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Measuring Beliefs about Suffering: Development of the Views of Suffering Scale

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Abstract

Efforts to measure religion have intensified and many specific dimensions have been identified. However, although belief is a core dimension of all world religions, little attention has been given to assessment of religious beliefs. In particular, one essential set of religious beliefs, those concerning the reasons for human suffering, has remained virtually unexamined in spite of the potential clinical relevance of these beliefs. To fill the need for a measure of people's beliefs about suffering, we developed the Views of Suffering Scale (VOSS). Analyses identified factors related to traditional Christian teachings, unorthodox theistic beliefs, karma, and randomness. Internal consistency and test-retest reliability for VOSS subscale scores were good (α's and r's $\geq$ .70). Comparisons to measures of related constructs suggest that the VOSS scores demonstrate good convergent validity. One subscale score was modestly correlated with social desirability related to image management, and seven were positively correlated to self-deceptive enhancement. These preliminary studies suggest that the VOSS differentiates religious perspectives on suffering among a sample of US university students, though more research is needed to confirm its utility in diverse populations. The VOSS provides a valid way to measure individuals' beliefs about suffering, allowing for inquiry into the factors that lead to various beliefs about suffering and the roles of these beliefs in adjusting to stressful life events.

Keywords

religious beliefs; theodicy; suffering; measurement; scale development

People in the United States tend to report high levels of religiousness. For example, in a 2010 poll, 80% of individuals rated religion as "fairly" or "very" important to them (Gallup Poll, 2010). The increasing recognition of the psychological importance of religion has led to a dramatic increase in research on religion and spirituality, particularly in the connections between religion and both physical and mental health (for reviews, see Lee & Newberg, 2005; Masters & Hooker, in press). Increased attention has also been given to *assessment* of religiousness (Hill, in press; Fetzer/NIA, 1999). Many distinct dimensions of religiousness have been identified, and researchers have endeavored to develop psychometrically sound measures of these dimensions, including organizational behaviors such as worship attendance (e.g., Idler et al., 2009), private behaviors such as prayer and meditation (e.g.,

Ladd & Spilka, 2006), religious social support (e.g., Ellison & George, 1994), religious motivations (e.g., Gorsuch & McPherson, 1989), and religious emotions (e.g., anger at God; Exline, Yali, & Lobel, 1999). However, one aspect of religiousness has been curiously overlooked: beliefs about suffering.

Although scholars agree that beliefs are a core religious dimension of religion (Idler et al., 2003; Haber, Jacob & Spangler, 2007), few studies have examined religious beliefs and their relationships with other variables. Some data are available on afterlife beliefs (e.g., Krause et al., 2002; Newman, Blok, & Rips, 2006) and conceptions of God (e.g., Aten et al. 2008; Diesendruck & Haber, 2009), but almost no research has examined the content of religious beliefs about other important aspects such as divine control (cf. Spilka, Shaver, & Kirkpatrick, 1997; Pargament et al., 1999), sin and redemption, or free will versus divine determinism.

This lack is surprising given the centrality of beliefs to religion and their potential clinical implications. Knowledge of individuals' beliefs may help to explain their decisions to use various coping strategies or explain certain health behaviors (e.g., use of medical care, performance of health behaviors, self-destructive behaviors; Avants, Marcotte, Arnold, & Margolin, 2003; Koenig, 2004; Strawbridge, Shema, Cohen, & Kaplan, 2001). Further, knowledge of relationships between beliefs and well-being may help structure clinical interventions, because people often turn to religion in stressful situations (Aldwin, 2007; Büssing, Ostermann, & Matthiessen, 2005).

Beliefs about suffering, also known as "theodicies," are one dimension of religious beliefs that seems likely to have great clinical relevance. A "theodicy" is any set of beliefs that attempts to reconcile orthodox teaching about God's goodness with the presence of suffering in the world (Brown, 1999). Theodicies attempt to answer the question, "How can God be good and powerful when there is evil in the world?" Stressful or traumatic experiences may raise existential questions (Edmondson, Chaudoir, Mills, Park, et al., 2011) or initiate a crisis of faith (Edmondson, Park, Chaudoir, & Wortmann, 2008). Questions about evil, divine help, human nature, and hope for the future surge to the surface when people are in crisis, and religious beliefs provide answers to these questions in ways that no other authority can (Berger, 1967). Several scholars have noted the importance of beliefs about suffering (e.g., Furnham & Brown, 1992; Hall & Johnson, 2001) but there is a dearth of empirical research.

Our goal was to develop a psychometrically sound measure to facilitate inquiry into the issues relevant to beliefs about suffering. The Views of Suffering Scale (VOSS) assesses a range of the most common belief systems in the United States, including theistic, Buddhist, Atheist, Hindu, and unorthodox theistic perspectives (Pew Forum, 2008). Although the VOSS includes beliefs from multiple belief systems, it includes more nuanced views from Christianity than other religions because the vast majority of Americans identify themselves as Christian (74% in a 2010 poll; Gallup Poll, 2010). The following ten perspectives are included in the VOSS based on their representation in religious literature and utilization by one or more sects in the United States.

The *Free Will, Open Theism*, and *Word-Faith* perspectives are mutually exclusive beliefs about God's role in suffering. The *Free Will* perspective (most clearly articulated by Reformed Protestant denominations and Catholic theology) emphasizes that suffering is present because the first humans broke the divine-human relationship; the world is no longer a just and perfect place, so people can expect pain until God's eventual redemption (e.g., Aquinas, 1264/1944; Augustine, 388/1937, 421/1948; Piper & Ergenbright, 2002). In contrast, *Open Theism* (represented in a range of Protestant denominations) emphasizes that

God chooses to suffer with people but cannot prevent evil from taking place because God chooses to limit his foreknowledge (e.g., Boyd, 2000). The *Word-Faith Theodicy* (also called "Health & Wealth" "Name it & Claim It" or "Prosperity" Gospels, most often present in Pentecostal denominations) holds that if one prays hard enough, believes strongly enough, and does not actively sin, he or she will not have to suffer (e.g., Hagin, 1966; Savelle, 1982).

In addition to these mutually exclusive frameworks for suffering, three other beliefs exist that can operate together and with any of the previous beliefs within a theistic framework. *Suffering God* emphasizes God's compassionate presence in the midst of suffering and appears in both Christianity and Judaism (e.g., Leaman, 2001; Moltmann, 1993). The *Soul-Building* perspective emphasizes that God always uses suffering as a challenge, and is represented most clearly in Christianity and Islam (Hick, 1966; Aslan, 2001). The *Encounter* perspective (in both Judaism & Christianity) emphasizes the conversations and complex relationship with God that individuals have in the midst of suffering (e.g., Leaman, 2001; Metz & Ashley, 1994).

In addition to these traditional theistic views of suffering the VOSS also includes unorthodox theistic and non-theistic views. *Unorthodox* views are those that affirm the existence and involvement of a divine being but deny divine characteristics that are central to the theistic religions (e.g., omnipotence, beneficence, perfection). In the *Random* perspective (an atheistic or agnostic belief), there is no way to predict who will suffer and there is no underlying reason. Finally, the *Retribution* perspective includes both Buddhist and Hindu beliefs in its conceptualization of suffering as part of cycle in which an individual's previous deeds impact their experience of suffering (Anantharaman, 2001; Shim, 2001).

Overview of VOSS Development

The VOSS was developed through two sequential studies. First, an initial pool of items on theodicies was developed representing a variety of religious views present in North America congruent with official denominational teachings, beliefs unassociated with specific denominations, and non-theistic beliefs. In Study 1, this group of items was pilot-tested on a sample of 246 undergraduate college students, and exploratory factor analysis (EFA) was used to identify which items should be retained. Based on the results of Study 1, we created additional items that supplemented both the theoretical and observed factors.

In Study 2 a new sample of 624 undergraduates completed the VOSS and other measures. These data provided information on factor structure, reliability, and validity. The 624 participants were randomly divided into two groups of 312 participants to allow for a second EFA and a confirmatory factor analysis (CFA) to be conducted on distinct samples (Netemeyer, Bearden & Sharma, 2003). These data were used to determine both factor structure and items for the finalized VOSS. Test-retest data were provided by a subset of 96 participants.

Study 1

Method

Participants—Participants were 246 undergraduates (149 women, 97 men; mean age of 19.2) at a large Northeastern public university, recruited from the participant pool for introductory psychology courses. The sample was 78.9% White, 5.7% Black, 8.9% Asian, 4.1% Hispanic/Latino and 2.4% Biracial/Other. The majority of participants expressed belief in God. In response to the multiple choice question, "Do you believe there is a God?" 23.2% chose "I am sure God really exists and that He is active in my life," 29.3% said, "Although I

sometimes question His existence, I do believe in God and believe He knows of me as a person," 26.8 % selected "I don't know if there is a personal God, but I do believe in a higher power of some kind," 13.4% indicated "I don't know if there is a personal God or a higher power of some kind, and I don't know if I ever will," and 7.3% said, "I don't believe in a personal God or in a higher power."

The majority (56.2%) of participants identified their religious affiliation as Christian (34.5% as Roman Catholic, 10.4% various Protestant denominations, and 11.3% "Christian"). Atheists or Agnostics made up 26.8% of the participants, 4.4% identified themselves as Jewish, 1.6% as Buddhist, 1.6% as Muslim, and 9.4% chose not to identify a religious affiliation. Participants varied in their perceptions of themselves: 33.3% identified themselves as either "moderately" or "very" religious, 36.6% as "slightly" religious, and 30.1% as "not at all" religious, while 43.9% identified themselves as "moderately" or "very" spiritual, 35.8% as "slightly" spiritual and 20.3% as "not at all" spiritual. This sample's proportion of Catholics is higher than the national average but consistent with the most recent poll data for New England (Kosmin & Keysar, 2009). The proportion of Atheists/ Agnostics in this sample is also higher than the national average of 15% (Kosmin & Keysar, 2009) but comparable to a large multi-university study which found that 79% of college students believe in God (suggesting that 21% are either Atheist or Agnostic) (Astin et al., 2005).

Item Generation—The first version of the VOSS included 53 items regarding religious perspectives on suffering. Given our sample size of 246, this met the 5:1 ratio recommended for factor analysis (Gorsuch, 1983). Items were derived by consulting with religious leaders, reading religious teachings and articles in the psychology of religion, and discussing beliefs with adherents of various faiths. Individual items were developed based on the Christian beliefs about suffering outlined previously (i.e., Free Will, Open Theism, Word-Faith, Encounter, Suffering God, and Soul-Building), beliefs about divine providence (i.e., control God has over specific events) and unorthodox theistic beliefs (e.g., views of God as impotent or unloving). Items highlighting a range of non-theistic beliefs (e.g., suffering as random) were also included. All questions were crafted to reflect beliefs as expressed by the average layperson and were ordered randomly.

Procedures and Measures—Participants selected the study entitled "Beliefs, Values, Experiences & Well-Being" from the university's online participant pool from among a list of studies. The study description clearly indicated that both religious and non-religious people were welcome to participate. The VOSS was part of a larger questionnaire battery assessing beliefs and well-being. Instructions for the VOSS were as follows: "For each of the following statements, please select the response that best indicates the extent of your belief or disbelief. Please use 'God' however your faith defines God." Items were rated from 1 (*strongly disagree*) to 6 (*strongly agree*).

<u>**Demographic questionnaire:**</u> Participants reported gender, ethnicity, and current religious affiliation (selected from a list of denominations, with the option to type in their affiliation if not listed). Belief in God was rated from 0 (*I don't believe in a personal God or in a higher power*) to 4 (*I am sure God really exists and that He is active in my life*) (Rohrbaugh & Jessor, 1975). Perceptions of self as a religious and a spiritual person were rated on 4-point scales ranging from 0 (*not at all*) to 3 (*very*) (BMMR/S; Fetzer/NIA, 1999).

Results

Exploratory Factor Analysis—In Study 1, we used EFA to identify preliminary factor structure and item loadings. We used principle axis factoring both because distribution was

not completely normal for all variables (Finch & West, 1997), and because it is more effective for latent variable identification than principal components analysis (Floyd & Widaman, 1995). We used direct oblimin rotation because factors were expected to be correlated, and listwise deletion to address missing data. Scree-plot analysis indicated a five-factor model accounting for 60.3% of the variance (Table 1). The five factors comprised (1) an amalgamation of traditional Christian perspectives, (2) open theist perspectives, (3) unorthodox theistic views, (4) beliefs of suffering as random or purposeless, and (5) beliefs about suffering as the result of karma or retribution for previous wrong-doing. Of the 53 items tested, 32 were retained for use in Study 2 based on factor loadings >.40 (Netemeyer et al., 2003). Items that cross-loaded were retained if they had strong construct validity (i.e., a clear basis in the theological literature) (Netemeyer et al., 2003). All individual subscales had Cronbach's alphas > .70 for the items retained (Bernstein & Nunnally, 1994).

Discussion

Results of this first study were fairly consistent with expectations. As predicted, participants made a clear distinction between traditional theistic beliefs and alternative belief systems. The emergence of non-theistic beliefs of randomness and retribution as clear factors, in spite of our predominantly Christian-affiliated sample, confirmed that these are important beliefs to assess. That the subscales of theistic beliefs (e.g., Free Will) did not emerge as distinct factors in the EFA was not entirely unexpected. This may have been a result of our relatively young sample (i.e., college students who may not have thought in depth about suffering prior to this study), an indication that the beliefs measured are indeed interconnected, or a result of poorly-worded questions. To address this last possibility, all items were reevaluated for clarity and conceptual validity, and adjustments were made before commencing Study 2.

Study 2

Introduction

The goals of Study 2 were to determine factor structure, finalize items for inclusion, and test hypotheses related to the VOSS' validity for this sample. The VOSS' validity was examined using previously studied measures thought to access specific constructs. We also explored correlations between VOSS subscales that expressed related and opposing beliefs, looking for relationships in the expected directions. Lastly, we did preliminary analyses regarding the VOSS' relationship to demographic characteristics. These hypotheses are described below in the Analytic Plan.

Method

Based on the theoretical foundation and content of the items retained from the initial item pool, we identified items representing 10 subscales for inclusion in Study 2. Six consisted of items that initially loaded onto the first, largest factor identified in the Study 1 EFA (i.e., theistic beliefs) and new items were added to further distinguish among theistic beliefs about suffering. The other four subscales were based on the other four factors identified in the Study 1 EFA. The 10 subscales specified in Study 2 were: (1) *Divine Responsibility* (Free will perspectives), (2) *Suffering God* (beliefs about God suffering with people), (3) *Overcoming* (beliefs about overcoming suffering through prayer and/or faith), (4) *Encounter* (beliefs about suffering as a divine encounter), (5) *Soul-Building* (beliefs about suffering as a divinely-intended personal growth experience), (6) *Providence* (beliefs about God's control over suffering), (7) *Unorthodox* (unorthodox theistic views), (8) *Limited Knowledge* (open theistic views reflecting God's limited foreknowledge), (9) *Retribution* (beliefs related to suffering as retribution or karma), and (10) *Random* (beliefs about suffering as random or purposeless). Given the ten identified subscales, our goal was a 30-item scale. This allowed for the suggested minimum three items per construct (Comrey, 1988) without being too

onerous for participants. An additional 38 items were created to supplement the 32 items from Study 1, following the same procedure of item development. Thus, 70 items assessed the anticipated ten factors, well within the suggested range of overdetermination for measure development (Fabrigar, Wegener, MacCallum, & Strahan, 1999).

In addition to determining the final factor structure, Study 2 also aimed to examine the VOSS' reliability and validity. Test-retest reliability was assessed using a 14-day interval (Robinson, Shaver, & Wrightsman, 1991), examining correlation coefficients between Time 1 and Time 2 for each subscale score (De Vellis, 1991; Bernstein & Nunnally, 1994). Internal consistency reliability was examined by measuring Cronbach's alphas for each subscale. Validity was considered by examining social desirability-influenced responses, and by comparing VOSS subscale scores to other measures of related constructs, to other VOSS subscale scores, and to demographic data.

Participants—Participants were 624 undergraduates (435 women, 188 men; mean age of 18.7) at a large Northeastern public university, recruited from the participant pool for introductory psychology courses. The sample was 80% White, 3% Black, 8% Asian, 5% Hispanic/Latino, and 4% Biracial/Other.

Most participants expressed belief in God; 31% responded to the multiple choice question "Do you believe there is a God?" with "Yes, definitely," 31% with "Yes, I'm mostly sure there is," 24% with "I'm not sure," 9% with, "No, I'm mostly sure there isn't," and 5% with, "No, definitely not." Selecting their religious preference from a list of religions common in the U.S., 40.4% identified themselves as Catholic, 22.9% as Atheist/Agnostic, 20.5% as Protestant, 6.7% as Jewish, 3% as Amish, 2.4% Buddhist; the remaining 4.1% was comprised less than 1% each of, Baha'i, Hindu, Muslim, Christian Scientist, and Orthodox adherents.

Procedure—Recruitment procedures for Study 2 were identical to those used in Study 1. A subset of 100 participants signed up to take the survey again after 14 days to provide test-retest data, again using a web-based survey. These participants signed up separately for the study and were contacted by email providing a link to a new online survey containing only the VOSS.

Measures

Demographic questionnaire: Same as that used in Study 1.

Christian Orthodoxy Scale (Short Form): Belief in orthodox Christian tenets was assessed using the *Christian Orthodoxy Scale (Short Form)* (Hunsberger, 1989). Participants rate five items from 0 (*strongly disagree*) to 6 (*strongly agree*). Items are summed and interpreted such that higher scores reflect a more orthodox religious orientation. In a previous study scale had internal reliability coefficients of.93–.95 and strong face validity (Hunsberger, 1989). Higher orthodoxy scores are correlated with higher scores on scales of authoritarianism, interest in religion, church attendance, and other religious constructs (Hunsberger, 1989).

Mastery Scale: Individuals' sense of personal control was assessed using the Mastery Scale (Pearlin & Schooler, 1978). Participants rate 7 items from 1 (*strongly disagree*) to 5 (*strongly agree*). Responses are summed to provide a total mastery score. Previous work has shown excellent reliability and construct validity (e.g., Lachman, 2006).

World Assumptions Scale: Assumptions about the justice, randomness, luck, and controllability were assessed using four subscales from the World Assumptions Scale (WAS; Janoff-Bulman, 1989). A total of 16 items (four per subscale) were rated from 0 (*strongly disagree*) to 4 (*strongly agree*). Previous subscale scores yielded internal reliability estimates between .60 and .83 and correlated as expected with other measures, supporting construct validity (Kaler et al., 2008).

God Image Scales: Beliefs related to divine goodness, control, and challenge were assessed with the *Benevolence, Providence*, and *Challenge* subscales of the God Image Scales (GIS) (Lawrence, 1997), 36 items rated from 0 (*strongly disagree*) to 3 (*strongly agree*). Internal reliability coefficients for all GIS subscales ranged from .86 to .94 in one previous study (Lawrence, 1997). These subscales appeared to have face validity but other forms have not been studied. Given the lack of any other measures related to these beliefs, however, the GIS seemed the best option for exploring the VOSS's validity, tentative though any conclusions must be.

Paulhus Deception Scales: Participants' tendency to respond in socially desirable ways was evaluated with the Paulhus Deception Scales (PDS) (Paulhus, 1998), which includes an *Image Management* (IM) subscale identifying tendencies toward social conventionality and a *Self-Deceptive Enhancement* subscale (SDE) measuring unconscious denial of thoughts and feelings that may threaten one's self-concept. Forty items are rated from 1 (*not true*) to 5 (*very true*). Internal reliability coefficients have been reported at .81–.86 for the IM subscale and .70–.75 for the SDE subscale (Paulhus, 1998). Several studies indicated that the PDS had strong face, structural (Paulhus, 1998), and convergent (e.g., Paulhus, 1984; Lautenschlager & Flaherty, 1990) validity. The PDS was administered to the test-retest subsample, using the IM subscale to identify patterns of socially desirable responding that might influence validity and the SDE subscale to highlight how religious beliefs may relate to an individual's self-concept.

Analytic Plan—Prior to analysis, the sample was split into two randomly selected groups of 312 participants each. Participants in each group did not differ significantly from one another on any demographic variable. Following this split, three phases of analyses were conducted. First, EFA was conducted to identify possible factor structures and reduce the number of items. Second, the model identified by the EFA, the hypothesized ten-factor model, and the model including a second-order *Traditional Christianity* factor were all examined using CFA to determine the best fit and to select final items for individual subscales (Brown, 2006; Netemeyer et al., 2003). Lastly, the finalized items were analyzed using the entire sample to assess reliability and validity.

We posited several hypotheses regarding the VOSS and other measures. We expected that scores on the Christian Orthodoxy Scale (Hunsberger, 1989) would be positively correlated to traditional beliefs reflected in *Divine Responsibility, Providence, Soul-Building, Suffering God, Overcoming, Encounter*, and *Limited Knowledge* subscales, but negatively correlated to the *Unorthodox* subscale. We hypothesized that the GIS *Providence* subscale (Lawrence, 1997) measuring God's general control over events would correlate positively to VOSS *Providence* and negatively to *Random* scores and that the GIS *Challenge* subscale (Lawrence, 1997) would be positively correlated with *Soul-Building* because they both include beliefs about God's desire to challenge believers. We predicted that the GIS *Benevolence* subscale (Lawrence, 1997) would positively correlate with *Suffering God*, because a benevolent God is assumed in the latter beliefs.

Next, we hypothesized that the WAS *Justice* subscale, measuring beliefs about the inherent justice of the world, would be positively correlated with VOSS *Retribution* and negatively

correlated with *Random* subscales, because these assume a just and a randomly-ordered world, respectively. We hypothesized a positive correlation between *Random* and the WAS *Random* subscale because they both purport to access beliefs about randomness, but a negative correlation between VOSS *Providence* and WAS *Random* or WAS *Luck* subscales because, by definition, a strong belief in God's control over details would rule out the existence of luck or randomness. We hypothesized that the WAS *Control* (Janoff-Bulman, 1989), reflecting a belief of self as in control would correlate positively to *Retribution* because belief in retribution represents a form of personal control over suffering.

Finally, we predicted that scores on *Random* or *Providence* would correlate negatively with *Mastery* (Pearlin & Schooler, 1978) because either could include a sense of low individual control. We also hypothesized that *Soul Building* would positively correlate to *Mastery* because perception of suffering as a form of challenge could provide a sense of control.

In addition to hypotheses about relationships with established measures, we also tested hypotheses about the relationships among the VOSS subscales. We hypothesized that although the VOSS subscales representing theistic beliefs (i.e., *Divine Responsibility, Providence, Soul-Building, Suffering God, Overcoming, Encounter*, and *Limited Knowledge*) would likely be intercorrelated because of their common assumptions in a divine being, the correlations would vary in strength and direction depending on whether they served as theological opposites or were mutually compatible. We expected *Encounter* and *Divine Responsibility* to be positively related because they both assume a Free Will perspective on God's role in suffering. We hypothesized that *Providence* and *Limited Knowledge* would be strongly negatively correlated because they have opposite views regarding God's level of control. We also expected to see strong negative correlations between non-theistic beliefs and those expressing the most clear theistic orientations (e.g., *Providence* and *Random* express opposing beliefs regarding the nature of divine control).

Lastly, we identified expectations regarding demographics. We posited that scores on theistic subscales (i.e., *Divine Responsibility, Providence, Soul-Building, Suffering God, Overcoming, Encounter*, and *Limited Knowledge*) would positively correlate with belief in God. We hypothesized that Atheist/Agnostic affiliation would be negatively correlated to the theistic subscales above, whereas Christian affiliation would be positively correlated to these. We also hypothesized that there may be positive or negative correlations on beliefs central to specific denominations (e.g., Baptist affiliation correlated to positively to *Providence* scores). Finally, we tentatively hypothesized that VOSS subscale scores may vary by race and ethnicity, based on the limited research available (e.g., Uecker, Regneres, & Vaaler, 2007). Blacks tend to have higher levels of religiousness than do non-Hispanic Whites (Pew Forum, 2008; Taylor, Chatters, Jayakody & Levin, 1996), so we hypothesized that this might appear in our data as positive correlations with items on the theistic subscales mentioned earlier.

Results

Exploratory Factor Analysis—We first conducted an EFA of the VOSS items, using one of the randomly selected samples. Data were examined for normality, KMO's measure of sampling adequacy (.9), and Bartlett's Test of Sphericity (.000). As before, principal axis factoring was employed due to the non-normality of some of the study variables, its usefulness in identifying underlying dimensions, and its generalizability to CFA (Floyd & Widaman, 1995). Direct oblimin rotation was used to allow factors to correlate as expected (Netemeyer et al., 2003). Missing data accounted for 1.4% of potential data points and were addressed using listwise deletion. No more than 2.2% of data was missing for any variable.

The EFA in Study 1 was used primarily for determining item retention, but was also helpful in suggesting that the VOSS contained a minimum of five factors. We explored models with five to seven factors, comparing eigenvalues, variance accounted for, scree plot, and item loadings to determine which model was the best fit (Costello & Osborne, 2005). The five-factor model provided the cleanest factor structure and accounted for the minimum 50% of the variance (Netemeyer et al., 2003). As in Study 1, this model combined *Divine Responsibility, Providence, Soul-Building, Suffering God, Overcoming* and *Encounter* subscales into a single factor. The *Unorthodox, Limited Knowledge, Retribution,* and *Random* subscales emerged as separate factors. Using this model, we selected items for inclusion in the CFA based on factor loadings >.5, (Hair, Anderson, Tatham, & Black, 1998) and item communalities > .4 (Costello & Osborne, 2005).

Next we selected four items per subscale to be used in the CFA. The two exceptions to this were the *Suffering God* and *Encounter* subscales, which each had three items that loaded much stronger than any others. Items with cross-loadings greater than .3 were not included in the CFA (Netemeyer et al., 2003). Most items had corrected item-total correlations greater than .5 and less than .8, as is ideal (Bearden & Netemeyer, 1998). Only two items from Soul-Building subscale had corrected item-total correlations of .84 and .81 and were retained based on their otherwise acceptable characteristics.

Confirmatory Factor Analysis—After identifying the five-factor model with EFA, we tested three CFA models using a second, separate, randomly selected sample of N=312 from the original 624 participants. All missing data were replaced using AMOS' regression-based stochastic imputation.

First, using AMOS 17 (Arbuckle, 2008), a CFA using maximum likelihood estimation was conducted to test the five-factor model suggested by the previous EFA (Model 1). Second, the originally hypothesized ten-factor model (Model 2) was tested. Third, a model including a second-order Christian beliefs factor with each of the traditional Christian beliefs' first-order latent variables as indicators was tested (Model 3).

Multiple fit indices were used to assess model fit, and their standard cutoff recommendations (Hu & Bentler, 1999) were employed. The model chi-square statistic was used to determine the fit of each model to the observed data (Bollen, 1989). A non-significant model chi-square (p >.05) suggests good model fit, as it indicates that the model does not differ significantly from the observed data (Kline, 2005). The comparative fit index (CFI) and root-mean-square error of approximation (RMSEA) are based on the non-centrality parameter, and were also used to assess the fit of each model. A CFI greater than .95 and an RMSEA of .05 or less suggest good fit (Hu & Bentler, 1999). Aside from the use of standard measures of model fit, the Akaike Information Criterion (AIC; Akaike, 1974) was used to compare the fit of non-nested models. The model with the lower AIC is the preferred model because it possesses better balance of model fit and parsimony. Modification indexes were used to specify CFAs in order to isolate covariance between the measurement error in individual indicators and improve model fit.

Model 1: Model 1 was a poor fit to the data, χ^2 (655) = 1763.15, p< .001; χ^2/df = 2.69; CFI= .83; RMSEA=.07 (90% CI= .07–.08); AIC= 2011.15. Even after removal of the lowest loading items, the model was still a poor fit to the data, χ^2 (397) = 1180.64, p< .001; χ^2/df = 2.97; CFI= .84; RMSEA= .08 (90% CI= .07–.09); AIC= 1376.64.

Model 2: Model 2 was an acceptable fit to the data, and was a better fit than Model 1, χ^2 (360) = 595.77, p< .001; χ^2/df = 1.66; CFI= .95; RMSEA= .05 (90% CI= .04–.05); AIC= 865.76. However, in Model 2 the *Encounter* and *Divine Responsibility* factors were

correlated at .99, indicating a lack of discriminant validity. We decided to retain both subscales in a single factor, and to allow the measurement error within items of the original subscales to covary. The new nine-factor model provided a good fit, χ^2 (363) = 617.03, p< .001; χ^2/df= 1.70; CFI= .95; RMSEA= .05 (90% CI= .04–.05); AIC= 821.03. Model 2's item loadings average is acceptable at .76 (Hair et al., 1998), and with the exception of one *Divine Responsibility* item that loaded at .5, individual items loaded on factors at a magnitude of .6 to .9 (Bagozzi & Yi, 1988) (Table 3).

Model 3: Given the strong correlations among the traditional Christian belief subscales, we tested a third model that specified a 2nd order Traditional Christian Beliefs factor with each of those subscale 1st order latent variables as indicators. While Model 3 adequately fit the data (χ^2 (390) = 694.22, p< .001; χ^2/df= 1.78; CFI= .94; RMSEA= .05 (90% CI= .04–.05); AIC= 904.22), Model 2 was a better fit.

Descriptive Statistics—Mean scores for individual subscales ranged from 6.6 to 11.4 (Table 2) and were generally slightly lower than the subscale midpoint (10.5). Fairly large standard deviations indicate that scores were quite variable across participants. The shape of the distributions approximated normality for all but the *Unorthodox* subscale, which was positively skewed (Skewness = .72, SE = .10).

Reliability—Reliability for the finalized subscale scores was excellent in these analyses, all within the recommended Cronbach's alphas of .7 to .9 (Bernstein & Nunnally, 1994) (Table 2). This sample's test-retest stability coefficients for all subscales after a 14-day interval ranged from .7 to .9. (Table 2).

Validity—Although the direction and magnitude of correlations among VOSS scores and measures of related constructs are of primary interest, we are aware of the influence of family-wise error when conducting multiple tests. After Bonferroni correction for 10 comparisons, the vast majority of correlations reported in Table 4 remain significant. Subscale scores were generally related to the other measures as predicted. As would be expected from subscales measuring related concepts, many of the theistic subscales (i.e., *Suffering God, Providence, Overcoming, Soul-Building, Encounter, Divine Responsibility*) correlated strongly with one another. The moderately strong correlations (r>.40, most p< .001) with the predicted established measures suggest that the VOSS is assessing the anticipated constructs, but differentiation among the subs measuring theistic beliefs about suffering is only moderate. For example, *Providence* was expected to correlate negatively with WAS *Randomness* and it did indeed have the largest negative correlation (r = −.26) but the other theistic subscales were also significantly positively related, suggesting that the relationships are not exclusive to individual subscales.

Table 4 presents correlations between VOSS subscales and other study measures. As predicted, *Suffering God, Providence, Overcoming, Soul-Building, Encounter*, and *Divine Responsibility* were all positively correlated with Christian Orthodoxy, suggesting that they have strong convergent validity. More specifically, as expected, *Soul Building* and the GIS *Challenge* subscale were strongly correlated, and GIS *Providence* was related to the VOSS's *Providence* subscale. *Suffering God* was also positively correlated with GIS *Benevolence* subscale scores.

Retribution and *Random* scores also demonstrated convergent validity. The WAS *Justice* and *Control* subscales were most strongly correlated with *Retribution*, suggesting that the subscale accessed beliefs that people get what they deserve. The VOSS *Random* subscale was correlated positively with the WAS *Randomness* subscale and negatively with *Justice*. Convergent validity is also suggested by negative correlations between *Random* scores and

all GIS subscales, particularly GIS *Providence*; this was expected, given that a purposeful God who exerts control over people's lives is logically incompatible with random experiences of suffering.

Both the *Unorthodox* and *Providence* subscale scores demonstrated convergent validity in relation to established measures. *Unorthodox* scores displayed convergent validity by being significantly negatively correlated to the *Christian Orthodoxy Scale* and the GIS *Benevolence* subscale. As expected, *Providence* was negatively correlated with both WAS *Randomness* and *Luck* subscales. There was also a negative trend ($p = .05$) in the predicted direction between VOSS *Providence* and *Mastery* scores.

Although many of the predicted relationships emerged, there were several gaps. First, *Mastery* scores were not associated with *Soul-Building* or *Random* scores. Given that both of these subscales correlated strongly with other measures as predicted, this lack of relationship is not conclusive, but should be taken into consideration in assessing the scales' validity. Lastly, we were unable to test the validity of the *Limited Knowledge* subscale, because we know of no established measures that assess any similar construct. At present, this subscale has face validity but no demonstrated convergent or discriminant validity.

Construct Validity: Relations with Demographics—As expected, belief in God was positively correlated ($r > .57$, $p < .001$) with all of the subscales that referenced traditional beliefs about God (i.e., all subscales except for *Unorthodox, Random*, and *Retribution*). Belief in God was negatively correlated ($p < .001$) with *Random* ($r = -.25$) and *Unorthodox* ($r = -.23$) beliefs. Women were slightly more likely to believe in God ($r = .13$, $p < .05$) so it was not surprising that female sex was correlated with higher scores on the theistic subscales ($r = .10–.12$, $p < .001$).

Religious affiliation and race/ethnicity were also related to scoring patterns. A MANOVA showed a significant effect for religious affiliation between Catholics, Protestants, and Atheists/Agnostics (F (20, 994) = 15.164, $p < .001$) based on Wilk's Lambda. Results of Tukey's post-hoc comparisons indicate that Catholics and Protestants both had significantly higher averages than Atheist/Agnostics on measures of traditional Christian beliefs (*Divine Responsibility, Providence, Soul-Building, Suffering God, Overcoming, Encounter*, and *Limited Knowledge*) (all subscales $p < .001$), while Atheist/Agnostics had significantly higher mean scores on the *Unorthodox* and *Random* subscales ($p < .01$). There were no clear relationships between VOSS subscales and specific denominations.

Finally, in support of our tentative hypotheses regarding race/ethnicity, MANOVAs also revealed several significant effects ($F(30, 1676.67) = 2.62$, $p < .001$) based on Wilk's Lambda. Results of Tukey's post-hoc comparisons indicate that Black respondents had higher scores than Whites on the *Overcoming* ($p < .001$), *Providence* ($p = .001$) and *Divine Responsibility* ($p = .006$) subscales and endorsed items from the *Unorthodox* ($p < .001$) or *Random* ($p = .02$) subscales less than did White respondents.

VOSS Responses & Social Desirability—In our test-retest sample of participants, we examined correlations between scores on the PDS and individual VOSS subscales. Only one (*Limited Knowledge*) showed a modestly correlated relationship (.25) between individuals' responses on the *Image Management* subscale and VOSS response patterns, suggesting that social desirability concerns do not present a major concern for the VOSS' validity. We also examined *Self-Deceptive Enhancement* scores and found that individuals' self-deception scores were positively correlated to scores on the *Unorthodox* and *Limited Knowledge* subscales (p < .01) as well as the *Retribution, Suffering God, Soul-Building, Encounter*, and *Divine Knowledge* subscales ($p < .05$).

Discussion

Study 2 provided important information about the factor structure, reliability and construct validity of the VOSS. EFA with a large sample provided preliminary information about the measure's factor structure, which was then used to test three models with CFA. Results suggested that while Christian beliefs about suffering are strongly related, the factor structure of the VOSS is best conceptualized as nine distinct factors. Although the CFA indicated that the *Encounter* and *Divine Responsibility* subscales should be considered a single factor, condensing these items into a single subscale would be premature at this stage of the VOSS' development. The subscales contain related but theologically distinct ideas and it seems likely that as more research is done with the VOSS they may be emerge more distinctly, so both subscales should be retained until the factor structure can be verified. Finally, VOSS scores demonstrated strong reliability and validity. Reliability for both test-retest and individual subscale scores alphas was in the recommended range (Bernstein & Nunnally, 1994). Good construct and convergent validity was demonstrated by correlations of the VOSS with other established measures and known demographic information.

General Discussion

Overall, results from these two studies indicate that the VOSS represents a reliable, structurally sound measure of individuals' views of suffering. It is the first measure of its kind and represents an important addition to the study of religious beliefs. In addition to its strong theoretical framework, the VOSS demonstrates excellent psychometrics. Although the subscales measuring traditional Christian beliefs are intercorrelated, they also show clear construct validity and are distinct from one another. Predicted relationships between VOSS subscales and established measures were found in almost every case, indicating strong convergent validity.

These studies also represent an important contribution to the literature regarding religious beliefs and social desirability. Although some researchers have concluded that there is no relationship between social desirability and religious beliefs (e.g., Eysenck, 1999 Lewis, 2000; Watson, Morris, Foster, Hood, 1986), others suggest that a distinction between other-deception and self-deception must be made (Leak & Fish, 1989). Our research indicates a distinction between other- and self-deception is indeed important.

Implications for Research

The known associations between religion and physical and emotional well-being, along with the lack of reliable and valid measures of theodicies, makes for a substantial gap in scientific knowledge; the VOSS provides a tool to further explore these relationships. At present, we know little about how beliefs about suffering affect decisions to access medical care, social support, or religious support. We do not know how beliefs about suffering inform coping decisions, reactions to trauma, or resilience, nor do we know which beliefs may make people more prone to depression or anxiety, or which may buffer against negative sequelae of trauma.

Information about beliefs themselves can also be explored using the VOSS. How are beliefs about suffering formed? Do people absorb official religious teaching or learn from their families or social networks? How much do traumatic exposures influence specific beliefs? How stable or amenable to change are these beliefs about suffering? What is the greatest source of change or stability for them? These are just a few of the research questions that can be addressed with this newly developed measure of religious beliefs about suffering.

Implications for Clinical Use

While the primary usefulness of the VOSS will initially be in research, it also has potential clinical applications. Once relationships between beliefs about suffering and other constructs of interest are identified, the VOSS may be an important assessment tool for highlighting areas for intervention and clinical focus for therapists who integrate spirituality into their work. Identification of beliefs that cause the most distress, provide the most comfort, or foster the most positive coping strategies may inform clinical interventions.

Strengths, Limitations and Future Directions

The VOSS has several important strengths. The use of two large samples allowed for systematic development and multiple analyses that ensure sound psychometrics. That the VOSS is grounded in a solid theological base and was developed through rigorous analysis sets it apart from other measures of religious belief, ensuring that the constructs identified are in fact those measured (a problematic issue in previous research; e.g., Daugherty, West, Williams, & Brockman, 2009). Another strength of the VOSS is that response patterns do not appear to be unduly influenced by socially desirable responding, since even the *Limited Knowledge* subscale was only modestly correlated to individuals' tendencies to answer in socially conventional ways.

Limitations of the present studies include the use of convenience samples of undergraduate students, limiting generalizability. Because of their relatively young age, many students may not have given much thought to suffering or religious beliefs more generally. The sample's ethnic and religious diversity was limited, and non-white ethnicities, specific Protestant denominations and other religious belief systems were each represented by only a small percentage of our participants. Further, our sample was predominantly female; females tend to be more religious than males (Francis, 1997), so the proportion of women may have influenced the differentiation that emerged between the theistic subscales.

Future research should include participants from varied ethnic and religious groups to address these norming deficits and should focus on norming the VOSS using samples with different religious and cultural characteristics. Validity should also be examined in each new sample, utilizing the most recent measures and information about religious beliefs. Future research should also continue to explore the relationship between social desirability and religious beliefs, particularly the role that self-deception may play in individuals' responses.

Lastly, at present the usefulness of the VOSS is limited to the North American context. We consciously streamlined the content of the VOSS in order to keep the measure succinct, with the result that not every religious group (or even every Christian theology) in North America is represented. Adherents of Islam, Hinduism, and Buddhism in particular will note that only very simplistic beliefs from these religions – ones most likely to be familiar to the greatest number of Americans – are included in the VOSS. In light of this fact, one avenue for future research will be to expand the VOSS' applicability by adding additional subscales elaborating on more nuanced beliefs particularly relevant to other regions or religious groups. Additional studies examining the VOSS in a variety of North American populations will also be important to ensure its usefulness among different belief systems.

Supplementary Material

Refer to Web version on PubMed Central for supplementary material.

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Appendix

The following appendix is supplementary material, not intended for publication. Views of Suffering Scale (VOSS)

Instructions: *For each of the following statements, circle the choice that best indicates the extent of your belief or disbelief (1 = strongly disagree, 2 = moderately disagree, 3 = mildly disagree, 4 = mildly agree, 5 = moderately agree, 6 = strongly agree). Please use "God" however your faith defines God or a higher power.*

1. God could prevent evil and/or suffering from happening, but God chooses not to because God isn't entirely good. (*Unorthodox*)

2. God is all-good and all-powerful, but God is not obligated to relieve suffering. (*Divine Responsibility*)

3. No one knows why bad things happen to good people; it's all pretty random. (*Random*)

4. The most important thing when we experience hard things is to keep asking God questions, even if we don't understand the answers. (*Encounter*)

5. The main obstacle to God preventing suffering is that God doesn't know when it will happen. (*Limited Knowledge*)

6. Individuals suffer because of their deeds in the past. (*Retribution*)

7. By praying and having faith we can take control over suffering. (*Overcoming*)

8. When we suffer, God is suffering along with us. (*Suffering God*)

9. Suffering is intended by God to be a source of personal growth. (*Soul-Building*)

10. Everything that we experience – including suffering – is planned in detail by God. (*Providence*)

11. God allows suffering because God is not all-loving. (*Unorthodox*)

12. Suffering happens randomly, not because of anything people have done wrong. (*Random*)

13. We shouldn't resist suffering because God has planned every detail of our experiences – even the bad ones. (*Providence*)

14. God is all-powerful and can change situations to alleviate suffering. (*Divine Responsibility*)

15. We know God is good in the midst of pain because God suffers with us. (*Suffering God*)

16. Karma is the best explanation for individuals' suffering. (*Retribution*)

17. God will stop our suffering if we pray and have faith. (*Overcoming*)

18. The most important thing to remember about human suffering is that God is above and beyond it all; we might never get answers to our questions. (*Encounter*)

19. We suffer because God wants us to become a better people through experiencing hard things. (*Soul-Building*)

20. There's no need to strive against suffering because God will ultimately control everything we experience. (*Providence*)

21. When we suffer, God does God's best within chosen boundaries. (*Divine Responsibility*)

22. God's primary role when we encounter suffering is to experience it with us. (*Suffering God*)

23. Suffering just happens without purpose or underlying reason. (*Random*)

24. We know that God is not all-good because there is suffering in the world. (*Unorthodox*)

25. Suffering is a way to encounter a God who is above and beyond human experience and comprehension. (*Encounter*)

26. God cares about people who are suffering, but can't protect them because God doesn't know in advance what will happen. (*Limited Knowledge*)

27. People can stop or get out of their experiences of suffering by praying. (*Overcoming*)

28. God intends suffering to be a catalyst for growth. (*Soul-Building*)

29. The main impediment to God protecting people from suffering is that God doesn't know when or how it will happen. (*Limited Knowledge*)

30. Individuals experience suffering as a result of their past wrongdoing. (*Retribution*)

Note. Subscale names in parentheses (e.g. *Unorthodox*) should not be visible in the scale administered to participants.

Table 1

Eigenvalues and Total Variance Explained by Five Factors in Study 1 EFA

Factor	Initial Eigenvalues			Sums of Squared Loadings		
	Total	% of Variance	Cumulative %	Total	% of Variance	Cumulative %
1	19.60	38.43	38.43	19.29	37.82	37.82
2	4.52	8.87	47.30	4.10	8.04	45.85
3	3.08	6.04	53.33	2.63	5.16	51.02
4	1.95	3.82	57.15	1.59	3.13	54.14
5	1.59	3.12	60.27	1.14	2.24	56.38
6	1.43	2.81	63.08	1.02	2.00	58.37
7	1.28	2.50	65.58	0.85	1.67	60.04

Table 2

Study 2 Descriptive Statistics for All VOSS Subscales in Study 2

	Mean± (S.D.)	Response Range	S.E.	Cronbach's α	Test-Retest Correlation (14-day interval)
Unorthodox	7 ± (3.29)	3–18	0.13	.77	.65
Random	11 ± (3.59)	3–18	0.14	.74	.72
Retribution	10 ± (3.52)	3–18	0.14	.76	.76
Limited Knowledge	8 ± (3.56)	3–18	0.14	.88	.77
Suffering God	10 ± (4.07)	3–18	0.16	.87	.87
Overcoming	9 ± (3.96)	3–18	0.16	.85	.82
Providence	9 ± (3.87)	3–18	0.16	.82	.77
Soul-Building	11 ± (4.19)	3–18	0.17	.89	.88
Encounter	10 ± (3.61)	3–18	0.15	.70	.82
Divine Responsibility	11 ± (3.62)	3–18	0.15	.70	.79

Note. S.D. = Standard Deviation, S.E. = Standard Error;

Table 3

Estimated Factor-Item Loadings and Latent Factor Correlations for Model 2

	1	2	3	4	5	6	7	8	9
1. Unorthodox	1								
Item 1 = .73									
Item 11 = .88									
Item 24 = .66									
2. Random	.21**	1							
Item 3 = .57									
Item 12 = .75									
Item 23 = .73									
3. Retribution	.20**	−.23**	1						
Item 6 = .76									
Item 16 = .61									
Item 30 = .78									
4. Limited Knowledge	.31**	.40**	.14*	1					
Item 5 = .84									
Item 26 = .86									
Item 29 = .82									
5. Suffering God	−.28**	−.08	−.01	.28**	1				
Item 8 = .82									
Item 15 = .90									
Item 22 = .77									
6. Providence	−.17*	−.32**	.13	.04	.68**	1			
Item 10 = .83									
Item 13 = .86									
Item 20 = .67									
7. Overcoming	−.20**	−.27**	.14*	.17*	.74**	.69**	1		
Item 7 = .79									
Item 17 = .84									
Item 27 = .79									

	1	2	3	4	5	6	7	8	9
8. Soul-Building	−.18 *	−.26 **	.26 **	.19 **	.61 **	.68 **	.62 **	1	
Item 9 = .86									
Item 19 = .85									
Item 28 = .84									
9. Encounter/ Divine Responsibility	−.19 **	−.25 **	.13	.26 **	.85 **	.82 **	.83 **	.84 **	1
Item 4 = .76									
Item 18 = .62									
Item 25 = .69									
Item 2 = .68									
Item 14 = .74									
Item 21 = .46									

Note.

*
Correlation is significant at the *p*<.05 level (2-tailed).

**
Correlation is significant at the *p*<.01 level (2-tailed).

Table 4

Study 2 Correlations between individual VOSS subscales and validation measures

	Unorthodox	Random	Retribution	Limited Knowledge	Suffering God	Overcoming	Providence	Soul-Building	Encounter	Divine Retribution
Christian										
Orthodoxy	-.34**	-.30**	-.04	.10*	.69**	.66**	.57**	.56**	.65**	.67**
WAS Justice	.02	-.14**	.44**	.10*	.11**	.18**	.17**	.22**	.12**	.22**
WAS										
Randomness	.23**	.55**	.01	.23**	-.22**	-.22**	-.26**	-.16**	-.16**	-.23**
WAS Luck	-.03	.04	.00	-.01	.05	.02	-.10*	.02	.01	.03
WAS Control	.04	-.05	.33**	-.01	-.08	.02	-.02	.00	-.04	.03
GIS										
Benevolence	-.19**	-.22**	.10*	.17**	.56**	.54**	.47**	.62**	.64**	.63**
GIS Challenge	-.32**	-.27**	.10*	.14**	.59**	.57**	.47**	.69**	.65**	.64**
GIS Providence	-.27**	-.43**	-.03	-.06	.60**	.58**	.61**	.38**	.52**	.49**
Mastery	-.20**	.01	-.90*	-.12**	-.05	-.06	-.08	-.02	-.07	-.05
PDS IM	-.10	-.07	.00	-.25*	-.06	-.10	-.08	.01	-.07	-.02

Note.

*
Correlation is significant at the *p*<.05 level (2-tailed).

**
Correlation is significant at the *p*<.01 level (2-tailed).

Christian Orthodoxy = Christian Orthodoxy Scale (Short Form); WAS = World Assumptions Scale; GIS = God Image Scales; Mastery = Mastery Scale; PDS IM = Paulhus Deception Scales Image Management.