

Spirituality and the Health of U. S. College Students: A Partial Replication and Extension

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Spirituality has been linked with numerous positive effects, and the university experience is generally viewed as an important time for students to develop their spiritual identities. The purpose of this study was to partially replicate and extend the findings of Nelms et al. (2007) on the relationship between spirituality and the health of university students. In a survey study of 968 first-year undergraduate students in the western United States, we found that spirituality was associated with higher levels of physical health, emotional health, and exercise, and these relationships were generally different for white individuals and men than for minorities and women.

Keywords: spirituality, health, college students

INTRODUCTION

Research has begun to accumulate on the linkage between spirituality and beneficial outcomes including positive relationships, well-being, morale, and resilience (Rajabipoor, Meybodi, & Mohammadi, 2021). The university experience has long been viewed as an important time to develop one's spiritual identity. As such, it is critical to identify the factors linked with one's spirituality.

In a survey study of undergraduate students in Tennessee, Nelms et al. (2007) found that students' spirituality was positively associated with their self-reported overall physical health, physical activity, and emotional health. The authors surmised that undergraduates who view themselves as healthy people seem to include a spiritual component in (1) their perception of what health and wellness looks like for them, (2) their pursuit of exercise, and (3) the emotional dimension of their health. The researchers further explained that integrating a spiritual dimension into one's health offers students a valuable coping mechanism during life's challenges and may help spiritual students resist peer pressure to engage in unhealthy behaviors at college. Finally, the scholars called for future research to examine their hypotheses in other universities to bolster the generalizability of their findings.

Our study responds to this call by partially replicating Nelms et al.'s (2007) study and extending their findings by examining the roles of gender and race in the relationship between spirituality and health. In the previous study, an insufficient sample size precluded making any comparisons based on race, and gender was not specifically identified as part of their model. Thus, the purpose of our study is to partially replicate the findings of Nelms et al. (2007) and extend their findings by examining the roles of gender and

race in the relationship between spirituality and health outcomes. The following section reviews the existing literature and presents our hypotheses.

Spirituality and Physical Health

Whereas a growing body of research has identified a positive relationship between individuals' spirituality and mental/emotional health (c.f., Karakus et al., 2021), significantly less attention has been afforded to the relationship between spirituality and physical health. One of the notable exceptions is Nelms et al.'s (2007) finding that students' spirituality was positively associated with their self-reported overall physical health. Litalien et al. (2021) also found, in a systematic review of the Canadian published studies on spirituality and health, that spirituality was positively associated with the management of illness (e.g., Mainguy et al., 2013), infectious diseases (e.g., Kumar, 2016), heart disease (Banerjee et al., 2014), eating disorders (Boisvert & Harrell, 2013), etcetera.

A related study on graduate students in Spain pursuing healthcare professions found that the students perceived a positive relationship between spirituality and physical health (de Diego Cordero et al., 2019). It should be noted that, in contrast with these studies, a large study on undergraduates in the UK did not detect a significant relationship between students' spirituality and health (Anand et al., 2015). However, the authors noted that their sample may not have had enough variance in the dependent variable to uncover a significant relationship. Whereas the number of studies explicitly examining a link between spirituality and physical health is relatively small, the majority have uncovered a positive relationship; as such, we hypothesize the following:

Hypothesis 1a: *Student self-reported level of spirituality will be positively related to the student self-reported level of physical health.*

In addition to the main effect predicted above, we expect gender differences in the relationship between spirituality and physical health. Although we are not aware of any studies that have explicitly examined the role of gender in the relationship between spirituality and physical health, we consider the existing research in the mental health area, which will be discussed more fully in the literature review of Hypothesis 2b. Specifically, research has found that, whereas women tend to report higher levels of spirituality than men, they appear to reap fewer health benefits from their spirituality than men do because of women's proclivity to discuss their worries (e.g., Rassouljian et al., 2021) and engage in spiritual activities such as meditation and prayer which can result in an even more heightened awareness of one's anxiety (Trzebiatowska & Bruce, 2013; Zemp & Lieb, 2019). Thus, we offer the following hypothesis:

Hypothesis 1b: *The positive relationship between self-reported spirituality and physical health will be different for men than for women.*

As noted earlier, Nelms et al. (2007) reported that an insufficient sample size in their study precluded making any comparisons based on race. The scholars further proposed that the African American subjects in their study likely viewed spirituality differently than the White subjects. It has been suggested that minority students are subject to unique stressors such as discrimination and stigmatization which may help to explain why they often report lower levels of well-being despite being more spiritual (Ibrahim & Gillen-O'Neel, 2018).

In a study of the role of race in the spirituality-health relationship, Ibrahim and Gillen-O'Neel (2018) found that having a high level of religious identity, a concept related to spirituality was positively associated with undergraduates' well-being. They also explored the role of race in their model but noted that their small sample size did not provide them with sufficient statistical power to fully test its effects. However, one interesting marginally significant finding from their study indicated that religious identity was more likely to be associated with well-being when the student perceived that their race had greater public regard. That is, although religious identity was positively linked with higher levels of well-being for all subjects,

the relationship was even stronger for those who believed that their racial identity was more respected by society. As a result, we hypothesize the following:

Hypothesis 1c: *The positive relationship between self-reported spirituality and physical health will be greater for white individuals than for non-white individuals.*

Spirituality and Emotional Health

In addition to physical health, our study sought to explore the relationship between spirituality and emotional health. Recall that Nelms et al.'s (2007) study found that students' spirituality was positively associated with their self-reported emotional health. A more recent study involving a systematic literature review using bibliographic coupling revealed that most studies on spirituality and emotional/mental health have also reported a significant positive relationship (Karakus et al., 2021). For instance, Wilkins et al. (2012) found, in a study of U.S. adults, that spirituality was a significant predictor of mental health, assessed as a combination of satisfaction with life, pro-social behavior, life purpose, and resilience.

Similarly, a study of U.S. undergraduates found that spirituality strongly predicted mental health resilience (Womble et al., 2013). It should be noted that studies in non-student samples appear to report findings in line with those using student samples. For example, in an online survey of U.S. adults, Fenzel and Richardson (2021) found that, for subjects with the highest levels of spirituality, stressful events did not result in depressive symptoms or a decrease in life satisfaction to the same extent as those with lower levels of spirituality. Thus, spirituality appears to buffer the negative effects of stressful events on individuals' mental health.

Comparable results have been found in other countries such as India (Deb et al., 2020), South Africa (Pillay et al., 2016), and Canada (Cherblanc et al., 2021). For instance, using an online survey of adults in India during the COVID-19 pandemic lockdown, Biswas and Jijina (2022) found that spirituality was positively associated with self-protective behaviors and better mental health. Similarly, in a study in Quebec, Canada, during the pandemic lockdown, Cherblanc et al. (2021) found that perceptions of spirituality were positively linked with better mental health perceptions. Participating in spiritual practices served as a valuable coping mechanism for individuals faced with the stress and uncertainty of the pandemic lockdown. Considering the reasoning outlined above, we postulate the following:

Hypothesis 2a: *Student self-reported level of spirituality will be positively related to the student self-reported level of emotional health.*

In addition to the main effect we propose between spirituality and mental health, another aim of our study was to examine the role of gender in the relationship between spirituality and emotional health. This area has received very little research attention, and scholars have recently called for future research to address this gap in the literature (Litalien et al., 2022). One of the notable exceptions to the lack of research on gender differences in this area is a study on cancer patients by Rassoulilian et al. (2021). This work revealed that, even though the women in the study were found to express higher levels of spirituality, they perceived higher levels of depression and anxiety during their cancer treatment. The scholars explained this finding as the result of gender socialization. Specifically, women are more likely to talk about their feelings and worries. In contrast, men tend to avoid discussing their emotions with others due to gender role stereotypes that men should be strong.

Another possible explanation for why women might experience a lesser benefit from spirituality on their mental health, as compared with men, is that women are significantly more likely to engage in spiritual activities such as meditation, prayer, and yoga, which facilitate a closer connection with one's inner feelings (Trzebiatowska & Bruce, 2013; Zemp & Lieb, 2019). The heightened awareness of one's inner feelings can make it more difficult to quell anxiety or depression (Rassoulilian et al., 2021). In addition, other research has found that spiritual activities, including church-based support, were associated with emotional health benefits for men but not women (e.g., McFarland, 2010). Following the reasoning outlined above, we hypothesize the following:

Hypothesis 2b: *The positive relationship between self-reported spirituality and emotional health will be greater for men than women.*

We also expect the relationship between spirituality and emotional health to exhibit differences by race. A hallmark study by Ellison (1995) revealed that participating in spiritual activities was associated with lower levels of depression, an indicator of emotional health, for White individuals but not for Black individuals. In a more recent qualitative study of Black American sexual minority men, Lassiter and Mims (2022) found that some of the case study participants exhibited a strong positive association between spirituality and emotional health, whereas others did not. The authors suggested that some participants who identified “restrictive religious backgrounds, negative psychological states, and ignoring the sacred” (3091) were less likely to experience a positive association between their spirituality and their emotional health. The scholars argued that these characteristics, associated with a “suboptimal worldview” from many of their Black respondents, prevented them from participating in positive behaviors to improve their health. Based on our review of the literature, we offer the following hypothesis:

Hypothesis 2c: *The positive relationship between self-reported spirituality and emotional health will be greater for white individuals than non-white individuals.*

Spirituality and Exercise

Taken together with spirituality’s link to physical and emotional health, the final aim of our study was to examine its link with exercise. A study with a nationwide U.S. sample indicated that spiritual individuals were significantly more likely to engage in higher levels of exercise because of the belief that one’s body is a temple of God (Krause et al., 2017). In another study involving international undergraduate students in the Middle East, Tunc et al. (2021) observed a positive link between students’ spirituality and physical activity. The authors suggested that spiritual growth drives students’ life goals, often including positive physical health behaviors such as exercise and sports.

In addition, Lynch (2015), in a qualitative study on primary school students in Australia, found that students perceived a positive link between spirituality and physical education activities, including sports. Similarly, another study by Odrovakavula and Mohammadnezhad (2021) found that adolescent students in Fiji perceived that one’s wellness is multidimensional, with one’s spiritual identity positively linked with one’s level of physical fitness (e.g., exercise). Although we are unaware of any existing research that has uncovered gender or racial differences in the spirituality – physical exercise relationship, we have formulated our hypotheses in the same way as those presented earlier involving the relationship between spirituality and physical and mental health. Based on our review of the scant literature in this area, we hypothesize the following:

Hypothesis 3a: *Student self-reported level of spirituality will be positively related to higher levels of self-reported exercise.*

Hypothesis 3b: *The positive relationship between self-reported spirituality and exercise will be greater for men than for women.*

Hypothesis 3c: *The positive relationship between self-reported spirituality and exercise will be greater for white individuals than for non-white individuals.*

METHODS

Sample

A total of 968 undergraduate students (51.9% women, 30.4% white/Caucasian) in the first year of their studies at a small, private, liberal arts university on the west coast responded to the Cooperative Institutional Research Program (CIRP) questionnaire at the beginning of the academic year. Other higher education

institutions have used the CIRP questionnaire for more than 50 years to uncover freshmen students' demographic characteristics, high school experiences, viewpoints, actions, and perceptions about university life. The survey is managed by the Higher Education Research Institute (HERI) at UCLA and has been completed by over 15 million undergraduates at over 1,900 colleges and universities.

The main goal of the CIRP survey is to inform educational practices and procedures and facilitate continuous improvement through a heightened understanding of the effect of higher education on undergraduates. The items developed by HERI, are often used to generate comparative assessments across numerous universities. As such, we were not able to modify the items. Those interested in CIRP data should contact HERI directly. The CIRP questionnaire does not include an item regarding students' age, but 87.6% graduated from high school in 2018, the year the survey was completed.

Compliance with Ethical Standards

After the authors completed human subjects research training, the university's institutional review board approved the use of the CIRP survey. The investigation was performed in keeping with the ethical standards outlined in the 1964 Declaration of Helsinki and its later amendments or comparable ethical standards. Informed consent to participate in the research was given before the start of the study. The authors have no relevant financial or non-financial interests to disclose.

Measures

Gender

Gender was measured by the following item: "What is your current gender identity?" (1 = "Man," 2 = "Woman").

Race

Given the low number of subjects in many of the minority groupings, responses were merged into two groups (1 = "white/Caucasian," 2 = "non-white/Caucasian") in order to allow for sufficient statistical power to empirically examine our framework.

Integrating Spirituality

Integrating spirituality may be defined as recognizing and celebrating that everyone is inextricably connected through a power greater than everyone and that our connection to that power and to each other is grounded in empathy and love (Brown, 2010). Four items ($\alpha = .783$) were used to assess this variable. A sample item includes the following: "Please indicate the importance to you personally of integrating spirituality in your life, as compared with the average person your age." Respondents chose from the following: 1 – lowest 10%, 2 – below average, 3 – average, 4 – above average, and 5 – highest 10%.

Physical Health

Respondents were asked to rate themselves on physical health as compared with the average person their age using the following: 1 – lowest 10%, 2 – below average, 3 – average, 4 – above average, and 5 – highest 10%.

Emotional Health

As with physical health, respondents were asked to rate themselves on emotional health as compared with the average person their age using the following: 1 – lowest 10%, 2 – below average, 3 – average, 4 – above average, and 5 – highest 10%.

Exercise/Sports

To assess participation in exercise/sports, respondents were asked, "During the last year, how much time did you spend on exercising/sports during a typical week?" using the following: 1 – none, 2 – less than one hour, 3 – 1 to 2 hours, 4 – 3 to 5 hours, 5 – 6 to 10 hours, 6 – 11 to 15 hours, 7 – 16 to 20 hours, and 8 – over 20 hours. In the following section, we present our statistical analyses' results.

RESULTS

Participant demographic characteristics and correlations appear in Table 1. Hypotheses 1a, b, and c involved the link between students' spirituality and physical health. First, Hypothesis 1a proposed that students' self-reported level of spirituality will be positively related to students self-reported level of physical health. A one-way ANOVA was conducted to compare the three groups mean spirituality scores with the subjects' self-reported physical health (please see Table 2). The ANOVA indicated a statistically significant difference between the three groups and the perception of physical health about the degree of spirituality. Thus, Hypothesis 1a was supported.

Hypothesis 1b suggested that the positive relationship between self-reported spirituality and physical health will be greater for men than for women. The results of the ANOVA supported this hypothesis as well (please see Table 3). The mean level of spirituality for women ($M = 2.26$, $SD = .68$) was higher than that for men ($M = 2.15$, $SD = .70$). The mean level of physical health for women ($M = 3.24$, $SD = .87$) was lower than that for men ($M = 3.65$, $SD = .90$). The correlation between spirituality and physical health for men was $r(457) = .26$, $p < .01$. In contrast, there was not a significant correlation between spirituality and physical health for women $r(493) = .08$, ns.

Hypothesis 1c posited that the positive relationship between self-reported spirituality and physical health will be greater for white individuals than for non-white individuals. The results of the ANOVA supported this hypothesis (please see Table 4). The mean level of physical health for white individuals ($M = 3.60$, $SD = .98$) was higher than that for non-white individuals ($M = 3.36$, $SD = .86$). The correlation between spirituality and physical health for whites, $r(286) = .13$, $p < .05$. was lower than that for non-white individuals, $r(667) = .15$, $p < .01$.

TABLE 1
PARTICIPANT DEMOGRAPHIC CHARACTERISTICS AND PEARSON CORRELATIONS^a

Variables	Means	s.d.	1	2	3	4	5
1. Spirituality	2.21	0.69	(.783)				
2. Gender	1.52	0.49	.09**				
3. Race	1.30	0.46	-.07**	-0.05			
4. Physical Health	3.44	0.90	.10**	-.23**	.12**		
5. Mental Health	3.31	1.02	.12**	-.21**	0.02	.43**	
6. Exercising/Sports activity	4.18	2.01	.09**	-.16**	.14**	.42**	.18**

^a Scale reliabilities are in parentheses. $N = 968$.

* $p < .05$

** $p < .01$

TABLE 2
ANOVA REPORTING FOR PARTICIPANT'S SELF-REPORTED
LEVEL OF SPIRITUALITY BY PHYSICAL HEALTH

ANOVA

	Sum of Squares	df	Mean Square	F	Sig.
Between Groups	8.886	4	2.222	3.193	.013
Within Groups	662.956	953	.696		
Total	671.842	957			

TABLE 3
ANOVA REPORTING FOR PARTICIPANT'S SELF-REPORTED
LEVEL OF SPIRITUALITY BY PHYSICAL HEALTH AND GENDER

ANOVA

	Sum of Squares	df	Mean Square	F	Sig.
Between Groups	64.571	4	16.143	5.171	<.001
Within Groups	2962.780	949	3.122		
Total	3027.351	953			

TABLE 4
ANOVA REPORTING FOR PARTICIPANT'S SELF-REPORTED
LEVEL OF SPIRITUALITY BY PHYSICAL HEALTH AND RACE

ANOVA

	Sum of Squares	df	Mean Square	F	Sig.
Between Groups	36.125	4	9.031	3.288	.011
Within Groups	2617.625	953	2.747		
Total	2653.749	957			

Hypotheses 2a, b, and c involved the association between students' spirituality and emotional health. First, Hypothesis 2a proposed that student self-reported level of spirituality will be positively related to student self-reported emotional health. A one-way ANOVA was conducted to compare the three groups mean spirituality scores with the subjects' self-reported emotional health (please see Table 5). The ANOVA indicated a statistically significant difference between the three groups. Thus, Hypothesis 2a was supported.

Second, Hypothesis 2b posited that the positive relationship between self-reported spirituality and emotional health will be greater for men than women. The mean level of emotional health for women ($M = 3.11$, $SD = .97$) was lower than that for men ($M = 3.53$, $SD = 1.01$). The correlation between spirituality and emotional health for men ($r(458) = .20$, $p < .01$) was higher than that for women ($r(492) = .13$, $p < .01$). The results of the ANOVA supported this hypothesis (please see Table 6).

Third, Hypothesis 2c posited that the positive relationship between self-reported spirituality and emotional health will be greater for white individuals than non-white individuals. The results of the ANOVA did not support this hypothesis (please see Table 7). The mean level of emotional health for white individuals ($M = 3.33$, $SD = 1.07$) was higher than that for non-white individuals ($M = 3.30$, $SD = .98$). The correlation between spirituality and emotional health for white individuals ($r(286) = .09$, $ns.$), was lower than that for non-white individuals ($r(667) = .11$, $p < .01$).

TABLE 5
ANOVA REPORTING FOR PARTICIPANT'S SELF-REPORTED LEVEL OF SPIRITUALITY
BY EMOTIONAL HEALTH

ANOVA

	Sum of Squares	df	Mean Square	F	Sig.
Between Groups	12.332	4	3.083	4.451	.001
Within Groups	660.157	953	.693		
Total	672.489	957			

TABLE 6
ANOVA REPORTING FOR PARTICIPANT'S SELF-REPORTED LEVEL OF SPIRITUALITY
BY EMOTIONAL HEALTH AND GENDER

ANOVA

	Sum of Squares	df	Mean Square	F	Sig.
Between Groups	51.363	4	12.841	4.089	.003
Within Groups	2979.988	949	3.140		
Total	3031.351	953			

TABLE 7
ANOVA REPORTING FOR PARTICIPANT'S SELF-REPORTED LEVEL OF SPIRITUALITY
BY EMOTIONAL HEALTH AND RACE

ANOVA

	Sum of Squares	df	Mean Square	F	Sig.
Between Groups	23.638	4	5.910	2.146	.073
Within Groups	2624.187	953	2.754		
Total	2647.826	957			

Hypotheses 3a, b, and c examined the relationship between spirituality and student self-reported level of exercise. First, Hypothesis 3a predicted that student self-reported level of spirituality will be positively related to higher levels of student self-reported exercise. A one-way ANOVA was conducted to compare the three group mean spirituality scores with the subjects' self-reported exercising/sports (please see Table 8). The ANOVA indicated a statistically significant difference between the three groups. Thus, Hypothesis 3a was supported.

Second, Hypothesis 3b proposed that the positive relationship between self-reported spirituality and exercising will be greater for men than for women. The mean exercise level for women ($M = 3.97$, $SD = .96$) was lower than that for men ($M = 4.32$, $SD = 1.01$). The correlation between spirituality and exercising for men was $r(458) = .16$, $p < .01$, whereas there was not a significant correlation between spirituality and exercising for women ($r(493) = .09$, ns). The results of the ANOVA offered support for this hypothesis (please see Table 9).

Third, Hypothesis 3c predicted that the positive relationship between self-reported spirituality and exercising will be greater for white individuals than for non-white individuals. The results of the ANOVA provided support for this hypothesis (please see Table 10). The mean exercise level for white individuals ($M = 4.62$, $SD = 2.16$) was lower than that for non-white ($M = 3.90$, $SD = 1.97$). The correlation between exercising for white individuals ($r(458) = .16$, $p < .01$) was higher than that for non-white individuals ($r(662) = .11$, $p < .01$). In the following section, we discuss our findings, implications, and limitations.

TABLE 8
ANOVA REPORTING FOR PARTICIPANT’S SELF-REPORTED LEVEL OF SPIRITUALITY
BY EXERCISING/SPORTS

ANOVA

	Sum of Squares	df	Mean Square	F	Sig.
Between Groups	11.795	7	1.685	2.414	.019
Within Groups	659.552	945	.698		
Total	671.347	952			

TABLE 9
ANOVA REPORTING FOR PARTICIPANT’S SELF-REPORTED LEVEL OF SPIRITUALITY
BY EXERCISING/SPORTS AND GENDER

ANOVA

	Sum of Squares	df	Mean Square	F	Sig.
Between Groups	102.252	5	20.450	5.202	<.001
Within Groups	3707.459	943	3.932		
Total	3809.711	948			

TABLE 10
ANOVA REPORTING FOR PARTICIPANT’S SELF-REPORTED LEVEL OF SPIRITUALITY
BY EXERCISING/SPORTS AND RACE

ANOVA

	Sum of Squares	df	Mean Square	F	Sig.
Between Groups	65.902	7	9.415	3.450	.001
Within Groups	2579.036	945	2.729		
Total	2644.938	952			

DISCUSSION

Our study responds to Nelms et al.’s (2007) call for future research to examine their hypotheses in other universities to test their model’s generalizability. Specifically, our findings offer a partial replication of their study and extend their findings by exploring the roles of gender and race in the relationship between spirituality and health outcomes. In keeping with the findings of Nelms et al. (2007), we found that undergraduate students’ self-reported higher level of spirituality was positively related to student self-reported level of physical health, emotional health, and exercise/sports.

Our study also revealed that there were significant gender differences in this relationship. Specifically, the positive relationship between self-reported spirituality and students’ physical health, emotional health, and exercise/sports was greater for men than women. Thus, it may be that spirituality does not serve as a sufficient buffer in response to stressors to women’s well-being as it does for men. This may be explained by the fact that women experience a disproportionate level of college stressors than men, according to recent nationwide college survey by the American College Health Association (e.g., ACHA, 2020). Female students tend to report, at a greater frequency than male students, that they experience difficulties with discrimination, bullying, relationships, microaggression, sexual harassment, and post-traumatic stress disorder (PTSD; ACHA, 2020).

Finally, our study uncovered significant differences by race in the relationship between students' spirituality and their physical health and exercise/sports. In particular, the relationship between self-reported spirituality and physical health and exercise/sports was greater for white individuals than for non-white individuals. This finding may be due to the fact that individuals who do not have to deal with the pressure of discrimination and stigmatization, can devote more attention to, and benefit from, their spiritual identity (e.g., Ibrahim & Gillen-O'Neel, 2018).

However, despite these racial differences, our study did not find the spirituality and emotional health relationship to be stronger for white individuals over non-whites. This finding is consistent with that of Blaine and Crocker (1995) who found, in a study of U.S. undergraduates, that religiosity was only positively linked with psychological health for Black undergraduates, and not White undergraduates. The scholars explained their findings by suggesting that attributions made to God boosted Black students' meaning of life and favorable social identity (Blaine & Crocker, 1995). Although our study's design precludes making causal inferences, it appears that spirituality was associated with positive mental health for all races in our sample.

Practical Implications

Our findings underscore the need to include spiritual practices in college students' health initiatives. Heightened respect for students' spiritual beliefs and activities can guide individualized holistic interventions to boost health outcomes. University health personnel may offer more personalized treatment by working with community members to help those in their community members deal with health challenges.

Limitations

Some caveats should be taken into account when considering our study's findings. First, our study involved single-source, cross-sectional questionnaire data. To further test causality, future studies should consider testing our hypotheses with experimental, longitudinal, or multi-source designs. Another limitation was that our health scales were narrow in focus. However, the fact that we were able to replicate the findings of Nelms et al. (2007), who used broader scales, allows more confidence to be placed in our findings. Finally, our sample included university students from a single university in the western U.S. Future research should examine our hypotheses in other contexts to test our findings' generalizability.

CONCLUSION

In summary, our study of U.S. undergraduates revealed that spirituality was associated with higher levels of physical health, emotional health, and exercise, and these relationships were generally different for white individuals and men than for minorities and women.

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