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## The Relationship Between COVID-19 Stress, Psychological Inflexibility, and Psychological Well-Being

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THE RELATIONSHIP BETWEEN COVID-19 STRESS, PSYCHOLOGICAL  
INFLEXIBILITY, AND PSYCHOLOGICAL WELL-BEING

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A Thesis  
Presented to the  
Faculty of  
California State University,  
San Bernardino

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In Partial Fulfillment  
of the Requirements for the Degree  
Master of Science  
in  
Clinical/Counseling Psychology

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by  
Alyx Michele Duckering  
May 2022

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## ABSTRACT

Since the onset of the COVID-19 pandemic, the literature on the mental and physical health consequences of COVID-19 has expanded exponentially. Much of the published research has focused on the physical health and economic consequences of COVID-19. Research on the mental health effects of COVID-19 has primarily addressed the increase in anxiety and depression and related avoidance/safety behaviors surrounding COVID-19 (Taylor et al., 2020). Although there is an emerging literature on the COVID-19 mental health consequences, there is a paucity of research examining the processes of how people respond to COVID-19 stress and psychological well-being. Specifically, data examining potential psychological processes (i.e., psychological inflexibility) that are potential mechanisms for the relationship between COVID-19 stress and overall psychological well-being are limited. Thus, the purpose of the present study was to explore whether the processes of psychological inflexibility mediate the relationship between COVID-19 related stress and psychological well-being. We operationalized psychological inflexibility utilizing measures of cognitive fusion, experiential avoidance, commitment, and valued living. Participants were 137, primarily Latinx undergraduate students (60% female, 37% male, and 3% other) at a large Southwestern university. We hypothesized that the relationship between COVID-19 stress and psychological well-being would be indirect and mediated by psychological inflexibility. The hypothesis was supported utilizing an SPSS statistical macro program PROCESS (Hayes, 2013) for testing multiple

mediation models. Results revealed that psychological inflexibility fully mediated the relationship between COVID-19 stress and psychological well-being. The full model accounted for a statistically significant amount of variance ( $R^2 = .78$ ,  $F(6, 145) = 87.83$ ,  $p = .000$ ), specifically, COVID-19 stress and psychological inflexibility accounted for 79% of the outcome variance. Additionally, there was a statistically significant total effect of COVID-19 stress ( $b = -.5450$ ,  $p = .0000$ , 95% CI  $[-.7739, -.3161]$ ) on psychological well-being. After accounting for the psychological inflexibility mediators, the direct effect of COVID-19 stress on psychological well-being was no longer statistically significant ( $b = -.0060$ ,  $p = .9297$ , 95% CI  $[-.1397, .1277]$ ). Based on the analyses, four variables of psychological inflexibility (experiential avoidance, committed action, values-progress, and values-obstruction) mediated the relationship between COVID-19 stress and psychological well-being. Clinical implications regarding psychological well-being in a global pandemic, limitations, and future directions of the research are discussed.

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# CHAPTER ONE

## INTRODUCTION

### COVID-19

The novel coronavirus (COVID-19) pandemic is a global phenomenon that has affected nearly every country. Many, if not all, facets of life have been disrupted in some way (i.e. physical health, mental health, job status, education mode, childcare, policies, social restrictions, media exposure, etc.). To date, the number of confirmed cases in the United States has exceeded 20.7 million, and the number of deaths has exceeded 350 thousand, with limited therapeutic interventions (WHO, 2020). Even since the vaccine was disseminated, there has been uncertainty regarding the percentage of the population who will take it. COVID-19 symptoms vary widely. They include, but are not limited to shortness of breath, fever, cough, and loss of taste or smell (CDC, 2020). The long-term effects of COVID-19 are unknown, and some people are affected much more severely than others. There is also changing information about the specific risk factors that lead to more severe cases. In addition to the mere existence of the virus, many people have been furloughed or laid off, and most currently employed people have the added challenge of dealing with work life balance and childcare, domestic violence issues, and keeping at risk family members safe (Marazziti, 2020).

## COVID-19 Uncertainty and Safety Behaviors

The COVID-19 virus also is associated with uncertainty and anxiety as the COVID-19 virus has become politicized. The CDC guidelines have evolved gradually in response to developing empirical knowledge about the nature of the spread of the virus and receiving inconsistent messaging from the government (CDC, 2020). The uncertainty of this novel virus has shaped an atmosphere of mass hysteria, misinformation, and a lack of trust among people and leadership figures. Some people believe the virus is either a hoax or not significant enough of an issue to limit the economy, whereas others take the pandemic more seriously and try to follow the public health guidelines the best they can (Casale & Flett, 2020). Unlike other countries, the United States response to COVID-19 has not been consistent across regions. Different states and even counties have adopted inconsistent public health guidelines/regulations with varying degrees of adherence to these guidelines/regulations. Some people indicate a belief that wearing a face covering is an infringement on their rights and only wear them when required, some people host and attend parties, and many do not adhere to social distancing guidelines. Others engage in recommended safety behaviors such as frequent hand washing, wearing masks, sanitizing, social distancing, and/or limiting activities even if certain establishments have resumed operation. The emerging and conflicting information about COVID-19 has led to distrust, fear, confusion and uncertainty and likely has an effect on psychological well-being (Satici et al., 2020). The inconsistency and uncertainty surrounding

COVID-19 has created a conflict between priorities of being cautious for the sake of health (self and other) and our innate need for social interaction, fear of missing out, and fear of not mattering due to the social distancing restrictions (Casale & Flett, 2020).

### COVID-19 Stress and Psychological Distress

As COVID-19 is novel, the literature on the effects of the virus has been steadily expanding; however, there is a dearth of information about the psychological consequences of living with the virus. Although the peer-reviewed articles may be limited due to recency of the virus, trusted health organizations have collected data on psychological impact. For example, the Kaiser Family Foundation found links between COVID and depression, anxiety, distress, substance use disorder and suicide (Panchal et al., 2020). The majority of the research has focused primarily on the physical sequelae of COVID-19 -- respiratory failure, stroke, inflammatory complications, organ failure, death, and uncertain chronic health issues (McIntosh, 2020).

Research on the overall level of increased stress and psychological distress attributable to COVID-19 is starting to emerge. As the pandemic sweeps across the world, so too has an increase in psychological distress. Fitzpatrick and colleagues (2020) noted the ubiquity of COVID-19 related mental health issues in various groups. Specifically, they note that although distress is higher in areas where cases are more concentrated and in marginalized groups, people living in less affected areas are not escaping the experience of symptoms of

depression, anxiety, and general fear and stress. With the pandemic continuing to surge, the negative effects on mental health might not disappear anytime soon. Therefore, it may help to understand the factors that enhance people's abilities to live with COVID-19 related stress and maintain psychological well-being (Fitzpatrick et al., 2020). Because COVID-19 affected essentially all areas of life, it seems reasonable that people would experience anxiety/fear on a wide range of aspects of COVID-19. In order to best help the population cope with the pandemic, we may benefit from an understanding of how one's response to this COVID-19 stress affects psychological well-being.

Currently there are a few notable studies that have assessed the relationship between COVID-19 stress/anxiety and psychological distress (Ahorsu et al., 2020; Korajlija et al., 2020, Taylor et al., 2020). Taylor et al., (2020), in a validation study of the COVID-19 Stress Scale, utilized two large samples (U.S. and Canada) and found that several COVID-19 stress themes (i.e., COVID-19 danger and contamination, COVID-19 socioeconomic consequences, COVID-19 xenophobia, COVID-19 traumatic stress symptoms, and COVID-19 compulsive checking) correlated significantly with measures of pre-COVID levels of health anxiety, obsessive-compulsive checking and obsessive-compulsive contamination fears. Additionally, results revealed that these same COVID-19 stress themes were significantly related to current levels of depression and anxiety. The least predictive COVID-19 stress theme was

COVID-19-related xenophobia. These results suggest that COVID-19 related stress is related to both past and current levels of anxiety and depression.

Ahorsu et al., (2020) in their validation study for the Fear of COVID-19 Scale with Iranian participants, found that COVID-19 fear correlated significantly with measures of current depression, anxiety, perceived infectability, and germ aversion. Korajlija and Jokich-Bejic (2020) in a validation study of a COVID-19 anxiety scale and COVID-19 related concerns and behaviors in Croatia, found that with increasing reports of COVID-19 related fatalities over a three-week period, COVID-19 related concerns and safety behaviors increased significantly. This effect was most pronounced in women with children and those living with a person with a chronic health condition.

The present study utilizes the COVID Stress Scale developed by Taylor and colleagues (2020) as this comprehensive scale assesses COVID stress about susceptibility to virus, psychological and somatic symptoms of anxiety attributed to the virus and frequency of safety behaviors. This scale is an encouraging source of information on the comprehensiveness of people's responses to the virus, and how their behaviors and mental health may have been affected. However, there is a deficiency in literature elucidating the processes behind how people respond to COVID-19 related stress, and how those responses promote or interfere with psychological well-being.

## Psychological Well-Being

Most treatment outcome research has focused primarily on reduction of psychological symptoms and post-treatment diagnostic status (e.g. no longer meet criteria for psychological disorder). However, less is known about the processes through which effective treatment enhances psychological well-being, a broader view of healthy functioning. There is room in the literature for gaining a broader understanding of psychological outcomes including well-being in social/interpersonal outcomes, meaning and purpose outcomes, general functioning and self-acceptance. Instead of defining psychological outcomes in terms of symptom reduction only, it would be prudent to understand outcomes in the larger context of psychological well-being. Although research on psychological symptom reduction has its merits, researchers have offered a broader view of possible outcomes that examines the multiple contexts of positive aspects of being (Seligman & Csikszentmihaly, 2000). Understanding how one can experience psychological well-being despite the challenges of COVID-19 stress can inform interventions and theoretical approaches to psychotherapy to extend well-being beyond the baseline of symptom reduction (Bohlmeier, 2017). For example, Huppert (2009) described psychological well-being as not just feeling good about oneself and life but also the ability to function effectively.

The notion of psychological well-being can be traced back to the Greek philosophers' discussions on the definition of well-being and the concepts of

hedonic well-being (the presence of pleasure and the avoidance of pain) and eudaimonic well-being (a presence of meaning, purpose and self-actualization) (Deci & Ryan, 2006; Ryff, 1989). Deci and Ryan (2006) also elucidate that although research on psychological well-being traditionally aligns with hedonism, eudaimonism deserves more attention in our goal of understanding the facets of psychological well-being. Diener's (1984) work on life satisfaction focused primarily on hedonism and people's subjective self-reported levels of happiness or quality of life. Both hedonism and eudaimonism seem to play a role in one's overall well-being, and understanding both these factors enhance our understanding of psychological well-being. Consequently, it seems reasonable to have a model that incorporates facets of both when exploring overall psychological well-being.

#### Ryff's Model of Psychological Well-Being

One comprehensive and frequently cited model of psychological well-being is the model of Ryff (1989). Our study utilizes Ryff's 42-item Psychological well-being Scale (PWBS), which is based upon her model of psychological well-being across six dimensions: **self-acceptance, positive relations with others, autonomy, environmental mastery, purpose in life, and personal growth** (Ryff, 1989). The development of the six dimensions in Ryff's model of psychological well-being stems from the theories of Maslow, Rogers, Jung, Allport, Erikson, Buhler, Neugarten, and Jahoda as PWB encompasses self-actualization, fully functioning, individuation, maturity, psychosocial development,

life fulfillment, personality change, and criteria for positive mental health (Ryff & Singer, 1996). The PWBS and its dimensions have been validated in multiple languages and cultures. Kallay and Rus (2014) translated the PWBS into Romanian. Though the model did not fit perfectly, they found evidence of a cross-cultural convergence of psychological well-being, especially in the dimensions of personal growth, positive relations with others, purpose in life, and self-acceptance.

In Ryff's psychological well-being model (1989), **Self-acceptance** has been operationalized as having positive attitudes towards oneself, including accepting oneself and one's past instead of focusing on shame and guilt. **Positive relations with others** is defined as expressing warmth, intimacy and generativity. Additionally, this area involves the degree of empathy, capability for affection and healthy, long-term close relationships. **Autonomy** is defined as possessing an internal locus of control and individuation. An autonomous person is believed to feel they can make their own decisions, feels confident in their values, and feels free to not conform to a group at large. **Environmental mastery** is defined as possessing agency and the ability to advance one's wishes through creative physical and/or mental activities. People with environmental mastery are believed to find and take advantage of opportunities for growth in themselves, their careers, living situations, etc. They are aware of their resources and can balance their responsibilities. Having a **Purpose in life** involves setting goals and working



towards them, finding positive meaning in experience and living with intentionality. **Personal growth** involves developing into one's potential, yet striving to expand on and work towards a higher level of potential (Ryff, 1989). A person oriented towards personal growth is continually developing rather than becoming complacent and stagnant. Across the six dimensions, having a positive relationship with oneself and others, a goal-oriented sense of direction, and individuation contribute to one's psychological well-being

Many people have lost their income, housing, and other basic survival needs due to the impact of COVID-19. Consistent with Maslow's notion of Hierarchy of Needs, basic survival needs are the priority for many (Casale & Flett, 2020). Additionally, the interpersonal and personal growth aspects of wellbeing are likely not at the forefront of a significant portion of the population (Casale & Flett, 2020). Even with basic survival needs being met, the shelter in place and physical/social distancing restrictions significantly limit access to the interpersonal and personal growth aspects of wellbeing. The proposed increased level of uncertainty and stress surrounding the pandemic has seemingly spared very few from the development of COVID-19 related stress and psychological and behavioral consequences (Presti et al., 2020). As an increase in anxiety across ages and socioeconomic backgrounds has emerged, Otu and colleagues (2020) proposed that the sources of the decrease in psychological well-being include worry about one's own health and the health of

their loved ones, effects of social isolation, experience of xenophobia, substance abuse, depression, suicidality, or any combination of the above.

The COVID-19 pandemic is an emerging phenomenon with much to learn about how the pandemic has influenced general psychological well-being. However, literature on SARS and other previous pandemics can perhaps shed some predictive light on what we might expect in terms of anxiety, PTSD, resilience, and recovery through post traumatic growth after the pandemic (Polizzi et al., 2020). Previous pandemics such as SARS and EBOLA negatively impacted psychological well-being, and we are likely also experiencing an overall decline in psychological wellbeing with COVID-19 (James et al., 2019; Gardner & Moallef, 2015). Additionally, understanding the possible processes influencing the relationship between COVID-19 related stress and psychological well-being (i.e., psychological inflexibility) will have important prevention and treatment implications. One possible mechanism is psychological inflexibility (Hayes et al., 2013).

### Psychological Inflexibility

Relational frame theory (RFT) is the underlying theory behind Acceptance and Commitment Therapy (ACT), and focuses on how humans process language (Hayes et al., 2013). RFT proposes that due to the nature of human brain development, particularly the cerebral cortex, we are able to form abstract ideas and relationships among these ideas. This ability to relate ideas and problems in the abstract, absence of the actual occurrence of these ideas, or the ability to

conceptualize problems in an abstract and relational manner has allowed for our advances in science and technology. The downside is having a large potential to worry about things that have not happened (Hayes et al., 2001). For example, we worry about potential consequences of events whereas lower order organisms do not. In essence, we relate various stimuli in the world, and if the psychological functions of those stimuli change, this can lead to human suffering (Hayes et al., 2001; Presti et al., 2020). In the context of COVID-19, Presti and colleagues (2020) present an example about how Corona beer was associated with the negative consequences of the coronavirus, as people related the names and internalized the connection. Instead of initially accommodating for the differences between stimuli, we have a tendency to generate negative thoughts and engage in inflexible ways of being in the world that are associated with our attempts to avoid negative experiences (Presti et al., 2020; Rolff, 2018). This inflexibility may work in the short term, but we end up removing ourselves from our experience (e.g., emotions, thoughts) and lose our commitment to values (Hayes et al. 2013).

Psychological flexibility is a key component of acceptance and commitment therapy (ACT). Hayes and colleagues (2013) present a hexaflex model of psychological flexibility and inflexibility components for each dimension: defusion/cognitive fusion, acceptance/experiential avoidance, committed action/inaction, values/lack of clear values, self as context/self as concept, and contact with the present moment/focus on past and future (Hayes, 2013;

Appendix C). As Rolffs (2018) presents, though the 12 total facets of psychological flexibility and inflexibility are conceptualized separately, they are essentially two sides of the same coin and very much related to each other. For example, it is more adaptive to see ourselves as the context, not the concept (Hayes et al., 2013). Seeing ourselves as the context requires us to step outside of the experience and observe an experience rather than getting fused and identifying with it, as in saying “I feel depressed” instead of “I am depressed” (Hayes et al., 2013). Psychological pain (e.g. anxiety, depression, etc.) is ubiquitous and inevitable; however, pain does not necessarily mean suffering. The efforts to cope with psychological pain become inflexible strategies that deny experiencing psychological pain, move us away from a commitment to valued living, and lead to suffering (Hayes et al., 2013; Presti et al., 2020). For the current study, we utilized the most reliable and discriminant measures of psychological inflexibility (i.e., cognitive fusion, experiential avoidance, values and commitment) to reduce potential for multicollinearity.

### Cognitive Fusion

Cognitive fusion is the process of taking thoughts literally as truths rather than experiencing them solely as thoughts (Hayes et al., 2013). In people who are fused to their thoughts, their thoughts construct their reality. The thoughts become the “absolute truths” we adhere to automatically, and it would take mindful effort to separate ourselves from the thoughts as is the goal of the psychological flexibility mechanism of defusion (Gillanders et al., 2014).

Cognitive fusion is analogous to being caught up with one's thoughts (Harris, 2009). Gillanders and colleagues in a development and validation study of the Cognitive Fusion Questionnaire, provided evidence of construct validity for the scale across several samples and found that cognitive fusion was positively associated with psychological inflexibility, negative automatic thoughts and rumination, and psychological distress (depression and anxiety). Additionally, these authors found that cognitive fusion was negatively associated with measures of mindfulness, general health, quality of life, life satisfaction, and valued living. As ACT is continuously increasing in popularity, so too is the literature elucidating its various mechanisms. In a two-part quantitative study conducted by Fergus (2015) with a sample of 623 community adults, results of correlation and multiple linear regression analyses found a positive relationship between cognitive fusion and health anxiety. In the present study, we expect higher levels of COVID-19 stress and cognitive fusion to be associated with lower scores in psychological wellbeing. When one becomes entangled in their thoughts that regulates one's behavioral and emotional responses, one becomes stuck in their thoughts and moves away from valued behaviors associated with psychological well-being. Cognitive defusion, on the other hand, involves metacognitive processes of recognizing and analyzing the thoughts as thoughts, separating our identity from the thoughts themselves, e.g., we are not our thoughts (Gillanders et al., 2014). Cognitive defusion allows us to avoid getting

entangled with our thoughts and experiential avoidance, which permits a more valued behavioral repertoire.

### Experiential Avoidance

Experiential avoidance is the disinclination to tolerate negative internal experiences or inclination to avoid unpleasant experiences (Gamez et al., 2014). Experiential avoidance of the unpleasantness of negative thoughts, feelings or behaviors is maintained via negative reinforcement (Hayes et al., 2013). Humans dislike experiencing negative aspects of life, and may go through extreme lengths to avoid them, even if it is maladaptive as a long-term coping strategy (Gamez et al., 2014). Gamez and colleagues (2014) in a validation study of the Brief Experiential Avoidance Questionnaire found in three independent samples consisting of students, patients and community members that experiential avoidance was positively associated with measures of negative emotionality, avoidance, and psychopathology (depression and anxiety). Additionally, the authors found that experiential avoidance was negatively associated with positive measures of personality and quality of life. These findings provide support for the inverse relationship between experiential avoidance and psychological well-being. Machell and colleagues in a sample of 95 college students examined the relationships between positive and negative affect, enjoyment in daily activities, meaning in life, and experiential avoidance. The authors found that daily experiential avoidance was positively associated with higher levels of distress (anxiety) and lower levels of meaning in life.

Additionally, experiential avoidance was negatively associated with psychological well-being and enjoyment of daily activities. Engaging in experiential avoidance inhibits emotion regulation and is linked to a decline in psychological wellbeing (Machell et al., 2015). Experiential avoidance is common with anxiety-inducing events, whether the anxiety is clinically diagnosable or not. Even as places open, people may avoid going out to public places, eating in restaurants, or even visiting friends and family. In the context of RFT, the experiential avoidance responses we use to distract ourselves from perceived aversive events become associated with the aversive event, therefore increasing the likelihood of experiencing the aversion (Hayes et al., 2013).

#### Lack of Clarity of Values and Commitment to Valued Living

Committed action is guided by our goals and values, is persistent, and allows for us to persevere flexibly in the face of setbacks (McCracken et al., 2014). McCracken and colleagues (2014) in a development and validation study of the Committed Action Questionnaire found in a sample of adults being treated for chronic pain that committed action was positively associated with measures of pain acceptance, social functioning, mental wellbeing, physical wellbeing, and vitality. Additionally, the authors found that experiential avoidance was positively associated with psychopathology (depression). These findings provide support for the relationship between committed action and psychological well-being.

Prior to Barrett and colleagues (2019) review of values-based measures, research ensuring the empirical support of existing psychometric tools was

insufficient. They explored seventeen values-based measures and determined six measures having the best psychometric properties, one of which being the Valuing Questionnaire (Smout et.al., 2014) which we used in this current study. Smout and colleagues (2014) in a developmental study of the Valuing Questionnaire found in a large sample of undergraduate psychology students that values-progress was positively associated with measures of personal well-being, life satisfaction, and positive affect. Additionally, the authors found that values-progress was negatively associated with negative affect and psychopathology (depression, anxiety, and stress). Conversely, values-obstruction was positively associated with measures of negative affect and psychopathology (depression, anxiety, and stress). Finally, values-obstruction was negatively associated with measures of personal well-being, life satisfaction, and positive affect. These findings provide support for the relationship between valued living and psychological well-being. With valued living, we still maintain a sense of ownership over the values we choose to live by, even if they align with others' values (Smout. et al., 2014). When we lose touch with our personal values for the sake of what we think others expect of us, or to avoid negative experiences such as punishment and shame, we stray from what we truly value and can become distressed. As our values become less clear and/or not our own or are merely related to the avoidance of experience, we stray further away from effective action (Hayes et al., 2013). During the COVID-19 pandemic, some people value individual freedoms and choose not to wear masks or social



distance even at the risk of infecting friends and family members. Those who value the wellbeing of friends and family may isolate themselves and not be as social and not engage in activities they previously enjoyed.

#### COVID-19 Stress, Psychological Inflexibility and Psychological Well-Being

As COVID-19 stress is prevalent and has significant physical and likely mental health consequences, it behooves us to understand the processes of the relationship between COVID-19 stress and psychological well-being.

Specifically, the current study will investigate the mediating role of psychological inflexibility on the relationship between COVID-19 stress and psychological well-being (Appendix A). In the present study, we hypothesize that the relationship between COVID-19 related stress and psychological well-being is indirect, and will be mediated by the processes of psychological inflexibility, specifically the variables of cognitive fusion, experiential avoidance, and lack of a strong commitment to values.

## CHAPTER TWO

### METHODS

#### Participants

Participants (N=152; 54% female, 42% male, 4% other) are students from California State University San Bernardino psychology classes, who participated to receive extra class credit. Participants ranged in age from 18 to 57 with a Mean age of 25.6, and a standard deviation of 9.0. The ethnic composition of the sample was 69% Latinx/Hispanic, 11% Caucasian (White), 4% African American (Black), 6% Asian (Asian American), 5% Bicultural, 5% Other. Less than 5% (4.6%) of participants reported having been diagnosed with COVID-19 themselves; however, 82% reported knowing someone who had been diagnosed with COVID-19, and 48% reported knowing someone who had become seriously ill due to COVID-19.

#### Measures

Participants were asked to complete an informed consent before being directed to a series of questionnaires that assess demographic information and the study variables of COVID-19 stress, cognitive fusion, experiential avoidance, committed action/valued living and psychological well-being. Participants received the surveys in a random order, with the exception of the demographic information form, which participants always completed last (See Appendix F). After completing the questionnaires, participants were given a post study

information form describing the study purpose in more detail. Additionally, counseling resources were provided.

#### Demographics Form

A demographics form assesses participants' age, gender, ethnicity, primary caretaker, primary language spoken by and education level of primary caretakers and student income.

#### Cognitive Fusion Questionnaire (CFQ; Gillanders et al., 2014)

The CFQ is a seven-point Likert scale that measures the tendency to become overly attached to one's thoughts. Sample items include "I tend to get very entangled in my thoughts" and "It's such a struggle to let go of upsetting thoughts even when I know that letting go would be helpful." The CFQ consists of seven items that range from 1 (never true) to 7 (always true). The CFQ demonstrated good internal consistency across five different large samples (i.e. students/community, work stress, mixed mental health, multiple sclerosis, and dementia caregivers) with Cronbach's  $\alpha$  ranging from .88 to .93. The authors provide numerous examples of evidence of concurrent validity of the CFQ and other related constructs; specifically, they report that the CFQ correlates .84 with the Ruminative Response Style Questionnaire (Nolen-Hoeksema & Jackson, S., 2001). Evidence for divergent validity was provided as the CFQ was correlated negatively with established measures of life satisfaction and quality of life.

#### Committed Action Questionnaire (CAQ-8; McCracken et al., 2014).

The CAQ-8 is an eight-item scale that measures an individual's committed action to important life values. The CAQ-8 consists of a seven item Likert scale ranging from 0 (never true) to 6 (always true). The CAQ-8 correlates as expected with other similar constructs such as acceptance. The CAQ is a truncated version of an original 18-item scale, and a 2-factor scale with positively and negatively phrased items. Sample items include "I prefer to change how I approach a goal rather than quit" and "I find it difficult to carry on with an activity unless I experience that it is successful." Internal consistency was adequate with a reported total score of  $\alpha = .87$ . The CAQ-8 also demonstrated high consistency as a unidimensional scale and 2-factor scale (McCracken et al., 2014). The total scores of the CAQ-8 demonstrated good construct validity with a correlation of .96 with the 18-item CAQ. No evidence for discriminant validity was provided.

The Valuing Questionnaire (VQ; Smout et al., 2014).

The Valuing Questionnaire was designed to evaluate the extent that a person enacted one's personal values during the past week, including the day of completing the questionnaire. The VQ consists of 10 items with a range of 0 (not at all true) to 6 (completely true). Sample items include "I worked towards my goals even if I didn't feel motivated to" and "When things didn't go according to plan, I gave up easily." The two subscales possess adequate internal consistency; progress toward valued living,  $\alpha = .87$ , and obstruction toward valued living,  $\alpha = .87$ . The authors reported that the VQ correlates .48 with the

VQ progress subscale and  $-.33$  with the VQ obstruction subscale (Wilson et al., 2010). No evidence for discriminant validity was provided.

Brief Experiential Avoidance Questionnaire (BEAQ; Gamez et al., 2014).

The BEAQ assesses experiential avoidance including emotional and behavioral avoidance. The questionnaire contains 15 items on a six point Likert scale (1= completely untrue of me; 2= mostly untrue of me; 3= slightly more true than untrue; 4= moderately true of me; 5= mostly true of me; 6= describes me perfectly). The items yield a single avoidance score that assess avoidance across six factors that relate to experiential avoidance: behavioral avoidance, distress aversion, procrastination, distraction/suppression, repression/denial, and distress endurance. Internal consistency was adequate with a reported  $\alpha = .86$ . Concurrent validity was demonstrated across patient, community and student samples, the BEAQ and Multidimensional Experiential Avoidance Questionnaire (MEAQ) experiential avoidance subscales correlated between  $.45$  and  $.85$  and the BEAQ and the MEAQ distress endurance subscale correlated between  $-.33$  and  $-.58$  (Gamez et al., 2014). The authors reported evidence of divergent validity as the BEAQ was negatively correlated with four of the five Big 5 personality traits (except neuroticism). No evidence for discriminant validity was provided.

COVID Stress Scale (CSS; Taylor et al., 2020).

The CSS is a five-point Likert scale that measures stress levels in response to COVID-19. The CSS consists of thirty-six items that range from 0

(not at all/never) to 4 (extremely/almost always). Sample items include “I am worried about catching the virus” and “I thought about the virus when I didn’t mean to.” The scale possesses adequate internal consistency, with  $\alpha > .80$  for all five factors. The authors provide evidence of concurrent validity in Canadian and U.S. samples as the five CSS subscales (COVID danger and contamination, COVID socioeconomic consequences, COVID xenophobia, COVID traumatic stress symptoms, and COVID compulsive checking) all were significantly correlated with current measures of anxiety and depression as well as measures of pre-COVID anxiety, obsessive compulsive checking and contamination behaviors (Taylor et al., 2020). No evidence for discriminant validity was provided.

Psychological Well-being Scale (PWS; Ryff et al., 1989).

The PWS is a 7-point Likert scale that measures psychological well-being across six domains: personal growth, self-acceptance, autonomy, environmental mastery, positive relationships, and purpose in life (see introduction). The PWS consists of forty-two items that range from 1 (strongly agree) to 7 (strongly disagree). Sample items include “In general, I feel I am in charge of the situation in which I live” and “The demands of everyday life often get me down.” The scale possesses high internal consistency,  $\alpha = .87$ . The authors provide evidence of concurrent validity as all subscales of the PWB were significantly correlated with established well-being scales (Ryff et al., 1989). No evidence for discriminant validity was provided.

## Procedure

Participants access all consent forms and surveys through the SONA research management system and are directed to Qualtrics.com (an online survey editorial system). Participants are asked to complete an informed consent before being directed to a series of questionnaires that assess demographic information, COVID-19 stress (Taylor et al., 2020), cognitive fusion (Gillanders et al., 2014), experiential avoidance (Gamez et al., 2014), committed action/valued living (Smout et al., 2014) and psychological well-being (Ryff et al., 1989). Four validity check items were randomly included throughout the surveys (see Appendix D). For inclusion in the study, participants must have answered all four validity items correctly. Additionally, participants with more than 10% missing data were excluded from analyses. No names or other identifying information will be recorded. Participants will receive the surveys in a random order, with the exception of the demographic information form, which participants will always receive last. After completing the questionnaires, participants are given a post study information form describing the study purpose in more detail. Additionally, counseling resources are provided.

## Analytic Strategy

The present study employed a non-experimental correlational design. The predictor variable was COVID-19 stress, the outcome variable was psychological well-being, and the mediator variables were three factors of psychological inflexibility - cognitive fusion, experiential avoidance, and lack of commitment to

values. Data analysis was quantitative in nature and employed multiple mediation regression analysis. All statistical analyses were performed using IBM SPSS version 27 (IBM Corporation, Armonk, NY, USA). The study hypotheses were tested utilizing an SPSS statistical macro program for testing multiple mediation models, called PROCESS (Hayes, 2013). A bootstrapping sampling procedure with 10,000 resamples was utilized to control for potential normality assumption violations. A bootstrapped 95% confidence interval indicates a statistically significant indirect effect if it does not include zero (Preacher & Kelley, 2011). Effect sizes were calculated using completely standardized indirect effects represented as the indirect effect of a one-unit change in the standardized predictor (1 unit = 1 standard deviation) on the standardized outcome. Completely standardized point estimates were used as a measure of effect size for the current study. Effect sizes of .14, .36, and .51 refer to small, medium, and large effects, respectively (Cheung, 2009). Mediation analyses were conducted with COVID stress as the predictor variable, psychological well-being as the outcome variable, and cognitive fusion, experiential avoidance and lack of commitment to valued living as simultaneous mediators.



## CHAPTER THREE

### RESULTS

#### Descriptive Statistics and Correlational Measures

Table 1 presents the descriptive statistics, internal consistency (Cronbach's  $\alpha$ ) coefficients, and correlations among all study variables. As expected, COVID-19 stress was negatively associated with psychological well-being. Additionally, COVID-19 stress was positively correlated with cognitive fusion, experiential avoidance, and values-obstruction, and negatively associated with committed action and values-progress. Lastly, committed action and values progress were positively associated with psychological well-being. Conversely, cognitive fusion, experiential avoidance and values-obstruction were negatively associated with psychological well-being.

#### Indirect Model

The model is presented in Figure 4. Tests for multicollinearity revealed that all predictors had VIF values of less than 5.0 and tolerance values greater than .10, so we proceeded with the analyses. The full model accounted for a statistically significant amount of variance ( $R^2 = .78$ ,  $F(6, 145) = 87.83$ ,  $p = .000$ ). COVID-19 stress and the psychological inflexibility variables accounted for 78% of the outcome variance due to the unique significant effects of experiential avoidance, committed action, values-obstruction, and values-progress. In terms

of psychological well-being, there was a statistically significant total effect of COVID-19 stress and psychological inflexibility mediators ( $b = -.5450$ ,  $p = .0000$ , 95% CI  $[-.7739, -.3161]$ ). Moreover, there was a statistically significant indirect effect of COVID-19 stress on psychological well-being via four out of the five psychological inflexibility variables (experiential avoidance, committed action, values-progress, and values-obstruction; see Figure 1). After accounting for the effect of psychological inflexibility, the direct effect of COVID-19 stress on psychological wellbeing was no longer statistically significant ( $b = -.0060$ ,  $p = .9297$ , 95% CI  $[-.1397, .1277]$ ). Based on the analyses, four variables of psychological inflexibility (experiential avoidance, committed action, values-progress, and values-obstruction) mediated the relationship between COVID-19 stress and psychological well-being. Cognitive fusion, however, only approached statistical significance as a mediator.

## CHAPTER FOUR

### DISCUSSION

Consistent with Satici and colleagues (2020), the present study demonstrated that higher levels of stress around COVID-19 was negatively associated with psychological well-being. As predicted, this relationship, however, was indirect and mediated by the psychological inflexibility variables of experiential avoidance and the three values/commitment variables of committed action, values-progress, and values-obstruction. Specifically, in the face of COVID-19 stress, higher levels of experiential avoidance and values obstruction, and lower levels of committed action and values progress yielded poorer psychological well-being. Contrary to study hypotheses, cognitive fusion only approached significance as a mediator of the relationship between COVID-19 and psychological wellbeing. Although the mediational effect of cognitive fusion was weaker and less reliable than the other hypothesized mediators, we will discuss the role of all the mediators on the COVID-19 and psychological well-being relationship.

In general, findings support the ACT Hexaflex model in that psychological inflexibility represents an unhealthy response to life stressors and is a mechanism through which life stress yields poor psychological well-being. Specifically, the mechanisms of high levels of experiential avoidance, with concomitant lower levels of commitment to aligned values and actions serves as a mechanism of action for the pathway of COVID-19 stress's negative impact on

psychological well-being. In the face of COVID-19 stress, a willingness to be connected with experience (e.g., emotions, thoughts and behaviors) and willingness to commit to one's life values, psychological well-being is either maintained or enhanced. Our results are consistent with Relational Frame Theory, specifically the theory underlying the Psychological Inflexibility Hexaflex Model associated with Acceptance and Commitment Therapy, where psychological inflexibility in response to negative experiences leads to diminished quality of life due to failure to commit to one's values and/or avoiding experiences - emotions and events (Hayes et al., 2001; Hayes et al., 2013).

Consistent with Hayes (2013) present findings suggest that individuals with high levels of psychological flexibility do not tend to let the stress of COVID-19 get in the way of doing what is important to them. People with higher levels of psychological flexibility do not avoid experiences of affect, thoughts and bodily sensations in ways that lead them astray from what they value in life. Instead, they experience their private events - positive and negative - and commit to action towards their life values. On the other hand, when people engage in experiential avoidance, they are more likely to avoid actions congruent with their values, and straying from their values may lead to a decline in psychological well-being (Ruiz, 2014; Hayes et al., 2013).

For those not handling COVID-19 stress well, the stress is impacting their ability to "stay the course" and stick with what is important to them, and they have difficulty dealing with or staying on track with the multitude of issues (i.e.

economic, physical, cognitive, mental). Among the mental issues, avoiding the experience of emotions can also lead to behavioral avoidance, even behaviors that align with one's values (Wolgast et al., 2013). In the present study, values-progress was a stronger predictor of psychological well-being and stronger mediator between COVID-19 stress and psychological well-being than values-obstruction. When people progress toward their values, they acknowledge that sometimes experiencing negative emotions or bodily sensations is necessary and acceptable (Harris, 2006; ). If they find experiencing these negative experiences unacceptable and avoid them instead, the path of action towards their values may be obstructed and they will not be able to live as meaningful a life due to moving away from their values (Harris, 2006).

It is important to note that perhaps people with higher levels of psychological flexibility may be able to cope better with stress in general, no matter the source. As a result, this relationship may occur whether COVID-19 is the specific stress source or not. Additionally, the relationship between COVID-19 stress and psychological well-being could have been explained by other variables such as more stable socioeconomic status or how many roles one has in their life (e.g., student, parent/caregiver, etc.) as well as how closely COVID has affected their lives (e.g., self or family diagnosed with COVID-19 and degree of illness or death). Lastly, as vaccines have been disseminated after data collection was completed, the effects of having this option were not ascertained in the study. These factors may be more prevalent on a campus with lower

socioeconomic status and could be factors affecting the results. Future research should address these demographic variables and an emerging COVID-19 landscape.

The present study hypothesized that cognitive fusion would have a mediating effect on the relationship between COVID-19 stress and psychological well-being, however the effect was not significant at the .05 level ( $p = .06$ ). These results appear inconsistent with Gillanders and colleagues (2014). However, even though the mediating effect of cognitive fusion only approached statistical significance, it would be prudent to discuss the role of cognitive fusion on the COVID-19 and psychological well-being relationship. Perhaps people became fused with ideas of uncertainty (e.g., "should I wear a mask or not?" "Is it safe to go outside or not?"). Future research should examine the mediating effect of other anxiety related variables such as intolerance of uncertainty (e.g., difficulty accepting ambiguity), and how the interaction of intolerance of uncertainty and cognitive fusion affect the relationship between COVID-19 stress and psychological well-being. Perhaps in the face of COVID-19 stress, the intolerance of uncertainty and cognitive fusion play a role in peoples' engaging in experiential avoidance, leading to not committing their actions towards their values, and decreasing their psychological well-being.

As the present study's participants were limited to CSUSB students, primarily Latinx and lower SES, the results can shed light on the experience of groups typically underrepresented and understudied in research. Perhaps a

contributing factor in the significant effect of COVID-19 stress on psychological well-being was that the sample consisted predominantly of marginalized groups, which aligns with Fitzpatrick and colleagues (2020). In a nationally representative sample of 10,368 U.S. adults, Fitzpatrick and colleagues examined the levels of fear of COVID-19 and found higher levels of fear in regions where more COVID-19 cases were, which tended to be regions of lower SES and marginalized populations. Additionally, fear levels were higher in those experiencing psychological distress (anxiety and depression). We also did not assess SES and demographic variables related to COVID-19 specific information such as the degree of participants' financial/economic impact/ stress, whether participants were personally infected with COVID-19 or if participants knew someone who was severely affected by COVID-19 (e.g., severe illness, need for hospitalization and death). The emerging nature of the pandemic and CDC guidance provided a fertile ground for those who struggle with uncertainty, which we did not measure. Other variables such as loss of income, degree of contact with COVID or family members with COVID sequelae, not measured, could influence the COVID-19 stress- psychological well-being relationship.

Further research should be conducted to explore the limitations of the present study. As our study was initiated shortly after the shutdown, more information and misinformation has emerged, vaccine rollout has commenced, and restrictions have been lifted at least to an extent. Future research could include a prospective versus cross-sectional design to examine the COVID-19

stress - psychological well-being relationship over time. Specifically, prospective designs could capture the variables assessing the emerging COVID-19 situation over time, e.g., vaccine development and dissemination, decreasing COVID-19 related deaths and cases, changing sociopolitical response to COVID-19, improving economy, lifting of some or all restrictions etc. Subsequent to commencement of the present study, Arslan and colleagues (2020) published a related study examining the mediational role of psychological inflexibility and pessimism-optimism on the relationship between COVID-19 related stress and psychological well-being. Instead of using Taylor and colleagues' COVID-19 Stress Scale (2020), they adapted their Coronavirus Stress Measure (CSM) from Cohen and colleagues' (1983) Perceived Stress Scale. Based upon Arslan et al, future research may examine alternative measures of COVID-19 stress as well as additional cognitive variables such as pessimism and optimism, self-efficacy, social support and as previously stated intolerance of uncertainty. Lastly, future research should also address the demographic and variable limitations (i.e. whether someone was or knew someone who was affected medically and/or economically by COVID-19, gender differences, and level of intolerance of uncertainty).

As COVID-19 stress seems to play an indirect role in psychological well-being, it logically follows to apply the emerging literature on the mechanisms through which COVID-19 stress affects well-being into effective interventions and treatment strategies. Claessens (2010) discussed the increasing popularity of



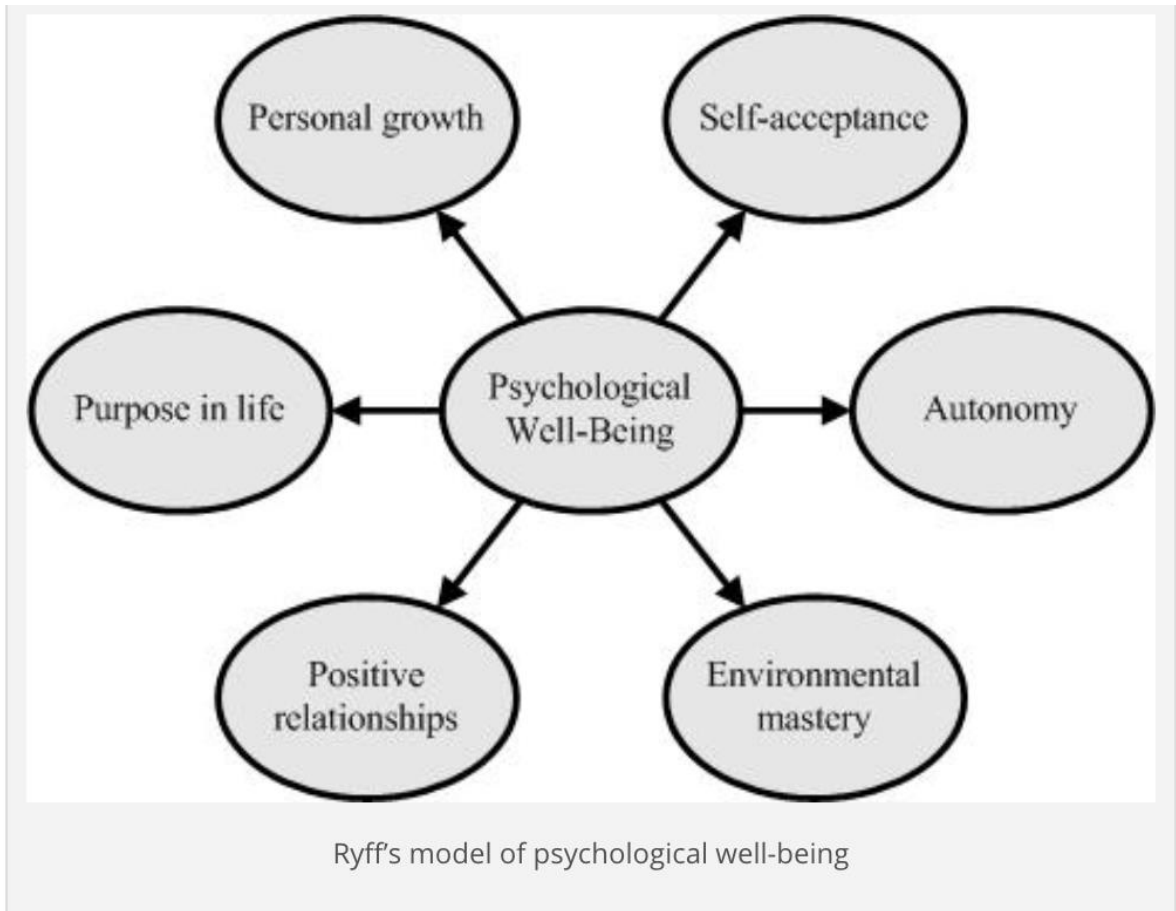
third wave CBT, which includes acceptance and commitment therapy and its emphasis on psychological flexibility, e.g., mindfulness and acceptance of experience, cognitive defusion, awareness of the observing self, and values clarification and commitment. Throughout the course of the present study, literature has emerged through various changes in levels of scientific and social uncertainty. Initially, the stay at home orders and shutdowns had been in effect for just a couple of months. At that time, there was little to no data about short term or long-term effects, no vaccine in sight, and significant uncertainty, mistrust and misinformation. The vaccine has now been widely disseminated, yet there is still a significant level of uncertainty, mistrust and misinformation.

Finally, variants of the virus have emerged, and there is uncertainty about the efficacy of the current vaccines against the new strains (Hamel et al., 2021). Given the dynamic nature of an emergent pandemic, a flexible response, i.e., the level of psychological flexibility vs. inflexibility, ACT may be an evidence-based practice that can help prevent and treat decline in psychological well-being due to stress in general and COVID-19 or other pandemic stress. ACT Interventions that target experiential avoidance include the avoidance and suffering diary and the costs of avoidance worksheet (Harris 2013). These interventions help clients evaluate what experiences (internal and external) they have been avoiding, what strategies they have used in the past to avoid those experiences, and how much relief or suffering that avoidance provided. Interventions that target committed action include the willingness and action plan, and goal setting. These

interventions aim to help clients navigate setting and working towards goals and actions that align with their values. Interventions that target valued living include a “Quick Look at Your Values” worksheet, values bullseye, and the life compass (Harris, 2013). Interventions focusing on values help a client learn what and who are really important to them, as well as evaluate how in alignment with their values their actions are. Interventions that target cognitive fusion include letting go, worry time, observing thoughts, defusion practice form, and labeling thoughts and feelings (Harris, 2013). These interventions help clients become aware of their thoughts and separate (defuse) from their thoughts. A combination of any or all of the above could help improve one’s psychological flexibility, leading them to be able to handle life’s stressors - due to COVID-19 and beyond- in a much healthier way, increasing overall psychological well-being in the process.

APPENDIX A

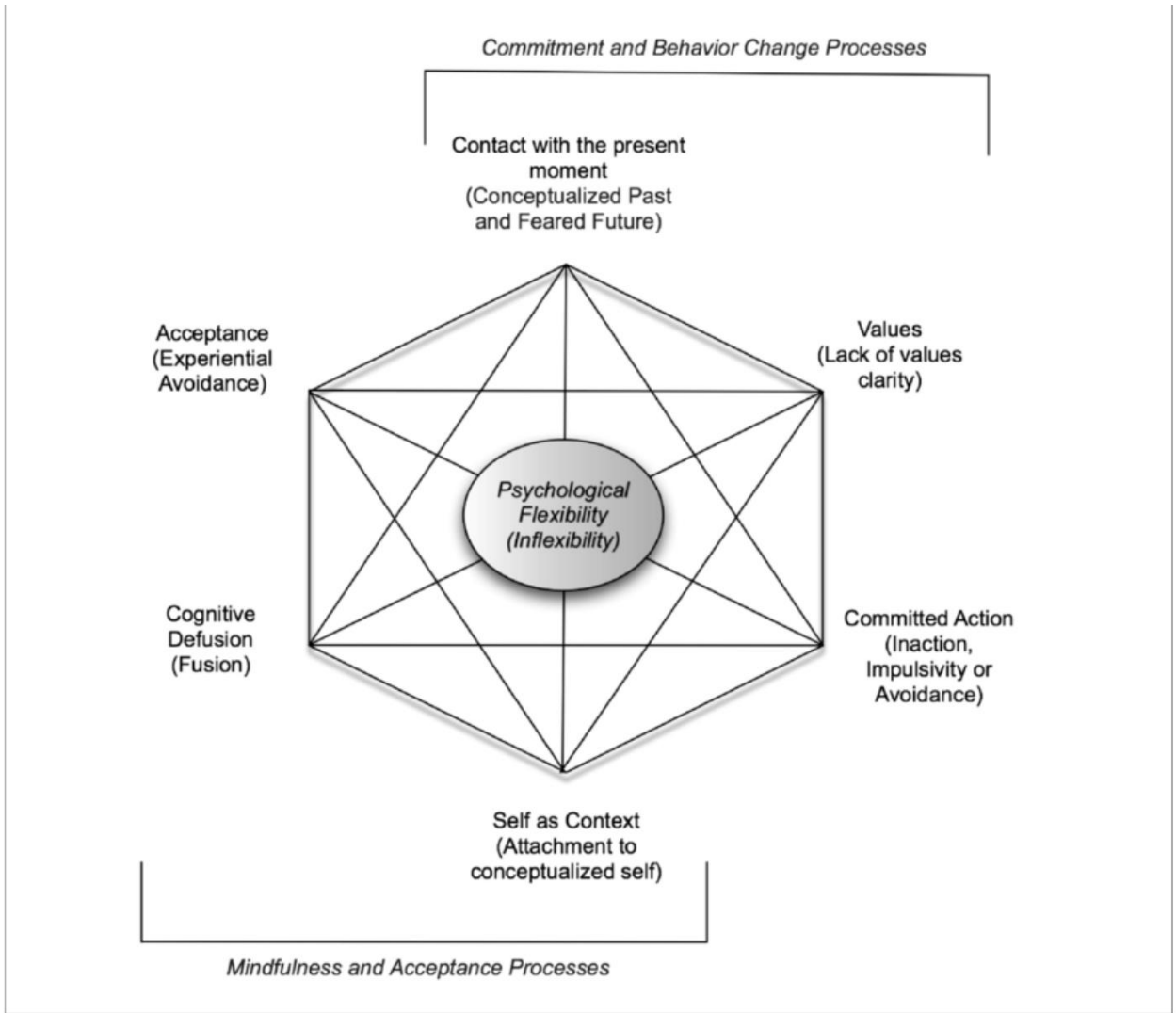
FIGURE 1: PSYCHOLOGICAL WELL-BEING



RYFF (1989)

APPENDIX B

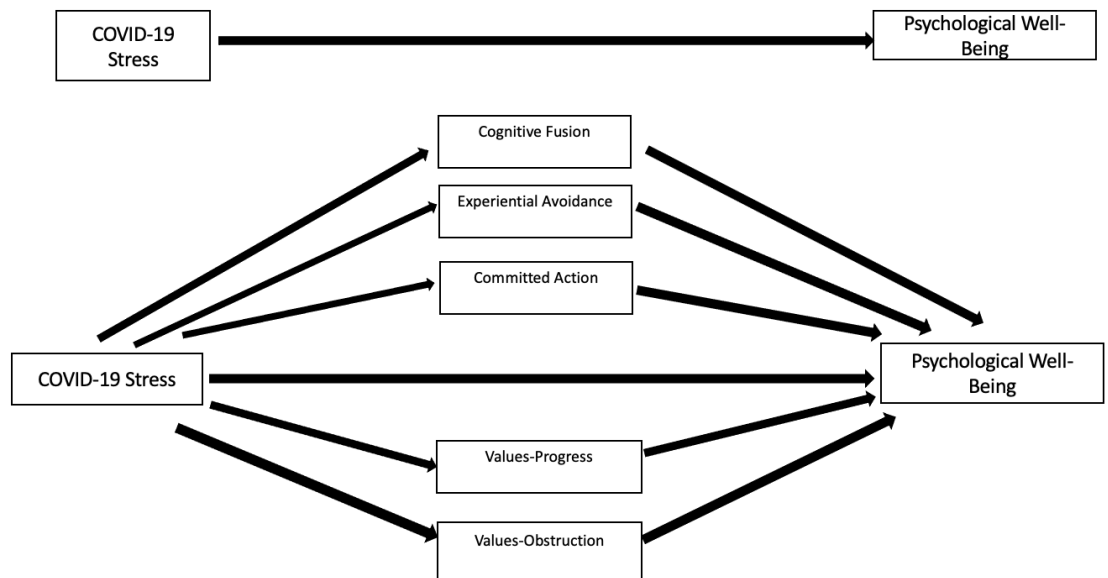
FIGURE 2: PSYCHOLOGICAL FLEXIBILITY HEXAFLEX MODEL



Hayes (2013)

APPENDIX C:

FIGURE 3: HYPOTHESIZED MEDIATION MODEL





APPENDIX D

TABLE 1: DESCRIPTIVE STATISTICS AND CORRELATIONS OF ALL STUDY  
VARIABLES

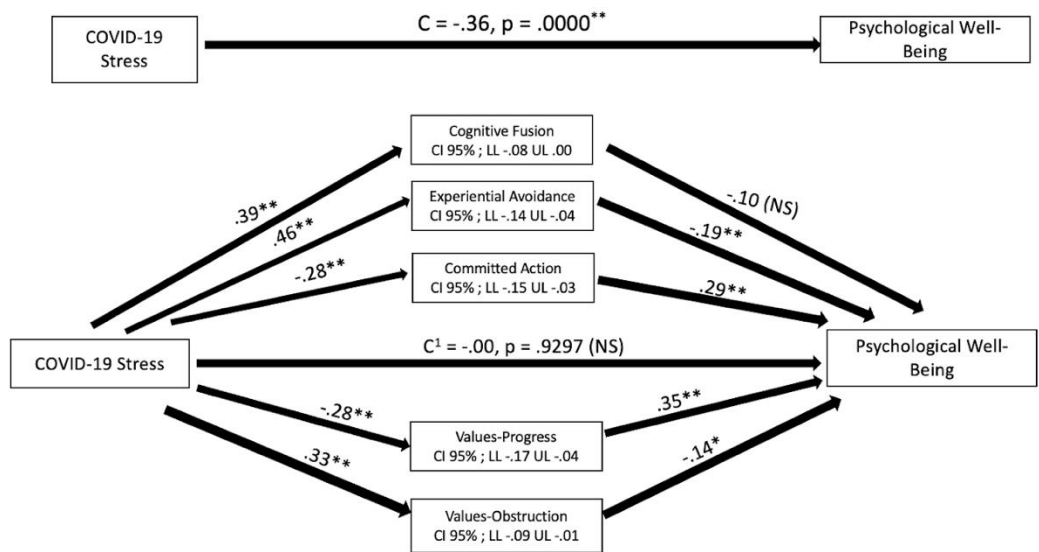
Table 1  
*Descriptive Statistics and Correlations for Study Variables*

<u>Variable</u>	<u>Mean (SD)</u>	<u>Scale alpha</u>	<u>Correlations</u>							
			1	2	3	4	5	6	7	
1. Psych Wellbeing	212.08 (37.68)	.94	1.00							
2. COVID-19 Stress	79.59 (24.80)	.95	-.36	1.00						
3. Cognitive Fusion	26.79 (10.45)	.94	-.64	.39	1.00					
4. Exper. Avoidance	48.64 (12.81)	.86	-.68	.46	.53	1.00				
5. Committed Action	41.05 (8.12)	.86	.78	-.28	-.61	-.62	1.00			
6. Values-Progress	24.63 (6.13)	.78	.75	-.28	-.46	-.49	.62	1.00		
7. Values-Obstruction	16.65 (7.51)	.83	-.69	.34	.69	.56	-.64	-.54	1.00	

Note: all correlation coefficients significant at the .01 level.

APPENDIX E

FIGURE 4: MEDIATION MODEL



Note:  
 NS =  $p > .05$   
 $** = p < .001$   
 $* = p < .05$

All coefficients are standardized

APPENDIX F  
STUDY MEASURES

## Demographics Form

PLEASE ANSWER EACH QUESTION TO THE BEST OF YOUR KNOWLEDGE.

1. AGE: \_\_\_\_\_

2. GENDER: M \_\_\_ F \_\_\_

3. ETHNICITY:

ASIAN (ASIAN AMERICAN) \_\_\_\_\_

AFRICAN AMERICAN (BLACK) \_\_\_\_\_

CAUCASIAN (WHITE) \_\_\_\_\_

NATIVE AMERICAN \_\_\_\_\_

LATINO (HISPANIC) \_\_\_\_\_

PLEASE SPECIFY HISPANIC ORIGIN \_\_\_\_\_ (E.G., MEXICAN, PUERTO  
RICAN, COLUMBIAN ETC.)

BI-CULTURAL \_\_\_\_\_ (PLEASE SPECIFY MULTIPLE ETHNIC ORIGINS)

\_\_\_\_\_

OTHER \_\_\_\_\_ (PLEASE SPECIFY) \_\_\_\_\_

4. PRIMARY CARETAKER

MOTHER \_\_\_\_\_

FATHER \_\_\_\_\_

MOTHER AND FATHER \_\_\_\_\_

5. PRIMARY LANGUAGE(S) SPOKEN BY PARENTS OR PRIMARY CARETAKERS

\_\_\_\_\_

6. STUDENT YEARLY INCOME:

\$0 - \$14,999	_____	\$15,000-\$29,999	_____
\$30,000-\$44,999	_____	\$45,000-\$59,999	_____
\$60,000-\$74,999	_____	\$75,000-\$89,999	_____
\$90,000-\$99,999	_____	OVER \$100,000	_____

7. HIGHEST EDUCATION LEVEL COMPLETED BY PARENT OR CARETAKER (CHECK ONE):

GRADE SCHOOL \_\_\_\_\_

MIDDLE SCHOOL \_\_\_\_\_

SOME HIGH SCHOOL \_\_\_\_\_

HIGH SCHOOL DIPLOMA OR GED \_\_\_\_\_

SOME COLLEGE \_\_\_\_\_

COLLEGE DEGREE \_\_\_\_\_

POST-GRADUATE \_\_\_\_\_

\*Created by Alyx Michele Duckering and Michael R. Lewin

## Cognitive Fusion Questionnaire (CFQ)

Below you will find a list of statements. Please rate how true each statement is for you by circling a number next to it. Use the scale below to make your choice.

1 = never true

2 = very seldom true

3 = seldom true

4 = sometimes true

5 = frequently true

6 = almost always true

7 = always true

1. My thoughts cause me distress or emotional pain.
2. I get so caught up in my thoughts that I am unable to do the things that I most want to do.
3. I over-analyze situations to the point where it's unhelpful to me.
4. I struggle with my thoughts.
5. I get upset with myself for having certain thoughts.
6. I tend to get very entangled in my thoughts.
7. It's such a struggle to let go of upsetting thoughts even when I know that letting go would be helpful.



\* Gillanders, D. T., Bolderston, H., Bond, F. W., Dempster, M., Flaxman, P. E., Campbell, L., Herr, S., et al. (2014). The development and initial validation of the cognitive fusion questionnaire. *Behavior Therapy*, 45, 83-101.

## Committed Action Questionnaire (CAQ)

Directions: Below you will find a list of statements. Please rate the truth of each statement as it applies to you by circling a number. Use the following rating scale to make your choices. For instance, if you believe a statement is “Always True”, you would circle the 6 next to that statement.

0 = never true

1 = very rarely true

2 = seldom true

3 = sometimes true

4 = often true

5 = almost always true

6 = always true

1. I can remain committed to my goals even when there are times that I fail to reach them
2. When a goal is difficult to reach, I am able to take small steps to reach it
3. I prefer to change how I approach a goal rather than quit
4. I am able to follow my long terms plans including times when progress is slow
5. I find it difficult to carry on with an activity unless I experience that it is successful\*
6. If I feel distressed or discouraged, I let my commitments slide\*

7. I get so wrapped up in what I am thinking or feeling that I cannot do the things that matter to me\*

8. If I cannot do something my way, I will not do it at all \*

\* Items marked with an asterisk are negatively keyed and need to be reversed before creating summary scores.

\*\* McCracken, L. M., Chilcot, J., and Norton, S. (2014). Further development in the assessment of psychological flexibility: A shortened committed action questionnaire (CAQ-8). *European Journal of Pain*, 19, 677-685. doi:10.1002/ejp.589

## Valuing Questionnaire (VQ)

Please read each statement carefully and then circle the number which best describes how much the statement was for you DURING THE PAST WEEK, INCLUDING TODAY

0 = not at all true

1

2

3

4

5

6 = completely true

1. I spent a lot of time thinking about the past or future, rather than being engaged in activities that mattered to me
2. I was basically on "auto-pilot" most of the time
3. I worked toward my goals even if I didn't feel motivated to
4. I was proud about how I lived my life
5. I made progress in the areas of my life I care most about
6. Difficult thoughts, feelings or memories got in the way of what I really wanted to do

7. I continued to get better at being the kind of person I want to be
8. When things didn't go according to plan, I gave up easily
9. I felt like I had a purpose in life
10. It seemed like I was just "going through the motions" rather than focusing on what was important to me

\*

## Brief Experiential Avoidance Questionnaire (BEAQ)

Please indicate the extent to which you agree or disagree with each of the following statements:

1 = strongly disagree

2 = moderately disagree

3 = slightly disagree

4 = slightly agree

5 = moderately agree

6 = strongly agree

1. The key to a good life is never feeling pain
2. I'm quick to leave any situation that makes me feel uneasy
3. When unpleasant memories come to me, I try to put them out of my mind
4. I felt disconnected from my emotions
5. I won't do something until I absolutely have to
6. Fear or anxiety won't stop me from doing something important
7. I would give up a lot not to feel bad
8. I rarely do something if there is a chance that it will upset me
9. It's hard for me to know what I'm feeling
10. I try to put off unpleasant tasks for as long as possible
11. I go out of my way to avoid uncomfortable situations
12. One of my big goals is to be free from painful emotions

13. I work hard to keep out upsetting feelings

14. If I have any doubts about doing something, I just won't do it

15. Pain always leads to suffering

\* Gamez, W., Kotov, R., Chmielewski, M., Ruggelo, C., Suzuki, N., & Watson,

D. (2014). The brief experiential avoidance questionnaire: Development and initial validation. *Psychological Assessment*, 26(1), 35-45. doi:

10.1037%2Fa0034473





## COVID Stress Scale (CSS)

The following asks about various kinds of worries that you might have experienced over the past seven days. In the following statements, we refer to COVID-19 as "the virus".

0 = not at all

1 = slightly

2 = moderately

3 = very

4 = extremely

1. I am worried about catching the virus.
2. I am worried that I can't keep my family safe from the virus.
3. I am worried that our health-care system won't be able to protect my loved ones.
4. I am worried our health-care system is unable to keep me safe from the virus.
5. I am worried that basic hygiene (e.g., handwashing) is not enough to keep me safe from the virus.
6. I am worried that social distancing is not enough to keep me safe from the virus.
7. I am worried about grocery stores running out of food.

8. I am worried that grocery stores will close down.
9. I am worried about grocery stores running out of cleaning or disinfectant supplies.
10. I am worried about grocery stores running out of cold or flu remedies.
11. I am worried about grocery stores running out of water.
12. I am worried about pharmacies running out of prescription medicines.
13. I am worried that foreigners are spreading the virus in my country.
14. If I went to a restaurant that specialized in foreign foods, I'd be worried about catching the virus.
15. I am worried about coming into contact with foreigners because they might have the virus.
16. If I met a person from a foreign country, I'd be worried that they might have the virus.
17. If I was in an elevator with a group of foreigners, I'd be worried that they're infected with the virus.
18. I am worried that foreigners are spreading the virus because they're not as clean as we are.
19. I am worried that if I touched something in a public space (e.g., handrail, door handle), I would catch the virus
20. I am worried that if someone coughed or sneezed near me, I would catch the virus.
21. I am worried that people around me will infect me with the virus.

22. I am worried about taking change in cash transactions.

23. I am worried that I might catch the virus from handling money or using a debit machine

24. I am worried that my mail has been contaminated by mail handler.

Please read each statement and indicate how frequently you have experienced each problem during the past seven days.

0 = never

1 = rarely

2 = sometimes

3 = often

4 = almost always

25. I had trouble concentrating because I kept thinking about the virus.

26. Disturbing mental images about the virus popped into my mind against my will.

27. I had trouble sleeping because I worried about the virus.

28. I thought about the virus when I didn't mean to.

29. Reminders of the virus caused me to have physical reactions, such as sweating or a pounding heart.

30. I had bad dreams about the virus.

The following items ask about checking behaviours. During the past seven days, how often have you done the following because of concerns about COVID-19?

0 = never

1 = rarely

2 = sometimes

3 = often

4 = almost always

31. Searched the internet for treatments for COVID-19.

32. Asked health professionals (e.g., doctors or pharmacists) for advice about COVID-19.

33. Checked YouTube videos about COVID-19.

34. Checked your own body for signs of infection (e.g., taking your temperature).

35. Sought reassurance from friends or family about COVID-19.

36. Checked social media posts concerning COVID-19.

\* Taylor, S., Landry, C. A., Paluszek, M. M., Fergus, T. A., McKay, D. & Asmundson, G. J. G. (2020). Development and initial validation of the COVID Stress Scales. *Journal of Anxiety Disorders*, 72, 1-7. doi: 10.1016/j.janxdis.2020.102232

## Psychological Well-Being Scale (PWB)

Choose a response for each statement to indicate how much you agree or disagree.

1 = strongly agree

2 = somewhat agree

3 = a little agree

4 = neither agree or disagree

5 = a little disagree

6 = somewhat disagree

7 = strongly disagree

1. I am not afraid to voice my opinions, even when they are in opposition to the opinions of most people.
2. For me, life has been a continuous process of learning, changing, and growth.
3. In general, I feel I am in charge of the situation in which I live.
4. People would describe me as a giving person, willing to share my time with others.
5. I am not interested in activities that will expand my horizons.
6. I enjoy making plans for the future and working to make them a reality.

7. Most people see me as loving and affectionate.
8. In many ways I feel disappointed about my achievements in life.
9. I live life one day at a time and don't really think about the future.
10. I tend to worry about what other people think of me.
11. When I look at the story of my life, I am pleased with how things have turned out.
12. I have difficulty arranging my life in a way that is satisfying to me.
13. My decisions are not usually influenced by what everyone else is doing.
14. I gave up trying to make big improvements or changes in my life a long time ago.
15. The demands of everyday life often get me down.
16. I have not experienced many warm and trusting relationships with others.
17. I think it is important to have new experiences that challenge how you think about yourself and the world.
18. Maintaining close relationships has been difficult and frustrating for me.
19. My attitude about myself is probably not as positive as most people feel about themselves.
20. I have a sense of direction and purpose in life.
21. I judge myself by what I think is important, not by the values of what others think is important.
22. In general, I feel confident and positive about myself.

23. I have been able to build a living environment and a lifestyle for myself that is much to my liking.
24. I tend to be influenced by people with strong opinions.
25. I do not enjoy being in new situations that require me to change my old familiar ways of doing things.
26. I do not fit very well with the people and the community around me.
27. I know that I can trust my friends, and they know they can trust me.
28. When I think about it, I haven't really improved much as a person over the years.
29. Some people wander aimlessly through life, but I am not one of them.
30. I often feel lonely because I have few close friends with whom to share my concerns.
31. When I compare myself to friends and acquaintances, it makes me feel good about who I am.
32. I don't have a good sense of what it is I'm trying to accomplish in life.
33. I sometimes feel as if I've done all there is to do in life.
34. I feel like many of the people I know have gotten more out of life than I have.
35. I have confidence in my opinions, even if they are contrary to the general consensus.
36. I am quite good at managing the many responsibilities of my daily life.
37. I have the sense that I have developed a lot as a person over time.

38. I enjoy personal and mutual conversations with family members and friends.

39. My daily activities often seem trivial and unimportant to me.

40. I like most parts of my personality.

41. It's difficult for me to voice my own opinions on controversial matters.

42. I often feel overwhelmed by my responsibilities.

\*Ryff, C. D. (1989). Happiness is everything, or is it? Explorations on the meaning of psychological well-being. *Journal of Personality and Social Psychology*, 57(6), 1069-1081.



APPENDIX G  
IRB APPROVAL LETTER

August 12, 2020

CSUSB INSTITUTIONAL REVIEW BOARD  
Administrative/Exempt Review Determination  
Status: Determined Exempt  
IRB-FY2021-16

Michael Lewin Alyx Duckering  
CSBS - Psychology  
California State University, San Bernardino  
5500 University Parkway  
San Bernardino, California 92407

Dear Michael Lewin Alyx Duckering :

Your application to use human subjects, titled "The Relationship between COVID-19 Anxiety, Psychological Inflexibility, and Psychological Well-being" has been reviewed and approved by the Chair of the Institutional Review Board (IRB) of California State University, San Bernardino has determined that your application meets the requirements for exemption from IRB review Federal

requirements under 45 CFR 46. As the researcher under the exempt category you do not have to follow the requirements under 45 CFR 46 which requires annual renewal and documentation of written informed consent which are not required for the exempt category. However, exempt status still requires you to attain consent from participants before conducting your research as needed. Please ensure your CITI Human Subjects Training is kept up-to-date and current throughout the study.

Your IRB proposal is approved. You are permitted to collect information from **[160]** participants for **[1 SONA unit]** from **[SONA and Qualtrics]**. This approval is valid from **[8/12/2020]**.

The CSUSB IRB has not evaluated your proposal for scientific merit, except to weigh the risk to the human participants and the aspects of the proposal related to potential risk and benefit. This approval notice does not replace any departmental or additional approvals which may be required.

Your responsibilities as the researcher/investigator include reporting to the IRB Committee the following three requirements highlighted below. Please note failure of the investigator to notify the IRB of the below requirements may result in disciplinary action.

Submit a protocol modification (change) form if any changes (no matter how minor) are proposed in your study for review and approval by the IRB before implemented in your study to ensure the risk level to participants has not increased,

If any unanticipated/adverse events are experienced by subjects during your research, and

Submit a study closure through the Cayuse IRB submission system when your study has ended.

The protocol modification, adverse/unanticipated event, and closure forms are located in the Cayuse IRB System. If you have any questions regarding the IRB decision, please contact Michael Gillespie, the Research Compliance Officer. Mr. Michael Gillespie can be reached by phone at (909) 537-7588, by fax at (909) 537-7028, or by email at [mgillesp@csusb.edu](mailto:mgillesp@csusb.edu). Please include your application approval identification number (listed at the top) in all correspondence.

If you have any questions regarding the IRB decision, please contact Dr. Jacob Jones, Assistant Professor of Psychology. Dr. Jones can be reached by email at [Jacob.Jones@csusb.edu](mailto:Jacob.Jones@csusb.edu). Please include your application approval identification number (listed at the top) in all correspondence.

Best of luck with your research.

Sincerely,

Nicole Dabbs

Nicole Dabbs, Ph.D., IRB Chair

CSUSB Institutional Review Board

ND/MG

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