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"Self-Rated Religiosity/Spirituality and Four Health Outcomes Among U.S. South Asians: Findings from the Study on Stress, Spirituality, and Health"

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Abstract

Almost no research exists on the relationship between religion/spirituality (R/S) and health in the U.S. South Asian population. Using data from the joint Study on Stress, Spirituality, and Health and Mediators of Atherosclerosis Among South Asians Living in America Study (MASALA), this paper examined associations between self-rated R/S and self-rated health, emotional functioning, trait anxiety, and trait anger in a community-based sample (n = 933) from the Chicago and San Francisco Bay areas. OLS regression was used to analyze categorical differences in levels of R/S and ordinal trends for R/S, adjusting for potential confounders. Being slightly or moderately R/S was associated with lower levels of self-rated health compared to being very R/S, and being slightly or moderately R/S was associated with higher levels of anxiety. In both cases, there was no significant difference between very R/S individuals and non-R/S individuals, suggesting a curvilinear relationship. Self-rated R/S was not significantly associated with emotional functioning or anger. In sum, high-R/S and low-R/S individuals had positive associations with self-rated health and anxiety compared to individuals with slight/moderate levels of R/S. It is important for clinicians and policy makers to recognize the role R/S can play in the health status of South Asians living in the United States.

Keywords

Immigrants; US South Asians; Religion; Spirituality; Mental Health; Depression; Self-Rated Health; Anxiety; Anger

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Introduction

South Asians are among the fastest growing ethnic groups in the United States (U.S.), yet epidemiological research among this group is scant (Kanaya et al., 2013; United States Census Bureau, 2010). Given higher rates of social discrimination and physical health problems experienced by South Asians, mental and physical health in this population are important spheres of study (Nadimpalli, Dulin-Keita, Salas, Kanaya, & Kandula, 2016). Within the psychosocial domain, religiosity and spirituality (R/S) are understudied constructs that may affect health outcomes.

In the general U.S. population, R/S have often, though not always, been linked to longevity and better mental and physical health (Zimmer et al., 2016). Research on R/S and health among South Asians is sparse, with prior work indicating that: (a) religious identity and organizational belonging are important in lives of U.S. South Asians; (b) Hindus, Muslims, and Sikhs are more likely to be overweight/obese compared to non-affiliates (Bharmal, McCarthy, Gadgil, Kandula, & Kanaya, 2018; Kandula et al., 2018); and (c) religious activities are inversely related to negative affect among Asian Indians (Diwan, Jonnalagadda, & Balaswamy, 2004). Extant research has not considered other R/S variables and health outcomes for the U.S. South Asian population. We extended previous work by investigating relationships between self-rated R/S, self-rated health, emotional functioning, anxiety, and anger in a large, community-based sample. Based on prior research on the general U.S. population we expected positive associations between R/S and health (Koenig, King, & Carson, 2012).

Methods

The MASALA study initially recruited participants from 2010–2013 in the San Francisco and greater Chicago areas. Participants were 40–84 years old, of South Asian descent, free of cardiovascular disease, and fluent in English, Hindi, or Urdu. The original cohort (Exam 1, n=906) was re-interviewed between 2015–2018 (Exam 2) where 733 returning cohort members completed an ancillary study, the Study on Stress, Spirituality, and Health. A new 2017–2018 recruitment wave (Exam 1A) added 258 participants. In all, 989 participants completed the R/S questionnaire. Individuals with missing data on key independent or dependent variables were excluded, with the exception of income (3.3% missing) and marital status (3.4% missing), where median and modal imputation were used. In all, 933 of 989 MASALA participants were included in these analyses. Further information on the MASALA study is available elsewhere (Kanaya et al., 2013).

Self-rated health ranged from 1 (poor) to 5 (excellent). Three variables from the Mental Health Inventory index (MHI-3), a depressive symptoms screen, comprised an index of emotional functioning (range=0–15; α=0.65). Trait anxiety (range 10–40; α=0.70) and trait anger (range=10–40; α=0.69) came from the Spielberger scales and each consisted of ten variables (Spielberger, 1980).

Self-rated R/S was measured with a question that asked, ‘To what extent do you consider yourself a religious or spiritual person?’ We focused on categories of self-rated R/S (not at all, slightly, moderately, and very) and also assessed ordinal p-trends.

Control variables included religious tradition (Hindu, Muslim, Jain, Sikh, other [Christian, Buddhist, etc.], multiple religions, and no affiliation); alcoholic drinks per week; depression/anxiety medication; language at home (1= South Asian language only, to 5=English only); and percent of life in the U.S. Demographic indicators included marital status (1=married), home ownership, full-time employment, education (less than college, college, and graduate degree), income (< $75,000, $75,000-$149,999, and $150,000+), sex, and age.

We reported descriptive statistics and estimated linear regressions (robust standard errors) using PROC GENMOD in SAS 9.4.

Results

Study variable descriptive statistics are shown in Table 1. Table 2 reports full models for self-rated health, emotional functioning, anxiety, and anger. Self-rated R/S was associated with self-rated health: being slightly (p=.001) or moderately R/S (p=.007) was associated with lower levels of health compared to being very R/S. The overall trend was significant (p=.006), indicating that higher levels of self-rated health were associated with higher categories of R/S, but no significant difference was observed between the very R/S and the non-R/S, indicating a U-shaped curvilinear relationship (see Figure 1). An inverse U-shaped pattern was seen with anxiety, such that those rating themselves as moderately (p=.024) and slightly R/S (p=.047) reported greater anxiety relative to the very R/S while no significant difference was observed between those rating themselves as very R/S and non-R/S individuals. Self-rated R/S was not significantly associated with emotional functioning or anger.

Discussion

We found that self-rated religiosity/spirituality had a curvilinear association with self-rated health and anxiety (a self-rated health trend was also significant). Those who reported being very R/S reported higher self-rated health and lower anxiety compared to somewhat and moderately R/S individuals, while non-R/S and very R/S individuals did not differ. There was no association with emotional functioning or anger. Several other cross-sectional studies have evaluated degree of religiosity or spirituality as a single item in non-South Asian populations. One study found that among U.S. Latinos, respondents who were 65+ and said religion was ‘not important at all’ were more likely to be anxious than those for whom religion was very important (Lerman et al., 2018); another found religiosity was associated with better self-rated health in Latin American and Caribbean elders (Reyes-Ortiz, Pelaez, Koenig, & Mulligan, 2007). Other research, using U.S. community and population-based samples, evaluated self-rated religiosity scaled with measures of religious participation and found mixed results when assessing anxiety and depressive symptoms (Deng, Lee, Lam, & Lee, 2016; Kasen, Wickramaratne, & Gameroff, 2014; Koenig et al., 2012).

In our data, persons indicating they were ‘not at all’ R/S did not significantly differ from those who were ‘very’ R/S. The curvilinear relationship between self-rated R/S and these outcomes resembled prior research that found a curvilinear relationship between other measures of religion (e.g., service attendance, belief in God) and mental well-being and depressive symptoms in U.S. community-based white and Black samples (Galen & Kloet, 2011; Taylor, Chatters, & Nguyen, 2013). However, to our knowledge, the current study is the first to show curvilinear associations for self-rated R/S on self-rated health and anxiety, and the first to examine these associations among U.S. South Asians.

An implication of these findings is that prior research measuring self-rated R/S as a continuous or binary variable possibly misspecified the relationship. Since previous research did not examine U.S. South Asians, it may also be that self-rated R/S operates differently among South Asians. One possibility is that persons who are somewhat religious, sometimes identified as R/S “liminals,” may experience stress due to their position on the periphery of faith communities—they are neither completely in nor out (Hastings, 2016; Lim, 2015; Mannheimer & Hill, 2014). Being slightly R/S may also suggest experiencing difficulty living out one’s faith in the U.S. context (e.g., dietary rules, religious practices, and religious holiday expectations). The highly R/S are likely to have a strong identity with which to reconcile their religiousness/spirituality with American society and see themselves as highly faithful. Conversely, secular South Asians may have a less pronounced faith dimension of life to reconcile with American society. While these explanations involve negative emotional effects of marginal R/S, reverse causation may also be an explanation. A pattern of resource mobilization may be operative whereby those experiencing poor health become somewhat R/S as they deal with health problems (Koenig et al., 2012).

Two main implications follow from our findings. First, high levels of self-rated R/S were linked to positive self-rated health among South Asians living in the U.S. It is important for clinicians and policy makers to recognize the role that R/S can play in positive health functioning. Second, this analysis has identified a vulnerable population—liminal South Asian religious adherents—a group potentially contributing a higher share of the illness burden among South Asians. Of the 690 liminal respondents in MASALA, 203 (29.4%) reported local religious congregation membership and 651 (94.3%) attended religious services at least once a month. Health programs might effectively collaborate with faith communities to help improve the health of this population.

Despite several strengths, our analysis also had several limitations. First, generalizability may be limited because MASALA targeted midlife and older South Asians in the Chicago and San Francisco areas, and high-income Asian Indians were overrepresented. Second, anxiety and anger measurement occurred concurrently with R/S variables among Exam 1A participants, but prior to R/S variables for Exam 1 participants, possibly resulting in a loss of power in analyses. Third, the data restricted this analysis to a cross-sectional design. Future longitudinal research is needed to better understand the relationship between self-rated R/S and health. Fourth, Asians with limited English proficiency may underreport self-rated health, though facility with English was controlled in all models (Kandula, Lauderdale, & Baker, 2007). Fifth, we used a measure that conflated religiosity and spirituality. The Study

on Stress, Spirituality, and Health is now conducting analyses that will help differentiate between religion and spirituality, and these should be examined and utilized in the future.

Despite these limitations, this was the first examination of self-rated R/S and mental/self-rated health in a large community-based sample of U.S. South Asians. Our findings highlight the potential health vulnerability of religiously/spiritually liminal South Asians in America.

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Abbreviations:

R/S	Religiosity/spirituality
U.S.	United States
MASALA	Mediators of Atherosclerosis Among South Asians Living in America

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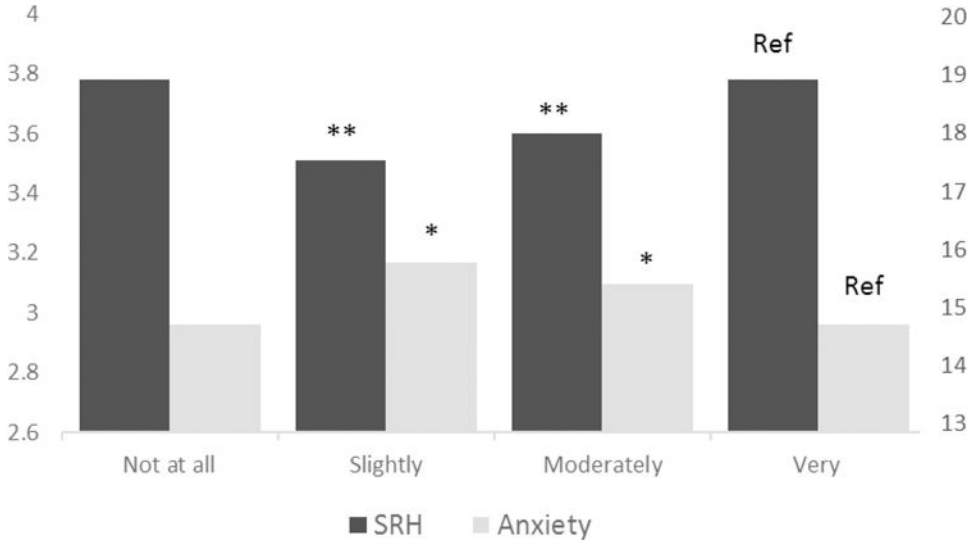

Figure 1. Predicted values of self-rated health and anxiety by degree of religiosity/spirituality

Notes: *p<.05, **p<.01

Based on Table 2. Significant covariates set to mean for predicted value calculations.

Table 1.

Descriptive statistics for study variables (MASALA, N=933)

	Mean	SD	Range
Dependent Variables			
Self-rated health	3.57	.82	1–5
Mental Health Inventory-3	11.37	2.33	1–15
Anxiety	15.86	4.25	10–36
Anger	15.87	3.69	10–37
Independent Variables			
Religious or spiritual person			
Not at all	.05		0–1
Slightly	.18		0–1
Moderately	.56		0–1
Very	.21		0–1
Religious tradition			
Hindu	.61		0–1
Muslim	.08		0–1
Jain	.05		0–1
Sikh	.06		0–1
Other religion	.04		0–1
Multiple religions	.07		0–1
No affiliation	.09		0–1
Alcohol consumption/week			
None	.68		0–1
1–2	.16		0–1
3–5	.09		0–1
6–9	.04		0–1
10+	.03		0–1
Depression/anxiety meds	.04		0–1
Language at home	3.08	1.21	1–5
% life lived in US	49.04	18.78	1.63–100
Married	.92		0–1
Own home	.89		0–1
Full time employment	.57		0–1
Education			
<Bachelor's	.12		0–1
Bachelor's	.30		0–1
Graduate	.58		0–1
Income			
<$75,000	.38		0–1
$75,000-$149,999	.35		0–1
$150,000+	.27		0–1

	Mean	SD	Range
Female	.47		0–1
Age	61.02	8.88	44–89

Table 2.

Regression of self-rated health, MHI-3, anxiety, and anger on religiosity (MASALA, N=933)

	Self-rated health			MHI-3			Anxiety			Anger		
Variable	**b**	**(SE)**		**b**	**(SE)**		**b**	**(SE)**		**b**	**(SE)**	
Religious or Spiritual Person												
Very (Ref)	-	-		-	-		-	-		-	-	
Moderately	−0.183	(.068)	**	−0.329	(.194)		0.678	(.340)	*	0.261	(.326)	
Slightly	−0.272	(.085)	**	−0.287	(.247)		1.031	(.456)	*	0.210	(.399)	
Not at all	−0.187	(.139)		−0.568	(.418)		0.282	(.828)		0.525	(.691)	
p-trend			**									
Religious Tradition												
Hindu (Ref)	-	-		-	-		-	-		-	-	
Islam	−0.091	(.105)		−0.301	(.313)		−0.075	(.585)		0.249	(.555)	
Jain	0.223	(.124)		0.084	(.372)		−0.323	(.648)		0.260	(.731)	
Sikh	−0.060	(.102)		−0.117	(.310)		−0.005	(.539)		0.072	(.444)	
Other religion	−0.077	(.158)		−0.956	(.417)	*	1.407	(.731)		1.080	(.608)	
Multiple religions	−0.026	(.102)		−0.281	(.258)		0.319	(.583)		−0.182	(.406)	
None	0.108	(.101)		0.087	(.256)		-0.106	(.488)		−0.844	(.395)	*
Alcoholic drinks/week												
None (Ref)	-	-		-	-		-	-		-	-	
1–2	0.003	(.075)		−0.193	(.210)		−0.078	(.380)		0.370	(.345)	
3–5	−0.061	(.101)		−0.519	(.285)		−0.077	(.534)		−0.110	(.457)	
6–9	0.126	(.138)		−0.107	(.350)		−0.249	(.655)		0.570	(.521)	
10+	0.064	(.113)		0.214	(.355)		−0.676	(.746)		1.827	(.826)	*
Depression/anxiety meds	−0.245	(.135)		−1.653	(.465)	***	3.195	(.996)	**	1.673	(.766)	*
Language at home	0.006	(.027)		−0.126	(.078)		0.065	(.142)		−0.045	(.114)	
% life lived in US	0.004	(.002)	*	−0.005	(.005)		0.014	(.008)		−0.007	(.008)	
Married	0.161	(.102)		0.482	(.277)		−1.374	(.574)	*	0.003	(.519)	*
Own home	−0.031	(.095)		0.257	(.292)		−0.452	(.553)		0.873	(.444)	*
Full time employment	0.230	(.062)	***	0.705	(.177)	***	−0.557	(.323)	***	−0.444	(.288)	
Education												
Graduate degree (Ref)	-	-		-	-		-	-		-	-	
Bachelor’s degree	−0.197	(.062)	**	0.014	(.172)		0.888	(.320)	**	0.289	(.284)	
<Bachelor’s degree	−0.364	(.093)	***	−0.243	(.282)		0.759	(.477)		−0.029	(.450)	
Income												
<$75,000 (Ref)	-	-		-	-		-	-		-	-	
$75,000-$149,999	−0.027	(.070)		0.065	(.203)		−0.620	(.369)		−0.286	(.313)	
$150,000+	−0.005	(.079)		0.246	(.235)		−0.704	(.416)		−0.376	(.351)	
Female	−0.007	(.062)		−0.273	(.170)		0.105	(.326)		−0.257	(.283)	
Age	−0.001	(.004)		0.039	(.010)	***	−0.060	(.017)	***	−0.067	(.015)	***
Intercept	3.455	(.309)	***	9.100	(.870)	***	19.919	(1.534)	***	19.773	(1.290)	***

*
p<.05

**
p<.01

***
p<.001