

**THE MEDIATING EFFECT OF MEANING MAKING ON HEXACO PERSONALITY  
FACTORS AND INTERNALIZING SYMPTOMS DURING COVID-19: A  
LONGITUDINAL ANALYSIS**

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## **Abstract**

The COVID-19 pandemic was associated with increases in mental health difficulties, particularly for young adults. The literature remains unclear regarding whether differential coping strategies, as well as personality traits, influenced mental health outcomes over time. Thus, a cross-lagged panel analysis was used to examine the longitudinal effect of HEXACO traits and meaning making on internalizing symptoms across three time points during and after the COVID-19 pandemic. Results indicated strong autoregressive stability for both internalizing symptoms and meaning making across time. Cross-lagged analyses revealed that higher levels of internalizing symptoms at age 23 predicted lower levels of eXtraversion at age 24, while greater meaning making at age 23 predicted higher subsequent eXtraversion. There was no evidence that meaning making mediated the relationship between personality traits and internalizing symptoms over time. These findings suggest that meaning making may be more closely related to mental health outcomes within time points rather than functioning as a long-term mediating mechanism between personality traits and psychological distress. Moreover, elevated internalizing symptoms may constrain the expression of personality traits, while engaging in meaning-making processes may support the maintenance or expression of extraverted behaviour over time. Clinical implications and directions for future research are suggested. Examining personality and meaning-focused coping within the context of a global crisis provides valuable insight into which individuals may be most vulnerable to psychological distress and which coping processes may promote adaptation in the face of acute and ongoing stressors.

*Keywords:* meaning making, internalizing symptoms, HEXACO, longitudinal analysis

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## **Introduction**

The COVID-19 pandemic was a global health crisis that produced unprecedented social, economic, and personal disruptions to individuals' daily lives. Beyond the immediate threat to physical health and safety, the pandemic had significant psychological repercussions, including heightened levels of stress, anxiety and depression symptoms, and uncertainty (Madigan et al., 2023; Pfefferbaum & North, 2020). Among young adults in particular, mental health deteriorated. A systematic review and meta-analysis of 173 studies conducted during the COVID-19 pandemic found that the most significant mental health difficulties were seen among young and middle-aged adults, with the highest rates of anxiety symptoms, depression symptoms, and suicidal ideation reported among young adults (Dragoti et al., 2022).

Although research has been conducted on the experiences of individuals throughout the pandemic, there are still gaps concerning who faced the most significant challenges with internalizing symptoms, which encompass the internal psychological states of depression and anxiety (Conley et al., 2023). Moreover, it is unclear whether the type of coping used was associated with these outcomes.

Researchers have explored the role of personality as a predictor of adaptive coping during the COVID-19 pandemic, with different traits linked to specific coping strategies (Connor-Smith & Flachsbart, 2007; Murphy & Mackenzie, 2024; Volk et al., 2021). Although the presence of internalizing symptoms and successful coping are likely to be determined by a complex interplay of biopsychosocial factors, preliminary findings suggest that there are unique individual qualities, such as personality traits, which strongly predict well-being outcomes. Specifically, an individual's ability to cognitively appraise their situation and make meaning during the COVID-19 pandemic may explain their mental health outcomes, yet further research is needed given that most previous studies have used a cross-sectional design, precluding an examination of change over time. Therefore, this study examined whether meaning making mediated the relation between young adults' HEXACO personality factors and internalizing symptoms during and after the COVID-19 pandemic in Canada.

## **Literature Review**

Young adulthood is a particularly uncertain yet pivotal time in one's life, as it is filled with several life transitions, including establishing careers, and growing or deepening

relationships (Roisman et al., 2004). For many, COVID-19 disrupted education, employment opportunities, and social networks, both affecting crucial support systems and limiting prospects. Thus, the effect of COVID-19 on young adults may have been particularly salient as it posed significant challenges while navigating these critical junctures in development. Indeed, multiple global systematic reviews exploring the mental health of young people before and during the COVID-19 pandemic found a nearly unanimous increase in anxiety and depression symptoms, often referred to as internalizing symptoms, as well as psychological distress, loneliness, and negative affect (Kauhanen et al., 2023; Samji et al., 2021). A report by the World Health Organization found that the prevalence of depression and anxiety symptoms increased by 25% during the first year of the pandemic, with young people disproportionately at risk of engaging in suicidal and self-harming behaviour (World Health Organization, 2022). Additionally, a study of almost 900 adolescents found that over 60% of participants felt the negative effects of the pandemic on their physical, emotional, and social well-being (Villanti et al., 2022). On a national level, the Mental Health Commission of Canada reported that 63.8% of Canadian citizens aged 15-24 perceived their mental health to be poor during the COVID-19 pandemic (Mental Health Commission of Canada, 2020). Within a Canadian sample, Krygsman et al. (2023) found that young adults with lower pre-pandemic anxiety symptoms experienced greater increases in symptoms during the pandemic, suggesting that the effects of the pandemic may have been especially felt by those with fewer adverse experiences or psychological challenges. These studies highlight that the COVID-19 pandemic was associated with widespread emotional and social challenges, particularly for young people.

### **Coping and Meaning Making During the COVID-19 Pandemic**

Although individuals experienced similar hardships throughout the pandemic, such as school closures, job loss, and isolation from friends and loved ones, responses to these stressors varied considerably. Importantly, while population-level mental health suffered, there were some young adults who were able to maintain their well-being more effectively than others during the pandemic (Prowse et al., 2021). To navigate these challenges, individuals drew on a range of coping strategies, defined as the cognitive and behavioural efforts used to manage internal or external demands (Folkman & Lazarus, 1985; Wu et al., 2020).

Given the range of coping strategies employed by individuals during times of stress, researchers have often categorized them into unique coping styles. Some research has

distinguished between problem-focused coping, which aims to address the source of stress through strategies such as planning and seeking instrumental support, and emotion-focused coping, which aims to manage emotional responses through methods like venting, distraction, or positive reframing (Folkman & Lazarus, 1985). Others have proposed a distinction between approach or engagement coping, which are efforts directed toward confronting a stressor, such as problem-solving or obtaining information, and avoidance or disengagement coping, which involves efforts to distance oneself from the stressor, such as denial and withdrawal (Carver & Connor-Smith, 2010; Roth & Cohen, 1986). The use of different coping strategies varies widely across individuals, and their effectiveness may either lessen or exacerbate the impacts of adversity (Hasselle et al., 2019). For example, problem-focused coping, which aims to directly address and manage a stressor, was associated with lower odds of depression during the pandemic, while emotion-focused coping was associated with higher odds of depression and anxiety symptoms (Chang et al., 2024; Gurvich et al., 2020).

Prior research has also highlighted an additional coping style not fully captured by these frameworks: meaning-focused coping (Folkman, 1997; Park, 2010). This style of coping involves efforts to make or find meaning in difficult situations, such as positive reappraisal and finding coherence in difficult situations, and has been recognized as a key factor in adapting to stress (Avsec et al., 2022; Riley & Park, 2014). Meaning-focused coping may be particularly crucial during times of acute, pervasive stress or adverse situations which cannot be resolved, as it reduces the incongruence between the appraised meaning of an event and a person's pre-existing global meaning, which encompasses their fundamental beliefs and goals (Park & Folkman, 1997). This process allows individuals to reappraise and reconcile stressful experiences with their understanding of the world, fostering a sense of coherence and acceptance.

Notably, the use of meaning-centered coping when experiencing stressful life events is associated with better health outcomes, including lower levels of depression and anxiety symptoms, and increased pain management (Eisenbeck et al., 2021; Gruszczyńska & Knoll, 2015; Winger et al., 2023). During the COVID-19 pandemic, meaning-focused coping was positively associated with psychological Quality of Life (QoL) (Cohrdes et al., 2023). This suggests that individuals who employed meaning-focused coping strategies experienced higher levels of psychological wellbeing. Among healthcare workers during COVID-19, meaning-focused coping was also associated with increased psychological well-being (Krok & Zarzycka,

2020). In another study, Eisenbeck et al. (2021) examined the impact of meaning-centered coping during the COVID-19 pandemic using data from 12,243 individuals across 30 countries. Their research found that while young people were particularly vulnerable to developing psychological problems during the pandemic, meaning-centered coping significantly reduced symptoms of depression, anxiety, and stress, acting as a buffer against psychological distress. Sanchez-Ruiz et al. (2021) also found similar results: meaning-centered coping was strongly correlated with overall wellbeing during the pandemic, and moderately correlated with decreased depression symptoms, anxiety symptoms and stress. Furthermore, while perceived risk of COVID-19 was associated with lower psychological well-being, engagement in meaning-focused coping moderated the relation between COVID-19 risk perception and better well-being outcomes. A review of five studies exploring meaning in life and coping with stressful events found that meaning in life was positively associated with coping self-efficacy and positive reinterpretation of events and was negatively associated with stress related to the pandemic and general distress (Ward et al., 2023). Therefore, while there are several ways to effectively manage stressors during critical periods of change and uncertainty, a meaning making response may be more effective in mitigating negative outcomes.

According to Park's (2010) work on meaning making and adversity, individuals respond to life stressors in particular ways based on their unique understanding of the world, which is made up of their beliefs, goals, and schemas (i.e., a person's global meaning). For example, one may believe that the world is usually fair, that it is important to care for others, or that they are a trustworthy person. This global meaning provides a framework through which individuals interpret experiences and appraise life events. When potentially challenging or stressful life events occur, individuals assess these experiences not only in relation to their global meaning, but also based on its perceived threat, controllability, and future implications. In the case of the COVID-19 pandemic, the immediate threat and future implications were both unclear, and individuals had very little control over their situation or circumstance. If an individual's global meaning can account for this threat (i.e., "bad things happen to good people"), meaning making theory would suggest that the individual could successfully adjust to the situation without meaning making. However, if there is discrepancy between appraised meaning and global meaning, (i.e., "everything happens for a reason"), the individual will engage in meaning making efforts to reduce this discrepancy and alleviate distress. Successful meaning making restores or

even enhances global meaning, often resulting in a stronger sense that ‘life is meaningful’ than would occur without such efforts. According to Park’s proposed meaning-making model, this restoration facilitates better adjustment to stressors, including lower psychological distress and improved well-being (Fitzke et al., 2021).

Embedded within meaning making theory is the recognition that individuals often reappraise or reframe stressful situations to reduce threat and increase consistency with their global meaning systems (Park, 2016). In line with this, the present study is also informed by cognitive appraisal theory, which suggests that emotional responses are shaped by how individuals evaluate situational demands (Lazarus, 1984; Lazarus & Folkman, 1987). Cognitive appraisal involves primary appraisal, in which an individual assesses whether an event is relevant, benign, or stressful, and secondary appraisal, which involves evaluating one’s emotional reaction and perceived ability to cope (Lazarus & Folkman, 1987; Quine & Pahl, 1991). These appraisals are influenced by both personality traits and environmental factors, which shape how individuals interpret the significance of the event. In the context of the COVID-19 pandemic, such appraisals may reflect individual differences in how threatening or manageable the situation is perceived to be. Whether individuals engage in meaning making and cognitive reappraisal is closely associated with their emotional responses, including subsequent internalizing symptoms. These cognitive processes contribute to the development of coping strategies and influence future psychological outcomes. Together, they help explain how relational meanings are assigned to emotionally salient experiences and ultimately impact well-being.

### **Personality as a Source of Individual Differences**

Despite the compelling theoretical and empirical body of literature demonstrating the effectiveness of meaning-focused coping, not every individual engages with this strategy. The wide range of coping strategies employed highlights the variability in how people respond to stress. One potential explanatory factor for these differences in coping is personality. As Folkman and Moskowitz (2004) explain, “coping is a complex, multidimensional process that is sensitive both to the environment, and its demands and resources, and to personality dispositions that influence the appraisal of stress and resources for coping” (p. 747). Personality can be defined as “the enduring characteristics and behavior that comprise a person’s unique adjustment to life”

(American Psychological Association, n.d.). Therefore, assessing individual differences through personality traits can provide insight into coping strategies utilized and psychological outcomes.

The HEXACO Personality Inventory is a six-factor model that has gained prominence within personality research to more accurately assess personality domains (Ashton & Lee, 2020; Lee & Ashton, 2018). It consists of six dimensions, namely Honesty-Humility (H), Emotionality (E), eXtraversion (X), Agreeableness (A), Conscientiousness (C), and Openness to Experience (O), and is a widely accepted model for measuring personality traits (Anglim & O'connor, 2019; Ashton et al., 2014). An individual's HEXACO score can be assessed through a questionnaire in which respondents answer questions which correspond to each of the 6 inventory dimensions (Ashton & Lee, 2009; Lee & Ashton, 2018). According to Lee and Ashton (2018), total scores reflect an individual's engagement in "social, work-related, and idea-related" experiences, as well as differences in "altruistic tendencies" (p. 544). A recent study suggests that the HEXACO model may be a stronger predictor of well-being than five factor models such as the Big Five (Pilch, 2023) and is particularly useful to employ in risk situations (Modersitzki et al., 2021). Therefore, the HEXACO may serve as an important explanatory framework for how young adults coped with the evolving demands of the COVID-19 pandemic and their subsequent mental health outcomes.

Broader research has long supported links between personality traits and coping. A meta-analysis across 165 samples found that eXtraversion and Conscientiousness positively predicted coping through problem-solving and cognitive restructuring, while Neuroticism was linked to disengagement strategies like withdrawal (Connor-Smith & Flachsbart, 2007). Although the overall correlation between personality and coping was small, personality's influence on coping was stronger among younger individuals than older individuals, and among those experiencing a high degree of stress. Therefore, the correlation between personality, coping strategies and psychological outcomes may be more robust within the proposed study. Expanding upon this work, a review by Carver and Connor-Smith (2010) further emphasized the critical influence of age and stress condition on personality and coping.

Research during the COVID-19 pandemic has further demonstrated that personality influences stress responses and coping. Notably, an individual's unique combination of personality traits seems to play a significant role in shaping their experiences across the lifespan, including their responses to stress and adversity, as well as their meaning making through these

circumstances (Volk et al., 2021). Those who were higher in Emotionality perceived the COVID-19 pandemic to be more threatening, while those higher in Conscientiousness engaged in more compensatory coping behaviour, such as stockpiling (Garbe et al., 2020). Using the Big 5 model, Rammstedt et al. (2022) found that higher levels of Agreeableness and Conscientiousness were linked to lower perceived COVID-19 risk. Furthermore, those who scored higher on Agreeableness more readily adapted their behaviour to the pandemic and more strongly endorsed measures to reduce the spread of infection. Volk et al. (2021) found that individuals who had higher eXtraversion, Conscientiousness, and Emotionality demonstrated more adaptive coping during the COVID-19 pandemic. Specifically, higher E and X were associated with seeking socioemotional support, while higher E and C more frequently employed problem-solving coping strategies (Volk et al., 2021). These associations suggest that personality is associated with differences in coping, specifically in the context of a crisis, like the COVID-19 pandemic.

### **Meaning Making as a Mediator**

Growing evidence indicates that personality and coping strategies interact to shape psychological adjustment, with coping either mitigating or intensifying the effects of personality-related vulnerabilities. For instance, the use of engagement coping has been shown to lessen the relationship between sociotropy—a personality trait linked to sensitivity to social stress—and internalizing symptoms, whereas disengagement coping can exacerbate this association (Connor-Smith & Compas, 2002). Avoidant coping strategies have also been found to strengthen the relation between behavioural approach tendencies—related to impulsivity and inhibition—and delinquency (Hasking, 2007). Different coping strategies have similarly been shown to intensify the connection between neuroticism and post-traumatic stress symptoms, indicating that personality influences coping strategy choices, which subsequently affect reactions in times of distress and overall health outcomes (Chung et al., 2005).

Although no single personality trait has been found to predict or prevent negative mental health outcomes, certain traits may be associated with greater vulnerability. In contrast, some individuals may possess personality profiles that support meaning-focused coping mechanisms, including meaning making, drawing upon known skills, and asking for help when needed (Murphy & Mackenzie, 2024; Volk et al., 2021). Despite this proposed link, researchers have yet to specifically explore whether the use of meaning-focused coping is tied to an individual's personality, and whether meaning making subsequently influences psychological outcomes.

Therefore, this study examined whether meaning making mediates the relation between personality traits and internalizing problems during the pandemic.

### **Gender Differences in Coping**

Although many of the impacts of the COVID-19 pandemic were widespread, there were notable differences in how they affected individuals across genders. During the pandemic, women experienced higher levels of depression and anxiety symptoms, as well as poorer mental health than men (Gestsdottir et al., 2021; Gurvich et al., 2020). These greater well-being decreases may be due to gender disparities in baseline prevalence, as women experience more than twice the rate of major depressive disorder compared to men, and account for up to two-thirds of all major anxiety disorder cases (American Psychiatric Association, 2022). During the pandemic, women also experienced diminished socialization relative to men, as well as greater childcare or familial responsibilities, which may have exacerbated internalizing problems (Etheridge & Spantig, 2022).

Along with differences in the perception of stress, research clearly demonstrates that men and women cope with stressors in different ways (Park et al., 2020). Women consistently have higher rates of post-traumatic stress, despite experiencing fewer traumatic events than men, which may be attributable to differences in cognitive appraisal (Olf et al., 2007; Tolin & Foa, 2006). Women also tend to engage in a broader range of coping strategies compared to men, including seeking social support, positive reappraisal, and positive self-talk (Tamres et al., 2002). However, they are also more likely to use emotion-focused and avoidant coping strategies, including avoidance, rumination, and wishful thinking (Matud, 2004; Tamres et al., 2002). Social factors may play a role in these gender differences, including social desirability bias and adherence to prescribed gender norms. Nonetheless, these differential experiences in coping have important implications during a crisis such as the pandemic.

In the context of COVID-19, Ahmadi et al. (2022) explored coping methods among Iranian university students. Women used prayer as a form of coping significantly more than men, while men tended to cope through private contemplation (Ahmadi et al., 2022). However, this study focused specifically on religious coping rather than general meaning-making, and the sample was predominantly women (75%), which may limit the generalizability of the findings. Cholankeril et al. (2023) examined differences in coping and its effect on anxiety levels during the pandemic. Interestingly, almost all coping strategies were associated with increased anxiety

symptoms for both men and women. Notably, for women only, the use of acceptance and positive reframing was linked to significantly lower levels of anxiety symptoms (Cholankeril et al., 2023). Hamid et al. (2023) came to a similar conclusion and found that emotion-focused coping was associated with decreased distress among women, but increased distress among men. Thus, the use of gender-specific coping strategies may explain well-being outcomes.

Despite these gender differences in general coping, research is mixed regarding gender differences in meaning-focused coping and cognitive flexibility during COVID-19. Zambelli and Tagliabue (2023) assessed meaning-making profiles across young adults both before and during COVID-19 and found no gender differences, but instead that age predicted the presence of meaning making. Others have found that meaning-centered coping moderated the effects of gender on depression, anxiety symptoms, stress, and overall psychological distress (Eisenbeck et al., 2021). Still others have found no significant differences in the use of meaning-focused coping between men and women (Cohrdes et al., 2023). These inconclusive findings suggest that additional research is needed to further disentangle whether there were gender differences in meaning-focused coping. Furthermore, it is crucial to understand whether differences in coping strategies contributed to disparities in psychological well-being during the pandemic.

### **Gaps in the Literature**

The broad base of literature exploring personality and its associations with both coping and well-being outcomes may have merit in the context of the COVID-19 pandemic. However, the effects of the COVID-19 pandemic were unprecedented in scope and affected young people in a myriad of ways. Although researchers generally agree that personality traits impacted coping and meaning making during the pandemic, research on this topic is still scarce and inconclusive. Researchers who have looked at the relation between personality and coping have focused almost exclusively on emotion and problem-focused coping strategies (Volk et al., 2021). Therefore, it is unclear whether there are differences when meaning-focused coping is considered. Furthermore, personality differences, which may critically impact the use of coping strategies and psychological well-being, have not been examined in relation to meaning-focused coping and mental health outcomes (Eisenbeck et al., 2021; Sanchez-Ruiz et al., 2021).

Finally, while several studies have independently linked coping to and personality to psychological outcomes, far fewer have examined how personality and coping interact to affect mental health, despite its remarkable stability (Carver & Connor-Smith, 2010). Even with the

many shifts that occur during adolescence and young adulthood, research shows that personality traits remain generally consistent across the lifespan. Across 18 countries, García et al. (2022) found that the mean effect of age on personality traits was low ( $\eta^2 < .03$ ), indicating that age plays only a small role in fluctuations in personality traits. A meta-analysis of nearly 6,000 participants from six countries found similar results, demonstrating that HEXACO scores remained moderately to highly stable over a two-year period (Henry et al., 2024). Moreover, a recent study of Canadian adolescents by Brazil et al. (2025) demonstrated that HEXACO personality traits had moderate to high longitudinal stability across a four-year period. These studies suggest that, despite minor fluctuations, personality traits demonstrate low variability across a lifespan, and therefore may play a crucial role in coping and well-being during times of crisis.

Additionally, no study to date has explored the impact of personality on meaning making longitudinally. A cross-sectional design limits the extent to which we can understand how coping mechanisms evolved and were used over the course of the pandemic, as individuals may initially employ certain coping mechanisms and then shift to others as they adjust to the situation (Cohrdes et al., 2023). By exploring this relation over several time points, it allows for a better understanding of coping and meaning making in relation to personality as COVID-19 restrictions changed, including whether other factors altered the relationship between personality and mental health outcomes. Moreover, employing a longitudinal design ensures that prior associations are accounted for, and that real change is assessed. Specifically, this study accounts for pre-pandemic levels of internalizing symptoms, which may affect subsequent increases in mental health problems. Although overall rates of mental health difficulties rose during the pandemic, some studies suggest that young adults with higher levels of pre-pandemic depression and anxiety experienced less significant increases in mental health problems. A meta-analysis of 65 longitudinal studies found that while there was an increase in mental health symptoms in the general population, individuals with pre-existing mental health conditions experienced no significant change during the pandemic (Robinson et al., 2022). Within a Canadian sample of young adults, Krygsman et al. (2023) also found that individuals who had lower anxiety symptoms before the pandemic had more significant increases during the pandemic, while those who had higher pre-pandemic levels exhibited less change. Thus, controlling for pre-pandemic

levels of depression and anxiety symptoms allows for a more precise understanding of internalizing problems over time.

Lastly, the uncertainty around the moderating role of gender in coping and internalizing problems during the COVID-19 pandemic highlights a crucial gap. Previous work suggests that coping mechanisms often vary by gender (Cholankeril et al., 2023; Park et al., 2020; Volk et al., 2021). However, some research conducted during the pandemic found that associations between personality, coping, and psychological outcomes were not moderated by gender (Garbe et al., 2020; Rammstedt et al., 2022). Notably, these studies were cross-sectional rather than longitudinal in nature, underscoring the need for further longitudinal research to clarify whether gender shapes coping responses in the context of large-scale stressors such as the pandemic.

### **Summary**

The COVID-19 pandemic brought widespread changes to individual's lives. For young people, there were significant changes in the form of isolation orders, shifts to online learning, and increased fears about health and safety which negatively impacted their mental health and well-being (Kauhanen et al., 2023; Samji et al., 2021). As young adults have heightened vulnerability to life stressors, their mental health and well-being were of particular concern during the COVID-19 pandemic, which was a profoundly distressing period that disrupted multiple aspects of daily life. Determining how individuals responded to these significant changes may be revealed through their personalities. Preliminary research has explored personality as a predictor of adaptive coping (Volk et al., 2021) and overall well-being (Modersitzki et al., 2021) during COVID-19. However, there are still gaps in the literature regarding who engaged in meaning-making during COVID-19, and whether this affected subsequent depression and anxiety symptoms. Furthermore, there are no longitudinal studies that have explored the relation between personality, meaning making, and mental health outcomes in the context of the COVID-19 pandemic before and after lockdown measures were lifted. It is crucial to consider whether there were changes in these factors throughout the pandemic to accurately assess how meaning making may have fluctuated over time, and whether this influenced internalizing symptoms. Therefore, by examining this relation, we can draw more definitive conclusions about who suffered under lockdown and what factors affected their coping and well-being.

## Current Study

### Research Objectives

For the current study, I examined the effect of young adults' personality on their meaning-focused coping and mental health outcomes during and after the COVID-19 pandemic. Specifically, I examined the longitudinal effect of HEXACO trait of eXtraversion (X) and meaning making on internalizing symptoms across three time points over five years while controlling for pre-pandemic anxiety and depression symptoms. Additionally, gender differences in meaning making outcomes were examined, as previous research has demonstrated mixed findings regarding COVID-19 meaning making, with some studies showing no difference in meaning making (Cohrdes et al., 2023; Zambelli & Tagliabue, 2023), while others demonstrated that women may have engaged in higher levels of cognitive reappraisal and meaning making (Ahmadi et al., 2022; Cholankeril et al., 2023), but also suffered poorer adjustment (Gestsdottir et al., 2021). Furthermore, there are notable gender differences in personality trait reporting and presentation, which may affect meaning-focused coping or psychological outcomes (Lee & Ashton, 2020).

### Research Questions

Based on the literature, my thesis addressed the following research questions:

1. What is the longitudinal relation between HEXACO personality traits and internalizing problems during the COVID-19 pandemic?
2. Does meaning-focused coping mediate this relation?
3. Are there gender differences within this relation?

### Hypotheses

In line with previous research assessing the most salient HEXACO factors in predicting COVID-19 responses (Volk et al., 2021), I hypothesized that participants who are lower in Emotionality (E), and higher in eXtraversion (X) and Conscientiousness (C) would demonstrate lower levels of internalizing problems during COVID-19. Additionally, I predicted that meaning making during the COVID-19 pandemic would mediate an individual's mental health outcomes, regardless of underlying participant personality traits. Gender was assessed using exploratory analysis and therefore no specific hypotheses were made.

## Methods

### Participants and Procedure

The current study uses data from the McMaster Teen study. This is an ongoing, longitudinal study which started in 2008, when participants were 10 years old (T1). Participants were recruited from 51 randomly selected elementary schools within a large southern Ontario public school board. Ethical approval was received from the participating school boards as well as the associated university research ethics board each year. Using a multi-method, multi-informant approach, this study explores a broad number of variables, such as mental health, bullying, health behaviour, and personality. Demographic information was also collected for each participant, including measures of their biological sex and race/ethnicity. The McMaster Teen study was completed using either an online or paper format. Participants were compensated for their participation in the study. Parents provided consent for their child as a participant each year until they turned 16, and student participants provided their assent, and later their consent, for their survey and telephone interview data to be used. The current study uses data from four timepoints, at T12 (22 years of age), T13 (23 years of age), T14 (24 years of age), and T15 (26 years of age), spanning from 2019-2023.

### Measures

#### *Personality*

The personality domains of Emotionality, eXtraversion, and Conscientiousness were measured using the 24-item Brief HEXACO Inventory (BHI) (de Vries, 2013). The Emotionality domain measures the facets of fearfulness, anxiety, dependence, and sentimentality (e.g., “I have to cry during sad or romantic movies”). The eXtraversion domain measures the facets of social esteem, social boldness, sociability and liveliness (e.g., “I am seldom cheerful”). The Conscientiousness domain measures the facets of organization, diligence, perfectionism and prudence (e.g., “I often do things without really thinking”). Participants respond to measures from each of the six factors using a 5-point Likert scale from “strongly disagree” to “strongly agree” (Ashton & Lee, 2009). Internal consistency for each domain of the BHI with the HEXACO is as follows: Emotionality:  $\alpha = .46$ ; Extraversion:  $\alpha = .72$ ; Conscientiousness:  $\alpha = .53$ . Personality factors from the BHI have been shown to have high convergence with those in the long form of the HEXACO (Ashton & Lee, 2009; de Vries, 2013).

#### *Meaning Making*

Meaning Making was measured through participants' perceptions of making meaning out of negative experiences (MINE) (Kross & Ayduk, 2011). The MINE questionnaire is a nine-item questionnaire used to evaluate how participants feel when they experience stressful life events, and focuses on their cognitive and emotional processing, as well as their ability to conceptualize the adverse event as a source of meaning. Statements include measures of participants' ability to find significance and importance through negative experiences (e.g., "I think that experiencing stressful events in life is meaningful") and their likelihood of reflecting upon the negative experiences' value (e.g., "I actively take the time to reflect on the stressful events that happen in my life"). Participants are asked to respond to each scale item based on how much they agree or disagree with each statement using a 6-point Likert-type scale (0= Strongly Disagree, 1 = Disagree, 2 = Slightly Disagree, 3 = Slightly Agree, 4 = Agree, 5 = Strongly Agree). Participant responses are added together to obtain a total overall score. Higher scores reflect a greater tendency to find meaning in stressful life events.

### ***Anxiety Symptoms***

Self-reported anxiety symptoms were measured using the anxiety subscale of the Behavioural Assessment System for Children-2 (BASC-2), Self-Report of Personality- College Version (SRP-COL; Reynolds & Kamphaus, 2004). This 14-item subscale asks participants to indicate the best response based on the statement provided. Four of the items are rated in a *true* = 2 or *false* = 0 format (e.g., "I worry about little things"), and the remaining ten items being rated on a 4-point Likert-type scale of *never* = 0, *sometimes* = 1, *often* = 2, and *almost always* = 3 (e.g., "I am afraid of a lot of things"). In the current sample this scale was found to have good internal consistency (Age 22  $\alpha$  = .88, Age 23  $\alpha$  = .87, and Age 26  $\alpha$  = .88), supporting reliability for the scale.

### ***Depression Symptoms***

Self-reported depression symptoms were measured using the depression subscale of the BASC-2, Self-Report of Personality- College Version (SRP-COL; Reynolds & Kamphaus, 2004). The BASC-2 depression subscale consists of 13 items that ask participants to indicate the best response based on the statement provided. Nine of the items are asked in a *true* = 2 or *false* = 0 format (e.g., "Nothing is fun anymore") with the remaining four questions being presented on a 4-point Likert scale of *never* = 0, *sometimes* = 1, *often* = 2, and *almost always* = 3 (e.g., "I feel

sad”). In the current sample this scale was found to have good internal consistency (Age 22  $\alpha = .88$ , Age 23  $\alpha = .88$ , and Age 26  $\alpha = .89$ ), supporting reliability for the scale.

### **Analytic Plan**

#### **Descriptive Statistics**

Descriptive statistics for age and gender were conducted using SPSS. An internalizing composite score was made by combining BASC depression and anxiety subscales. Means, standard deviations, and frequencies were also calculated for the HEXACO traits of eXtraversion, depression and anxiety symptoms, and meaning making.

#### **Main Analyses**

To examine the reciprocal and mediated effects among HEXACO personality traits, meaning making, and mental health outcomes, a path model using cross-lagged panel analysis in Mplus Version 8.11 was used (Muthén & Muthén, 2017). This modeling approach explored between-person differences over time, allowing for an assessment of whether HEXACO personality traits predicted depression and anxiety symptoms across three time points over four years, and whether meaning making mediated these relations. Model fit was evaluated using conventional indices, including the Comparative Fit Index (CFI), Tucker-Lewis Index (TLI), Root Mean Square Error of Approximation (RMSEA), and Standardized Root Mean Square Residual (SRMR). Missing data were handled using Full Information Maximum Likelihood (FIML). Due to low Chronbach’s alpha for Emotionality and Conscientiousness ( $<.60$ ), these personality measures were removed from the final analysis.

A longitudinal path analysis was conducted to examine the associations between internalizing problems at four time points (ages 22-26) and its relation to extraversion at age 24. Meaning making was evaluated as a mediator across two time points (age 23 and 24). This model incorporated autoregressive pathways to account for traits which may remain stable between time points. Additionally, cross-lagged pathways between variables were explored to determine longitudinal associations between variables, such as whether changes in meaning focused coping across time points are associated with fluctuations in internalizing problems. Concurrent associations were also modeled to assess covariance, or the relation between constructs at each time point. Finally, to investigate the potential moderating effect of gender, a multi-group path analysis was conducted, exploring whether the structural pathways and model fit were significantly different between male and female respondents.

## Results

### Descriptive Statistics

The analytic sample consisted of 443 participants (40% men;  $n = 178$  and 60% women;  $n = 265$ ). Descriptive statistics, including means, standard deviations, and sample sizes for anxiety symptoms, depression symptoms, and meaning making across various time points are presented in Table 1. Correlations between the above variables across all time points are presented in Table 2. Internalizing symptoms were significantly and positively correlated with itself over time, as well as with each other at all time points (*Min*:  $r = .71, p < .01$ , *Max*:  $r = .84, p = < .01$ ). Meaning making was also significantly correlated with itself ( $r = .58, p < .01$ ). There were no significant correlations identified between meaning making and internalizing symptoms at either time point.

**Table 1**

*Descriptive and Frequency Statistics [total sample]*

Variables	<i>n</i>	Min	Max	<i>M</i>	<i>SD</i>
BASC- Anxiety Symptoms					
T12 (Age 22)	383	0.00	37.00	15.19	8.99
T13 (Age 23)	373	0.00	37.00	15.29	8.80
T14 (Age 24)	385	0.00	37.00	16.08	8.88
T15 (Age 26)	359	0.00	36.00	15.66	8.64
BASC- Depression Symptoms					
T12 (Age 22)	379	0.00	29.00	5.54	5.75
T13 (Age 23)	368	0.00	29.00	5.54	5.84
T14 (Age 24)	381	0.00	30.00	5.86	5.77
T15 (Age 26)	356	0.00	30.00	5.40	5.83
Internalizing Symptoms					
T12 (Age 22)	377	0.00	66	20.62	13.60
T13 (Age 23)	368	0.00	62	20.68	13.44
T14 (Age 24)	380	0.00	65	21.78	13.48
T15 (Age 26)	355	0.00	63	20.95	13.20

Variables	<i>n</i>	Min	Max	<i>M</i>	<i>SD</i>
Meaning Making					
T13 (Age 23)	335	0.67	5.00	3.11	0.85
T14 (Age 24)	336	0.56	5.00	3.18	0.86
eXtraversion					
T14 (Age 24)	382	1.25	5.00	3.62	0.69

**Table 2***Correlations Among Study Variables*

Variables	1	2	3	4	5	6	7
1. T12	-	.82	.75	.72	.02	-.02	-.42
INT		**	**	**			**
2. T13		-	.84	.77	-.04	-.05	-.49
INT			**	**			**
3. T14			-	.83	-.06	-.09	-.54
INT				**			**
4. T15				-	-.02	-.05	-.46
INT							**
5. T13					-	.58	.18
MM						**	**
6. T14						-	.27
MM							**
7. T14							-
X							

Note: \*\* $p < .01$ ; INT= internalizing problems; X= eXtraversion; MM= meaning making.

**Cross-lagged Panel Model: Transactional Model**

**Model Fit.** The model demonstrated acceptable fit to the data,  $\chi^2(6) = 20.45, p < .01$ , CFI = .99, TLI = .96, RMSEA = .074, 90% CI [.041, .119], SRMR = .03.

**Auto-regressive paths.** All one-lag and two-lag autoregressive paths for internalizing symptoms demonstrated significant stability ( $bs = .18$  to  $.80$ ,  $\beta s = .19$  to  $.82$ ,  $ps < .001$ ), suggesting strong temporal stability across time points. Meaning making also demonstrated significant autoregressive stability ( $b = .59$ ,  $\beta = .58$ ,  $p < .001$ ; see Figure 1).

**Within-time associations.** A significant negative relation between internalizing symptoms and eXtraversion at Age 24 (T14) ( $b = -1.29$ ,  $\beta = -.30$ ,  $p < .001$ ) was found. No other significant within time-associations were found across time points.

**Cross-lagged paths.** Cross-lagged effects showed two significant associations among eXtraversion, internalizing symptoms and meaning making. Greater internalizing symptoms at Age 23 (T13) significantly predicted lower eXtraversion at Age 24 (T14) ( $b = -.02$ ,  $\beta = -.47$ ,  $p < .001$ ). Conversely, greater meaning making at Age 23 (T13) significantly predicted higher eXtraversion at Age 24 (T14) ( $b = .12$ ,  $\beta = .15$ ,  $p < .001$ ). No other significant cross-lagged associations were found ( $bs = -.00$  to  $.26$ ,  $\beta s = -.02$  to  $.02$ ,  $ps > .05$ ).

**Indirect effects.** Indirect effects were not supported in the present model. Although internalizing symptoms and meaning making predicted subsequent eXtraversion, eXtraversion did not predict later internalizing symptoms. Given the absence of a significant path from eXtraversion and meaning making to subsequent internalizing symptoms, indirect effects were not examined.

Given the high autoregressive stability of internalizing symptoms across waves, additional models were assessed to examine whether this stability impaired potential cross-lagged effects. Specifically, internalizing at Age 22 was removed from the model and analyses were re-run. Next, internalizing at Age 26 was also removed. Across all models, the pattern and significance of cross-lagged paths was not statistically significant. Therefore, the absence of mediation effects and the significant path from internalizing at Age 23 to lower extraversion at Age 24 were not attributable to statistical suppression due to stability in internalizing symptoms.

### **Sex Differences**

To formally evaluate sex differences, equality constraints were tested using Wald  $\chi^2$  tests. Results indicated that model parameters, including autoregressive, cross-lagged, and within-time associations, did not significantly differ across sex,  $\chi^2(15) = 8.87$ ,  $p = .88$ . Therefore, despite minor differences across groups, associations between eXtraversion, meaning making, and internalizing symptoms did not differ significantly between men and women.

## Discussion

In the present study, I examined whether meaning making mediated the longitudinal associations between young adults' HEXACO personality factors and internalizing symptoms during and after the COVID-19 pandemic in Canada. The effects of gender were also explored, as previous research has found differential impacts of the pandemic on men and women.

### Stability of Auto-Regressive Paths

Internalizing symptoms and meaning-focused coping both demonstrated strong stability across time points. This finding aligns with prior research demonstrating that after increases in depression and anxiety symptoms, as well as psychological distress at the onset of the COVID-19 pandemic (Dragioti et al., 2022; Kauhanen et al., 2023; Madigan et al., 2023; Samji et al., 2021), individuals maintained relatively stable symptomology (Batterham et al., 2021; Fancourt et al., 2021; Li et al., 2025; O'Connor et al., 2020; Saunders et al., 2022). Previous research from the pandemic also demonstrates that individuals who have higher levels of internalizing symptoms at the start of stressful periods are more likely to maintain those levels of difficulty over time (Fancourt et al., 2021). Therefore, although individuals differed in their levels of symptoms and coping, these differences remained relatively stable over time. This finding indicates that for those with more significant internalizing symptoms, these difficulties may exert an enduring longitudinal effect on mental health outcomes and overall well-being.

Similarly, the use of meaning-focused coping across the pandemic was stable. Specifically, individuals who employed meaning-focused coping earlier in the pandemic continued to report similar levels of use one year later, whereas those who were lower in meaning making at T13 tended to remain lower in meaning-focused coping strategies over time. Although longitudinal research on coping remains limited, these findings are consistent with broader evidence suggesting moderate stability in coping tendencies across time. Wingo et al. (2015) found relative stability in coping styles across a 16-year period, with the most significant changes occurring earlier in development between adolescence and early adulthood. Recent studies assessing adolescence and early adulthood similarly found moderate to high stability in coping (Amai & Hojo, 2022; Henning et al., 2025). These results suggest that, like personality traits, the use of meaning-focused coping may also act as a more stable coping response across situations, with enduring effects across the lifespan. Supporting this explanation, a longitudinal study by Fitzke et al. (2021) found that individuals who engaged in meaning making early in

midlife continued to demonstrate greater meaning in life and better emotional adjustment approximately twenty years later, suggesting stability in the lasting impacts of meaning making.

### **Cross-Lagged Paths**

When assessing cross-lagged paths, greater internalizing symptoms at age 23 (T13) predicted lower eXtraversion at age 24 (T14). Contrary to initial hypotheses, which anticipated that eXtraversion would predict subsequent internalizing symptoms, the direction of association instead found that higher levels of depression and anxiety symptoms at age 23 were associated with lower levels of eXtraversion one year later. As noted previously, personality traits become increasingly more stable across the lifespan, with developmental research suggesting that personality traits, including eXtraversion, show fluctuation across adolescence and early adulthood (Bleidorn et al., 2022; Brandes et al., 2021; Soto & Tackett, 2015), but stabilize in adulthood (Brazil et al., 2025; Elkins et al., 2017; García et al., 2022). Therefore, rather than indicating fundamental changes in personality, this finding may suggest that the context of the COVID-19 pandemic led to modified expression or reporting of eXtraversion during a prolonged period of stress.

One explanation is that pandemic-related lockdowns significantly restricted social and physical engagement, which may have led to withdrawal, social disengagement, and a reduction in the expression of extraverted tendencies. Within the HEXACO framework, eXtraversion encompasses social self-esteem, social boldness, sociability, and liveliness (Lee & Ashton, 2016). The COVID-19 pandemic severely restricted social interactions, particularly for Ontario residents, where many social interventions, including stay-at-home orders, remote learning and physical distancing, lasted for over two years (Vaillancourt & Brittain, 2024). Moreover, individuals managing elevated levels of depression and anxiety symptoms are more likely to experience social disengagement (Kupferberg & Hasler, 2023), further affecting behavioural displays of extraversion. Thus, while underlying personality traits may not have changed, an individual's ability to act in accordance with those personality traits may have been limited.

It is also possible that the effects of the COVID-19 pandemic contributed to noticeable shifts in personality expression, specifically decreases in eXtraversion over time. Although personality demonstrates high stability, there is research to suggest that impactful life events, such as marriage, parenthood, employment, and retirement, can lead to small but significant changes in personality traits or trait expression (Bleidorn et al., 2018; Bühler et al., 2024; Kyle et

al., 2025). Consistent with this interpretation, large-scale longitudinal research in the United States found decreases in eXtraversion and increases in neuroticism during the later phases of the COVID-19 pandemic, particularly among young adults (Sutin et al., 2022). Finally, increased levels of internalizing symptoms may have affected self-reports of eXtraversion. Depression and anxiety symptoms are associated with a decreased sense of self and perceived social competence (Hoffman et al., 2024; Kupferberg & Hasler, 2023), which may lead individuals to report lower eXtraversion irrespective of definite trait change. This association may therefore be a result of perceived or actual trait expression, or changes in underlying personality. These findings demonstrate the potential longstanding impact of prolonged stress during early adulthood (Carver & Connor-Smith, 2010) and the need for continued examinations of personality traits during times of crisis.

Among cross-lagged paths, greater meaning making at Age 23 (T13) significantly predicted higher eXtraversion at Age 24 (T14), suggesting that individuals who engaged more frequently in meaning-focused coping tended to report relatively higher subsequent eXtraversion. This finding signals that engaging in meaning-making processes may support the maintenance or expression of extraverted behaviour over time. Due to scarce literature exploring meaning-focused coping and personality longitudinally, it is challenging to assess this finding in relation to previous studies. One possible explanation is that meaning-making processes, which often involve reframing adversity, acceptance, and identifying positive life changes in stressful experiences, may promote positive affect, optimism and social engagement, which are characteristic of eXtraversion (Lee & Ashton, 2016; Žurko et al., 2022). Furthermore, these processes may have been particularly salient during the COVID-19 pandemic, wherein individuals who engaged in higher levels of meaning-making may have been better able to maintain levels of optimism, social orientation, and subjective well-being (Schnell & Becker, 2006), which were then reflected in higher levels of eXtraversion. These findings may also indicate a bi-directional process in which meaning-focused coping contributes to the expression of extraverted tendencies, while at the same time underlying eXtraversion encourages meaning-making processes. Although meaning making is a uniquely personal experience, this finding is significant as it suggests that regardless of the source of meaning, engaging in meaning-focused coping may promote the expression of eXtraversion, which has been associated with better coping and psychological adjustment during the COVID-19 pandemic more generally (Volk et

al., 2021). However, it is important to note that as eXtraversion was only measured at one time point, it is unclear whether meaning-focused coping predicted changes in eXtraversion or simply reflected pre-existing individual differences.

From a theoretical perspective, these findings align with meaning-making theory (Park, 2010), which proposes that meaning-making arises from a discrepancy between appraised meaning of an event and an individual's broader global beliefs. Through cognitive processes such as reappraisal, individuals attempt to reduce this discrepancy and restore psychological coherence and acceptance. Young adults who engaged in meaning making may have simultaneously fostered greater positive affect and social well-being (Park, 2010), which are also qualities associated with eXtraversion as an approach temperament (Murphy & Mackenzie, 2024). Consequently, meaning making may be associated with subsequent reports of higher eXtraversion over time by fostering adaptive cognitive and emotional responses to adversity.

#### **Within-time Association of eXtraversion and Internalizing Symptoms**

Notably, within T14 (age 24), there was an inverse relation between eXtraversion and internalizing symptoms, such that individuals who reported greater levels of eXtraversion also reported lower levels of internalizing symptoms. Although eXtraversion did not indicate lower internalizing symptoms across time points, this within-time association aligns with the study's initial hypotheses, as well as existing literature identifying eXtraversion as a protective personality trait against psychological distress within time points (Connor-Smith & Flachsbart, 2007; Volk et al., 2021). Indeed, eXtraversion consistently emerges in personality research as a significant predictor of subjective well-being and positive mental health outcomes (Demir & Weitekamp, 2007; Harris et al., 2017; Jylhä & Isometsä, 2006). Traits associated with eXtraversion, including sociability, social self-esteem, and positive affect, may buffer against experiences of distress, suggesting why individuals higher in eXtraversion reported lower concurrent internalizing symptoms. This concurrent finding also aligns with the study's cross lagged results, in that those who experienced higher internalizing symptoms reported lower levels of eXtraversion, suggesting that internalizing symptoms may reduce the expression of eXtraversion both within and across time. Longitudinal research exploring the impact of extraversion on psychological distress during the COVID-19 pandemic similarly suggests that personality-related processes interact dynamically with distress over time. For example, individuals with diagnosed mental health disorders have been found to report significantly lower

baseline levels of eXtraversion relative to controls, and extraversion appeared to function as a protective factor against subsequent distress (Schmit et al., 2024).

One potential explanation for this association is that individuals higher in eXtraversion have strong social networks and may be more likely to seek interpersonal support during times of stress, as asking others for mental health support is an inherently social process (Pescosolido & Olafsdottir, 2013). Additionally, the consistent interconnectedness of eXtraversion and subsequent well-being outcomes may also denote that this personality trait and internalizing symptoms reflect inverse processes, and that, in light of the COVID-19 pandemic, eXtraversion measured underlying protective qualities. Indeed, higher levels of eXtraversion have been linked to lower health anxiety and COVID-19–related anxiety, which themselves predict later depression and generalized anxiety symptoms (Nikčević et al., 2021). These findings suggest that individuals higher in eXtraversion may have been buffered from pandemic-related distress, supporting the inverse association between eXtraversion and internalizing symptoms at T14.

### **Absence of Mediating Effects**

Contrary to initial predictions, we were unable to assess for the mediating effect of meaning making on internalizing symptoms. Specifically, there was no evidence of a downstream longitudinal pathway linking the personality trait of eXtraversion to later internalizing symptoms through earlier meaning-focused coping. Although prior cross-sectional research has suggested that meaning-focused coping buffers distress during the COVID-19 pandemic (Eisenbeck et al., 2021; Sanchez-Ruiz et al., 2021; Ward et al., 2023), and that personality traits are a key indicator of the coping strategies individuals tend to employ (Connor-Smith & Flachsbart, 2007; Volk et al., 2021), the present longitudinal findings suggest that these associations may be more concurrent than predictive. Specifically, meaning making may be more closely related to mental health outcomes within time points rather than functioning as a long-term mediating mechanism connecting personality traits to later psychological distress.

Moreover, as the hypothesized indirect pathway was not supported, there may be a more concurrent relation between eXtraversion and internalizing symptoms rather than through indirect coping pathways. This interpretation is supported by research indicating that personality traits exert relatively stable influences on emotional functioning and psychological well-being, potentially shaping mental health outcomes independently of specific coping strategies (Modersitzki et al., 2021; Pilch, 2023). Another possible explanation for a lack of mediation may

be due to the rapidly evolving state of the COVID-19 pandemic. As the present study assessed measures annually, the periods of assessment may not have been close enough together to capture changes in coping strategies as well as internalizing symptoms. Finally, this interconnectedness suggests that meaning-focused coping may not act as an explanatory mechanism, but rather as an additional resource to reduce the effects of stressful or traumatic life events.

### **Absence of Gender Differences**

Using exploratory analysis, the present study found no significant gender differences in the model. This finding contrasts with some research demonstrating differences in internalizing symptoms between men and women during the COVID-19 pandemic (Chima et al., 2022; Gestsdottir et al., 2021; Gurvich et al., 2020). As noted previously, the prevalence of depression among women is over two times the amount relative to men, and accounts for roughly two-thirds of diagnosed anxiety disorder (American Psychiatric Association, 2022). Despite these sizeable population-level gender differences in mental health, the absence of significant gender differences in the present model suggests that the relations among eXtraversion, meaning-focused coping, and internalizing symptoms may operate similarly for men and women. This finding is consistent with prior research indicating that gender differences in personality traits are relatively small across most domains. Within the HEXACO model, women tend to score higher in Emotionality and Honesty-Humility; however, gender differences are not significant for other traits, including eXtraversion (García et al., 2021; Lee & Ashton, 2020).

Furthermore, studies suggest that gender does not strongly predict the use of meaning-focused coping strategies (Cohrdes et al., 2023; Zambelli & Tagliabue, 2023). Instead, other individual differences, such as personality traits, may play a larger role in shaping coping responses and mental health outcomes (Nikčević et al., 2021; Rammstedt et al., 2021). Finally, the widespread effect of the COVID-19 pandemic may have reduced the potential influence of gender within the proposed model. As such, although men and women may differ in mean levels of distress, the underlying relations between personality, coping styles, and internalizing symptoms may remain relatively consistent across gender.

Although the overall model was not statistically significantly different across gender, exploratory analyses suggested one potential subgroup difference between models for men and women. Meaning making at age 23 (T13) predicted subsequent eXtraversion at age 24 (T14) for

women, but not for men. There is evidence to suggest that women are more likely to seek emotional and social support and engage in more effective coping strategies, like cognitive restructuring (Kolakowsky-Hayner et al., 2021; Tamres et al., 2002). Thus, this finding may reflect underlying gender biases about support seeking behaviours, such that men are less likely to ask for mental health support and may be more likely to engage in problem-focused coping strategies (Ptacek et al., 1994) rather than meaning-focused coping.

### **Theoretical and Clinical Implications**

The present findings indicate that both meaning-focused coping and internalizing symptoms may have important implications for the expression and maintenance of eXtraversion, which is associated with psychological growth, social engagement, and overall well-being outcomes (Demir & Weitekamp, 2007; Harris et al., 2017; Jylhä & Isometsä, 2006). Although personality traits have high stability across the lifespan (Elkins et al., 2017), these results suggest that mental health trajectories and coping strategies may influence future expressions of trait-related behaviour, like eXtraversion. The hypothesis that meaning making may function as a mediating mechanism linking internalizing symptoms to changes in eXtraversion within the modeled timeframe was not supported. Specifically, despite the absence of a mediation path, findings indicate that meaning-focused coping may act parallel to internalizing symptoms to affect trait expression. Prior research suggests that meaning-focused coping has important implications for mental health outcomes and long-term well-being (Eisenbeck et al., 2021). As mental health trajectories tend to remain stable over time, findings suggest that early intervention is critical for supporting psychological challenges through periods of instability. There is emerging evidence to suggest that meaning making can be effectively fostered through a number of strategies, including meaning-centred psychotherapy (MCP) (Wong et al., 2025), logotherapy (Sun et al., 2021) and has been demonstrated to promote reductions in depression and anxiety symptoms and reduced emotional effects of pain (Eisenbeck et al., 2021; Marco et al., 2025; Winger et al., 2023). Moreover, individuals with early engagement in meaning-focused coping tend to maintain these tendencies over time, which may support sustained emotional adjustment (Fitzke et al., 2021). Although much of the present work on meaning making has emerged from oncology literature, the present findings suggest that meaning focused coping may have important implications for individuals across the lifespan, particularly in times of stress.

The finding that greater internalizing symptoms was associated with lower eXtraversion one year later highlights the importance of early identification and treatment of internalizing distress. Interventions that target anxiety and depressive symptoms may not only reduce distress but also support broader social functioning, including social engagement and behavioural activation. Moreover, personality traits are stable over time but are susceptible to change in adolescence and early adulthood, particularly in the presence of significant life events (Bleidorn et al., 2018; Bleidorn et al., 2022). As personality increases in rank-order stability, its effects remain consistent over the lifespan. Thus, these findings highlight that it is particularly crucial to ensure that mental health supports are in place early to promote and teach appropriate coping strategies to buffer negative consequences and deterioration of personality traits that may protect against internalizing symptoms. Importantly, this potential for fluctuation also suggests that by fostering coping strategies, as well as traits associated with protective elements of personality like social connectivity and engagement, there may be broader implications for psychological and well-being outcomes.

### **Limitations and Future Research Directions**

There are several key strengths within the present study, including the longitudinal design, a relatively large community sample and controlling for pre-pandemic internalizing symptoms. Nonetheless, there are important limitations to address. Due to low internal consistency for the HEXACO subscales of Emotionality and Conscientiousness within the present sample, I was unable to assess mediation effects involving these traits, which previous cross-sectional research has suggested are related to effective coping during the COVID-19 pandemic (Volk et al., 2021). This limits the ability to draw conclusions regarding other personality factors that might have influenced this relationship. Furthermore, eXtraversion was measured at only one time point, precluding examination of its autoregressive stability or reciprocal effects with internalizing symptoms and meaning making. As a result, it was not possible to determine whether internalizing symptoms or meaning making predicted changes in eXtraversion over time, or whether the present findings reflect stable individual differences in personality. Therefore, this limitation restricts the ability to draw conclusions around longitudinal change in personality trait expression. Finally, meaning making was also assessed at only two time points, which may have reduced statistical power to capture mediating or indirect effects.

In the present study, I found no gender differences in the proposed model. However, it is important to note that gender was only explored using a binary (i.e. men and women) as there was insufficient sample size of gender-diverse participants. There are well documented findings of disparities in psychological impact on gender diverse individuals relative to men and women, with transgender and gender diverse individuals reporting the most severe mental health difficulties (Chima et al., 2022; Leibler et al., 2025). Therefore, additional efforts should be made to assess the influence of personality factors on gender minorities and subsequent mental health outcomes. Additionally, while pre-pandemic internalizing symptoms were controlled for, meaning-focused coping was assessed only after the onset of the COVID-19 pandemic. Earlier assessments of meaning making would have allowed for stronger examination of change and whether shifts in coping strategies preceded changes in mental health.

The Making Meaning out of Negative Experiences scale is not a formally validated measure, and it is therefore less clear whether it measured meaning making specifically, cognitive restructuring, or resilience-related processes. As Park (2010) highlights, literature on meaning making is challenging to assess collectively due to inconsistent terminology to describe similar constructs. Moreover, there are concerns regarding the accuracy of self-reported coping strategies, as the operational definition of meaning-making contributes significantly to the frequency of reported use (Park, 2010). Future research should employ validated measures such as the Global Meaning Violation Scale (Park et al., 2016) or the Meaning-Centered Coping Scale (Eisenbeck et al., 2021) to confirm study findings and improve comparability across studies.

Finally, future research should examine additional potential mediators or moderators of longitudinal associations, such as stress exposure, life transitions, or social context, to better understand under what circumstances meaning-focused coping is most adaptive. Prior studies suggest that resilience may function as a mediator or moderator between personality traits and mental health outcomes (Gong et al., 2020; Zager Kocjan et al., 2021), highlighting the importance of examining additional pathways. Clarifying these mechanisms may advance understanding of how personality traits and adaptive coping strategies jointly shape mental health outcomes during periods of widespread crisis.

## **Conclusion**

In the present study I examined the longitudinal associations between eXtraversion, meaning-focused coping, and internalizing symptoms during the COVID-19 pandemic.

Examining personality and meaning-focused coping within the context of a global crisis provides valuable insight into which individuals may be most vulnerable to psychological distress and which coping processes may promote adaptation in the face of acute and ongoing stressors. Although a mediation effect was not supported, the findings suggest that other mechanisms or contextual moderators may have played a more central role in shaping mental health outcomes during this period. Notably, both meaning making and internalizing symptoms demonstrated strong longitudinal stability, underscoring the persistence of individual differences in coping and psychological distress across time. These findings highlight the importance of early identification and intervention, as patterns of mental health and coping may endure during periods of prolonged stress. By integrating personality research through a positive psychology framework, this study contributes to a more nuanced understanding of how individual traits intersect with meaning-making processes to influence well-being and flourishing. Such insight can inform the development of targeted interventions aimed at strengthening adaptive coping and fostering meaning making during times of uncertainty and disruption. As Carver and Connor-Smith (2010) note, “a small influence, multiplied by the thousands of stressors experienced over a lifetime, may result in a large impact over time” (p. 689). Thus, modest effects of personality and coping processes may therefore accumulate, affecting long-term mental health trajectories and underscoring the broader significance of these findings.

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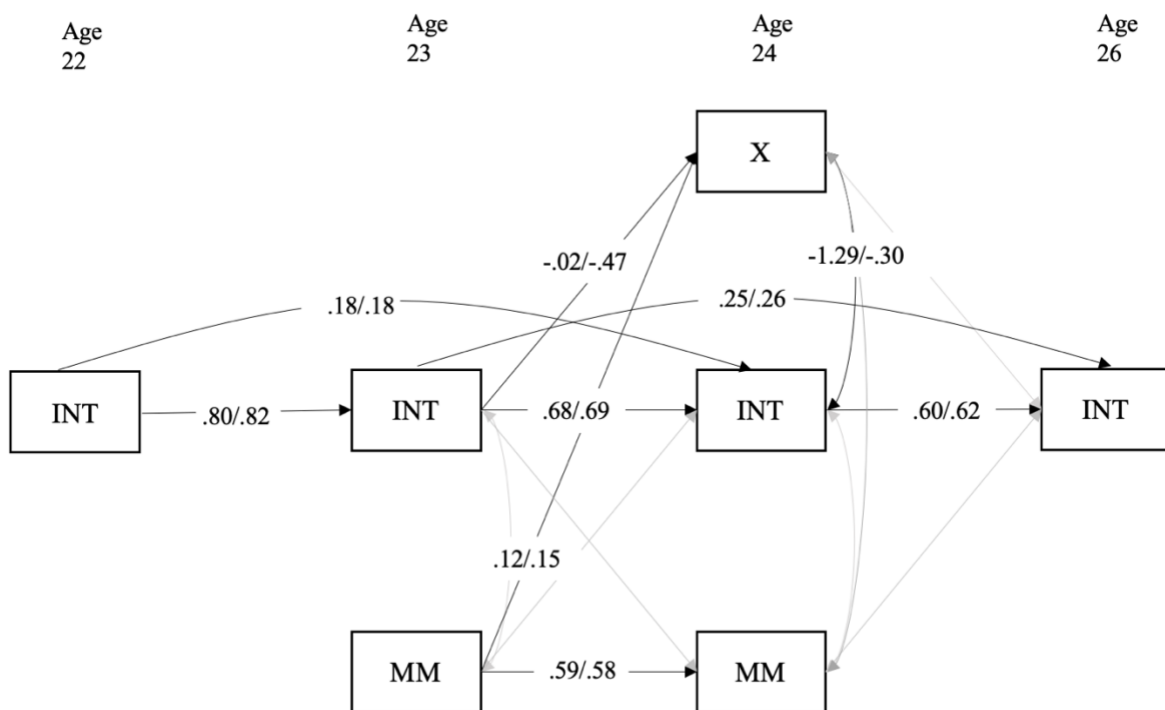
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**Figure 1**

*Cross-Lagged Panel Model of Internalizing Symptoms, Meaning Making, and eXtraversion.*



Note: INT=Internalizing symptoms; MM=Meaning Making; X=eXtraversion.

Unstandardized/Standardized. CFI = .99, RMSEA = .074, 90% CI [.040, .110],  $\chi^2(6) = 20.45, p < .01$