RELIGION, SPIRITUALITY, AND HEALTH IN LATIN AMERICA

# Religious Coping, Experiential Avoidance, Self-Compassion, and Post-Traumatic Stress by COVID-19: a Serial Mediation Study

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## Abstract

The COVID-19 pandemic has brought consequences to mental health, with religiosity being a relevant coping factor in reducing the negative impact of the health crisis. Based on a convenience sample of Chilean adults, this study sought to explore the relationship between religious coping and post-traumatic stress due to COVID-19, hypothesizing that this relationship would be mediated by experiential avoidance and self-compassion. A non-experimental cross-sectional design was used, applying an online survey to 300 adults who lived in Chile. The results show that all variables are related and that experiential avoidance (EA) and self-compassion play a serial mediating role in the relationship between negative religious coping (NRC) and post-traumatic stress. Furthermore, the results showed that religious coping, experiential avoidance, self-compassion, and COVID-19 post-traumatic stress are significantly interrelated. Moreover, a serial mediation was found among the variables: higher experiential avoidance and lower level of self-compassion mediate the impact of COVID-19 post-traumatic stress in people with negative religious coping. At the end of the article, the implications of the results and how these variables interact in a serial mediation mechanism that sheds further light on the relationships between negative religious coping, mental health, and adverse situations such as COVID-19 are discussed.

**Keywords** Religious coping · Experiential avoidance · Self-compassion · Post-traumatic stress · COVID-19

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## Introduction

In the context of the COVID-19 pandemic, mental health has been strongly altered by changes in the routine and lockdown contexts, which has significantly increased the prevalence of adverse outcomes in mental health, such as bad mood, worry, depression, anxiety, and suicidal thoughts and behaviors (Hit and Struggling 2020). In turn, in the first seven months of the pandemic, a higher prevalence of depression, anxiety, and stress was observed than in the months before the pandemic (Lakhan et al. 2020). It has also been indicated that the impact on health is disproportionate among the population and is mediated by social and cultural determinants (Baqui et al. 2020; Laurencin and McClinton 2020; Zhang and Schwartz 2020). Among them, religiosity has been postulated as a protective factor for mental health in symptomatic aspects such as suicide, anxiety, depression (Bekelman et al. 2007; Mofidi et al. 2007), and bipolar disorder (Koenig 2007; Moritz et al. 2006). However, some authors suggest the opposite: religiosity may be a risk factor associated with anxious and depressive symptoms (Simkin and Etchevers 2014) and negatively related to mental health and quality of life (Newberg 2010).

Although there is an agreement in the literature on the negative effects of COVID-19 on mental health, the basic processes of how people cope with stressful situations, considering psychological and religious mechanisms, are not entirely clear. One area of interest in looking at this dimension involves focusing on variables of experience processing or coping strategies, mainly cognitive, in which the person evaluates resources and threats to answer to or face stressful situations (Lazarus and Folkman 1984).

The following are some psychological and religious coping variables that have reduced the impact of COVID-19 on mental health. A relevant cognitive coping variable that is predictive of mental health is Experiential Avoidance (EA). EA refers to all deliberate efforts to avoid or escape from the content of a particular experience, such as thoughts, emotions, and physical sensations that are experienced as aversive, even when this leads to actions that are inconsistent with one's values and goals (Hayes et al. 1996). EA is a basal clinical variable and a transdiagnostic category of different physical and mental illnesses (Gloster et al. 2017). In the early quarantine period, EA has been identified as one of the main predictors of mental health distress in adults, such as depression, anxiety, stress, loneliness, and negative emotions (Ferreira et al. 2021). In turn, AE is significantly related to fatigue severity, pain intensity, and pain disability during COVID-19 in Latino adults (Mayorga et al. 2022).

Another important variable in mental health as a psychological coping mechanism is self-compassion, understood as the internal attitude of being warm and kind to oneself instead of self-criticizing when failing or suffering (Neff 2016). This variable predicted healthcare professionals' quality of life and well-being during the pandemic (Lluch-Zans et al. 2022). It has also been shown that compassion-based interventions can help alleviate stress in the pandemic context of adult women (Wu 2021) and contribute positively to the life satisfaction of men in COVID-19 quarantine (Li et al. 2021).

Finally, a coping strategy associated with how people use their sacred-related experiences to respond to crises or suffering events is religious coping (RC) (Pargament and Raiya 2007). During the pandemic, it was observed that people with more depressive and anxious symptoms were associated with higher use of negative RC (Zarrouq et al. 2021). Similarly, a negative relationship between positive religious coping and perceived stress was observed in a sample of quarantined adults (Mahamid and Bdier 2021). Furthermore, RC has also been shown to moderate the relationship between hope and well-being in the general population exposed to strict lockdowns during the COVID-19 pandemic (Counted et al. 2022). On the other hand, in a sample of older adult women, it was observed that high levels of religious coping were associated with lower anxiety about death in the pandemic context (Rababa et al. 2021).

RC, EA, and self-compassion appear to be potentially related variables. First, all three variables behave as a process of managing and coping with stressful events. Second, all three variables are closely related to well-being and mental health (Akbari et al. 2022; Ferrari et al. 2019; Fabricatore et al. 2004). Third, these three variables tend to be specifically associated with stress (Bardeen et al. 2013; Hormansyah and Hidayah 2019; Ano and Vasconcelles 2005). Fourth, while both EA and self-compassion are also related to post-traumatic stress, only EA has been identified as a predictor of risk for post-traumatic stress symptoms following a traumatic event (Kumpula et al. 2011; Henschel et al. 2021). Therefore, we hypothesize that it would have a more preponderant role as a mediating variable than self-compassion since a recent systematic review of self-compassion and post-traumatic stress disorders only shows evidence that supports the association between increased self-compassion and decreased post-traumatic stress symptoms (Winders et al. 2020), but not its predictability.

Similarly, positive RC appeared to be a protective variable that favors growth and positive changes after a traumatic event (Gómez and García 2021). Conversely, the negative RC subscale appeared to be the most consistently associated with indicators of poor psychological functioning, such as anxiety and depression (Pargament et al. 2011). Finally, all these variables appear to be associated with the pandemic's effects on mental health during the COVID-19 pandemic. Nevertheless, despite this affinity between functioning and mental health effects, there is no work in the literature devoted to exploring the mechanisms underlying these variables.

The present study aims to explore the relationships between negative RC, EA, self-compassion, and post-traumatic stress caused by COVID-19 and to observe the multi-serial mediation of EA and self-compassion in the relationship between NRC and COVID post-traumatic stress in a sample of Chilean adults.

## Method

### Data Collection Process

The sample was a nonrepresentative and convenience sampling that included persons over 18 years old who lived in Chile. They were contacted and invited to participate

using academic contact networks of the researchers and partner institutions (Centro UC Estudios de la Religión, Centro de Salud Universitario Universidad Austral de Chile, and Centro UC Estudios de la Vejez y Envejecimiento), and also through personal networks, mainly due to practical criteria of application and feasibility of the data collection process. In addition, given the novelty of the research field in the country, there was not enough prior knowledge that could theoretically or empirically support the criteria for the sample's definition.

The invitation was distributed through social media (Facebook, Whatsapp, and Instagram) and email, which included a brief presentation of the study and the link to the informed consent (Google Form completed online), where the potential participants found all the information referred to the project and the link to participate in the survey, in case they freely decided to do so. By clicking on the link, all participants expressed their consent to participate. The procedure was evaluated and approved by the Ethical Committee for Social Sciences, Arts, and Humanities of the Pontificia Universidad Católica de Chile in August 2021. Because of the pandemic, the whole data collection process was done through a self-applied online survey (encuestaonline.com), which consisted of 21 questions and 140 items applied between September and December 2021.

## Instruments

The Spanish version of the Coronavirus Psychological Impact Questionnaire (Cuestionario de Impacto Psicológico del Coronavirus) was used to assess COVID posttraumatic stress (Sandin et al. 2020) using the Post-Traumatic Stress Symptoms Scale. This instrument had eight items evaluated on a 5-point Likert scale ranging from 1 (never or almost never) to 5 (always or almost always), obtaining the total score with the sum of its items. In the present sample, the reliability of the total scores on this scale was satisfactory (Cronbach's $\alpha = 0.92$).

The Spanish validation of the Action and Acceptance Scale (AAQ-II, Bond 2011) was used to measure experiential avoidance (Ruiz 2013), which in its original version had a reliability coefficient of 0.82. The scale had seven items evaluated on a 7-point Likert scale ranging from $1 = $ "never" to $7 = $ "always," and the total score was obtained by summing its items. In the present sample, the reliability of this scale achieved a very good level (Cronbach's $\alpha = 0.95$).

The Chilean version of the Self-Compassion Scale was used to evaluate Self-Compassion (Araya et al. 2017), which has 26 items evaluated on a 5-point Likert scale ranging from $1 = $ "almost never" to $5 = $ "almost always." In this study, the positive items of self-pity were inverted: the higher the score, the lower the level of self-pity. The total score was obtained by summing all items. The scale's reliability was satisfactory (Cronbach's $\alpha = 0.82$).

Finally, religious coping was measured using the brief-RCOPE scale, according to Pargament (1998). The validated version for the Chilean context (García et al. 2020) was used. The original version of the instrument has two subscales: positive religious coping (PRC) and NRC, each with seven items, using a Likert scale from 1 (not at all) to 5 (very much) and obtaining the total score with the sum of its items.

Only the negative religious coping subscale was used in the sample analyzed here, which also obtained a satisfactory reliability level ($\alpha = 0.87$).

## Statistical Analysis

First, descriptive statistics and correlations were conducted. Second, a serial mediation model was used to examine the direct, indirect, and total effects among the following variables: NRC (independent), COVID post-traumatic stress (dependent), EA (mediator 1), and self-compassion (mediator 2). All estimates were performed using the statistical software STATA (version 17).

## Sample

The final sample consisted of 300 participants who met the selection criteria (adults who lived in Chile), excluding those who participated in the survey but did not answer it completely ($N = 70$). The respondents were aged between 18 and 87 years old with a mean value of 49.65 years (SD = 16.50) and were distributed into four age groups as follows: 16% were youngsters (18–29 years old), 25% were young adults (30–45 years), 26.3% of them were adults (46–59 years), and 32.7% older adults/seniors (more than 60 years old). Females represented 65.7% of the sample. Those who lived in Santiago represented 60% of the sample, while those in Valdivia were 16.7% and 23.3% in other cities. Slightly over 10% had only some level of school education (most of them complete, 7.3%), while 7.3% completed technical superior education. In total, 15.3% had incomplete superior education, and almost 30% completed it. Over a third of the sample (35.7%) had some postgraduate studies. Furthermore, 60.3% of participants identified as Catholics, 14% as Evangelicals, and 21% had no religious affiliation. Other religions represented 4.6% of the sample. For further details about these sociodemographic background variables, see Table 1.

## Results

Table 2 shows the descriptive statistics of all variables and their correlations. As the table displays, high scores on negative religious coping were positively correlated with higher levels of EA ($r = 0.632$, $p < 0.001$) and COVID post-traumatic stress ($r = 0.415$, $p < 0.001$) and with lower self-compassion ($r = 0.545$, $p < 0.001$). At the same time, EA was correlated with COVID post-traumatic stress ($r = 0.439$, $p < 0.001$) and self-compassion ($r = 0.722$, $p < 0.001$). Finally, self-compassion was correlated with COVID post-traumatic stress ($r = 0.454$, $p < 0.001$).

    Figure 1 shows the results of the estimated serial mediation model. The total effect of NRC on COVID post-traumatic stress was statistically significant ($c = 0.646$, SE = 0.101, $t = 6.37$, and $p < 0.001$). Also, the direct effects of NRC on EA and self-compassion were significant ($B = 1.240$, SE = 0.111, $t = 11.1$, $p < 0.001$, and $B = 0.441$; $SE = 0.220$, $t = 2.01$, and $p < 0.05$, respectively). The direct effect of EA as the first mediating variable on the second mediating variable of Self-compassion

**Table 1** Sample characterization ($N = 300$)

| Variable | | N | % | Valid % |
|---|---|---|---|---|
| Age | Youngsters (18–29 years) | 48 | 16.0 | 16.0 |
| | Young adults (30–45 years) | 75 | 25.0 | 25.0 |
| | Adults (46–59 years) | 79 | 26.3 | 26.3 |
| | Older adults—seniors (more than 60) | 98 | 32.7 | 32.7 |
| Sex | Female | 197 | 65.7 | 65.7 |
| | Male | 103 | 34.3 | 34.3 |
| City | Santiago | 180 | 60.0 | 60.0 |
| | Valdivia | 50 | 16.7 | 16.7 |
| | Other | 70 | 23.3 | 23.3 |
| Educational level | Secondary incomplete | 9 | 3.0 | 3.0 |
| | Secondary complete | 22 | 7.3 | 7.3 |
| | Higher-technical incomplete | 5 | 1.7 | 1.7 |
| | Higher-technical complete | 22 | 7.3 | 7.3 |
| | Higher-university incomplete | 46 | 15.3 | 15.3 |
| | Higher-university complete | 89 | 29.7 | 29.7 |
| | Postgraduate | 107 | 35.7 | 35.7 |
| Religious affiliation | Catholic | 181 | 60.3 | 60.3 |
| | Evangelical | 42 | 14.0 | 14.0 |
| | Protestant | 10 | 3.3 | 3.3 |
| | Jewish | 1 | 0.3 | 0.3 |
| | Without religion | 63 | 21.0 | 21.0 |
| | Other | 3 | 1.0 | 1.0 |

Age: $M = 49.65$; SD $= 16.50$

**Table 2** Descriptive statistics and Pearson correlation coefficient values regarding study variables

| Variables | Mean | SD | 1 | 2 | 3 | 4 |
|---|---|---|---|---|---|---|
| 1. Negative religious coping | 11.345 | 5.623 | 1.000 | | | |
| 2. Experiential avoidance | 19.14 | 11.598 | 0.632*** | 1.000 | | |
| 3. Self-compassion (more to less) | 72.128 | 20.078 | 0.544*** | 0.722*** | 1.000 | |
| 4. COVID post-traumatic stress | 17.916 | 8.679 | 0.415*** | 0.439*** | 0.454*** | 1.000 |

$*p < 0.05$, $**p < 0.01$, $***p < 0.001$

is also significant ($B = 1.113$, SE $= 0.113$, $t = 9.97$, and $p < 0.001$). A review of the direct effects of mediating variables on COVID post-traumatic stress showed that the effect of self-compassion was significant ($B = 0.129$, SE $= 0.041$, $t = 3.12$, and $p < 0.01$), while the mediating variable EA was not significant. When NRC and all other mediating variables were simultaneously entered into the model, the direct effect of this first variable on COVID post-traumatic stress also was statistically significant ($c' = 0.252$, SE $= 0.124$, $t = 2.03$, and $p < 0.05$).
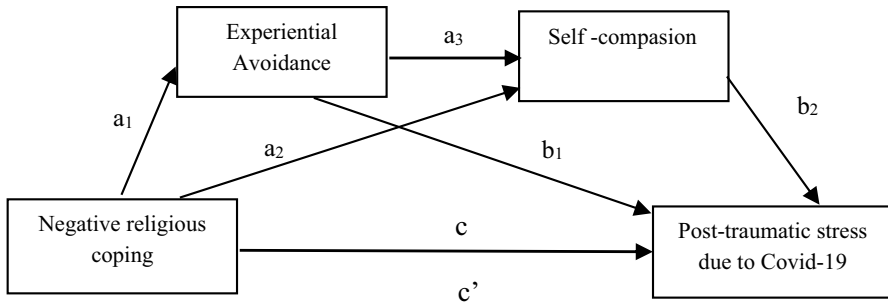
**Fig. 1** Serial-multiple mediation of experiential avoidance and self-compassion in the relationship between negative religious coping and COVID post-traumatic stress with *B* non-standardized. $*p < 0.05$, $**p < 0.01$, $***p < 0.001$

Finally, the total indirect effect of NRC through EA and self-compassion on COVID post-traumatic stress was statistically significant ($c - c' = 0.394$, SE $= 0.088$, $t = 4.43$, and $p < 0.001$).

## Discussion

Currently, the COVID-19 health crisis and its effects on the population continue to be of interest and relevance in wellness and mental health issues. In this context, this study explored the relationships between negative RC, EA, self-compassion, and post-traumatic stress due to COVID-19. Our results also reveal the mechanisms underlying the relationship between negative RC and post-traumatic stress by COVID-19, highlighting the role of two mediating variables, EA and self-compassion.

First, the results indicate that all variables are correlated. According to the literature, it can be stated that both EA and self-compassion play a role in the management of post-traumatic stress (Henschel et al. 2021; Winders et al. 2020). For this reason, we explored the serial mediating role of EA and self-compassion in the relationship between negative RC and post-traumatic stress by COVID-19. Second, the results show that EA and self-compassion have a sequential mediating role in the relationship between negative RC and post-traumatic stress by COVID-19. In turn, self-compassion is also shown to be a mediating variable between RC and stress, suggesting that in people with negative coping styles, more self-compassionate coping may mediate the impact of RC on post-traumatic stress by COVID-19. However, EA does not appear to mediate the relationship between RC and COVID-19 post-traumatic stress. These findings are consistent with works that consider experiential avoidance and self-compassion as variables associated with different mental health indicators, such as anxiety and depression (Yela et al. 2020), and physical health, such as chronic pain (Costa and Pinto-Gouveia 2013).

Regarding negative religious coping, we found that it was positively correlated with post-traumatic stress caused by COVID-19. In the present study, people who

used negative religious coping and were less compassionate toward themselves had greater symptomatology of post-traumatic stress caused by COVID-19. Therefore, these results support previous work indicating that self-compassion plays an important role in coping with adverse situations (Allen and Leary 2010), in contexts of stress (Stutts et al. 2018), and in post-traumatic stress (Winders et al. 2020).

As for EA, we found significant and positive relationships with post-traumatic stress caused by COVID-19, consistent with the theoretical approach that the strategy of controlling or avoiding unwanted psychological experiences is an unhelpful psychological response to improve emotional functioning (Tull and Gratz 2008). However, EA alone did not mediate the relationship between negative religious coping and post-traumatic stress caused by COVID-19, but together with serial self-compassion for three main reasons. First, although research supports a strong negative relationship between self-compassion and avoidance, the self-compassion scale has been related to two of the three dimensions of psychological coping, denial, and emotional disconnection, which are oriented to avoidance (Neff et al. 2005). However, negative religious coping assumes that its items assess not only a psychological coping style but also incorporate maladaptive religious strategies that reflect tension, conflict, or struggle with the sacred, which do not always correspond to an avoidance style. Second, negative religious coping or spiritual struggle, although in the immediate, may correlate with psychological distress; in the long term, it could also result in a possibility for learning, growth, and transformation (Pargament et al. 2011).

On the contrary, experiential avoidance functions in both the short and long term as a maladaptive psychological strategy (Kelly et al. 2019; Moroz and Dunkley 2019). Thus, we believe this difference in functioning over time could affect the mediating role of experiential avoidance. Third, we consider that serial mediation is possible since self-compassion brings an affective quality to the relationship with the self (critical judgments and kindness toward the self). This complements harmoniously with EA, which points to how we relate to the contents of consciousness (thoughts, emotions, or sensations). Thus, the relationship between the self and the contents of the consciousness could be analogous to the relationship we can establish with the sacred. In other words, serial mediation could account for how we relate to our contents of consciousness and how we relate to ourselves and mediates how we cope with adverse situations such as COVID-19 when we have a maladaptive relationship of conflict or struggle with the sacred.

Thus, it is suggested to promote interventions that work on decreasing experiential avoidance and strengthening self-compassion, such as mindfulness-based interventions (Golden et al. 2021) or acceptance and commitment therapy (Hayes 2019), which may collaborate in symptomatic mental health relief by COVID-19 in people who use maladaptive religious coping strategies.

It is important to point out that our study has some important limitations to consider. First, we cannot establish causal relationships between variables due to our cross-sectional design. Second, the self-report modality of the questionnaires could result in some of the responses being biased. For future studies, it would be important to explore the relationship between religiosity and mental health by considering an instrument of emotional awareness or internal affective states, such as the Five

Facets of Mindfulness Questionnaire (FFMQ) (Baer et al. 2006), to clarify whether the results are biased by a report of one's own emotional experience that is difficult to access in a context of religious tension or conflict. Third, the convenience sampling used to select cases can be considered another limitation that prevents us from generalizing the results to the Chilean population.

In conclusion, the serial mediation model shows that greater use of experiential avoidance in sequence with lower levels of self-compassion predicts the likelihood that people with negative religious coping will suffer from COVID-19 post-traumatic stress. The contribution of these results adds a psychological processing background that may shape how people organize their religious beliefs and experiences and how these contents are used to cope with post-traumatic stress.

**Author Contribution** All authors contributed to the study's conception and design. Material preparation, data collection, and analysis were performed by Catalina Cerda-Planas and Reiner Fuentes. The first draft of the manuscript was written by Reiner Fuentes, and all authors commented on previous versions of the manuscript. All authors read and approved the final manuscript.

**Data Availability** The raw data supporting the conclusions of this article will be made available by the authors without undue reservation (available on request).

## Declarations

**Ethics Approval** All procedures carried out in studies with human participants were in accordance with the ethical standards of the Ethics Committee of the Universidad Católica Chile and with the Declaration of Helsinki of 1964 and its subsequent amendments or comparable ethical standards.

**Consent to Participate** Informed consent was obtained from all individual adult participants included in the study.

**Consent for Publication** The authors declare that they consent to the publication of this manuscript.

**Competing Interests** The authors declare no competing interests.

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