Positive Religious Coping and Mental Health among Christians and Muslims in Response to the COVID-19 Pandemic

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Abstract: Positive religious coping has frequently been associated with better mental health outcomes when dealing with stressful life events (e.g., natural disasters, domestic abuse, divorce). The COVID-19 pandemic, and the associated infection prevention and control measures (curfew, quarantine, restricted travel, social distancing), represent a society-wide stressor. This study explored positive religious coping among the Muslim and Christian residents of the United Arab Emirates (UAE) during the early stages of the national response to the COVID-19 pandemic. Participants ($N = 543$) completed an online survey assessing religious coping in response to the pandemic, along with symptom measures of depression, anxiety and history of psychological disorder. Muslims ($N = 339$) reported significantly higher levels of positive religious coping compared to their Christian counterparts ($N = 204$). Across the whole sample, positive religious coping was inversely related to having a history of psychological disorders. Among the Muslim cohort, positive religious coping was inversely related to depressive symptoms and having a history of psychological disorders. Positive religious coping during infectious disease outbreaks may help some individuals reduce their risk of depressive illness. National pandemic preparedness plans may benefit from including a focus on religion and religious coping.

Keywords: religious coping; COVID-19; depression; Muslim; Christian; UAE; Arab

1. Introduction

Religiosity is a valued sense of belonging to a religious creed, which elicits commitment to related practices—for example, praying, fasting, and reading holy scriptures (Miller et al. 2012). A large body of cross-sectional research generally suggests that, in adults, religiosity is inversely related to depression (depressive symptoms). A meta-analytic review of 147 studies, including 98,975 participants, confirms this negative correlation (Smith et al. 2003). The demographic covariates and strength of the relationship between depression and religiosity differ across studies but the general finding is the same. Furthermore, this inverse relationship is not only limited to European and North American samples. For example, a study among 7666 participants from four cities in South America reported a significant inverse relationship between depression and religiosity, but only among females; furthermore, the relationship was far stronger among those 65 years and older (Santero et al. 2019). Beyond cross-sectional studies, prospective longitudinal designs also provide evidence of religiosity being linked with lower levels of depressive symptomatology. Miller et al. (2012) followed 114 adults over ten years and observed a seemingly protective effect of religiosity. Compared to their less-religious counterparts, participants initially categorized as high in religiosity had one-fourth the risk of experiencing a major depressive episode over the 10-year study period.

Much of the depression–religiosity research has been undertaken within Western industrialized nations among practitioners of Judeo-Christian religious traditions. However, studies among Muslims resident in Muslim nations (e.g., Saudi Arabia and Kuwait) report similar findings (Abdel-Khalek 2008; Abdel-Khalek and Eid 2011). The links between anxiety-related problems and religiosity have not been as clear-cut. Mixed findings are reported in a meta-analytic review of primarily Christian participants (Khalaf et al. 2015). A meta-analytic review of 10 studies focused on Muslims residing in the Arab nations and reported that 9 of the 10 studies found a significant inverse relationship between anxiety and religiosity (Abdel-Khalek et al. 2019).

The link between depression and religiosity raises the question as to the possible mechanisms through which religion might play this apparently protective role. Without being mutually exclusive, current ideas span the full bio-psycho-social spectrum. For example, Newberg (2011) proposes that spiritual/religious practice may be associated with physical changes in the brain and increases in the neurotransmitter serotonin. From the perspective of behaviour genetics, Smith et al. (2003) suggest the possibility of dual-duty genes, conferring depressive resilience while simultaneously contributing to heightened religious sentiments. Developmental perspectives have proposed distressing early life events (e.g., an abusive/neglectful caregiver) that might both, disincline an individual towards religion, and simultaneously constitute a vulnerability to depression (Hunsberger 1980). Social perspectives put forward ideas about the health-promoting sense of belonging and social identity associated with the congregational aspects of religious practice (Haslam et al. 2009; Haslam et al. 2005), as well as the increased access to social support and social events/interaction (Putnam 2000). Another psycho-social explanation for the relationship between depression and religiosity is the lower rate of alcohol and substance abuse reported by religious individuals, especially Muslims (Ghandour et al. 2009). National surveys repeatedly report high rates of comorbidity between depression and substance-related disorders (Moreira-Almeida et al. 2006); one interpretation of this relationship is that substance abuse represents a risk factor for the development of depression. By following religious proscriptions against drug use, individuals arguably also reduce their risk of developing depression. Islam, of course, has a total prohibition on the consumption of alcohol, and by extension other intoxicating psychoactive substances. Studies show lower rates of alcoholism amongst Muslims, even in comparison to the followers of other religious traditions (Ghandour et al. 2009).

In recent decades, however, a more direct account of religion's potential prophylactic role in the context of depression has emerged. This account is based on the observation that, when faced with stressful life events, an individual's responses, interpretations and general coping processes are frequently informed by, and actively involve, religion (Pargament 1997). Examples of religious coping might include, prayers of petition, confession, focusing on the "world-to-come", seeking support from clergy or acceptance of adversity as the will of God (Pargament et al. 1990). In the context of stressful life situations, Pargament et al. suggest religious coping can be helpful (positive), harmful (negative) or neutral, depending on the specific circumstances (Pargament et al. 2000). Positive religious coping is generally viewed as being adaptive, and it reflects beliefs about the meaningfulness of life and a reliance on a secure relationship with a merciful God (Pargament 1997).

Conversely, capturing the bittersweet nature of religious experience, negative religious coping reflects a spiritual tension characterized by a less secure relationship with God, religious discontent and negative reappraisals of God's power. For example, feelings of being punished or abandoned by God (Pargament et al. 2000). Negative religious coping is also referred to as "religious struggle" (Pargament et al. 2011). Positive and negative religious coping are not intrinsically adaptive and maladaptive, whether they are harmful or helpful is viewed as being influenced by an interplay of personal, situational and sociocultural factors (Pargament et al. 2011).

These ideas about religious coping find their psychometric expression in the RCOPE and the Brief RCOPE, presently the most frequently used measure of religious coping in the context of major life stressors (Pargament et al. 2011). Over the past two decades, the Brief RCOPE report has been used to explore religious coping in the context of natural disasters, terror attacks, chronic illnesses and many

other adverse life events. There is strong support for the role of religious coping as a useful predictor of mental health symptoms in such situations, over and above the predictive value of general religiosity (e.g., frequency of church attendance). For example, exploring religious coping among predominantly Christian geriatric patients diagnosed with major depressive disorder, Bosworth et al. (2003) found that both positive and negative religious coping strategies were associated with depressive symptoms in the anticipated directions. Furthermore, positive coping was associated with attenuated depressive symptom scores six months later.

Similarly, among adult members of a protestant church, positive religious coping appeared to buffer the deleterious effects of adverse life events on depression (Bjorck and Thurman 2007), even after controlling for religiosity. Carpenter et al. (2012) report a similar moderation effect, with negative religious coping appearing to exacerbate the depressogenic effects of stress over 12 weeks. Exploring the same question among undergraduates attending a private Christian university, Ahles et al. (2016) found that negative religious coping moderated/exacerbated the stress–depression relationship, but only among those individuals reporting high levels of religiosity. Furthermore, Ahles et al. found no evidence of positive religious coping acting as a buffer for the deleterious effects of stress on depression. Other studies have looked at the relationship between depression and religious coping in medical patients reporting similar results (for example, Santos et al. 2017).

A multifaith (Christian, Hindu, Jewish, Muslim, other) study undertaken in the UK found that Muslims expressed the strongest beliefs concerning the efficacy of religious coping for depression and were more likely to report the use of religious coping (Loewenthal et al. 2001). Despite this finding, there has been relatively little subsequent research exploring the link between religious coping and depression among Muslims. For example, in a review of the RCOPE literature, just 1.5% of the pooled participants (*N* = 5835) identified as Muslim (Pargament et al. 2011). The few studies that have focused on Muslims, however, also tend to report the anticipated associations between religious coping and depression/anxiety. For example, in a cross-sectional study of Muslim students of Somali origin attending college in the USA, positive and negative religious coping strategies were associated with symptoms of depression and anxiety in the anticipated directions (Areba et al. 2018).

Similarly, in a multicultural/multifaith study undertaken in the Netherlands, religious coping was associated with depressive symptoms in the hypothesized directions. This study included many immigrants from majority Muslim nations, specifically Moroccans and Turks (Braam et al. 2010). Among Muslims resident in a Muslim nation, similar data are also reported. Aflakseir and Mahdiyar (2016) report the anticipated association between religious coping and depression among Muslim women attending fertility clinics in Iran. Another Iranian study found the anticipated relationships between positive/negative religious coping and depression among Muslim cancer patients (Sharif et al. 2018). Finally, a study among Muslim Pakistani college students reported that negative (but not positive) religious coping was associated with symptoms of depression and anxiety (Khan and Watson 2006).

In general, positive religious coping appears to be associated with greater wellbeing, and is frequently, but not invariably, inversely associated with psychopathology. Negative religious coping, or religious struggle, is consistently associated with indicators of poor functioning such as depression and anxiety (Pargament et al. 2011). These constructs—positive and negative religious coping—may have important implications for the remediation and prevention of mental health problems in the wake of stressful life events (Pargament et al. 2000; Xu 2016).

The COVID-19 pandemic undoubtedly represented a significant stressor for many individuals around the globe. Data from several different nations suggest that, after lockdown (governmental restrictions placed on freedom of movement), the levels of depression and anxiety were much higher than those typically observed in prepandemic community surveys (Lei et al. 2020; Shevlin et al. Forthcoming). There is also evidence of a rise in religious coping. Bentzen (2020) used Google search data from 95 countries to look at the frequency of religion-related searches. The term "prayer", for example, showed a pronounced spike in March 2020, around the time many countries began enacting large-scale infection control measures, such as social distancing, curfew and

quarantine. The Google searches for "prayer" rose during March to the highest level since Google's records began, surpassing all other significant religious occasions, such as Christmas and Ramadan. Similar patterns were also observed for other religion-related search terms—for example, God, Allah, Bible, Quran, and internet church.

The COVID-19 pandemic presents an opportunity to explore further the links between religious coping and common mental health symptoms associated with depression and anxiety. The widespread nature of the COVID-19 stressor also allows us to simultaneously explore similarities and differences in religious coping across different faith communities. In an editorial paper exploring the possible mental health implications of COVID-19, the authors suggest wide-ranging impacts for religious communities, from eschatological anxieties to the possible persecution of religious minorities (Dein et al. 2020). In terms of primary research exploring religious coping during the COVID-19 pandemic, we can identify only one published study to date. This study looked at the levels of COVID-19-related stress among 419 American Orthodox Jews, finding that positive religious coping was associated with lower stress levels (Pirutinsky et al. 2020).

The present study aimed to explore positive religious coping, psychiatric history and current symptom levels of depression and anxiety among Muslim and Christian residents of the United Arab Emirates (UAE) during the early stages of the COVID-19 pandemic. It was hypothesized (1) that Muslims would report higher levels of religious coping and that (2), in general, religious coping would be inversely related to symptom levels of depression, anxiety and a history of psychological disorders.

2. Materials and Methods

Participants were a nonprobability sample of adult residents of the UAE. The study was approved by the UAE's Ministry of Health and Prevention (ZU20_077_F). According to a report by Statistica (2020)—Social media: active usage penetration in selected countries 2020—the UAE has one of the highest social media penetration rates in the world (99%). In light of such widespread social media usage, the invitation to participate was announced through leading social media platforms, including WhatsApp, Facebook, Twitter, and LinkedIn. A total of 611 participants completed the online survey. For the purpose of the present study, only those participants who identified as Christian or Muslim were included in the study. There were a small number of participants who identified as Hindu, Buddhist, agnostic and atheist (*N* = 68). These participants were excluded from the present analysis based on the small numbers within these subgroupings and the study's primary aims. This study was part of a larger project more broadly exploring the psychological adjustment to the COVID-19 pandemic in the UAE. All data were collected between 6 April and 17 April 2020. The final sample in the present analysis numbered 543 adults, the mean age of the sample was 32.9 (*SD* = 11.10), and further participant demographic details are summarized in Table 1.

Table 1. Sample characteristics.

Variable	Frequency (%) Whole Sample	Frequency (%) Muslims	Frequency (%) Christians
Gender			
Female	94 (15.4%)	28 (8.2%)	49 (24.0%)
Male	517 (84.6%)	311 (91.7%)	155 (75.9%)
Education			
Did not complete college	174 (28.4%)	123 (36.2%)	35 (17.1%)
Completed college	437 (71.5%)	216 (63.7%)	169 (82.8%)
Emirate/City state			
Abu Dhabi	177 (29.0%)	140 (41.2%)	22 (10.7%)
Dubai	359 (58.8%)	130 (38.3%)	179 (87.7%)
Northern Emirates	75 (12.3%)	69 (20.5%)	3 (1.4%)

Table 1. *Cont.*

Variable	Frequency (%) Whole Sample	Frequency (%) Muslims	Frequency (%) Christians
Residential status			
Citizen/Emirati National	292 (47.8%)	281 (82.8%)	0 (0%)
Migrant Worker/Expatriate	319 (52.2%)	58 (17.1%)	204 (100.0%)
Religious Faith			
Christianity	204 (33.4%)	339 (66.6%)	204 (33.4%)
Islam	339 (55.5%)		
Hinduism	12 (2.0%)		
Buddhism	3 (0.5%)		
Agnostic/Atheist	51 (8.3%)		
Other	2 (0.3%)		
Past History of Psychological Disorders			
No	518 (84.8%)	283 (83.4%)	186 (91.1%)
Yes	27 (15.2%)	56 (16.5%)	18 (8.8%)
	Continuous variables		
Age			
Mean (SD)	32.20 (10.95)	26.56 (8.30)	41.59 (7.97)
Median [IQR]	32 [20–44]	24 [21–31]	41 [36–47]
Education			
Median [IQR]	3 [2–4]	3 [2–3]	4 [3–4]

N = 543. Sixty-eight participants, who did not identify as either Christian or Muslim, were excluded.

2.1. Measures

All measures were presented online in English. After completing demographics, participants completed measures assessing symptoms of depression and anxiety, followed by a measure of positive religious coping.

2.1.1. The Patient Health Questionnaire-8 (PHQ8)

The PHQ8 (Kroenke et al. 2009) is a standardized instrument to assess the prevalence and severity of depressive symptoms in the general population. It has good psychometric properties (Kroenke et al. 2009) and consists of eight items assessing the frequency of symptomatology over the past two weeks. Participants' responses range from 0 to 3 with 0 = not at all, 1 = several days, 2 = more than half the days, 3 = nearly every day. Total scores (0 to 24) are obtained by summing the responses to each item. Higher scores are indicative of greater levels of depressive symptomatology. When used as a screening instrument, a cut-off score ≥10 has been associated with excellent sensitivity and specificity for the diagnosis of depressive disorders (Kroenke et al. 2009). The cut-off score of ≥10 was used in the present study. The reliability of the scale among the current sample was excellent, $\alpha = 0.906$.

2.1.2. The Generalized Anxiety Disorder-7 (GAD7)

The GAD7 (Spitzer et al. 2006) is a widely used measure of anxiety in the general population. Participants are asked to indicate how often, in the past two weeks, they have experienced each of seven main symptoms associated with generalized anxiety disorder. Total scores can range from 0 to 21 and are calculated by assigning scores of 0 (not at all), 1 (several days), 2 (more than half the days), and 3 (nearly every day) to item responses. Scores of 5, 10, and 15 are considered cut-off points for mild, moderate and severe anxiety, respectively. The psychometric properties of the instrument have been widely supported (Pargament et al. 2011), and the reliability of the scale among the current sample was excellent, $\alpha = 0.931$. The present study used the cut-off score ≥10 as indicative of clinically significant symptomatology.

2.1.3. The Brief RCOPE-14 (Positive Coping Subscale)

Grounded in coping theory, the Brief RCOPE-14 (Pargament et al. 1998) assesses the extent to which religion plays an active role in an individual's interpretation of, and responses to, major life stressors. It has become the most widely used measure of religious coping (Pargament et al. 2011). The RCOPE has two independent subscales, based on the assumption that religious coping strategies can be both adaptive and maladaptive. In the present study we assess only adaptive (positive) religious coping. The positive subscale of the RCOPE is comprised of the seven items, which reflect a generally secure relationship with the divine or whatever it is that the individual holds sacred (Pargament et al. 2011). The scale accommodates minor adaptations to fit the research context. In the present study, COVID-19-specific instructions were given: "The following statements describe specific ways people might cope with stressful situations. As you think of your current experience with COVID-19, how much do you use each of the following things to cope with it?". Example items on the scale include: "Sought God's love and care" and "Looked for a stronger connection with God". These items are responded to on 1–4 four-point Likert scale, where 1 = "not at all" and 4 = "a great deal". Scores range from 7 to 28, with higher scores indicative of greater use of positive religious coping. Both subscales of the RCOPE, positive and negative, have good psychometric properties (Pargament et al. 2011). The internal reliability of the positive subscale used among the current sample was excellent, $\alpha = 0.962$.

2.1.4. Demographics and Mental Health History

The data for all other study variables were captured by single item survey responses. Education level was captured by an item asking participants to report the highest level of education they had completed. Responses ranged across six categories, scored from 0 to 5—from "some high school" to "PhD". However, in the present study we dichotomized the education variable into those who did, and did not, complete tertiary education (college), scored from 0 to 1, respectively. Participants were also asked to select their religious affiliation (Christianity, Islam, Hinduism, Buddhism, Agnosticism/Atheism, other) and to report any history of psychological disorders. Several psychiatric categories were provided for participants to endorse, e.g., mood disorders and eating disorders. However, in the present analysis, responses were dichotomized (yes = 1 and no = 0), reflecting either the presence or absence of psychiatric history.

2.2. Data Analysis Plan

Data were analyzed in three phases. In each phase, we start by looking at the whole sample before focusing on the two constituent faith groups separately. Firstly, we produced descriptive statistics for the whole sample before moving on to look at descriptive statistics for Muslims and Christians separately. In the second phase of the analysis, we used Pearson's correlation to look at the relationships between the study variables for the whole sample, before performing the same analysis separately for Christians and Muslims. Finally, we performed a logistic regression analysis for the whole sample and then independently for the two faith groups. These regression analyses aimed to further explore religious coping and other demographic variables as predictors of mental health status. ANCOVA and t-tests were also used to explore differences between the faith groups in terms of reliance on religious coping.

3. Results

We performed a descriptive analysis on the sample as a whole, with Christians and Muslims combined. The measures of psychopathology were right-skewed. All other continuous variables (age, religious coping scores) were normally distributed. The PHQ8 and the GAD7 have well-established screening cut-offs. Scores ≥ 10 are considered indicative of moderate levels of symptomatology.

See Table 2 for the descriptive statistics of the study's main continuous variables including the percentages of participants scoring above the screening cut-offs on the GAD7 and PHQ8.

Table 2. Descriptive statistics and screening cut-off percentages for the study's main variables.

	GAD7			PHQ8			RCOPE		
	Tot	**Chr**	**Mus**	**Tot**	**Chr**	**Mus**	**Tot**	**Chr**	**Mus**
Median	6.00	5.00	7.00	6.00	5.00	8.00	15.00	10.00	19.00
IQR	3–12	2–8	3.5–14	3–12	2–8	4–14	10–22	7–14	13–25
Mean	7.62	5.97	8.62	8.06	5.66	9.51	16.107	11.66	18.78
SD	6.04	5.10	6.35	6.41	5.16	6.66	7.316	5.58	6.92
Min	0.00	0.00	0.00	0.00	0.00	0.00	7.000	7.00	7.00
Max	21.00	21.00	21.00	24.00	24.00	24.00	28.000	28.00	28.00
% Above Cut-off	32.41	20.09	39.82	33.88	17.15	43.95	-	-	-

Notes: Total (Tot) $N = 543$, Christian (Chr) $N = 204$, Muslim (Mus) $N = 339$.

3.1. Correlational Analysis

To explore the relationship between religious coping and depression/anxiety symptoms, we undertook a correlational analysis. We initially used scatter plots to explore the key variables to rule out potential nonlinear relationships between the variables. The data for the whole sample (Christians and Muslims) indicated that positive religious coping was not related to symptoms of depression or anxiety, or a history of psychological disorders: see Table 3.

Table 3. Correlations between the study's key variables for all participants.

	Sex	**Edu**	**PHQ8**	**GAD7**	**HPD**	**RCOPE**
Age	0.267 ***	0.397 ***	0.386 ***	0.291 ***	−0.133 **	−0.282 ***
Sex	—	−0.109 ***	0.213 ***	0.209 ***	0.085 *	0.177 ***
Edu		—	−0.220 ***	−0.131 **	−0.065	−0.022
PHQ8			—	0.802 ***	0.304 ***	0.077
GAD7				—	0.240 ***	0.077
HPD					—	−0.066

Notes: $N = 543$, Edu = Educational level (College = 1, No College = 0), Sex (Female = 1, Male = 0) HPD = History of Psychological Disorder (Yes = 1, No = 0). * $p < 0.05$, ** $p < 0.01$, *** $p < 0.001$.

None of the outcome variables (PHQ8, GAD7 or HPD) were correlated with positive religious coping across the whole sample. A further correlational analysis among the Christian cohort similarly failed to find the posited inverse relationship between religious coping and current or historic symptoms of psychopathology. A correlational analysis for the Muslim cohort did, however, identify the posited inverse relationship between religious coping and depression (r [337] = −0.110, $p = 0.02$). There was also an inverse relationship with history of psychological disorder (r [337] = −0.181, $p < 0.001$), indicating that Muslims reporting lower levels of reliance on religious coping in response to COVID-19, were also more likely to have experienced a psychological disorder in their past and are currently experincing reltivley high levels of depressive symptomatology.

3.2. Multivariate Logistic Regression Analysis

Given the absence of a significant relationship between religious coping and anxiety, we did not perform any further analysis of anxiety symptom scores or status. However, in line with the aims of the study and to further assess religious coping as a predictor of mental health status, we conducted several multivariate logistic regression analyses (whole sample, Muslims, Christians) with depressive symptom status (above or below the PHQ8 cut-off) and history of psychological disorders (yes/no) as dependent variables. The predictor variables were religious coping, age, gender, education level and, in

the case of the whole sample, religious affiliation. For ease of interpretation, we dichotomized education level into a binary categorical variable, where 0 represents "no college degree", and 1 represents having a "college degree". Table 4 details the results of this analysis.

Table 4. Multivariate logistic regression predicting depressive symptom status and history of psychological disorder among Christians and Muslims.

	OR (95% CI) Whole Sample	OR (95% CI) Muslims	OR (95% CI) Christians
Depressive symptom status			
Religious Coping	0.985 [0.957, 1.015]	0.971 [0.939, 1.005] *	1.045 [0.010, 2.591]
Age	0.948 [0.920, 0.977] ***	0.928 [0.891, 0.967] ***	0.980 [0.935, 1.027]
Gender (Female: Male)	1.851 [0.931, 3.680]	2.200 [0.819, 5.909]	1.563 [0.603, 4.052]
Education (College: No College)	0.752 [0.477, 1.187]	0.879 [0.503, 1.537]	0.744 [0.290, 1.907]
Religion (Muslim:Christian)	1.663 [0.894, 3.094]	-	-
History of psychological disorder			
Religious Coping	0.941 [0.904, 0.979] **	0.926 [0.885, 0.969] *	1.004 [0.916, 1.102]
Age	0.986 [0.949, 1.024]	0.921 [0.869, 0.977] ***	1.022 [0.960, 1.089]
Gender (Female/Male)	2.059 [0.772, 5.496]	1.061 [0.330, 3.410]	6.337 [0.803, 5.024]
Education (College/No College)	1.080 [0.592, 1.970]	2.310 [1.105, 4.831] *	0.266 [0.092, 0.770] *
Religion (Muslim/Christian)	2.027 [0.893, 4.604]	-	-

Notes: $N = 543$. *** $p < 0.001$, ** $p < 0.01$, * $p < 0.05$.

Across the whole sample, the multivariate logistic regression models for depressive symptom status ($\chi^2 = 76.96$, $p < 0.001$) and history of psychological disorders ($\chi^2 = 22.18$, $p < 0.001$) were statistically significant. Across the whole sample, when the adjusted odds ratios (ORs) were calculated, there is only an effect for age in the model predicting depressive symptom status. For history of psychological disorder, however, there was an effect for religious coping, with higher religious coping scores being predictive of a lower liklihood of having experienced a psychological disorder in the past. The multivariate models exploring Muslims only were also statistically significant, for both depressive symptom status ($\chi^2 = 37.21$, $p < 0.001$) and psychiatric history ($\chi^2 = 21.76$, $p < 0.001$). Adjusting for the other variables in the model, there were effects for religious coping and age when predicting depressive symptom status and history of psychological disorder. In both cases, a younger age and less reliance on religious coping were associated with poorer mental health. The was also a significant effect for education status (having completed college) in the model predicting the history of psychological disorder. Looking at the multivariate models for Christians, only the model predicting the history of psychological disorder was significant ($\chi^2 = 10.63$, $p = 0.03$). When the unadjusted odds ratios were calcualted, there was only an effect for education, with less-educated particpants more frequently reporting a history of psychological disorders.

3.3. Faith Group Differences in Religious Coping

Finally, we looked at differences between the two faith groups in their reported usage of religious coping. We performed an ANCOVA controlling for age, gender and education level. There were significant group differences for positive religious coping, with the Muslims reporting greater reliance on religious coping than their Christian counterparts (means reported in Table 2), F (1,538) = 97.64, $p < 0.001$, $\eta^2 = 0.152$. There were also significant differences between the two groups for each individual item on the RCOPE ($p < 0.001$ in all cases). The results of the independent groups t-test are detailed below in Table 5.

Table 5. Means standard deviations and t-test effect sizes for RCOPE items by faith grouping.

RCOPE Items	Christian		Muslim	
	M	*SD*	*M*	*SD*
1. Looked for a stronger connection with God	1.87	0.96	2.76	1.07
2. Sought God's love and care	1.89	0.97	2.83	1.10
3. Sought help from God in letting go of my anger	1.55	0.86	2.43	1.18
4. Tried to put my plans into action together with God	1.64	0.96	2.65	1.13
5. Tried to see how God might . . . strengthen me in this situation	1.72	0.93	2.86	1.12
6. Asked forgiveness for my sins	1.53	0.83	2.78	1.14
7. Focused on religion to stop worrying about my problems	1.41	0.82	2.45	1.19

Christian N = 204, Muslim N = 339, Independent samples t-test (df = 541) indicated a significant effect for religion on all items, $p < 0.001$ in all cases.

4. Discussion

This study explored positive religious coping and mental health among Christians and Muslims resident in the UAE during the early stages of the country's response to the COVID-19 pandemic (6 April to 17 April 2020). The study hypothesized an inverse relationship between religious coping and mental ill-health, specifically depression, anxiety and a history of psychological disorders. When looking at the whole sample—Muslims and Christians—together, the hypothesized inverse relationship with religious coping was only observed for psychiatric history (history of the psychological disorder). However, when exploring the Muslim group independently, religious coping was inversely related to the current levels of depressive symptomatology and history of psychological disorder. Even after controlling for other demographic variables (age, gender, education) the effects for religious coping persisted. This finding aligns with previous studies exploring the links between depressive symptoms and religious coping in general (Bjorck and Thurman 2007; Pargament et al. 2001; Santos et al. 2017) and among Muslim participants in particular (Aflakseir and Mahdiyar 2016; Areba et al. 2018). It is also in line with findings suggesting a stress-attenuating role for positive religious coping among an American Jewish community dealing with the COVID-19 pandemic in a hard-hit region of the USA (Pirutinsky et al. 2020).

After controlling for demographic variables, there was no effect for religious affiliation (Muslim/Christian) on depressive symptom status or psychiatric history. However, as hypothesized, Muslims did report a significantly greater use of positive religious coping compared to their Christian counterparts. The mean religious coping score for Muslims (18.78) was within the range of the norms (17 to 21) previously reported by Pargament et al. (2011). The mean positive religious coping scores for Christians (11.66), however, fell well below these norms. This pattern of group differences applied to all items of the religious coping scale. The groups also differed on which item was most strongly endorsed, with Muslims most strongly endorsing "Tried to see how God might . . . strengthen me in this situation", while Christians most strongly endorsed "Sought God's love and care". This difference may reflect varying theological emphases between the two religions. The greater use of religious coping among Muslims in the present study might be related to higher levels of religiosity. The idea of relatively heightened religiosity among Muslims aligns with previous multifaith research in the UK (Loewenthal et al. 2001). Furthermore, a global survey ("The Age Gap in Religion Around the World") by Pew Research Center (2018) reported the highest levels of religiosity (daily prayers, weekly visits to places of worship, and importance ascribed to religion) for the Muslim countries of the Middle East and Africa. Heightened religiosity is correlated with a greater use of positive religious coping (Pargament et al. 2001). Unfortunately, religiosity was not assessed in the present study and this should be viewed as a limitation.

In the present study it is also important to note that all of the Christians were migrant workers, whereas the Muslims were mostly (82.89%) UAE citizens. Being away from one's homeland and being a Christian, living in a Muslim country, may attenuate religiosity or religious coping in various

ways. For example, the UAE's migrant workers are a mobile population, which may lead to church congregations experiencing a relatively high turnover in membership. Another issue which may impact religiosity for Christian's in the UAE is the fact that religious holidays, including the weekend, follow the Islamic calendar.

In the present study, positive religious coping in the wake of the COVID-19 pandemic was linked to lower depression scores (scores below the PHQ8 cut-off) for Muslims, but not for Christians. Muslims, however, relied on positive religious coping to a greater extent than their Christian counterparts. This pattern, akin to a dose-effect, might be likened to the findings of Pargament et al. (2001), who reported that positive religious coping and wellbeing were more strongly associated among Presbyterian church clergy than they were among regular church members. The clergy also reported greater reliance on religious coping than the members of their congregations. Similarly, Ahles et al. (2016) reported a moderating effect of religious coping on the relationship between stress and depression, but only for those participants with high levels of religious coping.

The finding that religious coping was inversely associated with a history of psychological disorder is also in keeping with the general idea that religious coping helps people successfully navigate stressful life events (Pargament et al. 2001). Surprisingly, however, the study failed to find any significant association between religious coping and anxiety symptoms. This may reflect the more trait-like nature of generalized anxiety, as assessed by the GAD7.

In the present study, for Muslims, there was a modest inverse relationship between depressive symptom status and the self-reported use of religious coping in the wake of the COVID-19 pandemic. As in the case of other negative life events, it appears that religious coping may help some people preserve their mental health during infectious illness pandemics too. Such an effect might be more likely if the levels of reliance on religious coping are high, above a certain threshold. This study, however, has several significant limitations. Firstly, web-based surveys can be prone to self-selection bias (the most anxious and depressed are perhaps keenest to participate). There are also potential socio-economic confounds between citizens, who made up the bulk of the Muslims, and Christian residents. Similarly, the use of English-only will have precluded the participation of many monolingual Arabic and Hindi speakers (the countries' other two most widely spoken languages).

Consequently, our study sample was not representative of Muslims and Christians in the general UAE population. Notably absent were male workers in fields such as construction and other manual labours. Based on time constraints and the restrictions placed on movement during April 2020, reaching this group was beyond the capability of the research team. Another limitation was not collecting data for negative religious coping or overall religiosity (religious commitment). The decision not to include the RCOPE negative subscale and a measure of religiosity was based on ensuring the survey (part of a larger project) did not become fatiguing for respondents. Future studies among the UAE population would benefit from including the negative subscale and a measure of religious commitment, which will provide a broader perspective on how religious coping is being used among the UAE's respective populations. A final important limitation of this study was the cross-sectional design, rendering all causal and temporal inferences tentative. However, given that relatively few studies have explored religious coping among Muslims, or among Christians residing in Muslim countries, this study makes a useful contribution to the existing literature.

Similarly, research examining religious coping during global pandemics is scarce, and the present study contributes to the literature here too. Obtaining a preliminary understanding of the links between religious coping and mental health during the pandemic may help inform public mental health plans for current and future outbreaks of infectious illness—for example, greater use of online technology to facilitate congregational worship and pastoral services. More generally, a better understanding of religious coping might also help psychotherapeutic practitioners better integrate religious and spiritual dimensions into the treatment and relapse prevention of common mental health problems such as depression. The high rate of participants with clinically significant depressive and anxious symptomatology in the present study underscores this point. Post-pandemic economic recovery is

likely to be significantly impacted by societal levels of mental ill-health. Exploring potential resilience factors, such as positive religious coping, may help inform broader strategies aimed at national recovery.

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