



# Effect of a spiritual retreat on perceived stress of Nigerian Catholic immigrant sisters in the United States

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## ABSTRACT

Stress among immigrants may be due to loss of familiar environment and experience of discrimination. Spiritual retreats may be one way to manage stressful life situations. The present study examined whether participation in a six-day spiritual retreat results in changes in perceived stress and whether changes in perceived stress depend on participant's demographic characteristics. A total of 88 Nigerian Catholic immigrant sisters completed the Perceived Stress questionnaire pre-retreat, day three, and immediately after a spiritual retreat. Friedman Two-way ANOVA by rank was used to determine if there are mean changes in perceived stress over the three-time period, while Kruskal–Wallis ANOVA was used to determine if there were demographic differences in perceived stress. There were no differences in perceived stress at baseline, but there was a significant reduction in perceived stress at Time 2 and 3. There were no differences in perceived stress for the demographic variables except age.

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## Introduction

A spiritual retreat is an intentional withdrawal from normal activities to experience the presence of a higher being. It is a chance for an encounter with other people, with creation, with issues, and with self (Bay, Ivy, & Terry, 2010). It is an opportunity to experience a renewed sense of purpose, identity, belief, and confidence in oneself (Kennedy, Abbott, & Rosenberg, 2002). It also creates the opportunity for one to discern what truly matters in one's life (Eliopoulos, 2014). Hence, participating in a spiritual retreat may foster an individual's self-confidence and a renewed sense of hope (Warber et al., 2011). It may also reduce fear and anxiety about daily life stresses and enhance positive appraisal of stressful life events (Pargament, Koenig, & Perez, 2000; Park, 2005). Although, Nigerian Catholic immigrant sisters are the focus of this paper, broadly, most immigrants experience high levels of stress as a result of migration (Bhugra & Ayorinde, 2004). Stress among immigrants has been attributed to a loss of familiar environment (Tartakovsky, 2007), negative life events (Bhugra & Ayorinde, 2004), under/unemployment (Dean & Wilson, 2009), and a clash of values with the new culture (Berry, 2001; Bhugra & Ayorinde, 2004; Kuo, 1976). A study of 407 Asian immigrant elders (Chinese, Korean, Indian, Filipino, Vietnamese, and

Japanese) found that about 40% of the participants were depressed. The depression was significantly associated with acculturation stress caused by elders' perception of a cultural gap, perceived poor health, stressful life events, religiosity, and longer residence in the United States (Mui & Kang, 2006). A different study of Arab American immigrants found that Arabs find acculturation to the United States difficult due to their religion, experience of discrimination, and the importance of maintaining cultural values and traditions (Fargallah, Schumm, & Webb, 1997). Immigrants can suffer losses through the acculturation process when they feel alienated or rejected by the dominant culture (Berry, 1997; Bhugra & Ayorinde, 2004). Also, immigrants who have features which make them distinct from the receiving society are likely to experience increase risks of ethnic prejudice and discrimination leading to considerable stress (Berry, 2001; Bhugra & Ayorinde, 2004; Molero, Recio, García-Ael, Fuster, & Sanjuán, 2013). This is particularly true for most Nigerian Catholic immigrant sisters who dress in the religious habit (attire) that sets them apart from other women including most indigenous women religious in the United States. This special feature may put them at risk of perceiving or experiencing the stress of discrimination greater than average African immigrants who blend in with the rest of the society. It is not clear how these women religious immigrants deal with these stressful life events, but what we do know is that Africans fall back to their deep-rooted spiritual practices and values in times of distress (Conway-Phillips & Janusek, 2016; Kanya, 1997; Watlington & Murphy, 2006). Similar findings were revealed in other ethnocultural studies. An in-depth qualitative study of older Russian immigrant women found that participants' adaptive success and their overall well-being were due to their ability to maintain physical, social, and spiritual engagement. Such engagement enhanced their sense of cultural competence and resilience (McConatha, Volkwein-Caplan, & DiGregorio, 2011). The authors further noted that participants' engagement in communities of like-minded people who share similar experience, language, and culture provided them with social connection and instrumental support in the alienating world. Lee (2007) found that religious support was associated with decreased depression and increased life satisfaction among older Korean and Chinese Americans, whereas the greater practice of forgiveness enhanced life satisfaction and self-efficacy.

### ***Nigerian Catholic immigrant sisters in the United States***

The participants are women religious from Nigeria who initially migrated to the United States at various times within the last 30 years on invitations of some Catholic Bishops in response to the shrinking number of indigenous women religious (religious sisters/nuns) in the United States (Berrelleza, Gautier, & Gray, 2014). The total number of women religious in the United States has fallen from roughly 180,000 in 1965 to about 49,883 in 2014, which is a 72% drop over a period of 50 years (Berrelleza et al., 2014). Following in the footsteps of Christ (Is. 61:1), these Nigerian Catholic immigrant sisters were sent to different states in Northeast, Midwest, Southeast, and Southwest of the United States by their central authority to engage in different ministries. These include attending to the spiritual needs of the elderly and sick in their homes and hospitals, teaching in schools, some work in different healthcare settings, and few others work in the community. By their vows of obedience, poverty, and chastity, these women have dedicated their lives to the will of God. Accepting to leave home and family to work for the

greater good puts them in a new and unfamiliar environment increasing their risk of experiencing social isolation and culture shock. To carry out the missions successfully, these Nigerian Catholic immigrant sisters have to adapt to the unfamiliar setting. Adapting to a new environment places immigrants in situations that may be overwhelmingly stressful (Berry, 1997, 2001; Kamya, 1997). The participants just like other immigrants may experience difficulties adjusting to Western lifestyle, diet, culture, and language (Kamya, 1997; Kasic, 2002; Takougang, 2003), which may lead to acculturative stress (Berry, 1997; Singh, McBride, & Kak, 2015). Also, dressing in religious habit; a feature which makes them distinct from most indigenous religious and laywomen increases their risks of experiencing ethnic prejudice and discrimination adding to the normal stress of daily life (Berry, 2001; Bhugra & Ayorinde, 2004; Molero et al., 2013). Many of the Nigerian Catholic immigrant sisters are highly educated similar to the results of a survey of educational attainment of other African immigrants (Nesbitt, 2002; US Census Bureau, 2010). Although they speak well, their distinct accents are obstacles toward integration into the larger society. Since these women are in situations that are immensely stressful, it is necessary to understand the extent to which their spirituality helps them to cope with stressful life events. One might assume that taking out time to participate in a spiritual retreat may help renew their sense of identity, belonging and purpose, and their belief and confidence in coping with life challenges in the foreign country. However, there is no research on the health and well-being of this population, including whether their participation in a spiritual retreat affects their perceived stress.

### ***Spirituality and perceived stress***

Stress arises when one appraises a situation as threatening and does not have an appropriate coping response that is immediately available (Cohen & Wills, 1985). There is evidence that spiritual practices may buffer stressful life events by weakening their impact and providing individuals with personal meaning and social and inner resources they can call upon in stressful situations (Ekwoye, Cahill, De Luca, & Cabell, 2017; Ellison & Levin, 1998). Spirituality is a key component of every individual (Sulmasy, 2002), and individuals fall back to it for inner strength to cope with stressful life events (Ellison & Levin, 1998; Pargament, Smith, Koenig, & Perez, 1998). Spirituality comprises the sense of well-being that arises from values such as compassion, love, forgiveness, and one's relationship with a higher power, people, nature, and the meaning found in these relationships and life experiences (Tripathi & Asthana, 2013). The notion that spirituality weakens perceived stress stems from one of the social psychological theories - the transactional model of stress and coping (Lazarus & Folkman, 1984). Applying the transactional model of stress and coping, when faced with various life stressors, individuals who are religious attempt to explain the stressful situation or event based on their spiritual belief (Pargament & Hahn, 1986). The attempt at making meaning of stressful life events promotes successful coping, adaptation, and overall well-being (Park & Folkman, 1997). Even the regular practice of 15 minutes of meditation twice a day has been found to improve mood, reduce stress and anxiety, and help individuals develop that sense of inner peace, satisfaction, and creativity (Coppola & Spector, 2009). Previous studies have shown the beneficial effects of spiritual practices in decreasing perceived stress and improving overall

psychological and physical well-being (Carmody & Baer, 2008; Tuck, Alleyne, & Thinganjana, 2006).

Private and communal prayer, daily meditation, and religious services are central in the life of Nigerian Catholic immigrant sisters, but it is not clear whether these spiritual practices help them to cope with daily life stressors. It is possible that these women in times of stress turn to behaviour (prayer) that is central to their chosen lifestyle. The present study was motivated by a lack of research on the health and well-being of Nigerian Catholic immigrant sisters. Therefore, the purpose of the study was to determine whether participants experienced changes in perceived stress because of their participation in a spiritual retreat during which they engaged in prayer, meditation, and self-care. Also, we examined whether changes in perceived stress during the spiritual retreat are related to participants age, length of residence in the United States, number of years in religious life, type of employment, and level of education.

## **Method**

### ***Participants***

Study participants were recruited from 178 members of a Nigerian religious institute residing in various states. Some teach in schools, some care for the sick in their homes and hospitals, and others are engaged in pastoral ministries. Most of the members live in communities, and their length of stay in the United States ranges from one–25 years. All had the same kind of religious training, speak the same local language and speak the English language. The researcher obtained permission from the Regional Superior of the religious institute and approval from the researcher's affiliated Institutional Review Board (IRB).

### ***Spiritual retreat intervention***

The six-day spiritual-based retreat activities were geared towards providing participants with renewed energy, inner resources to discern what truly matters in life, enhanced sense of meaning and purpose, and improved self-efficacy. Each day of the retreat started with a communal singing of the Divine office followed by a 30-minute mindfulness meditation and concluded with Mass accompanied by uplifting traditional songs. Meals were eaten in common, giving participants the opportunity to listen and share their thoughts and experiences with each other. Participants had an hour of open dialogue with the retreat moderator (clergy) both in the morning and in the evening. The dialogue focused on the virtues of forgiveness, charity, patience, tolerance, service, abandonment to God's will, and a call to live a life of love and authenticity as contained in the religious institute's constitution. The retreat schedule allowed for a one and half hour rest in the afternoon after lunch followed by an evening community prayer and meditation and ending with the adoration of the Blessed Sacrament. Participants had the opportunity to go to confession (sacrament of reconciliation). Some sisters also had a one-on-one dialogue with the retreat moderator. Although silence was highly encouraged and observed most of the time during the entire period of the retreat, participants were allowed to talk during meals and had an hour of social gathering every evening where they shared stories,

sang traditional songs, and engaged in traditional dance. The night ended with a community night prayer and a hymn to the Blessed Virgin Mother. These practices have been shown to be beneficial in managing stressful life events (Graham, Furr, Flowers, & Burke, 2001; Levin, 1994; Park, 2005; Warber et al., 2011).

### ***Perceived Stress Scale***

The Perceived Stress Scale (PSS; Cohen & Williamson, 1988) was used to evaluate whether participation in the spiritual retreat programme results in changes in the perceived stress level of Nigerian Catholic immigrant sisters. The 10-item PSS measures how unpredictable, uncontrolled, and overwhelmed respondents found their lives during the last month (Cohen & Williamson, 1988). The PSS includes some direct questions about current levels of experienced stress. Respondents answered the items on Likert-type scales ranging from 0 “never” to 4 “very often”. Items 4, 5, 7, and 8 are positively stated and were reverse coded. Scores ranged from 0 to 40, with higher scores indicating higher perceived stress. All the scores were summed up to obtain a total perceived stress score. The PSS has been used in various community samples and has demonstrated good internal consistency Cronbach’s  $\alpha = .74-.91$  (Cohen & Williamson, 1988; Mitchell, Crane, & Kim, 2008). The PSS has average test-retest reliability of .85 for a two-day interval (Cohen, Kamarck, & Mermelstein, 1983), and .74-.86 for a seven-day interval (Chaaya, Osman, Naassan, & Mahfoud, 2010; Siqueira Reis, Ferreira Hino, & Romélio Rodriguez Añez, 2010).

### ***Procedure***

Upon study approval by the Franklin Pierce University IRB, a convenience sample of 92 Nigerian Catholic immigrant sisters from the same religious institute who attended the annual retreat programme was approached and offered the opportunity to participate in the study voluntarily. Any member of the institute who attended, but left before the end of the spiritual retreat was excluded from the study. The researcher explained the objectives of the study, followed by the distribution of a numerically coded consent form. Participants were given the opportunity to read and sign the consent form, and the signed copy was given to each participant. Questionnaires (PSS) were coded to match the codes on the consent form. Data were collected before the start of spiritual-based retreat activities (pre-retreat), then on day three of the retreat, and immediately after the retreat (post-retreat).

### ***Analyses***

The numerical data collected were entered into SPSS version 20 and analysed at  $\alpha \leq .05$ . Demographic information which included: age, numbers of years in religious life, length of stay in the United States, level of education, and type of employment were summarised using simple descriptive statistics (mean, standard deviation). Friedman Two-way ANOVA by rank with time as a within-subjects factor was used to determine if there are mean changes in perceived stress pre-retreat, day three, and post-retreat. If significant changes were observed, pairwise comparisons were conducted using Wilcoxon test with Bonferroni corrected accepted  $p$ -level  $< .008$ . Kruskal-Wallis ANOVA was used to

determine if there are differences in perceived stress over the three-time periods based on participants age, length of stay in the United States, number of years in religious life, educational level, and type of employment. Multiple pairwise comparisons were carried out with Bonferroni corrected accepted  $p$ -level  $\leq .05$ .

Additionally, the data collection instrument included three short open-ended questions such as (1) "What are the perceived stressors in your life?" (2) "Reflecting on your involvement in this religious and spiritual activities this week, are there specific activities you consider most helpful in dealing with your life stresses?" and (3) "Do you plan to continue to engage in those practices after the retreat?" Data collected from these questions were analysed for themes that might explain the participants' perspectives on their retreat experiences, as well as, assist the researchers in describing how the retreat experience may relate to the experience of perceived stress.

## Results

### *Participants characteristics*

The data collected were entered into SPSS version 20.0. Participant characteristics are summarised in Table 1. Valid data were collected from a total of 88 out of 92 members of this institute who attended the retreat. Three members left on the second day of the study, so their baseline data were excluded from the analyses. One member declined participation.

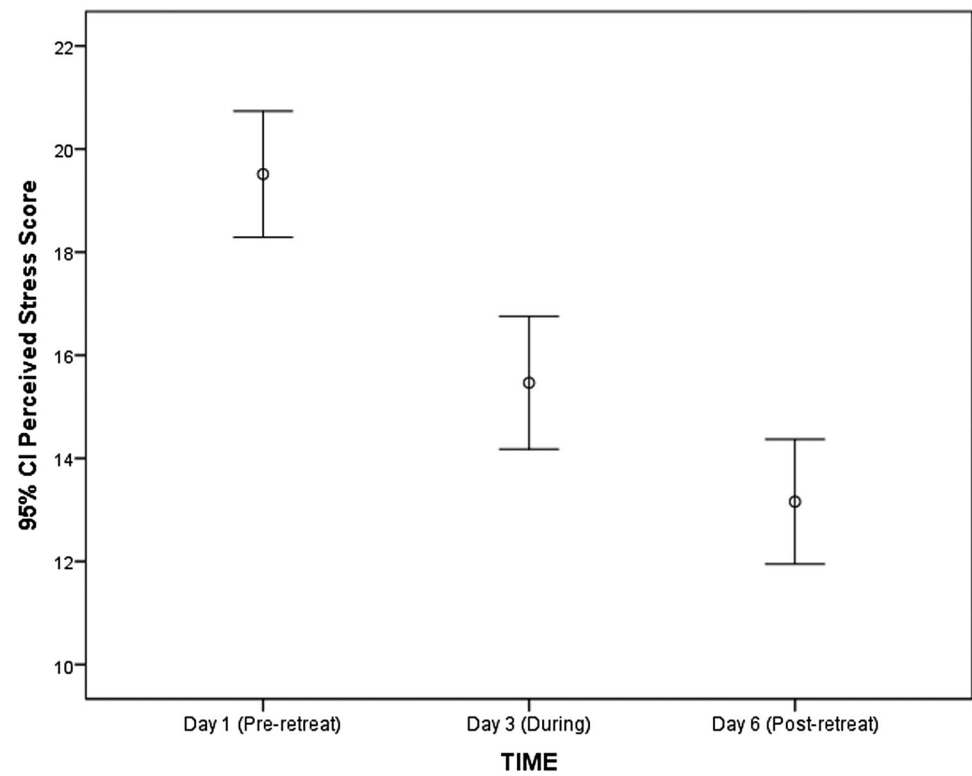
**Table 1.** Demographic characteristics ( $n = 88$ ).

Characteristics	$n$	(%)
Age		
30–40 years old	5	5.68
41–50 years old	31	35.22
51–60 years old	34	38.63
61–70 years old	18	20.45
Years of Religious Life		
11–15 years	4	4.54
16–20 years	9	10.22
21–25 years	25	28.41
26–30 years	25	28.41
31–35 years	6	6.81
36–40 years	13	14.77
>40 years	6	6.81
Length of Residence in the USA		
1–5 years	8	9.09
6–10 years	7	7.95
11–15 years	35	39.77
16–20 years	30	34.09
>20 years	8	9.09
Educational level		
High School diploma	3	3.40
Associate degree	12	13.63
Bachelor's degree	39	44.32
Master's degree	28	31.81
Doctoral degree	6	6.81
Type of employment		
Teaching	16	18.18
Healthcare	34	38.63
Administrative	5	5.68
Pastoral	10	11.36
Other	23	26.14

Most of the participants (94.32%) were over 40 years old. About 4.5% have lived the religious life for less than 15 years, whereas a greater number of participants (95.5%) have lived the life for over 20 years. Seventeen percent of the participants are more recent immigrants (1–10 years), and more than 70% have lived in the United States more than 10 years. A higher percentage of study participants hold a Bachelor’s degree (44%), 31.81% have Master’s degree, 13.63% have Associate degree, 6.81% have a doctoral degree, and 3.40% hold a high school diploma. These data are consistent with the American Community Survey which found that 22% of African American women age 25 and older hold a bachelor’s degree or more in 2015 (US Census Bureau, 2016). The largest group of participants (38.63%) work in health care settings, 18.18% teach at different levels of education, 11.36% carry out pastoral ministry, and the rest are involved in administrative work (5.68%) or other jobs within the community (26.14%).

**Effect of time on perceived stress scores of participants**

Perceived stress scores were measured using the PSS before the retreat activities. Friedman two-way ANOVA was conducted to determine the effect of time on perceived stress. Results show that perceived stress fell from a mean of 19.51 pre-retreat to 15.47 on day three, and to 13.16 post-retreat. Although there is some overlap between the bars for day three and post-retreat, the extent of the overlap is quite small (Figure 1).



**Figure 1.** Mean perceived stress scores pre-retreat, day three, and post-retreat.

Mean changes in perceived stress across the three-time points were statistically significant (Friedman ANOVA  $\chi^2 = 68.55$ ;  $p < .0005$ ). To determine which time points were significantly different in perceived stress, pairwise comparisons were conducted using Wilcoxon test, and Bonferroni corrected (accepted level  $p < .008$ ). Significant reduction in perceived stress was found between pre-retreat to day three ( $Z = -5.81$ ;  $p = .0005$ ), pre-retreat to post-retreat, and ( $Z = -6.53$ ;  $p = .0005$ ), day three and post-retreat ( $Z = -4.10$ ,  $p < .0005$ ). A review of the mean differences indicates that perceived stress scores gradually declined, from 6.35 pre-retreat to 4.05 on day three, and to 2.31 post-retreat. These results suggest that withdrawing from one's normal routine activities to participate in a spiritual retreat may be beneficial to overall health and well-being of participants.

### ***Demographic differences in perceived stress over the three-time period***

Stress scores obtained before the spiritual retreat were highest for participants in the 61–70-year-old. Higher mean perceived stress scores were obtained for participants who have lived the religious life for 31–35 years; those who have resided in the United States for over 20 years; those with a high school diploma; and participants who work in healthcare settings. Kruskal–Wallis ANOVA was used to determine if these differences were significant. Results of the analyses revealed no substantial differences in perceived stress before the retreat, an indication of initial group equivalence (Table 2).

Further analyses showed no statistically significant differences in perceived stress scores during and immediately after the retreat based on participant's length of residence in the United States, number of years of religious life, type of employment, and level of education ( $p > .05$ ). However, significant age differences emerged on day three ( $\chi^2 = 7.82$ ;  $p = .05$ ), and immediately after the spiritual retreat ( $\chi^2 = 11.71$ ;  $p = .008$ ). In order to determine which age groups were different during and immediately after the retreat, multiple comparisons were conducted, and Bonferroni correction was set at  $p \leq .05$ . Perceived stress levels were found to be significantly lowest for participants in the 61–70 age group during the retreat ( $p \leq .05$ ), see Table 3, and immediately after the retreat ( $p < .05$ ), see Table 4.

These results indicate that older participants may have benefited more regarding perceived stress from the spiritual retreat than participants in other age groups may.

### ***Qualitative data***

Study participants had the opportunity to provide brief comments in the survey. While the data from this open-ended section was limited, it was interesting. For example, some comments spoke to causes of their stress. One participant said, "I work long hours and I get overwhelmed with what needs to be done." Another commented on inadequate compensation being a stressor: "I am not well paid." Many participants mentioned "prejudice and discrimination", as their stressor. One individual said, "non-praying community members stresses me out". Another individual remarked, that "maintaining balance between school, work, and community affairs" is her major stressor. Some mentioned "community life", "betrayals", "unfulfilled life", "lack of rest", "unsuccessful goals and expectations", "sickness", "lack of health insurance", and "weather", as their main stressor. In response to the question: What specific activities do you consider most helpful in dealing with your life stresses? Most mentioned "prayer", "adoration to the Blessed Sacrament", "meditation", and "going to confession". Other comments spoke to how "singing", "socialising



**Table 2.** Group differences in Perceived Stress Scale (PSS) score before (Time 1), during (Time 2), and immediately after (Time 3) the spiritual retreat.

	PSS TIME 1			PSS TIME 2			PSS TIME 3		
	<i>n</i>	Mean rank	<i>p</i> -value	<i>n</i>	Mean rank	<i>p</i> -value	<i>n</i>	Mean rank	<i>p</i> -value
Age			.23			.05*			.008**
30–40 years old	5	38.00		5	39.20		5	53.70	
41–50 years old	31	38.63		31	40.81		31	38.94	
51–60 years old	35	46.16		35	53.43		35	54.37	
61–70 years old	17	53.71		17	34.41		17	31.62	
Years of religious life			.59			.17			.37
11–15 years	4	33.13		4	37.13		4	43.88	
16–20 years	9	37.56		9	41.94		9	48.89	
21–25 years	25	47.62		25	44.56		25	45.64	
26–30 years	25	43.94		25	47.30		25	47.56	
31–35 years	6	59.42		6	57.92		6	54.33	
36–40 years	13	39.12		13	48.85		13	39.04	
>40 years	6	48.58		6	18.50		6	22.83	
Length of residence in USA			.25			.29			.23
1–5 years	8	41.13		8	31.94		8	28.69	
6–10 years	7	30.14		7	30.29		7	34.86	
11–15 years	35	41.50		35	48.06		35	49.51	
16–20 years	30	47.60		30	44.90		30	44.47	
>20 years	7	58.21		7	47.36		7	41.07	
Educational level			.58			.84			.37
HS Diploma	3	56.17		3	40.17		3	28.67	
Associate degree	12	37.63		12	38.42		12	43.46	
Bachelor's degree	39	46.49		39	46.71		39	47.82	
Master's degree	28	41.52		28	45.71		28	45.46	
Doctoral degree	6	53.42		6	38.83		6	28.42	
Employment type			.56			.26			.32
Teaching	16	42.09		16	41.53		16	35.56	
Healthcare	34	49.37		34	51.56		34	50.75	
Administrative	5	36.40		5	29.20		5	47.90	
Pastoral	10	47.60		10	40.10		10	44.65	
Other	23	39.39		23	41.37		23	40.67	

Note: HS (High school).

\**p* ≤ .05, \*\**p* < .01.

with religious counterparts”, “resting”, “saying the rosary”, “having common meals”, are stress-relieving practices for them. Participants were also asked, Do you plan to continue to engage in those activities to help you deal with daily life stressors? Many participants

**Table 3.** Mean age differences in perceived stress during the retreat (Time 2).

Ranked age	(J) Ranked age	Mean difference (I–J)	Std. error	Sig.
30–40 years old	41–50 years old	–.22	2.83	1.00
	51–60 years old	–3.54	2.807	1.00
	61–70 years old	1.14	2.987	1.00
41–50 years old	30–40 years old	.22	2.830	1.00
	51–60 years old	–3.32	1.448	.145
	61–70 years old	1.36	1.772	1.00
51–60 years old	30–40 years old	3.54	2.807	1.00
	41–50 years old	3.32	1.448	.145
	61–70 years old <sup>a</sup>	4.68	1.736	.050
61–70 years old	30–40 years old	–1.14	2.987	1.00
	41–50 years old	–1.36	1.772	1.00
	51–60 years old <sup>a</sup>	–4.68	1.736	.050

<sup>a</sup>The mean difference is significant at the ≤ .05 level.

**Table 4.** Mean age difference in perceived stress immediately after the retreat (Time 3).

Ranked age	(J) Ranked age	Mean difference (I–J)	Std. error	Sig.
30–40 years old	41–50 years old	3.30	2.619	1.000
	51–60 years old	–.11	2.598	1.000
	61–70 years old	4.79	2.765	.522
41–50 years old	30–40 years old	–3.30	2.619	1.000
	51–60 years old	–3.41	1.340	.077
	61–70 years old	1.49	1.640	1.000
51–60 years old	30–40 years old	.11	2.598	1.000
	41–50 years old	3.41	1.340	.077
	61–70 years old	4.90 <sup>a</sup>	1.607	.018
61–70 years old	30–40 years old	–4.79	2.765	.522
	41–50 years old	–1.49	1.640	1.000
	51–60 years old	–4.90 <sup>a</sup>	1.607	.018

<sup>a</sup>The mean difference is significant at the  $\leq .05$  level.

responded to this question with personal, concrete goals, e.g., “increase singing the psalms”, “pray constantly”, “better my prayer life; meditation”, “keep my commitment to God in my life of dedication and prayers”. However, others responded with philosophical goals, e.g., “I must be patient with myself and the environment”, “I can only change what can be changed”, and “I will engage in activities as often as the Spirit gives me strength.”

## Discussion

Motivated by lack of research on the health and well-being of Nigerian Catholic immigrant sisters, the present study examined the effect of a six-day participation in spiritual retreat on the perceived stress of Nigerian Catholic immigrant sisters in the United States. Specifically, we sought to extend the knowledge that participating in spiritual retreats result in better mental health regardless of participant’s age, length of residence in the United States, number of years in religious life, type of employment, and level of education. Our primary outcome variable, perceived stress, was not significantly different among groups before the start of the retreat confirming initial group equivalence. There was a substantial reduction in perceived stress on day three of the retreat ( $p = .0005$ ) and immediately after the retreat ( $p = .0005$ ). The significant overall decline in perceived stress during and immediately after the spiritual retreat may have been due to the opportunity participants had to fully engage in various spiritual exercises. These include individual and communal prayers, daily meditation, discourse on the theme of forgiveness and reconciliation, service, faith, hope, and a call to live a life of love and authenticity. The spiritual exercises may have also given participants a chance for a renewed commitment to the underlying values of their religious (chosen) lifestyle. Our findings support previous work, which found that regular practice of meditation twice a day, improved mood, reduced stress and anxiety, and helped individuals develop a sense of inner peace, satisfaction, and creativity (Coppola & Spector, 2009). Participation in spiritual intervention is beneficial even for individuals who are not religious. Evidence of this was found in a study of a healthy adult sample that saw a substantial decrease in the levels of perceived stress from the pretest to the six-week spiritual intervention (Tuck et al., 2006). Consistent with our results, a different study found a decrease in perceived stress level and an overall improvement in psychological symptoms and well-being after an eight-session

mindfulness-based stress reduction programme (Carmody & Baer, 2008). The health benefits of spiritual retreats were also supported by previous research, which found that participation in four-day weekend spiritual retreat increased hope and positive cardiovascular outcome (Warber et al., 2011). Having hope may counteract feelings of helplessness, anxiety, and agitation, which make individuals less reactive to perceived stress (Folkman, 2010).

Our study found no relationships between perceived stress and the demographic variables (age, number of years in religious life, length of residence in the United States, type of employment, and level of education) at baseline and day three of the retreat. Our findings are consistent with a previous study that found no link between perceived stress and age, race, gender, and education level among healthy adult participants (Tuck et al., 2006). We expected to see participants who have lived longer in the United States to have lower stress due to a more extended adjustment period, but our results did not support that. It is possible that these women regardless of their time of arrival in the United States continue to experience similar kinds of stress especially that of religious and ethnic/racial discrimination. Contrary to our finding, Kanya (1997) found that immigrants who had lived more than 10 years in the United States tend to have a higher inner strength for tolerating stress. Though we did not obtain significant main effects of the demographic variables on stress levels on day three, meaningful interactions emerged between time and age, time and number of years in religious life. We found a significant drop in stress level for participants who have been in religious life for over 40 years, while no significant change was obtained for those who have been in religious life for 31–35 years, and for the 51–60-year-old participants. While it is uncertain why stress levels did not change significantly for the 31–35-year-olds, it is possible that this group who are active in the workforce are still grappling with making sense of their life purpose. Concerning the 51–60-year-olds, they may be going through some physiological changes related to the process of aging (menopause) or other events of their lives explaining why they may be taking longer to get into the spirit of the retreat. We also found a significant drop in stress levels immediately after the retreat for the 61–70-year-old participants. The participants who are older in age and religious life reported lower stress levels might be indicative of a stronger sense of meaning, fulfilment, purpose, and satisfaction in life as they look forward to their retirement. The reduction in stress felt by the older participants may also be due to differences in the frequency of prayer, a finding substantiated by a previous study which found that older age cohort (>60 years) engage in more frequent prayer than younger groups (Levin & Taylor, 1997). A different study found religious intensity and belief to increase with age (Bengtson, Silverstein, Putney, & Harris, 2015). Overall, the stress level was significantly reduced for all participants during and after the spiritual retreat regardless of their age, the number of years in religious life, length of residence in the United States, type of employment, and level of education, which point to the moderating effects of spirituality in buffering stress. The decreased stress levels of participants during and after the spiritual retreat may have been due to increased spirituality gained as a result of taking part in the retreat. Increased level of spirituality has been related to improved well-being and meaning in life, decreased anger, and increased confidence in handling problems among cardiac patients following a spiritual retreat programme (Kennedy et al., 2002). Increased spirituality and a desire to continue to engage in spiritual exercises to better care for mind, body, and spirit were also reported in a study of nurses who attended a

two one-day spiritual retreat (Bay, Ivy, & Terry, 2010). Our findings support the notion of spirituality as an effective means of managing stress.

The present study has some limitations. First, data were collected from Nigerian Catholic immigrant sisters, so the findings may not be generalised to members of other religious institutes, or to other immigrant population. Future study should examine the relationship between spirituality and different aspects of mental health (stress, anxiety, and depression) for members of both local and foreign-based religious institutes to gain better insight on the issue. Second, the sample size of 88 respondents may have limited our statistical power so more studies should be conducted with a larger sample size. Third, spirituality was not directly measured, so we were unable to assess changes in spirituality during and after the retreat. A future study that adds a measure concerning perceived spirituality could expand our understanding of this variable as an additional variable in the experience of a religious retreat. Fourth, this study focused on the short-term experience of a spiritual retreat and found that perceived stress was reduced. Future study should collect two, four, and six months follow-up data to assess if changes in stress levels will be sustained. Additional study could explore if non-spiritual retreats and experiences that include activities such as those described in this study (e.g., meditation, mindfulness, silence, reflection ...) have a similar relationship to perceive stress as found in this study.

A few broader themes emerged which could form the basis for in-depth qualitative study. On the questionnaire, when participants were asked, "What are the perceived stressors in your life?" Stressors were categorised into three possible themes. (1) Work exhaustion. Many participants felt their long working hours, and heavy workloads resulted in a lack of rest. A follow-up study could learn of the specific sources of their exhaustion. (2) Outside discrimination. Some participants felt discriminated against by those outside of their community. They experienced prejudice and a lack of acceptance. A follow-up study could uncover whether these feelings also resulted in feeling overwhelmed and whether they felt targeted by outsiders in specific ways. (3) Community life. Participants expressed the everyday stressors that occur when living in such proximity to others, notably, feelings of hurt, betrayal, annoyance, and lack of privacy. A follow-up study could examine these feelings more closely and how they interfere with "living the life of God". Participants overwhelmingly named prayer and meditation as useful stress-relieving practices. Also, practicing regular self-reflection was named as a critical daily practice in relieving stress, which is often neglected. Participants acknowledged that taking part in the spiritual retreat allowed time for strategic self-reflection. Some participants had personal, concrete goals, while others had philosophical goals. A follow-up study could delve deeper into how participants are making meaning of these goals.

## Conclusion

This study is the first of its kind to be conducted with this unique population of Nigerian Catholic immigrant sisters in the United States. Given that immigrants experience considerable stress as they attempt to integrate into the educational, social, or employment settings of the receiving society, the findings of the present study are well timed. The results of the study revealed the importance of taking time off from one's usual routine activities to participate in a spiritual retreat, which has been found beneficial to mental

and physical health. The findings are relevant to Catholic women religious, particularly women religious immigrants as it suggests the need for Catholic religious institutes to organise and encourage their members to attend spiritual retreats. This intentional time away from the hassles of daily life may help to reenergise their sense of meaning and purpose in life, belief, and confidence in self and these inner resources can be called upon in times of distress. Africans have a deeply rooted sense of spirituality, so the findings of this study may suggest to healthcare professionals/practitioners the need to take a more holistic approach when dealing with the physical and mental health of these immigrants. The findings are also relevant to immigrants, in general, who undergo immense stress in their effort to integrate into the receiving society. Attending spiritual retreats and/or building spiritual exercises into the daily routine may serve as useful means of coping with the stress of acculturation and other stressful life events. Mindfulness meditation has long been part of Buddhist, and other spiritual traditions (Kabat-Zinn, 2009; Keng, Smoski, & Robins, 2011) and studies have shown time and time again that it is effective in improving mood, reducing stress and anxiety, and helping individuals develop that sense of inner peace and satisfaction (Coppola & Spector, 2009; Williams, Kolar, Reger, & Pearson, 2001). If this assertion holds true, then the findings of this study may suggest to health promotion practitioners the need to offer such intervention to various groups and community samples regardless of their ethnic, cultural, religious, or spiritual background. Overall, the findings help to encourage all individuals to incorporate spiritual practices into their daily routine and take some time off during the year to find, attend, and participate in religious retreat programmes. With the reported increase in average stress levels of United States adults (American Psychological Association, 2015), the findings of the study add to the evidence that spiritual intervention may provide another avenue for effectively coping with stress since it enhances one's sense of identity and self-efficacy, which weakens one's perception of stress promoting individual overall well-being. Studying religious or spiritual communities of people not only help them to feel more supported by mainstream society but can also help mental health practitioners understand that encouraging commitment to something more significant than oneself can alleviate everyday stressors associated with individualistic societies.

## Disclosure statement

No potential conflict of interest was reported by the authors.

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