

## RESEARCH ARTICLE

# Suffering, psychological distress, and well-being in Indonesia: A prospective cohort study

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## Abstract

Research on the subjective experience of suffering has typically focussed on older clinical samples living in Western, educated, industrialised, rich, and democratic (WEIRD) countries. To further extend the existing body of empirical research on suffering to less WEIRD contexts, we use three waves of data (Wave 1: December 2020; Wave 2: January 2021; Wave 3: February 2021) from a sample of nonclinical Indonesian adults ( $n = 594$ ) to examine associations between suffering, two indices of psychological distress, and 10 facets of well-being. In our primary analysis, we estimated a series of multiple regression models that adjusted for a range of sociodemographic characteristics, financial and material stability, religious/spiritual factors, prior values of overall suffering, and prior values of each outcome assessed in Wave 1. Results indicated that overall suffering assessed in Wave 2 was associated with an increase in both indices of psychological distress and a decrease in eight facets of well-being assessed in Wave 3. Using a similar analytic approach, results from a secondary analysis indicated that higher scores on both indices of psychological distress and lower scores on seven of the well-being facets assessed in Wave 2 were associated with worse subsequent overall suffering assessed in Wave 3. These findings contribute to empirical literature on the implications of suffering for well-being.

## KEYWORDS

anxiety, depression, health, psychological distress, suffering, well-being

## 1 | INTRODUCTION

Suffering is an enigmatic phenomenon that has garnered considerable attention from philosophical and religious traditions over the centuries. Some descriptions emphasize suffering as a relatively

pervasive experience that is an unavoidable part of being human. For example, Schopenhauer (1909) posited that all suffering originates from desires of “the will.” He suggested that these desires could not be permanently satisfied because an infinite number of human desires exist, and each one that is fulfilled generally gives rise to a new

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one. In other accounts, suffering is described as an experience that is necessary for achieving the highest levels of human fulfilment. To illustrate, Nietzsche (2006) viewed suffering as an essential ingredient of life that must be embraced and endured if a person is to be truly fulfilled; life without suffering, he asserted, would diminish our capacity for joy. Similar perspectives can be found in many of the dominant religions of the world. In some Muslim traditions, suffering serves a transcendent purpose and is a pathway through which a person might grow in their faith to become a true believer in God (Fitzpatrick et al., 2016). Within the Roman Catholic tradition, suffering has a redemptive quality and divine significance to individual and collective salvation (John Paul II, 1984). Although far from a comprehensive survey of the philosophical and religious perspectives on suffering, they reveal humanity's universal interest in understanding the mystery of suffering and its connection to the human experience.

Historical descriptions of suffering have laid the foundation for empirical research that has begun to emerge on suffering over the last few decades. The current body of evidence has played a fundamental role in expanding our understanding of how suffering is experienced and what its implications might be for well-being. Some evidence has shown that suffering can be a destructive, debilitating experience that may increase a person's desire for a hastened death (Krikorian et al., 2012; Rattner, 2021). Other findings suggest that there are times when suffering might lead to personal or spiritual growth among those who are able to endure it (Hall et al., 2020; Wittmann et al., 2009). However, much of the existing research has addressed suffering within clinical settings, particularly older populations from Western, educated, industrialised, rich, and democratic (WEIRD) contexts (e.g., US) who are dealing with physical symptoms (e.g., pain), confronted with terminal illness (e.g., cancer), or receiving end-of-life care (Cowden, Davis, et al., 2021). In addition, the bulk of available evidence linking suffering with well-being is based on cross-sectional data oriented towards physical health, illness, or symptoms (VanderWeele, 2019a), but there are a wide range of potential causes (e.g., religious/spiritual struggles) and consequences (e.g., social disintegration) of suffering that need to be more thoroughly investigated (Cowden, Rueger, et al., 2021). Hence, the empirical literature on suffering could be enriched through methodologically rigorous research that considers a broader range of populations living in a variety of contexts (particularly countries that are less WEIRD). To address some of these gaps, this study leverages prospective data from a nonclinical sample of predominantly younger Indonesian adults to examine associations of suffering with several indices of psychological distress and well-being.

## 1.1 | Background on suffering

The notion of suffering has both objective and subjective dimensions. A person might be suffering on some objective level without endorsing suffering as part of their subjective experience. For example, a "happy" child who has a sexually abusive caregiver may

deny any suffering but be objectively suffering because what they have experienced is unlawful and a violation of their basic human rights (Tate & Pearlman, 2019). On the other hand, suffering may be experienced subjectively without a clear objective teleology that has been jeopardised. For example, a person may be suffering from social disconnection even though they are not socially isolated. Although it may be important to resolve instances of objective suffering that occur in the absence of subjective suffering, such situations might only be remedied by external changes that are made to the environment. In contrast, finding relief from subjective experiences of suffering will often necessitate that some degree of internal change (e.g., cognitive reframing, meaning-making) take place (Fitzpatrick et al., 2016). In this study, we focus on the subjective experience of suffering because its implications may be more broadly relevant to the subjective well-being of a person.

Subjective suffering is an undesired experiential state, of considerable duration or intensity, that is constituted by the loss or privation of some perceived good (VanderWeele, 2019a). Although suffering has universal qualities (e.g., it is an inescapable part of human existence), experiences of suffering can vary both within and between individuals. Two individuals may be dealing with the same loss, but their experiences of suffering could be quite different (Cassell, 1999). An individual's experience of suffering may also fluctuate (positively or negatively) over short periods of time, even if there has been little change in their circumstances (Beng et al., 2020). For example, suffering may be exacerbated by ruminating on the negative aspects of one's experience, whereas a more positive reconstruction of one's situation (e.g., acceptance of what cannot be changed) could lessen suffering (Cowden, Counted, et al., 2021).

Experiences of suffering signal a certain lacking in the complete well-being of the individual, which helps explain how suffering threatens the intactness of a person and has an element of uncontrollability to it (Cassell, 2004; Gilleard, 2018). Suffering typically involves a degree of perceived intolerability concerning the intensity of the undesired state or duration the individual expects to endure the negative experience (VanderWeele, 2019a). A person's experience of suffering may evolve from a minor, manageable burden to become an intense, pervasive source of distress that can disrupt salient aspects of their life (Black & Rubinstein, 2004; Cassell, 1999).

Suffering is distinct from other forms of distress, such as depression or pain. These distinctions have been highlighted in empirical research. For instance, Body et al. (2015) found that 16% of individuals who presented to an emergency department with a pain score of  $\geq 7/10$  indicated that they were not suffering. In a longitudinal study of individuals with chronic illness, Cowden, Davis, et al. (2021) found that suffering was associated with worse psychological well-being even after adjusting for anxiety and depression symptoms. Hence, suffering could have a unique impact on well-being beyond other forms of distress and therefore may require specialised attention in clinical settings. These findings suggest that further empirical research on suffering might contribute to developing a more holistic understanding of how different forms of distress affect well-being.

## 1.2 | Suffering, psychological distress, and well-being

Previous empirical research has pointed to linkages between suffering, indices of psychological distress, and facets of well-being. Several studies have found cross-sectional evidence suggesting that suffering is associated with worse anxiety and depression symptoms (e.g., Al-Shahri et al., 2012; Brady et al., 2019; Lima-Verde et al., 2013). At least one longitudinal study has reported similar findings (Cowden, Davis, et al., 2021). Prior research on suffering and well-being has disproportionately focussed on suffering that is due to physical illness or symptoms (e.g., pain). As such, there is extensive cross-sectional evidence indicating that suffering is associated with worse general health, functional limitations, and physical health symptoms (e.g., Brady et al., 2019; Gielissen et al., 2013; Reimus et al., 2007). Relations between suffering and other aspects of well-being have been examined less frequently, but the pattern of findings is largely comparable to evidence found for physical health. For example, suffering has been cross-sectionally associated with worse scores on indices of social well-being (e.g., loneliness), social functioning because of mental or physical problems (e.g., Büchi et al., 2002; Lehmann et al., 2011; van Baarsen, 2009), aspects of hedonic (e.g., happiness, life satisfaction) and eudaimonic (e.g., meaning in life, sense of purpose) well-being (e.g., Abraham et al., 2006; Büchi et al., 2002; Rumpf et al., 2004; Shmotkin & Shrira, 2012), and spiritual well-being (e.g., Lehmann et al., 2011; Wilson et al., 2007). Numerous studies have also reported cross-sectional evidence linking suffering with lower scores on measures that provide a broader indication of well-being (e.g., Corazza et al., 2020; Peter et al., 2016; Ruijs et al., 2009), although many of such assessments centred on physical health (e.g., dermatological quality of life, health-related quality of life).

Overall, the current literature suggests that suffering is associated with higher psychological distress and lower well-being. However, a key issue in this area is that prior research is based almost exclusively on cross-sectional data that cannot be used to make inferences about causality. When associations between suffering and aspects of well-being have been explored in longitudinal observational studies (e.g., Cowden, Davis, et al., 2021), results are typically limited to a narrow set of well-being outcomes that do not provide a comprehensive indication of how suffering may be related to well-being. In addition, existing research on suffering and well-being has tended to emphasize some aspects of well-being (e.g., physical health) while overlooking others. For example, little evidence exists on the relation between suffering and character/virtue. Applying a broader conception of well-being to research involving suffering could improve our understanding of how suffering might affect different aspects of human functioning, which could be of value to practitioners (e.g., mental health professionals, physicians) as they provide services to people who are suffering.

## 1.3 | The present study

The current study builds on the existing body of (mostly cross-sectional) research on suffering by prospectively examining associations of suffering with several indices of psychological distress and facets of well-being in a nonclinical sample of adults from Indonesia. In doing so, this study is among the first to test for evidence concerning potential causal effects of suffering on a range of psychological distress and well-being outcomes in a sample of participants living in a less WEIRD context. Our analyses follow the analytic templates for longitudinal designs outlined in VanderWeele et al. (2020), which aim to strengthen causal inferences with observational data by including steps to reduce potential confounding and reverse causation. Although some variations in the associations of suffering with the indices of psychological distress and facets of well-being were anticipated, we expected that the general pattern of associations would be consistent with the idea that suffering negatively affects psychological distress and well-being. As a secondary objective, we conducted an exploratory analysis examining the indices of psychological distress and facets of well-being as candidate antecedents of suffering. Such evidence can provide insight into potential bidirectional associations among variables and unveil factors that could be targeted to diminish suffering, which may inform future research and treatment approaches within clinical settings.

## 2 | METHODS

### 2.1 | Study sample

This study used data from a three-wave longitudinal research project addressing self and other-oriented forgiveness, religion/spirituality, and well-being among adult Indonesian adherents of Christianity and Islam. The project was granted ethical approval by the Nusantara Scientific Psychology Consortium (015/2020 Etik/KPIN). Participants were recruited via a convenience sampling approach. Data collection was facilitated by twelve graduate-level research assistants from four universities located in two major cities in Indonesia. Under the supervision of the fourth, fifth, and sixth authors, the research assistants recruited participants from the universities they attended ( $n = 311$ ) and members of the general public via their social networks ( $n = 309$ ). During the recruitment process, individuals were provided information about the research and the nature of their prospective involvement in it. Those interested were directed to an online data collection platform where they were presented with more information about the study, after which they provided electronic consent. Participants then completed the baseline survey online (Wave 1: 7 to 17 December 2020). Approximately 1 month (Wave 2: 4 to 15 January 2021) and 2 months (Wave 3: 1 to 13 February 2021) after Wave 1, the research assistants recontacted participants and invited them to complete a web-based follow-up survey. Participants were compensated the equivalent of \$6 for participating in the study.

Except for sociodemographic items, which were only administered in Wave 1, participants completed the same survey on all three occasions. All measures were translated into the Indonesian language using back-translation. After the measures were translated into Indonesian, a second translator independently completed the back-translation while blinded to the original English version of each measure. The original and back-translated versions were compared for accuracy, and problematic items were modified through blind back-translation. Four Indonesian social scientists with doctoral degrees in psychology evaluated the items to ensure that the translated versions of the items were culturally appropriate.

Of the 620 participants who completed Wave 1, 594 completed all survey items across all three waves. Most of the 26 individuals who did not complete all the survey items in Waves 2 or 3 were participants recruited from local universities (84.62%). We used logistic regression analyses to identify potential predictors of item-level missingness in any of the waves. None of the covariates, exposures, or outcomes included in the analytic models for this study predicted missingness ( $ps > 0.122$ ).

The sociodemographic characteristics of the participants are presented in Table 1, with the important features highlighted below. The analytic sample for this study ( $n = 594$ ) included males (45.12%) and females (54.71%) from 18 to 55 years of age ( $M_{\text{age}} = 21.94$ ,  $SD = 4.40$ ). Approximately two-thirds of the sample had not yet completed education that extended beyond high school equivalency (67.51%). Javanese (28.62%) and Tionghoa (25.25%) formed the majority ethnic groups. Almost all the participants were not married (95.62%). Participants self-identified as either Christian (50.00%) or Muslim (50.00%).

## 2.2 | Measures

**Personal Suffering Assessment (PSA; VanderWeele, 2019a).** The PSA comprises seven items that capture the subjective experience of suffering. One item is a global question that assesses the extent of suffering experienced (i.e., “To what extent are you suffering?”). The remaining items assess salient characteristics of suffering: intensity, duration, uncontrollability, pervasiveness, disruption to purposes, and threats to personhood (e.g., “The intensity of what I have been experiencing feels intolerable”). Participants rate each item using an 11-point response format, although the anchor points for the global question (0 = *Not suffering at all*; 10 = *Suffering terribly*) differ from those provided for the other six items (0 = *Strongly disagree*; 10 = *Strongly agree*). In this study, we averaged responses to the seven items for an overall suffering score (Wave 1:  $\alpha = 0.93$ ; Wave 2:  $\alpha = 0.95$ ; Wave 3:  $\alpha = 0.95$ ). We also used each of the items individually to obtain a more nuanced understanding of how different aspects of suffering might be associated with indices of psychological distress and facets of well-being.

**Patient Health Questionnaire for Depression and Anxiety-4 (PHQ-4; Kroenke et al., 2009).** The PHQ-4 is a four-item screening tool for anxiety and depression (two items each). The items assess some of

**TABLE 1** Sociodemographic characteristics of participants in Wave 1 ( $n = 594$ )

Characteristic	
Age (years), $M \pm SD$ (range)	21.94 $\pm$ 4.40 (18–55)
Gender, $n$ (%)	
Female	325 (54.71)
Male	268 (45.12)
Other	1 (0.17)
Ethnic status, $n$ (%)	
Batak	52 (8.75)
Betawi	22 (3.70)
Javanese	170 (28.62)
Melayu	6 (1.01)
Minang	17 (2.86)
Sunda	88 (14.81)
Tionghoa	150 (25.25)
Other	88 (14.81)
Educational attainment, $n$ (%)	
Below high school	2 (0.34)
High school equivalency	399 (67.17)
Postsecondary degree or higher	193 (32.49)
Marital status, $n$ (%)	
Not married	568 (95.62)
Married	26 (4.38)
Religious status, $n$ (%)	
Christian	297 (50.00)
Muslim	297 (50.00)

Note: Cumulative percentages may not add up to 100% due to rounding. Abbreviations:  $M$ , mean;  $SD$ , standard deviation.

the core symptoms of generalized anxiety (i.e., “Feeling nervous, anxious or on edge”) and depression (i.e., “Feeling down, depressed or hopeless”) experienced over the past 2 weeks. The items are rated using a four-point scale (0 = *Not at all*; 3 = *Nearly every day*). In this study, we derived total scores for anxiety symptoms (Wave 1:  $\alpha = 0.80$ ; Wave 2:  $\alpha = 0.82$ ; Wave 3:  $\alpha = 0.87$ ) and depression symptoms (Wave 1:  $\alpha = 0.64$ ; Wave 2:  $\alpha = 0.72$ ; Wave 3:  $\alpha = 0.80$ ) by averaging the respective items. Higher scores reflect more severe symptoms.

**Flourishing Index (FI; VanderWeele, 2017).** The FI was used to assess well-being. The measure contains 10 questions and items (e.g., “Overall, how satisfied are you with life as a whole these days?”) that assess the core constituents of complete well-being (i.e., happiness and life satisfaction, mental and physical health, meaning and purpose, character and virtue, and close social relationships). Items are rated on an 11-point response scale (from 0 to 10), with orienting labels presented alongside anchor points at each end of the scale. In

this study, we modelled the 10 items individually because each is theorized to capture a unique facet of well-being (VanderWeele, 2017).

**Covariates.** We controlled for a range of covariates assessed in Wave 1. Covariates were chosen based on data that were available and by applying the disjunctive cause criterion for confounder selection (VanderWeele, 2019b), which involves choosing confounders based on whether they are causes, or sufficient proxies for causes, of either the exposure, the outcome, or both. For example, we included several aspects of religiousness (e.g., religious service attendance) as covariates because prior research has demonstrated that some religious/spiritual factors (e.g., positive religious coping; Cowden, Rueger, et al., 2021) are associated with both suffering and different dimensions of well-being (e.g., psychological well-being; Davis et al., 2021). The disjunctive cause criterion approach is well-suited to this study, given that our primary analysis included multiple outcome variables and the possibility that confounders of the associations between suffering and the outcomes might vary by outcome. Covariates included age (continuous), gender (female/other, male), ethnic status (Javanese, Tionghoa, other), educational attainment (up to high school equivalency, postsecondary degree or higher), marital status (unmarried, married), religious status (Christian, Muslim), frequency of religious service attendance (continuous), financial and material stability (continuous) that combined two items of the Secure Flourishing Index (VanderWeele, 2017), and the intrinsic, extrinsic, and quest dimensions (all continuous) of religious orientation (New Indexes of Religious Orientation; Francis, 2007). Alpha estimates of internal consistency reliability for all multi-item covariates can be found in Supplemental Table S1.

## 2.3 | Data analysis

Statistical processing was performed in R (R Core Team, 2020). We computed Pearson correlations to describe the cross-sectional bivariate associations of overall suffering with the outcomes assessed in Wave 1, along with the prospective bivariate associations of overall suffering assessed in Wave 2 with the outcomes assessed in Wave 3.

### 2.3.1 | Primary analysis

A series of linear regression models were used to regress continuous scores of each outcome (i.e., anxiety symptoms, depression symptoms, and the 10 facets of well-being) assessed in Wave 3 on continuous scores of overall suffering assessed in Wave 2 (one outcome at a time). For interpretation purposes, overall suffering and the respective outcome in each model were standardized ( $M = 0$ ,  $SD = 1$ ). All models adjusted for covariates assessed in Wave 1. Models controlled for prior values of all outcome variables assessed in Wave 1, which reduces the possibility of reverse causation. We also modelled the effect of *incident exposure* on each outcome by

adjusting for prior values of overall suffering assessed in Wave 1, which is advantageous because it helps to further address reverse causation and minimise potential bias due to unmeasured confounding (VanderWeele, 2021). The timing of variable assessment for models in the primary analysis is displayed visually in Supplemental Figure S1.

To obtain a more fine-grained understanding of linkages between suffering and the outcomes, we followed the analytic template for a lagged exposure-wide design in combination with the outcome-wide design to examine the associations of each aspect of suffering with the outcomes (VanderWeele et al., 2020). In separate models, we regressed continuous scores of each outcome assessed in Wave 3 on continuous scores of each of the seven aspects of suffering assessed in Wave 2 (one exposure and one outcome at a time). The exposure and outcome variables in each model were standardized ( $M = 0$ ,  $SD = 1$ ). All models adjusted for the same set of Wave 1 covariates, prior values of all seven aspects of suffering assessed in Wave 1, and prior values of each outcome assessed in Wave 1.

### 2.3.2 | Secondary analysis

A secondary analysis was performed to explore anxiety symptoms, depression symptoms, and the 10 facets of well-being as potential antecedents of overall suffering. Using the analytic template for a lagged exposure-wide design (VanderWeele et al., 2020), we estimated a series of models that involved regressing continuous scores of overall suffering assessed in Wave 3 on each candidate predictor assessed in Wave 2 (one candidate predictor at a time). Models controlled for prior values of overall suffering assessed in Wave 1, prior values of all the candidate predictors assessed in Wave 1, and the same Wave 1 covariates that were included in the primary analysis.

We also applied the analytic template for a lagged exposure-wide design in combination with the outcome-wide design to examine the associations of each candidate predictor with each of the seven aspects of suffering. In separate models, we regressed continuous scores of each aspect of suffering assessed in Wave 3 on continuous scores of each candidate predictor assessed in Wave 2 (one candidate predictor and one aspect of suffering at a time). The candidate predictors and outcome variables in each model were standardized ( $M = 0$ ,  $SD = 1$ ). Models controlled for all the same Wave 1 covariates indicated previously, prior values of each candidate predictor assessed in Wave 1, and prior values of all seven aspects of suffering assessed in Wave 1.

### 2.3.3 | Sensitivity analysis

We used *E*-values to assess the robustness of the estimated effects to potential unmeasured confounding (VanderWeele & Ding, 2017). *E*-values estimate the minimum strength of association that an unmeasured confounder would need to have with both the exposure

and the outcome, after accounting for the measured covariates, to fully explain away the observed effect. The lowest possible *E*-value is 1, with higher values indicating that an unmeasured confounder would need to have a stronger association with both the exposure and the outcome to explain away the observed association. In this study, we report *E*-values corresponding with associations involving overall suffering in the primary and secondary analyses.

### 3 | RESULTS

Descriptive statistics for all study variables and internal consistency reliability estimates for multi-item measures are reported in Supplemental Table S1. Both the cross-sectional and prospective Pearson correlations of overall suffering with anxiety symptoms, depression symptoms, and the 10 facets of well-being are reported in Supplemental Table S2. All correlations were in the expected direction, such that overall suffering correlated positively with anxiety symptoms (cross-sectional:  $r = 0.46$ ; prospective:  $r = 0.43$ ) and depression symptoms (cross-sectional:  $r = 0.46$ ; prospective:  $r = 0.44$ ) and correlated negatively with each facet of well-being (cross-sectional:  $r_s = -0.43$  to  $-0.09$ ; prospective:  $r_s = -0.41$  to  $-0.15$ ).

#### 3.1 | Suffering, psychological distress, and well-being

The associations of overall suffering with each of the subsequent outcomes are presented in Table 2. Overall suffering was robustly associated with an increase in both indices of psychological distress (anxiety symptoms:  $\beta = 0.22$ ,  $p < 0.001$ ; depression symptoms:  $\beta = 0.25$ ,  $p < 0.001$ ) and a decrease in five facets of well-being, namely life satisfaction ( $\beta = -0.21$ ,  $p < 0.001$ ), happiness ( $\beta = -0.26$ ,  $p < 0.001$ ), mental health ( $\beta = -0.19$ ,  $p < 0.001$ ), meaning in life ( $\beta = -0.14$ ,  $p = 0.002$ ), and sense of purpose ( $\beta = -0.14$ ,  $p = 0.002$ ). Associations of overall suffering with decreases in subsequent physical health ( $\beta = -0.13$ ,  $p = 0.008$ ), orientation to promote the good ( $\beta = -0.10$ ,  $p = 0.038$ ), and delayed gratification ( $\beta = -0.10$ ,  $p = 0.037$ ) were more modest. There was little evidence of an association between overall suffering and both subsequent contentment with relationships ( $\beta = -0.09$ ,  $p = 0.057$ ) and satisfying relationships ( $\beta = -0.07$ ,  $p = 0.090$ ).

Results for the associations between each aspect of suffering and the outcomes are reported in Supplemental Table S3. All aspects of suffering were associated with an increase in subsequent anxiety and depression symptoms. Disruption to purposes was the only aspect of suffering for which there was evidence of association with all subsequent well-being outcomes; slightly fewer associations with subsequent facets of well-being were found for powerlessness over suffering (8/10), pervasiveness of suffering (7/10), and threats to personhood (7/10). The aspects of suffering that yielded the fewest associations with the well-being outcomes were intensity of suffering (4/10), extent of suffering (5/10), and length of suffering (5/10). All

seven aspects of suffering were associated with a decrease in subsequent life satisfaction, happiness, and mental health. The well-being outcomes that were not predicted by all seven aspects of suffering included satisfying relationships (1/7), orientation to promote the good (2/7), delayed gratification (3/7), contentment with relationships (3/7), physical health (4/7), meaning in life (6/7), and sense of purpose (6/7).

#### 3.2 | Antecedents of suffering

Results for the secondary analysis in which anxiety symptoms, depression symptoms, and the facets of well-being were modelled as candidate antecedents of overall suffering are reported in Table 3. Both indices of psychological distress were robustly associated with an increase in subsequent overall suffering (anxiety symptoms:  $\beta = 0.24$ ,  $p < 0.001$ ; depression symptoms:  $\beta = 0.26$ ,  $p < 0.001$ ). Of the well-being facets, life satisfaction ( $\beta = -0.22$ ,  $p < 0.001$ ), happiness ( $\beta = -0.20$ ,  $p < 0.001$ ), mental health ( $\beta = -0.19$ ,  $p < 0.001$ ), meaning in life ( $\beta = -0.21$ ,  $p < 0.001$ ), sense of purpose ( $\beta = -0.17$ ,  $p < 0.001$ ), and contentment with relationships ( $\beta = -0.12$ ,  $p = 0.003$ ) evidenced robust associations with a decrease in subsequent overall suffering. The association between satisfying relationships and a decline in subsequent overall suffering was more modest ( $\beta = -0.10$ ,  $p = 0.022$ ). Physical health ( $\beta = -0.05$ ,  $p = 0.179$ ), orientation to promote the good ( $\beta = -0.05$ ,  $p = 0.187$ ), and delayed gratification ( $\beta = -0.00$ ,  $p = 0.916$ ) showed little evidence of association with subsequent overall suffering.

Estimated effects of each candidate predictor on the aspects of suffering are presented in Supplemental Table S4. Both anxiety and depression symptoms were associated with a subsequent increase in all aspects of suffering. Of the well-being facets, only life satisfaction, happiness, mental health, and sense of purpose were associated with a subsequent decrease in each aspect of suffering. Fewer associations with aspects of suffering were found for meaning in life (6/7), contentment with relationships (4/7), satisfying relationships (4/7), and orientation to promote the good (1/7). Physical health and delayed gratification showed little evidence of association with all seven aspects of suffering. More facets of well-being were associated with powerlessness over suffering (8/10) than any other aspect of suffering, with slightly fewer associations found for pervasiveness of suffering (7/10), disruption to purposes (7/10), and threats to personhood (7/10). Extent of suffering was predicted by the fewest number of well-being facets (4/10), followed by intensity of suffering (5/10) and length of suffering (5/10).

#### 3.3 | Sensitivity analysis

The *E*-values corresponding with both sets of analyses involving overall suffering suggest that the observed associations are moderately robust to unmeasured confounding. For the primary analysis, *E*-values for the estimated effects of overall suffering on

**TABLE 2** Associations of overall suffering (Wave 2) with subsequent anxiety symptoms, depression symptoms, and facets of well-being assessed 1 month later (Wave 3)

Outcome	Overall suffering	
	$\beta$ [95% CI]	E-values <sup>a</sup> [EE <sup>b</sup> , LCI <sup>c</sup> ]
<i>Psychological distress</i>		
Anxiety symptoms	0.22 [0.12, 0.32]***	[1.74, 1.48]
Depression symptoms	0.25 [0.16, 0.35]***	[1.83, 1.57]
<i>Well-being</i>		
Life satisfaction	-0.21 [-0.30, -0.12]***	[1.71, 1.47]
Happiness	-0.26 [-0.35, -0.17]***	[1.84, 1.61]
Physical health	-0.13 [-0.23, -0.03]*	[1.50, 1.22]
Mental health	-0.19 [-0.28, -0.11]***	[1.67, 1.44]
Meaning in life	-0.14 [-0.22, -0.05]***	[1.52, 1.27]
Sense of purpose	-0.14 [-0.23, -0.05]***	[1.53, 1.28]
Promote good	-0.10 [-0.20, -0.01]*	[1.43, 1.08]
Delayed gratification	-0.10 [-0.20, -0.01]*	[1.42, 1.08]
Content with relationships	-0.09 [-0.17, 0.00]	[1.38, 1.00]
Satisfying relationships	-0.07 [-0.16, 0.01]	[1.34, 1.00]

Note:  $n = 594$  for all analyses. In separate models, ordinary least squares regressions were used to regress each outcome on overall suffering. Regression models estimate the mean change ( $\beta$ ) in the standardized scores of each outcome with the change in overall suffering. Overall suffering and each outcome were continuous and standardized ( $M = 0$ ,  $SD = 1$ ). All models adjusted for prior values of age, gender, ethnic status, marital status, educational attainment, religious status, dimensions of religious orientation (i.e., intrinsic, extrinsic, and quest), frequency of religious service attendance, financial and material stability assessed in Wave 1, prior values of overall suffering assessed in Wave 1, and prior values of all outcomes (i.e., anxiety symptoms, depression symptoms, and each facet of well-being) assessed in Wave 1.

Abbreviations:  $\beta$ , standardized effect size; CI, confidence interval; EE, E-value for the effect estimate; LCI, E-value for the limit of the confidence interval.

<sup>a</sup>The formula for calculating E-values can be found in VanderWeele and Ding (2017).

<sup>b</sup>E-values for effect estimates are the minimum strength of association that an unmeasured confounder would need to have with both the exposure and the outcome variable to fully explain away the observed effect, after accounting for the measured covariates.

<sup>c</sup>E-values for the limit of the 95% CI closest to the null denote the minimum strength of association that an unmeasured confounder would need to have with both the exposure and the outcome variable to shift the confidence interval to include the null value, after accounting for the measured covariates.

\* $p < 0.05$  before Bonferroni correction, \*\*\* $p < 0.05$  after Bonferroni correction (the  $p$ -value cutoff for Bonferroni correction was  $0.05/12 = 0.004$  for each outcome).

subsequent anxiety symptoms, depression symptoms, and the facets of well-being ranged from 1.34 to 1.84 (see Table 2). Similarly, E-values for the estimated effects of anxiety symptoms, depression symptoms, and the well-being facets on subsequent overall suffering ranged from 1.06 to 1.84 (see Table 3). E-values corresponding with the confidence interval limits for both the primary (range: 1.00 to 1.61) and secondary (range: 1.00 to 1.64) analyses were somewhat smaller, but still suggested at least modest robustness to potential unmeasured confounding. Using results of the primary analysis to illustrate (see Table 2), an unmeasured confounder would have to be associated with a 1.74-fold increase (on the risk ratio scale) in both overall suffering and anxiety symptoms (above and beyond the adjusted covariates) to explain

away the estimated effect of overall suffering on subsequent anxiety symptoms, but weaker confounder associations could not. For the limit of the confidence interval, confounder risk ratio associations of 1.48 for both overall suffering and anxiety symptoms could shift the confidence interval to include the null, but weaker joint confounder associations could not.

## 4 | DISCUSSION

Building on prior (predominantly cross-sectional) research that suggests suffering may degrade human flourishing in a variety of domains, this is one of the first studies to offer evidence on the

Candidate antecedent	Overall suffering	
	$\beta$ [95% CI]	E-values [EE, LCI]
<i>Psychological distress</i>		
Anxiety symptoms	0.24 [0.17, 0.32]***	[1.80, 1.60]
Depression symptoms	0.26 [0.18, 0.33]***	[1.84, 1.64]
<i>Well-being</i>		
Life satisfaction	-0.22 [-0.30, -0.15]***	[1.76, 1.55]
Happiness	-0.20 [-0.29, -0.12]***	[1.70, 1.48]
Physical health	-0.05 [-0.13, 0.02]	[1.28, 1.00]
Mental health	-0.19 [-0.27, -0.10]***	[1.65, 1.42]
Meaning in life	-0.21 [-0.29, -0.13]***	[1.72, 1.49]
Sense of purpose	-0.17 [-0.26, -0.09]***	[1.62, 1.39]
Promote good	-0.05 [-0.12, 0.02]	[1.26, 1.00]
Delayed gratification	-0.00 [-0.08, 0.07]	[1.06, 1.00]
Content with relationships	-0.12 [-0.20, -0.04]***	[1.47, 1.23]
Satisfying relationships	-0.10 [-0.18, -0.01]*	[1.41, 1.13]

**TABLE 3** Associations of anxiety symptoms, depression symptoms, and facets of well-being (Wave 2) with subsequent overall suffering assessed 1 month later (Wave 3)

Note:  $n = 594$  for all analyses. In separate models, ordinary least squares regressions were used to regress overall suffering on each of the candidate antecedents. Regression models estimate the mean change ( $\beta$ ) in the standardized scores of the outcome with the change in the candidate antecedent. Candidate antecedents and the outcome were continuous and standardized ( $M = 0$ ,  $SD = 1$ ). All models adjusted for prior values of age, gender, ethnic status, marital status, educational attainment, religious status, dimensions of religious orientation (i.e., intrinsic, extrinsic, and quest), frequency of religious service attendance, financial and material stability assessed in Wave 1, prior values of all candidate antecedents (i.e., anxiety symptoms, depression symptoms, and each facet of well-being) assessed in Wave 1, and prior values of overall suffering assessed in Wave 1. Abbreviations:  $\beta$ , standardized effect size; CI, confidence interval; EE, E-value for the effect estimate; LCI, E-value for the limit of the confidence interval.

\* $p < 0.05$  before Bonferroni correction, \*\*\* $p < 0.05$  after Bonferroni correction (the  $p$ -value cutoff for Bonferroni correction was  $0.05/12 = 0.004$  for each outcome).

potential implications of suffering for individuals living in a less WEIRD context. Using prospective data from a nonclinical sample of (mostly younger) Indonesian adults, we estimated the effect of subjective experiences of suffering on indices of psychological distress and facets of well-being assessed 1 month later. The findings were largely consistent with our expectations, such that overall suffering was associated with an increase in psychological distress and a decrease in several facets of well-being. A similar pattern of findings emerged when the aspects of suffering were examined individually, with some variations across the well-being outcomes.

#### 4.1 | Suffering and psychological distress

Our results indicated that overall suffering is associated with a moderate increase in both anxiety and depression symptoms assessed 1 month later. These findings align closely with previous research that has found suffering is associated with worse anxiety and depression symptoms (e.g., Al-Shahri et al., 2012; Brady et al., 2019; Lima-Verde et al., 2013), although effect sizes in this

study were generally smaller than those that are based on cross-sectional data (see also Supplemental Table S2). Whereas prior studies in this area have typically assessed subjective suffering using a single item, we used a set of items to capture different aspects of suffering. We found that each aspect of suffering was associated with higher subsequent anxiety and depression symptoms, with some variation in the magnitude of effect sizes that emerged. This study's findings share some overlap with one earlier study that reported associations for the same aspects of suffering included in this study, but some distinctions were also observed. For example, effect sizes that we found for the associations between some aspects of suffering (e.g., powerlessness over suffering, threats to personhood) and subsequent depression symptoms were comparable to those reported in Cowden, Davis, et al.'s (2021) study of US adults living with chronic illness, but effect sizes pertaining to other aspects of suffering (e.g., extent of suffering, disruption to purposes) were larger in the current study. Taken together, these findings suggest that in-depth assessments of suffering might be needed to evaluate the idiosyncratic ways in which it may be experienced and identify its implications for different areas of functioning, both within and between populations.



## 4.2 | Suffering and well-being

The findings also revealed that overall suffering was associated with a decrease in several aspects of well-being assessed 1 month later. The strongest effect that emerged was for happiness, with slightly smaller effect sizes found for life satisfaction, mental health, meaning in life, and sense of purpose. This pattern of findings was also generally consistent across the aspects of suffering, suggesting that subjective experiences of suffering may be particularly disruptive to both hedonic and eudaimonic dimensions of subjective well-being. Overall suffering evidenced its weakest associations with the facets of well-being within the domain of close social relationships, the effect sizes for which were somewhat smaller than those found in previous cross-sectional work (e.g., Büchi et al., 2002; Lehmann et al., 2011).

In contrast with several earlier studies that have reported a stronger effect of suffering on physical health relative to mental health (e.g., Büchi et al., 2000; Kassardjian et al., 2008), we found that overall suffering was more strongly associated with a decline in subsequent mental health compared to physical health. This trend was consistent for each aspect of suffering, but effect sizes for some aspects of suffering (e.g., powerlessness over suffering, disruption to purposes) were more similar. Although a variety of factors could contribute to distinctions in findings across studies, most of the previous studies within this area of research have focussed on older patient samples. The current study is among the first to sample (mostly) younger individuals outside of medical settings, and it is possible that suffering may be more strongly associated with mental health among populations in which physical health problems are likely to be less debilitating and occur less frequently. However, this speculation requires further investigation because we did not obtain information about physical health conditions (e.g., chronic disease) or current medical treatments from participants in this study.

To our knowledge, this is the first prospective study to estimate the effects of subjective suffering on character/virtue. We found small negative associations between overall suffering and both facets within the domain of character/virtue (i.e., orientation to promote the good, delayed gratification). These findings do not support theory (VanderWeele, 2019a) and some qualitative evidence (e.g., Hall et al., 2020; Wittmann et al., 2009) that suggest suffering has the potential to build character and contribute to the development of virtue. However, several aspects of suffering (i.e., extent of suffering, intensity of suffering, length of suffering, pervasiveness of suffering) showed little evidence of association with both character/virtue items, signifying that not all experiences of suffering may be detrimental to character/virtue. In addition, the direction and strength of associations that were observed might have been influenced by a combination of methodological factors (e.g., narrow conceptual breadth of character/virtue assessment, short timeframe between assessments), which could be especially important when estimating causal linkages between suffering and the development of character/virtue. Although the findings of this study help to shed further light on this area of the literature, more extensive research is needed to

develop a robust body of knowledge on the implications of suffering for character/virtue.

## 4.3 | Antecedents of suffering

Our secondary analysis of potential antecedents of suffering indicated that both indices of psychological distress and several facets of well-being were associated with worse subsequent overall suffering. Effect sizes were slightly larger for both anxiety and depression symptoms compared to the facets of well-being that were more strongly associated with subsequent overall suffering (i.e., life satisfaction, meaning in life, happiness, mental health, sense of purpose). Evidence-based treatment approaches that are known to be effective at addressing one or more of these areas could be particularly effective at attenuating suffering. Some facets of well-being yielded stronger associations with overall suffering when modelled as outcomes rather than as antecedents (e.g., physical health, delayed gratification), whereas others were more strongly associated with overall suffering when modelled as antecedents compared to outcomes (e.g., meaning in life, contentment with relationships). These findings indicate that the linkages between suffering and well-being are complex, highlighting the importance of employing more rigorous methodological approaches to develop a better understanding of the factors that might be more likely to precipitate or alleviate suffering. For example, our results suggest that overall suffering has the potential to degrade physical health, but improvements in a person's physical health may not necessarily lead to a reduction in overall suffering. In addition, many of the candidate antecedents that were associated with subsequent overall suffering were also outcomes predicted by overall suffering, providing further evidence that suffering may be bidirectionally associated with different domains of functioning (Cowden, Davis, et al., 2021). Hence, targeted interventions focussed on reducing suffering could have downstream implications for decreasing psychological distress and improving different facets of well-being.

## 4.4 | Practical implications

The findings of this study highlight the importance of screening for suffering in clinical practice and providing appropriate services (or referrals) to address clients' subjective experiences of suffering. Screening procedures might approach the subject of suffering by exploring whether or not clients consider themselves to be suffering, but our findings suggest that healthcare professionals ought to assess clients' suffering experiences more deeply to understand how aspects of their phenomenological experiences may be impacting their well-being (Cowden, Davis, et al., 2021). For example, extent of suffering showed little evidence of association with the character/virtue facets of well-being, but both powerlessness over suffering and disruption to purposes yielded modest negative associations with each facet. Hence, the effectiveness of practitioners' attempts to

support clients who are suffering may depend on the extent to which their screening protocols comprehensively capture the breadth and depth of clients' suffering experiences.

Drawing on the idea that suffering has the potential to be transformed into flourishing (Wong et al., 2021), there may be opportunities for mental health practitioners to help clients transcend their suffering. Of particular interest is meaning, which has previously been identified as a therapeutic target for addressing suffering (e.g., Lethborg et al., 2019) and was one of the strongest predictors of lower subsequent suffering (including several aspects of suffering) in this study. One promising therapeutic framework that attends to meaning directly is integrative meaning therapy (Wong, 2010), which combines logotherapy with positive psychology research to place suffering in a broader and brighter light. A central tenet of integrative meaning therapy is that people can transcend their suffering if they (a) acknowledge that both the dark and light sides of life are necessary for living the "good life," (b) are able to embrace suffering as an experience that can bestow wisdom on them, and (c) take personal responsibility to search for and find meaning (Wong, 2021). Although further empirical research in this area is needed, integrative meaning therapy (and other approaches centred on meaning) could be useful for clients who are experiencing suffering. Moreover, if the process of searching for and finding meaning leads to a decline in clients' suffering, our findings of bidirectional associations between suffering, psychological distress, and some facets of well-being suggest that improvements in suffering might set the stage for subsequent gains in a wide range of other areas of functioning.

#### 4.5 | Limitations and future research directions

There are several methodological limitations of this study. First, the sample consisted entirely of Christian and Muslim adults who were conveniently sampled from local universities and communities. Although the findings of this study help to expand the existing literature on subjective suffering to a broader range of people and contexts, our sample was not representative of the Indonesian population. For example, approximately 50% of the participants in this study identified as Christian, but estimates suggest that only about 10% of Indonesians are Christian (Pew Research Center, 2012). Further research is needed to determine whether the findings generalise to the broader Indonesian population and specific sub-populations (e.g., older adults, people with disabilities) within the country, as well as whether the findings can be applied to populations living in other sociocultural contexts. Second, this study took place during the coronavirus disease 2019 pandemic, a time when people in many parts of the world (including Indonesia) were dealing with a wide range of adversities (e.g., stringent lockdowns, loss of loved ones) that had the potential to precipitate distress and disrupt well-being (Counted et al., 2022; De Kock et al., 2022; Govender et al., 2020). Our findings should be considered in light of the context in which data collection occurred, as participants' responses may

have been affected by the pandemic-related circumstances they were facing. Third, the outcomes of interest (i.e., anxiety symptoms, depression symptoms, facets of well-being) were based entirely on self-report data and assessed using single or two-item measures. Future research could integrate objective metrics (e.g., standardized clinical interviews, biomarkers) alongside self-report measures that capture the conceptual breadth of constructs to provide a more comprehensive assessment of outcomes. Fourth, with observational data there is always a possibility that the estimated effects may be confounded by unmeasured factors. We attempted to reduce concerns about this by adjusting for a range of covariates (including prior values of both the exposure and outcome variables), and *E*-values suggested that the results were at least somewhat robust to potential unmeasured confounding. However, we cannot rule out the possibility that the observed associations may be explained away by one or more unmeasured confounders (e.g., temperament, trauma exposure). In addition, some of the covariates that we included in the analyses were based on measures that have yet to be psychometrically validated in Indonesia (e.g., New Indexes of Religious Orientation). Although our analyses included numerous potential confounders as covariates, it is possible that the precision of our results may have been affected by measurement error. Fifth, there was a 1-month lag between each assessment and the results provide an indication of the associations between suffering, indices of psychological distress, and facets of well-being at a single point in time. Effects of suffering may change over time, and a longer timeframe may be needed to observe the potential for suffering to culminate in more adaptive outcomes (e.g., growth of character). Cohort studies that make use of longer lags between points of assessment could contribute substantially to advancing our empirical understanding of subjective suffering and its impact on health and well-being.

## 5 | CONCLUSION

This study offers additional evidence towards developing a more comprehensive understanding of the implications of suffering for predominantly younger Indonesian adults. Given that this is one of the first prospective studies to report on the potential causal effects of subjective suffering among nonclinical populations living in less WEIRD contexts, additional research in this area is needed to determine whether the findings replicate across cultures, in sub-populations within specific contexts, and in studies that use longer lags between assessments. Based on the findings of this study, it may be important for practitioners to screen for suffering and appropriately attend to clients' subjective experiences of suffering.

### CONFLICT OF INTEREST

The authors have declared that no competing interests exist.

### DATA AVAILABILITY STATEMENT

All data related to this study are publicly available on the Open Science Framework (<https://osf.io/xwvur/>).

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## REFERENCES

- Abraham, A., Kutner, J. S., & Beaty, B. (2006). Suffering at the end of life in the setting of low physical symptom distress. *Journal of Palliative Medicine*, 9(3), 658–665. <https://doi.org/10.1089/jpm.2006.9.658>
- Al-Shahri, M. Z., Eldali, A. M., & Al-Zahrani, O. (2012). Prevalence and severity of suffering among patients with advanced cancer. *Supportive Care in Cancer*, 20(12), 3137–3140. <https://doi.org/10.1007/s00520-012-1443-6>
- Beng, S. T., Ting, T. T., Karupiah, M., Ni, C. X., Li, H. L., Guan, N. C., Chin, L. E., Loong, L. C., & Pin, T. M. (2020). Patterns of suffering in palliative care: A descriptive study. *OMEGA - Journal of Death and Dying*, 84(2), 512–524. <https://doi.org/10.1177/0030222820903221>
- Black, H. K., & Rubinstein, R. L. (2004). Themes of suffering in later life. *Journal of Gerontology: Serie Bibliographique*, 59(1), S17–S24. <https://doi.org/10.1093/geronb/59.1.S17>
- Body, R., Kaide, E., Kendal, S., & Foex, B. (2015). Not all suffering is pain: Sources of patients' suffering in the emergency department call for improvements in communication from practitioners. *Emergency Medicine Journal*, 32(1), 15–20. <https://doi.org/10.1136/emered-2013-202860>
- Brady, B., Veljanova, I., Andary, T., Southwell, T., & Chipchase, L. (2019). Recognising ethnocultural diversity in chronic pain assessment: Validation of the Pictorial Representation of Illness and Self Measure (PRISM) for use with culturally diverse communities. *Health and Quality of Life Outcomes*, 17(1), 56. <https://doi.org/10.1186/s12955-019-1126-9>
- Büchi, S., Buddeberg, C., Klaghofer, R., Russi, E. W., Brändli, O., Schlösser, C., Stoll, T., Villiger, P. M., & Sensky, T. (2002). Preliminary validation of PRISM (Pictorial representation of illness and self measure)—A brief method to assess suffering. *Psychotherapy and Psychosomatics*, 71(6), 333–341. <https://doi.org/10.1159/000065994>
- Büchi, S., Villiger, P., Kauer, Y., Klaghofer, R., Sensky, T., & Stoll, T. (2000). PRISM (Pictorial Representation of Illness and Self Measure)—A novel visual method to assess the global burden of illness in patients with systemic lupus erythematosus. *Lupus*, 9(5), 368–373. <https://doi.org/10.1191/096120300678828479>
- Cassell, E. J. (1999). Diagnosing suffering: A perspective. *Annals of Internal Medicine*, 131(7), 531–534. <https://doi.org/10.7326/0003-4819-131-7-199910050-00009>
- Cassell, E. J. (2004). *The nature of suffering and the goals of medicine* (2nd ed.). Oxford University Press.
- Corazza, M., Virgili, A., Toni, G., Valpiani, G., Morotti, C., & Borghi, A. (2020). Pictorial Representation of Illness and Self-Measure to assess the perceived burden in patients with chronic inflammatory vulvar diseases: An observational study. *Journal of the European Academy of Dermatology and Venereology*, 34(11), 2645–2651. <https://doi.org/10.1111/jdv.16637>
- Counted, V., Pargament, K. I., Bechara, A. O., Joynt, S., & Cowden, R. G. (2022). Hope and well-being in vulnerable contexts during the COVID-19 pandemic: Does religious coping matter? *The Journal of Positive Psychology*, 17(1), 70–81. <https://doi.org/10.1080/17439760.2020.1832247>
- Cowden, R. G., Counted, V., & Ramkissoon, H. (2021). Place attachment and suffering during a pandemic. In V. Counted, R. G. Cowden, & H. Ramkissoon, *Place and post-pandemic flourishing: Disruption, adjustment, and healthy behaviors* (pp. 45–54). Springer. [https://doi.org/10.1007/978-3-030-82580-5\\_4](https://doi.org/10.1007/978-3-030-82580-5_4)
- Cowden, R. G., Davis, E. B., Counted, V., Chen, Y., Rueger, S. Y., VanderWeele, T. J., Lemke, A. W., Glowiak, K. J., & Worthington, E. L., Jr. (2021). Suffering, mental health, and psychological well-being during the COVID-19 pandemic: A longitudinal study of U.S. Adults with chronic health conditions. *Wellbeing, Space and Society*, 2, 100048. <https://doi.org/10.1016/j.wss.2021.100048>
- Cowden, R. G., Rueger, S. Y., Davis, E. B., Counted, V., Kent, B. V., Chen, Y., VanderWeele, T. J., Rim, M., Lemke, A. W., & Worthington, E. L., Jr. (2021). Resource loss, positive religious coping, and suffering during the COVID-19 pandemic: A prospective cohort study of US adults with chronic illness. *Mental Health, Religion & Culture*. Advance online publication. <https://doi.org/10.1080/13674676.2021.1948000>
- Davis, E. B., McElroy-Heltzel, S. E., Lemke, A. W., Cowden, R. G., VanderWeele, T. J., Worthington, E. L., Jr., Glowiak, K. J., Shannonhouse, L. R., Davis, D. E., Hook, J. N., Van Tongeren, D. R., & Aten, J. D. (2021). Psychological and spiritual outcomes during the COVID-19 pandemic: A prospective longitudinal study of adults with chronic disease. *Health Psychology*, 40(6), 347–356. <https://doi.org/10.1037/hea0001079>
- De Kock, J. H., Latham, H. A., Cowden, R. G., Cullen, B., Narzisi, K., Jerdan, S., Muñoz, S.-A., Leslie, S. J., McNamara, N., Boggon, A., & Humphry, R. W. (2022). The mental health of NHS staff during the COVID-19 pandemic: Two-wave Scottish cohort study. *BJPsych Open*, 8(1), E23. <https://doi.org/10.1192/bjo.2021.1079>
- Fitzpatrick, S. J., Kerridge, I. H., Jordens, C. F. C., Zoloth, L., Tollefsen, C., Tsomo, K. L., Jensen, M. P., Sachedina, A., & Sarma, D. (2016). Religious perspectives on human suffering: Implications for medicine and bioethics. *Journal of Religion and Health*, 55(1), 159–173. <https://doi.org/10.1007/s10943-015-0014-9>
- Francis, L. J. (2007). Introducing the New Indices of Religious Orientation (NIRO): Conceptualization and measurement. *Mental Health, Religion & Culture*, 10(6), 585–602. <https://doi.org/10.1080/13674670601035510>
- Gielissen, M. F. M., Prins, J. B., Knoop, H., Verhagen, S., & Bleijenberg, G. (2013). Pictorial representation of self and illness measure (PRISM): A graphic instrument to assess suffering in fatigued cancer survivors. *Psychological Assessment*, 25(2), 658–663. <https://doi.org/10.1037/a0031526>
- Gilleard, C. (2018). Suffering: The darker side of ageing. *Journal of Aging Studies*, 44, 28–33. <https://doi.org/10.1016/j.jaging.2017.12.001>
- Govender, K., Cowden, R. G., Nyamaruze, P., Armstrong, R. M., & Hatane, L. (2020). Beyond the disease: Contextualized implications of the COVID-19 pandemic for children and young people living in Eastern and Southern Africa. *Frontiers in Public Health*, 8, 504. <https://doi.org/10.3389/fpubh.2020.00504>
- Hall, M. E. L., Shannonhouse, L., Aten, J., McMartin, J., & Silverman, E. (2020). The varieties of redemptive experiences: A qualitative study of meaning-making in evangelical Christian cancer patients. *Psychology of Religion and Spirituality*, 12(1), 13–25. <https://doi.org/10.1037/rel0000210>
- Kassardjian, C. D., Gardner-Nix, J., Dupak, K., Barbati, J., & Lam-McCulloch, J. (2008). Validating PRISM (Pictorial Representation of Illness and Self Measure) as a measure of suffering in chronic non-cancer pain patients. *The Journal of Pain*, 9(12), 1135–1143. <https://doi.org/10.1016/j.jpain.2008.06.016>
- Krikorian, A., Limonero, J. T., & Maté, J. (2012). Suffering and distress at the end-of-life. *Psycho-Oncology*, 21(8), 799–808. <https://doi.org/10.1002/pon.2087>

- Kroenke, K., Spitzer, R. L., Williams, J. B. W., & Löwe, B. (2009). An ultra-brief screening scale for anxiety and depression: The PHQ-4. *Psychosomatics*, 50(6), 613–621. <https://doi.org/10.1176/appi.psy.50.6.613>
- Lehmann, V., Oerlemans, S., van de Poll-Franse, L. V., Vingerhoets, A. J. J. M., & Mols, F. (2011). Suffering in long-term cancer survivors: An evaluation of the PRISM-R2 in a population-based cohort. *Quality of Life Research*, 20(10), 1645–1654. <https://doi.org/10.1007/s11136-011-9911-x>
- Lethborg, C., Kissane, D. W., & Schofield, P. (2019). Meaning and Purpose (MaP) therapy I: Therapeutic processes and themes in advanced cancer. *Palliative & Supportive Care*, 17(1), 13–20. <https://doi.org/10.1017/S1478951518000871>
- Lima-Verde, A. C., Pozza, D. H., Rodrigues, L. L. F. R., Velly, A. M., & Guimarães, A. S. (2013). Cross-cultural adaptation and validation for Portuguese (Brazilian) of the pictorial representation of illness and self measure instrument in orofacial pain patients. *Journal of Orofacial Pain*, 27(3), 271–275. <https://doi.org/10.11607/jop.1070>
- Nietzsche, F. (2006). In A. Del Caro & R. B. Pippin (Eds.), *Thus spoke Zarathustra* (A. Del Caro, Trans). Cambridge University Press.
- Paul, J., II. (1984). *Apostolic letter: Salvifici doloris*. [http://www.vatican.va/content/john-paul-ii/en/apost\\_letters/1984/documents/hf\\_jp-ii\\_apl\\_11021984\\_salvifici-doloris.html](http://www.vatican.va/content/john-paul-ii/en/apost_letters/1984/documents/hf_jp-ii_apl_11021984_salvifici-doloris.html)
- Peter, N., Kleinjung, T., Horat, L., Schmidt-Weitmann, S., Meyer, M., Büchi, S., & Weidt, S. (2016). Validation of PRISM (Pictorial Representation of Illness and Self Measure) as a novel visual assessment tool for the burden of suffering in tinnitus patients. *Health and Quality of Life Outcomes*, 14, 47. <https://doi.org/10.1186/s12955-016-0454-2>
- Pew Research Center. (2012). *The global religious landscape: A report on the size and distribution of the world's major religious groups as of 2010*. <https://assets.pewresearch.org/wp-content/uploads/sites/11/2014/01/global-religion-full.pdf>
- Rattner, M. (2021). Increasing our understanding of nonphysical suffering within palliative care: A scoping review. *Palliative & Supportive Care*. Advance online publication. <https://doi.org/10.1017/S1478951521001127>
- R Core Team. (2020). *R: A language and environment for statistical computing*. R Foundation for Statistical Computing. <https://www.R-project.org/>
- Reimus, J. L. M., Vingerhoets, A. J. J. M., Soons, P. H. G. M., & Korstanje, M. J. (2007). Suffering in psoriasis patients: Its relation with illness severity and subjective well-being. *International Journal of Dermatology*, 46(10), 1042–1045. <https://doi.org/10.1111/j.1365-4632.2007.03191.x>
- Ruijs, C. D., Onwuteaka-Philipsen, B. D., van der Wal, G., & Kerkhof, A. J. (2009). Unbearability of suffering at the end of life: The development of a new measuring device, the SOS-V. *BMC Palliative Care*, 8(1), 16. <https://doi.org/10.1186/1472-684X-8-16>
- Rumpf, H.-J., Löntz, W., & Uessler, S. (2004). A self-administered version of a brief measure of suffering: First aspects of validity. *Psychotherapy and Psychosomatics*, 73(1), 53–56. <https://doi.org/10.1159/000074440>
- Schopenhauer, A. (1909). *The world as will and idea: Vol. Three* (R. B. Hal-dane, & J. Kemp, Trans.; 6th ed.). Kegan Paul, Trench, Trübner & Co.
- Shmotkin, D., & Shrira, A. (2012). Happiness and suffering in the life story: An inquiry into conflicting expectations concerning the association of perceived past with present subjective well-being in old age. *Journal of Happiness Studies*, 13(3), 389–409. <https://doi.org/10.1007/s10902-011-9270-x>
- Tate, T., & Pearlman, R. (2019). What we mean when we talk about suffering—And why Eric Cassell should not have the last word. *Perspectives in Biology and Medicine*, 62(1), 95–110. <https://doi.org/10.1353/pbm.2019.0005>
- van Baarsen, B. (2009). Suffering, loneliness, and the euthanasia choice: An explorative study. *Journal of Social Work in End-Of-Life and Palliative Care*, 4(3), 189–213. <https://doi.org/10.1080/15524250902822366>
- VanderWeele, T. J. (2017). On the promotion of human flourishing. *Proceedings of the National Academy of Sciences*, 114(31), 8148–8156. <https://doi.org/10.1073/pnas.1702996114>
- VanderWeele, T. J. (2019a). Suffering and response: Directions in empirical research. *Social Science & Medicine*, 224, 58–66. <https://doi.org/10.1016/j.socscimed.2019.01.041>
- VanderWeele, T. J. (2019b). Principles of confounder selection. *European Journal of Epidemiology*, 34(3), 211–219. <https://doi.org/10.1007/s10654-019-00494-6>
- VanderWeele, T. J. (2021). Can sophisticated study designs with regression analyses of observational data provide causal inferences? *JAMA Psychiatry*, 78(3), 244–246. <https://doi.org/10.1001/jamapsychiatry.2020.2588>
- VanderWeele, T. J., & Ding, P. (2017). Sensitivity analysis in observational research: Introducing the E-value. *Annals of Internal Medicine*, 167(4), 268–274. <https://doi.org/10.7326/M16-2607>
- VanderWeele, T. J., Mathur, M. B., & Chen, Y. (2020). Outcome-wide longitudinal designs for causal inference: A new template for empirical studies. *Statistical Science*, 35(3), 437–466. <https://doi.org/10.1214/19-STS728>
- Wilson, K. G., Chochinov, H. M., McPherson, C. J., LeMay, K., Allard, P., Chary, S., Gagnon, P. R., Macmillan, K., De Luca, M., O'Shea, F., Kuhl, D., & Fainsinger, R. L. (2007). Suffering with advanced cancer. *Journal of Clinical Oncology*, 25(13), 1691–1697. <https://doi.org/10.1200/JCO.2006.08.6801>
- Wittmann, L., Sensky, T., Meder, L., Michel, B., Stoli, T., & Büchi, S. (2009). Suffering and posttraumatic growth in women with systemic lupus erythematosus (SLE): A qualitative/quantitative case study. *Psychosomatics*, 50(4), 362–374. <https://doi.org/10.1176/appi.psy.50.4.362>
- Wong, P. T. P. (2010). Meaning therapy: An integrative and positive existential psychotherapy. *Journal of Contemporary Psychotherapy*, 40(2), 85–93. <https://doi.org/10.1007/s10879-009-9132-6>
- Wong, P. T. P. (2021). What is existential positive psychology (PP 2.0)? Why is it necessary for mental health during the pandemic? *International Journal of Existential Positive Psychology*, 10(1), 1–16. <https://www.meaning.ca/ijepp-article/vol10-no1/what-is-existential-positive-psychology-pp-2-0-why-is-it-necessary-for-mental-health-during-the-pandemic/>
- Wong, P. T. P., Mayer, C. H., & Arslan, G. (2021). COVID-19 and existential positive psychology (PP 2.0): The new science of self-transcendence. *Frontiers in Psychology*, 12, 800308. <https://doi.org/10.3389/fpsyg.2021.800308>

## SUPPORTING INFORMATION

Additional supporting information can be found online in the Supporting Information section at the end of this article.

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