social support makes the relationship between student stress and well-being better. The survey serves as an exploratory investigation of the relationship between online social supports, stress and well-being during COVID-19

What you will do in this study:

In this study, you will be answering survey questions presented to you in an online survey. The questions ask about your trust and use of certain online social services during the COVID-19 global pandemic. (both university-offered and personal use), stress and well-being, anxiety and your personality. Some questions regarding use of specific services (i.e. counselling) could be upsetting to some participants. Further, questions regarding the COVID-19 global pandemic, stress and well-being also have the potential to be upsetting to some participants. Please remember that you do not need to answer any questions that make you feel uncomfortable and that you are free to withdraw from the survey at any point by simply closing your browser.

Length of time:

The study will take approximately 15 minutes to complete.

Withdrawal from the study:

You may withdraw consent at any time during the study up until the point of submission. This includes now (by not providing consent) or throughout the questionnaire at any time (by not completing it or exiting it).

You will be prompted in the final step of the survey to input your Prolific ID code. This is how we will be able to provide you compensation for taking part. Should you choose not to have your data used in the study, you are still able to enter your Prolific ID code to receive payment. Prolific will not know whether you gave consent to use your data.

Possible benefits:

You will have the opportunity to share how these services are working for you, which may result in a better online social experience. This study is also directly related to COVID-19, allowing you the opportunity to provide information that may allow to universities to better adapt to the current global situation. Lastly, you will be helping to inform best practices, and contributing to the scientific community.

Compensation

For your participation in this study, you will be paid 2.00 pounds. Please remember that you must provide your prolific ID to receive compensation. We will delete this ID once it has been entered for payment.

Possible risks:

There is a potential for emotional upset from some of the questions on the survey. In particular, questions regarding types of the social support, stress and well-being received by various services. Please remember, you do not need to answer any questions that make you uncomfortable and you can withdraw from the survey at any point. Your participation is completely voluntary. The data will be anonymous and confidential so there are no social risks. There are no financial risks.

If you are feeling isolated and alone during **COVID-19**, you are encouraged to reach out and speak with a trained mental health peer supporter. If you are experiencing stress or anxiety related to completing this survey and you are located in Canada please call Crisis Services Canada toll free: 1(833) 456 4566, or Canadian Crisis Hotline at: 1 (888) 352 2272. If you are located outside of Canada please consult with a health care provider near you. Also please remember you can access your university's student counselling and wellness services should you require them.

Confidentiality:

Confidentiality is ensuring that identities of participants are accessible only to those authorized to have access.

Only the researchers, and authorized research assistants will have access to the data. Although the data from this research project may be published in journals and presented at conferences, the data will be reported in aggregate form, so that it will not be possible to identify individuals. Moreover, we are not collecting IP addresses.

Please note that your institution **WILL NOT** know you have completed the survey and **WILL NOT** have access to your individual data.

Anonymity:

Anonymity refers to not disclosing participant's identifying characteristics, such as name or description of physical appearance.

This survey will collect your prolific ID code to ensure payment, however once payment is ensured it will be deleted to ensure anonymity. We assure you that every reasonable effort will be made to assure your anonymity and that you will not be identified in any reports, presentations, or publications.

This survey does not collect any additional identifying data (such as your name), however it does ask demographic data (such as age, area of study, etc.). Because names or specific identifying data are not collected as part of the main survey, your data will be anonymous and impossible to use to identify you once your Prolific code is deleted.

The answers of the survey will not be shared outside of the aggregated (collected together) reporting of the data included in academic research, any publications, or related presentations. Your data will not be traceable back to you. Furthermore, Prolific will not know your answers to the survey, and researchers will not know any personal information outside of any demographic information you choose to provide.

Storage of Data:

Questionnaires will be stored electronically on password-protected servers and computers (i.e., researchers' university laptop and desktop computers). No identifying information will be stored with the data or will be linked to the data files in anyway (e.g., similar file names). The data will be kept for a minimum of five years, as per the Memorial University policy on Integrity in Scholarly Research. The data will not be used for archival purposes; rather it will be maintained in case the research is "audited" by another researcher or future analyses are required for revision purposes in the publication process.

Reporting of Results:

The collected data will be used in a thesis that will be published, submitted for journal publication, and potentially presented at conferences. The data will be reported without any personally identifying information. It will only be presented in an aggregated form.

This thesis will be publicly available at Memorial University's QEII Library which you can access using this URL: <http://www.library.mun.ca/>

A summary of the findings will also be available for anyone who is interested at: <https://karaarnold.com>

Questions:

We would be more than happy to answer any questions that you have about the study via email. If you would like more information about this study, please contact: Sarah-Kay Walker (slwalker@mun.ca).

The proposal for this research has been reviewed by the Interdisciplinary Committee on Ethics in Human Research and found to be in compliance with Memorial University's ethics policy. If you have ethical concerns about the research, such as the way you have been treated or your rights as a participant, you may contact the Chairperson of the ICEHR at icehr@mun.ca or by telephone at 709-864-2861.

Consent:

By completing this survey, you agree that:

- You have read the information about the research.
- You have been able to ask questions about this study.
- You are satisfied with the answers to all your questions.
- You understand what the study is about and what you will be doing.
- You understand that you are free to withdraw from the study, without having to give a reason, and that doing so will not affect you now or in the future.
- You understand that once you hit the submit button we will be unable to delete your data as it will be anonymous

You can end your participation by simply closing your browser or navigating away from this page.

By consenting to this online survey, you do not give up your legal rights and do not release the researchers from their professional responsibilities.

Please retain a copy of this consent information for your records.

Clicking *Accept and Start Survey* below and submitting this survey constitutes consent and implies your agreement to the above stipulations.

Appendix F: Full Measures

Please remember that you may skip any questions you do not wish to answer. Thank you so much for your participation.

QUESTIONNAIRE:

Are you a: [Student type A – note information in square brackets will not be part of the survey shown to participants]

- Graduate student
- Undergraduate student
- Other (open text box)

Are you studying: [Student type B]

- Part time
- Full time
- Other (open text box)

Are you an international student? YES NO

If YES, are you living in the same country as your university? YES NO

What country is your university located in? (open text box)

What program are you in (drop down menu):

- Business
- Engineering
- Arts/Humanities
- Science
- Music
- Medicine
- Education
- Other (open text box)

What year of study are you in?

- Slider bar

What is your age in years?

- Slider bar

I identify as: (dropdown) Female; Male; Transgender female; Transgender male; Gender nonconforming; I prefer not to report my gender'; You do not have an option that applies to me, I am (open text box)

What is your currently living situation?

- I am currently living at home with family
- I am currently living with roommates (off-campus)
- I am currently living in residence
- I am currently living alone
- Other: _____

[Measure of Online Social Support]

We are interested in your use of personal online social support. For example, personal sources could include the use of Facebook or Zoom to connect with family and friends.

Now think about the ***personal online spaces/platforms*** you use. Rate how often the following things have happened for you while you interacted with others (family or friends) online over the last two months on these personal platforms.

Use the following scale:

1_ Never 2 _ Rarely 3 _ Sometimes 4_ Pretty Often 5 _ A Lot

1. People show that they care about me online.
2. Online, people say or do things that make me feel good about myself
3. People encourage me when I'm online
4. People pay attention to me online.
5. I get likes, favorites, upvotes, views, etc. online.
6. I get positive comments online.
7. When I'm online, people tell me they like the things I say or do.
8. Online, people are interested in me as a person.
9. People support me online.
10. When I'm online, people make me feel good about myself.
11. When I'm online, I talk or do things with other people.
12. People spend time with me online.
13. People hang out and do fun things with me online.
14. Online, I belong to groups of people with similar interests.
15. People talk with me online about things we have in common.
16. Online, I connect with people who like the same things I do.
17. I am part of groups online.
18. When I'm online, people joke and kid around with me.
19. People relate to me through things I say or do online.
20. Online, people make me feel like I belong.

Now we want you to ***shift your attention to university-provided online social support.***

Now, think about online university-related spaces/platforms you use. University-provided sources could include online bingo, trivia, online counselling, or other services through your student association. Rate how often the following things have happened for you while you have interacted with your college/university online over the last two months.

Use the following scale:

1_ Never 2 _ Rarely 3 _ Sometimes 4_ Pretty Often 5 _ A Lot

21. When I'm online, my university give me useful advice.
22. Online, the university provides me with helpful information.
23. If I had a problem, the university would help me online by saying what they would do.
24. Online, my university would tell me where to find help if I needed it.
25. My university help me learn new things when I'm online.
26. My university offer suggestions to me online.
27. My university tell me things I want to know online.
28. When I'm online, my university helps me understand my situation better.
29. If I had a problem, my university would share their point of view online.
30. My university helps me see things in new ways when I'm online.
31. My university online would help me with money or other things if I needed it.
32. When I'm online, my university helps me with school or work.
33. Online, my university helps me get things done.
34. If I needed a hand doing something, online, my university will help out.
35. Online, my university offers to do things for me.
36. Online, my university helps me with causes or events that I think are important.
37. When I'm online, my university has offered me things I need.
38. Online, my university may lend me something when I need something.
39. When I need a hand with school or work things, I get help from my university online.
40. I contact my university online to get help or raise money for things I think are important.

We are interested in what university offered online platforms are used. What type of online university-provided social support do you use? University-provided sources could include Online bingo, trivia, online counselling, or other services through the student association. [Select more than one]

- A. Counselling
- B. Facebook
- C. Sports teams (university offered)
- D. Trivia nights/ social events
- E. Peer tutoring/writing workshops
- F. Athletic and recreational services
- G. Other (open text box)

We are interested in what university offered online platform you use most often. What type of online university-provided social support do you use most often? University-provided sources could include Online bingo, trivia, online counselling, or other services through the student association. [Select one only]

- A. Counselling
- B. Facebook
- C. Sports teams (university offered)
- D. Trivia nights/ social events

- E. Peer tutoring/writing workshops
- F. Athletic and recreational services
- G. Other (open text box)

Within the past two months, how often have you used this service?

- A. Everyday 1
- B. Several times a week 2
- C. About once a week 3
- D. 2 or 3 times a month 4
- E. Once a month 5
- F. Less than once a month 6

We are interested in what university offered online platforms are most helpful. What type of online university-provided social support do you find most helpful? University-provided sources could include Online bingo, trivia, online counselling, or other services through the student association.

- A. Counselling
- B. Facebook
- C. Sports teams (university offered)
- D. Trivia nights/ social events
- E. Peer tutoring/writing workshops
- F. Athletic and recreational services
- G. Other (open text box)

[Citation:

Lin, K., & Lu, H. (2011). Why people use social networking sites: An empirical study integrating network externalities and motivation theory. *Computers in Human Behavior*, 27(3), 1152-1161. doi:10.1016/j.chb.2010.12.009]

Perceived Financial Threat

Please indicate how you feel about your current financial situation. (Agreement scale)

1. I am uncertain about my financial situation.
2. I feel at risk.
3. I feel threatened.
4. I am worried about my financial situation.
5. I think about my financial situation a lot.

Marjanovic, Z. (2013). Psychometric evaluation of the financial threat scale in the context of the great recession. *Journal of Economic Psychology*

Perceived Threat – Illness

Please indicate how you feel about COVID-19. (Agreement scale)

1. I feel uncertain about the threat that COVID-19 poses to me.
2. I feel that COVID-19 puts me at risk.
3. I feel threatened by COVID-19.
4. I worry about COVID-19.
5. I think about COVID-19 a lot.

[Reference:

Marjanovic, Z. (2013). Psychometric evaluation of the financial threat scale in the context of the great recession. *Journal of Economic Psychology*].

7-item General Anxiety Disorder-7 Scale

Over the last 2 months, how often have you been bothered by the following problems?

Response: 0=Not at all 1=Several days 2=More than half the days 3=Nearly every day

Feeling nervous, anxious or on edge.

Not being able to stop or control worrying.

Worrying too much about different things.

Trouble relaxing.

Being so restless that it is hard to sit still.

Becoming easily annoyed or irritable.

Feeling afraid as if something awful might happen.

[Reference:

Spitzer RL, Kroenke K, Williams JBW, Lowe B. A brief measure for assessing generalized anxiety disorder. *Arch Intern Med*. 2006;166:1092-1097.; Used in Byrne et al 2014 LQ pub]

In general, would you say your health is Excellent, Very Good, Good, Fair or Poor

[Reference:

DeSalvo, K. B., Jones, T. M., Peabody, J., McDonald, J., Fihn, S., Fan, V., ... & Muntner, P. (2009). Health care expenditure prediction with a single item, self-rated health measure. *Medical care*, 440-447.]

[Well-being (Past 30 days – 5 item measure)]

Indicate of each of the 5 statements which is closest to how you have been feeling over the past two months...

- have felt cheerful and in good spirits
- have felt calm and relaxed
- I have felt active and vigorous
- I woke up feeling fresh and rested
- My daily life has been filled with things that interest me

[Citation:

Bech, P., Gudex, C., & Johansen, K. S. (1996). WHO (Ten) Well-being Index. *PsycTESTS Dataset*. doi:10.1037/t64029-000]

[Qualitative Questions]

In your opinion, has your university transferred social supports online effectively? YES NO
[chose one]

If yes, why? [open text box]

If not, why not? [open text box]

Which social support do you benefit the most from prior to the COVID-19 global pandemic?
[open text box].

Is there anything else you would like use to know about your online social support services either personal or university related. [open text box].

Input your Prolific ID here: [open text box]

End of survey message:

Thank you so much for taking part in our study.

If you are feeling isolated and alone during **COVID-19**, you are encouraged to reach out and speak with a trained mental health peer supporter. If you are experiencing stress or anxiety related to completing this survey and you are located in Canada please call Crisis Services Canada toll free: 1(833) 456 4566, or Canadian Crisis Hotline at: 1 (888) 352 2272. If you are located outside of Canada please consult with a health care provider near you. Also please remember you can access your university's student counselling and wellness services should you require them.