

RESILIENCE TO STRESSFUL LIFE EVENTS IN MIDDLE AGED AND OLDER AFRICAN  
AMERICANS

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## **ABSTRACT**

African Americans in later-life have had a life time of exposure to both typical stressful life experiences and racial discrimination and are at risk for exposure to stressors related to old age. Religiosity and eudaimonic well-being are potentially two useful protective resources for this community. This study analyzed data from the Health and Retirement Study to test a main effects model and a double moderation model of the relationship between stress, discrimination, protective factors, and later-life well-being, using a series of four-step linear regression analyses. In line with the hypotheses, both stressful life events and discrimination showed negative main effects on later-life well-being. There also was support for a two-staged moderation effect in which high levels of discrimination exacerbated the negative effects of stressful life events on depression, but people with moderate and high levels of religiosity demonstrated resilience to these effects. Eudaimonic well-being was associated with positive well-being but was not supported as a moderator. Limitations and directions for future research are discussed.

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## **INTRODUCTION**

Stressful life events are experiences that require people to make major and often permanent readjustments in their usual routine (Dohrenwend, 2006). Stressors may cause acute or chronic distress. The experience of losing a job or the death of a spouse, for instance, could have an immediate impact on one's welfare, as well as create ongoing circumstances that negatively affect well-being (Pearlin, Schieman, Fazio, & Meersman, 2005), such as economic strain. (Pearlin, et al., 2005). Furthermore, there are risk factors that predispose some individuals to experience more stressful circumstances than others. Important risk factors include being born to a particular ethnic group, such as African American, or to a family of low socioeconomic status (Pearlin et al., 2005). Another risk factor for exposure to stressful life events is old age (Kling, Seltzer, & Ryff, 1997). The longer one lives the more likely it is that that person will have experienced major stressors at some point in life, and certain stressors, such as the deaths of friends and family members or the experience of having a life-threatening illness, are more common in later-life. Based on these risk factors, a group of people who are particularly vulnerable to the impact of stressful life events are African Americans who are in later life.

In later-life, in addition to the potential cumulative effect of a lifetime of experience with stressors, as well as the catalyst that old age may provide for the onset of certain major stressors, the loss of some of the potential resources to cope with those stressors is also greater than in younger age groups (Pinquart & Sorenson, 2000). Older individuals experience losses in multiple domains, such as their financial, social, and physical and mental resources. These losses may negatively impact their ability to care for themselves. For example, retirement is typically associated with the loss of approximately one third of one's income in Western societies, which can significantly impact the financial independence of the retiree. The increasing loss of peers, family

members and significant others, which are themselves stressful events in later life, also leave older individuals with less social support to use in times of need. Loss of competence in physical and cognitive domains also reduces the ability of older persons to independently care for themselves, which may serve to further exacerbate stressors (Pinquart & Sorenson, 2000).

Compounded with these vulnerabilities, African Americans in later-life have the additional chronic stressor of a lifetime of racial discrimination. Racial discrimination – defined as a type of social ostracism or denigration of a person or groups of people based on their ethnic or cultural background (Brondolo, Brady, Pencille, Beatty & Contrada, 2009) – creates immense burden and negative impact on susceptible groups in U.S. society. This treatment has negative effects on the targets that endure it on a daily basis (Harrell, 2000). Thus, the term “racism-related stress” has been used (Clark, Anderson, Clark, & Williams, 1999; Harrell, 2000; Pieterse & Clark, 2007) to describe interactions between individuals or groups that are the result of existing racist dynamics and are perceived as threatening the well-being or taxing the resources of one of these individuals or groups (Harrell, 2000).

With the added impact of racial discrimination, African Americans are at higher risk than other American ethnic groups for exposure to stressful life events (Utsey, Giesbrecht Hook, & Stanard, 2008). For example, American national statistics indicate that hate crimes targeted towards African American individuals in the United States are more frequent than those perpetrated against any other American ethnic group (FBI, 2015). Generations of discrimination have created circumstances that keep African Americans in financial hardship, such that even in times of national economic growth African Americans still have relatively high rates of unemployment and poverty,

especially when compared with both European and Hispanic Americans (White & Rogers, 2000). These economic disadvantages make it difficult for African Americans to avoid exposure to dangerous environments while leaving them with few financial resources to mitigate the impact of the stressors they face (Pearlin et al., 2005). African Americans also have both a greater incidence of physical disease and lower life expectancies than European Americans, which have been attributed, at least in part, to psychological and physiological responses to the chronic stressor of racial discrimination (Utsey et al., 2008). Older African Americans therefore have to cope with the deleterious effects of both race-based stressors and the impact on their health over the years, as well as the additional influx of stressors that are often present in old age (George & Lynch, 2003).

A very limited amount of research has focused specifically on the well-being of African Americans in later-life. Therefore, more research needs to be done to ascertain the impact of the cumulative effect of a lifetime of stressors, major later-life stressors and race-based stressors on older African Americans' well-being. The current study examines the impact of the combined stress of racial discrimination and the cumulative stress of negative life events on the psychological well-being of middle-aged and older African Americans.

Schwarzer and Schulz (2001) explain stress by referring to the "Cognitive – Transactional Process Perspective" (Schwarzer and Schulz, 2001, p. 3), described in Lazarus (1991). This describes a model of coping with the stress of life events and how one's coping capacity affects personal outcomes. In the model, stress is described as a constantly unfolding process made up of antecedent events that make the stressor more or less likely to occur, "mediating processes" (Schwarzer and Schulz, 2001, p. 3) that occur after the stressor and influence the eventual outcome, and the effects that result from the

interplay between all three factors (Schwarzer and Schulz, 2001). The antecedents are variables associated with the person, such as their demographic characteristics or social environment. In the context of this model, mediating processes refer to anything that happens after the stressor occurs that has an impact on the outcome, such as methods of coping and appraisals of one's resources. The experience of the stressor is therefore influenced by the antecedents and mediating processes, which impact the outcome of the stressor. The effect of the stressor interacting with these factors may be expressed through a variety of variables, such as immediate or long-term impacts on psychological well-being, physical health or social functioning (Schwarzer and Schulz, 2001). Thus, the current study builds on Lazarus's model to examine the impact of life stressors on well-being. In this model, the antecedent factor of interest is race, the mediating processes are community coping resources which act as moderators, and the aim is to evaluate how these antecedents and moderators interact to influence well-being as an outcome of life course stressors in midlife and old age.

In order to understand the impact of stress, it is important to examine the factors that may contribute to resilience in older African Americans. Resilience has been defined as the ability to overcome negative reactions from exposure to traumatic experiences, or the ability to avoid developing negative reactions in the first place (Brown & Tylka, 2011). Thus, there are likely resilience factors that buffer against the possible aggregate impact of lifetime, later-life and race-based stressors that older African Americans may face. Notably, despite the negative stressful life events that are more prevalent in later-life, research has found that on average, reports of well-being do not decrease with age, as older cohorts report similar levels of life satisfaction and happiness as younger cohorts (Pinquart & Sorenson, 2000), with some studies even finding that happiness peaks in

later-life (Frijters & Beatton, 2012). A large amount of research also points to notable resiliency to stressors within the African American community, as revealed in generally high levels of well-being despite the disadvantages associated with experiencing persistent discrimination. Studies have found similar levels of mental health functioning among African American and European American people (Keys, 2009). Furthermore, when disparities are found, African American people often have lower rates of mental disorders than European American people (Keys, 2009).

In light of this evidence for resilience, recent research on the topic of African American adversity has shifted away from focusing primarily on the potential psychological distress that African Americans may face as a result of discrimination and has addressed the ways African Americans may be able to use cultural resources likely derived from that adversity to develop resilience (Brown & Tylka, 2011). Studies have found that many people have been able to successfully recover from, or to be relatively unaffected by the impact of stressors. This resilience research has found a number of social and family resources that appear to be salient in African American communities that may contribute to this resilience effect. Two such resources are religious participation, and eudaimonic well-being.

Religiosity is generally stronger within African Americans than ethnic majority Whites, and it is a possible protective factor against stress for African Americans. When compared with other racial groups, especially non-Hispanic European Americans, African Americans are more likely to attend religious services, be members of a church, and consider religion to be of great importance in their lives (Taylor, Chatters, Jayakody, & Levin, 1996). Research with African Americans and European Americans has found that, within both groups, greater religious attendance is related to higher levels of subjective well-being and lower levels of psychological distress and mental illness (Keys,

2009). African Americans are also more likely than European Americans to endorse statements reflecting positive religious attitudes, such as descriptions of one's self as religiously minded or of religion as being important in their lives. These differences remained after controlling for socioeconomic status or type of religious affiliation. Because religious participation is higher among African Americans than other groups, it is likely that religion offers a uniquely important resource for coping among African Americans.

Religion may be an even more important resource for older than younger persons in the African American community. A review by Taylor (1988) indicated that religious participation among African Americans increases with age. Older African Americans were likely to hold many important roles in their religious communities, such as social organizers or caregivers. African Americans also were more likely than European Americans to state that church members over the age of 65 years were the most respected in the church community.

Another coping resource that may be particularly relevant for African Americans is a personality characteristic called eudaimonic well-being. Eudaimonic well-being involves placing an emphasis on human potential and the struggle to make life meaningful (Ryff, Keyes, & Hughes, 2003). Research has found that minority status in America is a predictor of relatively high levels of eudaimonic well-being (Ryff et al., 2003). For parents, eudaimonic well-being can take the form of generative interests in the growth and development of the next generation. African American parents have been found to report more generative concern and use more generative behaviours than European American parents (Keys, 2009).

Ryff and colleagues (2003) argued that racial socialization and group identification among African Americans might instill a sense of meaning and life purpose that contributes to eudaimonic well-being. Racial socialization refers to the variety of messages about race and culture given to African American youth by the adults that raise them. The messages can be both overt and covert in nature, and their purpose is to give young African Americans adaptive ways to deal with the racism they encounter (Brown & Tylka, 2011). Commonly, these messages encourage cultural pride and educate youth on African American history and traditions (Brown & Tylka, 2011). In theory, this type of cultural promotion and education helps to give youth both an explanation for the discrimination they face and a shared common understanding of the mutual struggles endured by those in their cultural group (Keys, 2009). Therefore, youth armed with these messages are thought to be more prepared when discrimination occurs because the experience may seem less surprising, they may be able to draw on information from the cultural messages about how to handle the experience, and they may feel a sense of cultural pride if they handle the experience successfully (Brown & Tylka, 2011).

A study by Brown and Tylka (2011) provides support for the importance of racial socialization in coping with discrimination. In this research, racial socialization messages were assessed using the Teenage Experience of Racial Socialization scale (TERS; Stevenson et al., 2002), which assesses the receipt of five types of messages. These messages include themes such as cultural coping with antagonism, reinforcement of cultural pride, cultural appreciation and legacy, cultural alertness to discrimination and cultural endorsement of mainstream society (Brown & Tylka, 2011). Brown and Tylka (2011) studied African American students and examined whether racial discrimination would be negatively correlated with resilience for individuals with low amounts of racial socialization messages. Resilience was assessed with the Conner-Davidson Resilience

Scale (CD-RISC; Connor & Davidson, 2003), which assesses individual levels of resilience in the face of adversity by targeting themes like problem solving skills and active confrontations of stressful situations. Accordingly, in participants who reported receiving low amounts of racial socialization messages, more experiences with racial discrimination were associated with low resilience scores. However, in participants who reported high amounts of racial socialization messages, high amounts of racial discrimination were not associated with low resilience. Even among the subgroup of participants who experienced the highest levels of racial discrimination, those who received high amounts of racial socialization messages had higher levels of resilience than those who received low amounts of racial socialization messages (Brown & Tylka, 2011). Thus, these results suggest that, under the right conditions of receiving substantial socialization for coping with racism, discrimination experiences may actually allow African Americans to build resilience to stressors.

This notion contrasts with the framework in which racial discrimination is generally seen as a destructive stressor for all African Americans in the U.S. Instead, in African Americans it appears that the experience of racism in the context of racial socialization may be a uniquely significant contributor to the development of attributes like purpose in life and self-acceptance that are associated with eudaimonic well-being. This cluster of eudaimonic traits fostered in African American families through generative interests and racial socialization, may serve as an important resource for African Americans when coping with life stressors.

In summary, research and theory on stressful life events and on racial discrimination reveal that instances of racial discrimination may be experienced as a

stressful life event for many African Americans. Thus, both a history of racism and the occurrence of negative life events might contribute to psychological functioning in later life. This situation is consistent with a “main effects model” of predicting later-life well-being from these two circumstances. However, the racial coping literature shows that African Americans can successfully cope with and even remain resilient in the face of the constant stress of racial discrimination by using resources gained through socialization within their community. Together, these findings suggest that a history of successfully coping with racial discrimination might make older African American people more resilient to other forms of stressful life events that they may encounter later in life. This situation is consistent with a “moderation model”, in which the effects of lifetime stressors are moderated by a combination of experience with racism and the development of resources for coping with racism. The current study is designed to test the plausibility of each of these models by testing hypotheses about the negative effects of stressful life events and of discrimination experience on older African Americans, as well as hypotheses about how African Americans who successfully cope with discrimination will develop coping skills that will help them manage lifetime and later-life stressors.

Specific hypotheses. Consistent with the vast literature (Holmes & Rahe 1967; Pearlin et al., 2005; Schwarzer & Schulz, 2001) on the effects of major negative life events on well-being, we propose two models through which the impact of those events may occur. The first is the “main effects model” through which we hypothesize that stressful life events generally will have a negative impact on later-life well-being for African Americans. Therefore, those with more experiences of stressful life events will have lower levels of later-life well-being than those with less or no experience of stressful life events (Hypothesis 1). Based on research on the negative impact that discrimination has on African Americans (Harrell, 2000), under this model we also hypothesize that the

experience of discrimination will have a negative effect on later-life well-being for African Americans (Hypothesis 2). The second model is this “double moderation (stress buffer) model”. Under this model we propose that discrimination, rather than having a direct effect on later-life well-being, will instead be moderated by experiences. Whether discrimination is experienced in the presence or absence of protective resources will determine whether or not discrimination will have a buffering or exacerbating effect on the relationship between stressful life events and later-life well-being for African Americans. That is, for a subgroup, discrimination may take place in the presence of protective resources that enable those individuals to cope positively with the occurrence. This experience will serve as a protective learning experience that will positively impact the effect of other stressful life events on well-being. However, for another subgroup, discrimination will take place in the absence of protective resources, in which case, discrimination will be experienced as an additional stressor, thereby compounding the effect of other stressful life events on well-being (Hypothesis 3).

## **METHODS**

### **Sample**

The sample was obtained from the Health and Retirement Study (HRS), which is a nationally representative longitudinal epidemiological survey of participants 50 years and older living in the United States. It is funded by the National Institute of Aging, carried out by the University of Michigan and approved by the University of Michigan's Health Sciences Institutional Review Board (Smith, Fisher, Ryan, Clarke, House & Weir, 2013). The entire study includes N = 38,183 adults, born between 1924 and 1965. Each family has one primary reporter who is the specified age appropriate head of the household who completes the majority of the survey. The initial sample, collected in 1992, consisted of persons born from 1931 to 1941, who were between the ages of 51 and 61 years old, and their spouses of any age. A second study was added in 1993, the Asset and Health Dynamics Among the Oldest of Old (AHEAD), which captured those born before 1924. These 2 cohorts were merged in 1998, and 2 new cohorts were enrolled to bridge the study age gap, now adding those born 1924 - 1930, and those born 1942 - 1947. The HRS now replenishes the sample every 6 years with younger cohorts. In 2004, those born 1948 - 1953 were added, in 2010 those born 1954 - 1959 were added, and most recently, in 2016 those born 1960 - 1965 were added. Since 2006, the HRS has employed a mixed mode design in which half of the sample is randomly assigned to a core interview, while the other half completes an enhanced interview, which has all the components of the core, plus additional physical and biological measures, as well as a mail-in psychosocial questionnaire, which is completed afterwards. Data are collected biennially, so the half sample that received only the core interview in 2006 received the enhanced interview in 2008, whereas the group that received the enhanced interview in

2006 received only the core interview in 2008. This alternation continues so that enhanced interview data are available every 4 years for the full sample (Sonnega, 2015).

The current report focused on African American participants who completed the mail-in psychosocial questionnaire in 2010 and 2012. The HRS oversampled for African Americans, as a representative sample among this age group would result in only 10% of the sample being comprised of African Americans. The HRS aimed for a twofold increase to that proportion, which resulted in African Americans making up 18.6% of the sample (Heeringa & Conner, 1995). This increase allowed for within-group study of African Americans among this age group. A total of 4135 African Americans were eligible to complete the psychosocial questionnaire in 2010 - 2012, which contained the data relevant to this investigation, and 2558 or 61.9% of those participants completed the survey. This rate of responding is comparable, but slightly lower than, the response rate for this questionnaire for the entire sample (72.9% of those randomly assigned to the enhanced interview). Another 33 of those participants were removed from the current sample because their survey was noted as completed by proxy, which indicated that the primary respondent did not fill out their own survey, and 1 participant was removed because he/she was a primary respondent who was under the age of 50. The current sample therefore consisted of 2524 participants. The psychosocial section of the questionnaire contained a battery of self-report measures that were completed by the primary reporter, (the previously selected age appropriate individual), for the household. The questions covered a wide range of topics including income, wealth, work, retirement, health, health care utilization, and psychosocial behavior, among others. All but one of the measures for the current report came from this questionnaire. The exception, the depression questionnaire, was a part of the core interview.

## Demographics

Table 1 shows the distribution of the following demographics in the sample.

Table 1

Demographic variables and their correlations with study variables  
(N=2524)

Variables	% of sample	r					
		Trauma	Discrimination	Depression	Life Satisfaction	Religiosity	Purpose in Life
Gender		-.01	-.11**	.08**	0	.14**	0.01
Female	65.8						
Male	34.2						
Age		0.02	-.14**	-.08**	.16**	.1**	-.08**
<65 years	60.2						
65 - 75 years	24.9						
>75 years	14.9						
Years in school		0.04	.13**	-.15**	0.03	-.03	.21**
< / = 12	57.6						
>12	42.4						
Income		-.04	0.02	-.24**	.13**	-.04	.22**
<7500	10.4						
7500 - 45000	59.3						
<45000 - 75000	14.3						
>75000	16						

**Age.** Age was calculated from year of birth, which was self – reported by participants and acquired from the HRS tracker file, which contains demographic information for all the participants in the HRS study.

**Gender.** Gender was self-reported by the participants and acquired from the HRS tracker file. Men were coded as 0 and women were coded as 1.

**Income.** The income data were calculated based on self – reported total household annual earnings from the participants.

**Education.** Education was self-reported as number of years in school by the participants.

## Measures

Table 2 shows the distribution of the responses to the following measures in the sample.

Table 2

Means (SD) and Distribution of Study Variables		
Measures	% of sample	Mean (SD)
Stressful Life Events (continuous)		1.14 (1.19)
Discrimination (categorical)		
Low	85.9%	
High	11.3%	
Depression (continuous)		2.23 (2.33)
Life Satisfaction (continuous)		4.32 (1.58)
Religiosity (categorical)		
Low	10.4%	
Moderate	35.9%	
High	53.7%	
Purpose in Life (continuous)		4.81 (0.92)

**Stressful Life Events.** The experiences of stressful life events were assessed with seven items derived from an ongoing longitudinal study about trauma in older adults (Krause, Shaw, & Cairney, 2004). Items are: ‘Has a child of yours ever died’, ‘Have you ever been in a major fire, flood, earthquake, or other natural disaster?’, ‘Have you ever fired a weapon in combat or been fired upon in combat?’, ‘Has your spouse, partner, or child ever been addicted to drugs or alcohol?’, ‘Were you the victim of a serious physical attack or assault in your life?’, ‘Did you ever have a life threatening illness or accident?’ and ‘Did your spouse or a child of yours ever have a life threatening illness or accident?’ If an event did occur, participants were asked to report the year it happened. Total scores

were calculated by taking the sum of the responses. Participants with all missing data (no yes or no indicated on the responses for this measure) were excluded. For all other participants, blank responses were counted as an indication that the event did not occur. The results from this measure were modified for this sample from a 7-point to a 5-point scale, such that total scores range from 0 - 4, rather than 0 -7. This was done because the data was not normally distributed but instead had a positive skew. There were very few participants who reported 4 or more stressful events, so those reporting 4 or more stressful life events were reduced into one category. Construct validity is supported by research with the HRS demonstrating that the number of stressful experiences endorsed is associated with more negative physical health outcomes (Lin, Neylan, Epel, & Donovan, 2016).

**Discrimination.** Major experiences of lifetime discrimination were assessed with a seven-item questionnaire about exposure to major negative life events that are viewed as unfair (Kessler, Mickelson, & Williams, 1999). The items were derived from the MacArthur Foundation Midlife Development in the United States (MIDUS) study. Questions are: ‘At any time in your life, have you ever been unfairly dismissed from a job’, ‘For unfair reasons, have you ever not been hired for a job?’, ‘Have you ever been unfairly denied a promotion?’, ‘Have you ever been unfairly prevented from moving into a neighborhood because the landlord or a realtor refused to sell or rent you a house or apartment?’, ‘Have you ever been unfairly denied a bank loan’, ‘Have you ever been unfairly stopped, searched, questioned, physically threatened or abused by the police?’, and ‘Have you ever been unfairly denied health care or treatment?’ If an event did occur, participants were asked to report the year it happened. Total scores were calculated by taking the sum of the responses. Participants with all missing data (no yes or no indicated on the responses for this measure) were excluded. For all other participants, blank

responses were counted as an indication that the event did not occur. Because the scores were not normally distributed, they were converted into a categorical variable, such that scores were divided into two groups, low discrimination (0 - 2 events) and high discrimination (3 or more events). This was done because there were few participants who reported 3 or more discrimination events, and the distribution of scores was bimodal rather than normal. Construct validity is supported by the use of this questionnaire in research, which found that major experiences of lifetime discrimination interacted significantly with depression and life satisfaction among European Americans and Latinos in the HRS sample, demonstrating that greater levels of discrimination were associated with more depressive symptoms and lower rates of life satisfaction (Ayalon & Gum, 2011).

### **Later-Life Well-Being**

**Depressive symptoms.** The Center for Epidemiologic Studies Depression (CES-D) (Radloff, 1997) scale is a commonly used measure of depressive symptoms. The HRS used a shortened, 9-item form of the questionnaire, with a modified yes or no response format that replaced the standard format of reporting the frequency of symptom occurrence (Steffick, 2000). Participants were asked to indicate whether or not they had experienced each of the symptoms indicated, such as depressed mood, fatigue etc., in the past week (Smith et al., 2013). Total scores were calculated by taking the mean of the responses and multiplying by the number of items. This was done so that scores from people with some missing data could be more accurately represented. Data from participants who had more than four responses missing was not included. Higher scores indicated more depressive symptoms. Psychometric evaluation of this short form CES-D

with the HRS population yielded alphas ranging from 0.77 to 0.83 (Steffick, 2000).

Construct validity is supported by the use of this questionnaire in research with the HRS sample, demonstrating a significant interaction between depression and frailty, such that the presence of depressive symptoms in the face of frailty led to more negative health outcomes (Lohman, Mezuk, & Dumenci, 2017). Thus, this measure can capture depressive symptoms as an indicator of well-being in an older sample.

**Life satisfaction.** Diener's measure of life satisfaction (Diener, Emmons, Larsen, & Griffin, 1985) is a well-established measure of subjective well-being. The measure contains five items. Questions are: 'In most ways life is close to ideal', 'The conditions of my life are excellent', 'I am satisfied with my life', 'So far, I have gotten the important things I want in life.' and 'If I could live my life again I would change almost nothing.' Respondents answer on a 7-point scale; 1 = strongly disagree, 2 = somewhat disagree, 3 = slightly disagree, 4 = neither agree nor disagree, 5 = slightly agree, 6 = somewhat agree, 7 = strongly agree. Total scores were calculated by taking the mean of the responses and multiplying by the number of items. Data from participants who had more than 2 responses missing was not included. Higher scores indicated more life satisfaction. This scale was found to be internally consistent by the HRS study's own psychometric testing, with an alpha of 0.89. Construct validity is supported by the use of this questionnaire in research with the HRS sample. For example, life satisfaction scores were associated with scores for positive outlook on life among aging adults (Heo, Chun, Lee, & Kim, 2016).

### **Protective Resources**

**Religiosity/Spirituality.** This construct was assessed with a four-item questionnaire about religious beliefs, meanings and values, which evaluates belief in the impact of a higher power in one's life. The items are derived from a multidimensional measure of religiousness and spirituality created by the Fetzer Institute (Fetzer

Institute/National Institute on Aging Working Group, 2003). Items are: 'I believe in a God who watches over me', 'The events in my life unfold according to a divine or greater plan', 'I try hard to carry my religious beliefs over into all my other dealings in life' and 'I find strength and comfort in my religion.' Respondents answered on a 6-point scale; 1 = strongly disagree, 2 = somewhat disagree, 3=slightly disagree, 4=slightly agree, 5=somewhat agree, 6=strongly agree. Total scores were calculated by taking the mean of the responses and multiplying by the number of items. Data from participants who had more than two responses missing was not included. This measure was then modified into a categorical variable, because the data was not normally distributed, but instead was distributed in a trimodal-like manner. Scores were divided into three groups, low religiosity (0 – 4.25), moderate religiosity (4.26 – 5.99) and high religiosity (6). This scale was found to be internally consistent by the HRS study's own psychometric testing, with an alpha of .92 (Smith et al., 2013). Construct validity has been supported by the use of this questionnaire with the HRS sample in research that demonstrated and expected negative correlations between religiosity and depression (Ronneberg, Miller, Dugan, & Porell, 2014).

**Eudaimonic Well-Being (Purpose in Life).** This was a seven-item section from the larger Ryff Measure of Psychological Well-Being (1989), which measured 6 dimensions of well-being. These seven items were selected from a total of 20 items on the original purpose in life subscale. This short form was created by choosing the 7 items with the highest factor loadings from previous research (Schmutte & Ryff, 1977). Questions are: 'I enjoy making plans for the future', 'My daily activities often seem trivial and unimportant to me'[R], 'I am an active person in carrying out the plans I set for myself', 'I don't have a good sense of what it is I am trying to accomplish in life' [R],

‘I sometimes feel as if I’ve done all there is to do in life’ [R], ‘I live life one day at a time and don’t really think about the future’ [R] and ‘I have a sense of direction and purpose in my life’. Participants are asked to rate how much they agree or disagree with the statements. Respondents answer on a 6-point scale; 1 = strongly disagree, 2 = somewhat disagree, 3=slightly disagree, 4=slightly agree, 5=somewhat agree, 6=strongly agree. Total scores were calculated by taking the mean of the responses and multiplying by the number of items. Data from participants who had more than three responses missing was not included. Higher scores indicated greater purpose in life. This scale was found to be sufficiently internally consistent by the HRS study’s own psychometric testing, with an alpha of .74 (Smith et al., 2013). Construct validity is supported by the use of this questionnaire in research to assess eudemonic well-being, as the research demonstrated, as would be expected, that eudaimonic well-being was negatively associated with loneliness in the HRS sample (Cole, Levine, Arevalo, Ma, Wr, & Crimmins, 2015).

## **RESULTS**

Regression analyses were conducted to test the main effects hypotheses and double moderation hypotheses. Each of the two moderators predicting each of the outcome variables was tested in a separate regression analysis, to reduce the number of interaction terms in each model. In total, four regression analyses were conducted. Two analyzed the impact of main effects and the three-way interaction between stressful life events, major discrimination and religiosity, on each outcome variable (depression and life-satisfaction), and two analyzed main effects and the three-way interaction between stressful life events, major discrimination and purpose in life, with each outcome variable. In order to control for demographic variables, age, gender, income, and number of years in school, were entered at step one. The main effects were entered at step two, the two-way interactions were entered at step three, and each three-way interaction was entered at step four.

For these analyses the continuous variables, stressful life events and purpose in life, were centred. Major discrimination was dummy coded as a single vector (1= 3 or more major discrimination events, 0 = less than 3 major discrimination events). Religiosity was dummy coded as two vectors with low religiosity as the index, so that the first religiosity vector contrasts low religiosity with moderate religiosity, and the second religiosity vector contrasts low religiosity with high religiosity.

Table 3 shows the regression results with religiosity as the moderator and depression as the outcome variable. In Model 1, there are significant main effects for both stressful life events and major discrimination on depression. The direction of these associations indicate support for the hypotheses proposed in the main effects model, that both stressful life events and major discrimination would predict poorer later-life well-

being. There was also a significant main effect of one of the religiosity vectors that contrasts low versus high religiosity. The direction of this effect indicates that high as opposed to low levels of religiosity predicts lower depression.

The relevant two-way interactions were entered in Model 2, none of which were significant.

In Model 3, there are significant effects of the three-way interactions between stressful life events, major discrimination and both religiosity vectors. In order to explore these significant three-way interactions in light of the hypothesis, the two-way interactions of stressful life events with discrimination were examined at each level of religiosity. These interactions are illustrated in Figures 1, 2, and 3. In general, the effect of stressful life events on depression is greater for people with major discrimination experience than those without this experience. As shown in Figures 1 and 3, this effect was more pronounced for people who had low levels of religiosity than for those with high levels of religiosity, which is consistent with the stress buffer model (hypothesis 3). Furthermore, Figure 2 shows that the most buffering occurred among those who had moderate levels of religiosity, where there are little effects of stress on depression whether or not people experienced significant discrimination as well. The simple effects of the slopes in Figure 1 indicate that under low religiosity, the effect of stress on depression is significant for those with high discrimination, but not significant for those with low discrimination. In figure 2, there is a small but significant effect under moderate religiosity for the impact of stress on depression for those who have low discrimination, whereas the simple effect for those in the high discrimination group is not significant. Finally, both slopes shown in figure 3 represent a significant effect under high religiosity of the impact of stress on depression. It is important to note that the sample sizes for the

low discrimination groups are much larger than the sample sizes in the high discrimination groups.

**Table 3**

Summary of Regression Analysis for Variables Predicting Depression in Later Life, with Religiosity as a Moderator. (N=2369)

Variables	Model 1				Model 2				Model 3			
	B	SE B	$\beta$	$R^2$	B	SE B	$\beta$	$R^2$	B	SE B	$\beta$	$R^2$
Age	-.02	0.01	-.10**		-.02	0.01	-.10**		-.02	0.01	-.10**	
Income	0.00	0.00	-.17**		0.00	0.00	-.17**		0.00	0.00	-.17**	
Gender	0.40	0.10	0.08**		0.39	0.10	.08**		0.40	0.10	.08**	
Number of Years in School	-.02	0.01	-.06**		-.02	0.01	-.06**		-.02	0.01	-.06**	
Stressful Life Events	0.24	0.04	.12**		0.18	0.13	.09		0.20	0.14	.01	
Major Discrimination	0.56	0.15	.08**		1.00	0.44	0.14*		0.60	0.46	.08	
Religiosity (low vs moderate)	-.01	0.16	-.02		-.01	0.18	.00		0.10	0.18	.00	
Religiosity (low vs high)	-.04	0.16	-.09**		-.03	0.17	-.08*		-.03	0.17	-.07*	
Stressful Life Events x Major Discrimination					0.16	0.10	.04		0.92	0.31	.21**	
Stressful Life Events x Religiosity (low vs moderate)					0.05	0.14	.02		0.27	0.16	.08	
Stressful Life Events x Religiosity (low vs high)					0.03	0.14	.01		0.17	0.16	.07	
Major Discrimination x Religiosity (low vs moderate)					-0.66	0.49	-.06		-0.11	0.52	-.01	
Major Discrimination x Religiosity (low vs high)					-0.56	0.48	-.06		-0.21	0.52	-.02	
Stressful Life Events x Major Discrimination x Religiosity (low vs moderate)									-1.10	0.36	-.15**	
Stressful Life Events x Major Discrimination x Religiosity (low vs high)									-0.68	0.35	-.12*	
$R^2$				0.08				0.08				0.09

\*p ≤ .05. \*\*p < .01.

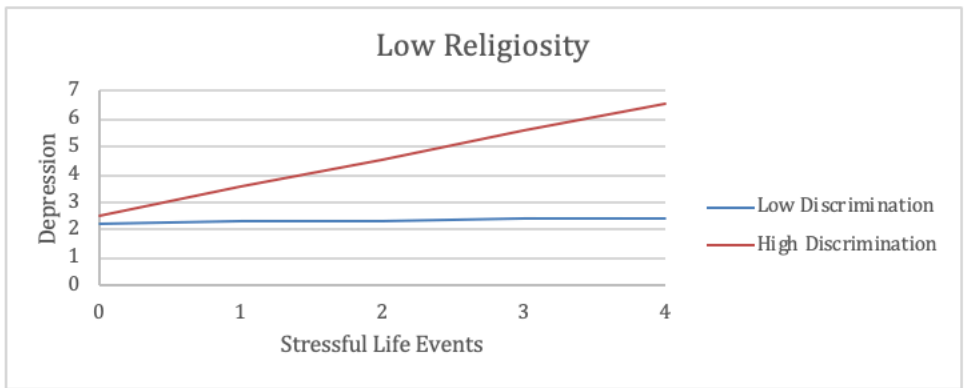


Figure 1: The impact of stressful life events on depression, with discrimination as a moderator, under conditions of low religiosity.

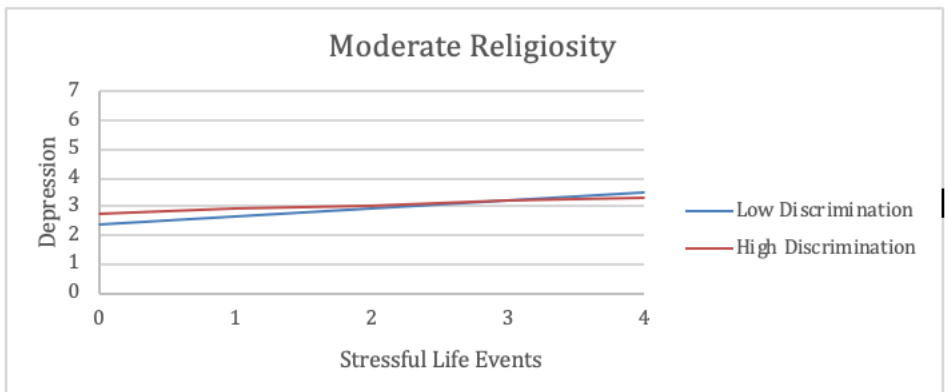


Figure 2: The impact of stressful life events on depression, with discrimination as a moderator, under conditions of moderate religiosity.

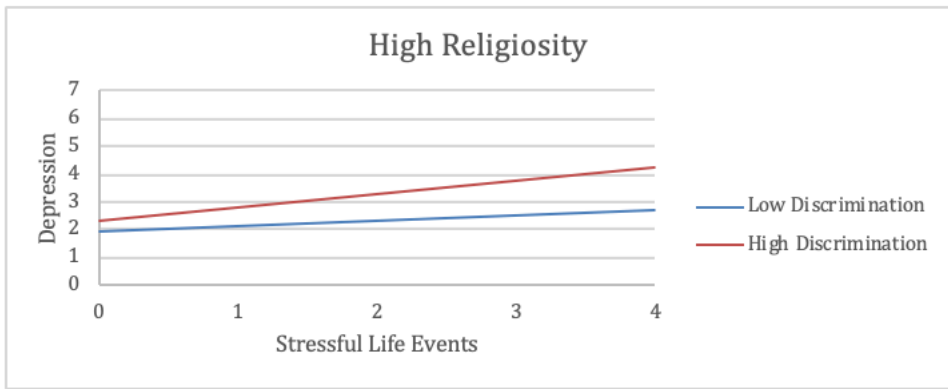


Figure 3: The impact of stressful life events on depression, with discrimination as a moderator, under conditions of high religiosity.

Table 4 shows the regression results with religiosity as the moderator and life satisfaction as the outcome variable. In Model 1, there are significant main effects for both stressful life events and major discrimination predicting lower levels of life satisfaction. Thus, these effects are consistent with the main effects model hypotheses. There is also a significant main effect of the religiosity vector contrasting low and high levels. The direction of this effect indicates that high as opposed to low levels of religiosity predicts greater life satisfaction.

The relevant two-way interactions were entered in Model 2, none of which were significant. However, in Model 3, when the three-way interaction terms were entered, there is a significant two-way interaction between stressful life events and major discrimination. Follow-up analyses were conducted to examine the nature of the significant two-way interaction. Figure 4 shows the prediction of life-satisfaction from stressful life events, moderated by discrimination level. The impact of stressful life events on life satisfaction is greater for people with major discrimination experience than those without this experience. There were no significant three-way interactions among stressful life events, major discrimination, and either vector of religiosity. Thus, there was no support for the double moderation hypothesis when life satisfaction is the outcome variable.

Table 4

Summary of Regression Analysis for Variables Predicting Life Satisfaction in Later Life, with Religiosity as a Moderator. (N=2363)

Variables	Model 1				Model 2				Model 3			
	B	SE B	$\beta$	$R^2$	B	SE B	$\beta$	$R^2$	B	SE B	$\beta$	$R^2$
Age	0.03	0.00	.17**		0.03	0.00	.17**		0.03	0.00	.17**	
Income	0.00	0.00	.13**		0.00	0.00	.13**		0.00	0.00	.13**	
Gender	-.01	0.07	-.00		-.01	0.07	-.00		-.10	0.07	-.00	
Number of Years in School	0.00	0.00	.01		0.00	0.00	.01		0.00	0.00	.01	
Stressful Life Events	-0.13	0.03	-.10**		-0.13	0.09	-.10		-0.07	0.10	-.05	
Major Discrimination	-0.33	0.10	-.07**		-0.57	0.30	-.12		-0.42	0.32	-.09	
Religiosity (low vs moderate)	0.14	0.11	.04		0.11	0.12	.03		0.10	0.12	.03	
Religiosity (low vs high)	0.46	0.11	0.15**		0.41	0.12	0.13**		0.40	0.12	0.13**	
Stressful Life Events x Major Discrimination					-0.14	0.07	-.05		-0.42	0.22	-.14*	
Stressful Life Events x Religiosity (low vs moderate)					0.10	0.10	.00		-0.51	0.11	-.02	
Stressful Life Events x Religiosity (low vs high)					0.03	0.10	.02		-0.03	0.11	-.02	
Major Discrimination x Religiosity (low vs moderate)					0.24	0.34	.03		0.09	0.36	.01	
Major Discrimination x Religiosity (low vs high)					0.45	0.33	.07		0.27	0.36	.04	
Stressful Life Events x Major Discrimination x Religiosity (low vs moderate)									0.30	0.25	.06	
Stressful Life Events x Major Discrimination x Religiosity (low vs high)									0.34	0.24	.09	
$R^2$				0.07				0.08				0.08

\*p ≤ .05. \*\*p < .01.

□

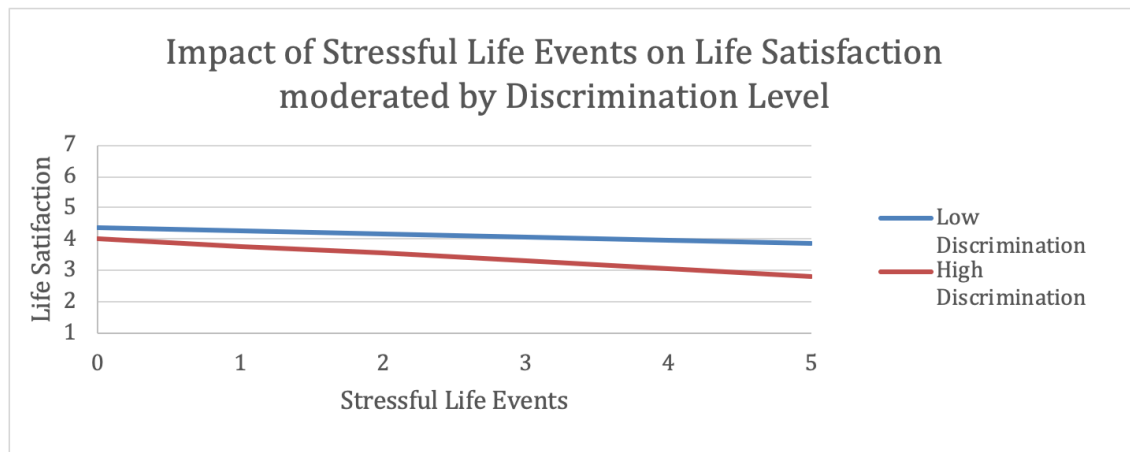


Figure 4: The impact of stressful life events on life satisfaction, with discrimination as a moderator.

Tables 5 and 6 show the regression results using purpose in life as the moderator in predicting both outcomes. Along with the main effects of stress and discrimination that were revealed in the first two regressions, here purpose in life also was a significant predictor of both outcomes. The direction of these effects indicates that higher levels of purpose in life predict greater well-being. No two-way interactions or three-way interactions with this moderator were significant. Thus, there was no support for the double moderation hypothesis when purpose in life is the moderator.

**Table 5**

Summary of Regression Analysis for Variables Predicting Depression in Later Life, with Purpose in Life as a Moderator. (N=2352)

Variables	Model 1				Model 2				Model 3			
	B	SE B	$\beta$	$R^2$	B	SE B	$\beta$	$R^2$	B	SE B	$\beta$	$R^2$
Age	-0.03	0.00	-.13**		-0.03	0.00	-.13**		-0.03	0.00	-.13**	
Income	0.00	0.00	-.12**		0.00	0.00	-.12**		0.00	0.00	-.12**	
Gender	0.35	0.10	.07**		0.35	0.10	.07**		0.35	0.10	.07**	
Number of Years in School	-0.01	0.01	-.04		-.01	0.01	-.04*		-0.01	0.01	-.04*	
Stressful Life Events	0.24	0.04	.12**		0.22	0.04	0.11**		0.22	0.04	0.11**	
Major Discrimination	0.46	0.14	.06**		0.40	0.15	0.06**		0.41	0.15	0.06**	
Purpose in Life	-0.74	0.05	-.29**		-0.75	0.05	-.29**		-0.73	0.05	-.29**	
Stressful Life Events x Major Discrimination					0.09	0.10	.02		0.10	0.10	.02	
Stressful Life Events x Purpose in Life					0.03	0.04	.01		0.02	0.05	.01	
Major Discrimination x Purpose in Life					-0.11	0.14	-.02		-0.16	0.16	-.02	
Stressful Life Events x Major Discrimination x Purpose in Life									0.07	0.10	.02	
$R^2$				0.16				0.16				0.16

\* $p \leq .05$ . \*\* $p < .01$ .

Table 6

Summary of Regression Analysis for Variables Predicting Life Satisfaction in Later Life, with Purpose in Life as a Moderator. (N=2344)

Variables	Model 1				Model 2				Model 3			
	B	SE B	$\beta$	$R^2$	B	SE B	$\beta$	$R^2$	B	SE B	$\beta$	$R^2$
Age	0.03	0.00	.19**		0.03	0.00	.19**		0.03	0.00	.19**	
Income	0.00	0.00	.09**		0.00	0.00	.09**		0.00	0.00	.09**	
Gender	0.02	0.07	.01		0.02	0.07	.01		0.02	0.07	.01	
Number of Years in School	-0.00	0.00	-.01		-0.00	0.00	-.01		-0.00	0.00	-.01	
Stressful Life Events	-0.13	0.03	-.10**		-0.11	0.03	-.08**		-0.11	0.03	-.09**	
Major Discrimination	-0.29	0.10	-.06**		-0.25	0.11	-.05*		-0.24	0.11	-.05*	
Purpose in Life	0.41	0.03	0.24**		0.39	0.04	-.02**		0.39	0.04	.23**	
Stressful Life Events x Major Discrimination					-0.07	0.07	-.02		-0.07	0.07	-.02	
Stressful Life Events x Purpose in Life					0.03	0.03	.02		0.02	0.03	.02	
Major Discrimination x Purpose in Life					0.10	0.07	.03		0.11	0.11	.02	
Stressful Life Events x Major Discrimination x Purpose in Life									0.02	0.07	.01	
$R^2$				0.12				0.12				0.12

\*p < .05. \*\*p < .01.

□

Follow-up analyses were conducted to gain a better understanding of whether or not participants typically experienced their reported major discrimination event before, after or within the same year, as their reported stressful life event. These analyses were done in order to ascertain whether participants would have had the opportunity to learn from the experience of their major discrimination event in order to help them cope with the experience of their stressful life event, as this is the proposed mechanism for the hypothesized three-way interaction. The results indicate that among participants who experienced both major discrimination events and stressful life events, 34% experienced their first reported major discrimination event before their first reported stressful life event, while another 22% experienced those events in the same year. 55% of participants experienced their first reported major discrimination event before their last reported

stressful life event, while 22.5% experienced those within the same year. Therefore, a total of 77.5% of the participants who experienced both major discrimination events and stressful life events, experienced their first major discrimination event before, or in the same year as at least one of their reported stressful life events. It is also important to note that there was considerable overlap in the timing of most of the reported discrimination and stressful life events, such that only 22% of the relevant sample had experienced all their discrimination events before any life stress events.

## **DISCUSSION**

Older African Americans have a history of experience with racism-related and later-life stressors, which negatively impact their well-being. Despite this situation, many African Americans have been able to remain resilient to these stressors, possibly by using community resources. The purpose of the current study was to examine the cumulative impact of stressful events, discrimination, and community resources (religiosity and eudaimonic-well-being) on the psychological well-being of middle-aged and older African Americans. The study tested two models, from which two main effects hypotheses and one double moderation hypothesis were derived. These hypotheses stated that both stressful life events and discrimination would have negative impacts on African American's later-life well-being, but that these negative effects would be altered depending on a person's resources for coping with earlier discrimination experiences. Notably, the double moderation hypothesis proposed that discrimination experienced in the presence of high amounts of protective resources (religiosity and eudaimonic-well-being) would have a buffering effect, and discrimination experienced in the presence of low amounts or no protective resources would have an exacerbation effect.

The findings supported the main effects model for both outcome variables, depression and life-satisfaction, and also supported the double moderation model when religiosity was the protective factor and depression was the outcome. In line with the hypotheses in the main effects model, stressful life events and major discrimination events were associated with later-life well-being, such that higher scores on these measures, were related to higher depression scores and lower life-satisfaction scores. This pattern is consistent with findings from previous research, in which stressors were related to poorer health, (Pearlin et al., 2005) and poorer well-being (Blazer, Hughes & George, 1987, Bidzińska, 1984), particularly in later-life (Pearlin et al., 2005). Prior research also

has shown that discrimination negatively affects health (Williams, Neighbors & Jackson, 2003) and well-being (Bhui et al., 2005), particularly in African Americans (Williams et al., 2003; Bhui et al., 2005). However, there is limited previous research specifically looking at the impact of stressful life events and major discrimination on older African Americans. Therefore, the current findings add to the research literature by extending evidence on the relationship between stressful events, discrimination, and the later-life well-being to older African Americans. The findings add to our understanding of how the impacts of multiple stressors throughout the life course can persist into old age and affect well-being (Kling, et al., 1997). Furthermore, the findings illustrate how African Americans in later-life are particularly vulnerable to stress (George & Lynch, 2003) due to the additional negative impact of discrimination on their well-being.

Although there was support for the double moderation model, the originally hypothesized mechanism differs from what was seen in the results. The hypothesis postulated that there would be a learning effect of high levels of discrimination in the presence of high levels of protective resources, such that the most buffering would occur among those with the highest levels of discrimination and the highest levels of protective resources. Instead, the results showed that there was a buffering effect of religiosity, however, those who had more discrimination experience were more vulnerable to stress than those with less discrimination experience. Specifically, the three-way interaction between stressful life events, major discrimination events and religiosity, with depression as the outcome, indicated that the relationship between stressful life events and depression was exacerbated by discrimination for people who had low levels of religiosity. Furthermore, more buffering occurred under moderate levels of religiosity, than under high levels of religiosity, implying that in this sample, very high levels of

religiosity may be associated with less positive consequences than more tempered levels of religiosity.

This pattern of findings expands on previous research by looking at the combined effect of discrimination and religiosity on the relationship between stressful life events and well-being in older African Americans. Previous research also has shown that religiosity is a protective factor, particularly among African Americans (Utsey, et al., 2008). The current research adds to the literature by combining predictors in a unique model that allows us to learn more about the impact of stress, discrimination, and religiosity on well-being, than research that looked at these factors separately (Williams, et al., 2003; Bhui et al., 2005; Utsey et al., 2008). The findings from this study postulate a different way of understanding the potential life-long buffering effects of religiosity on the uniquely stressful experiences of African Americans.

An interesting feature of the buffering findings is that they suggest that moderate levels of religiosity may be more protective than extremely high levels of religiosity. In this study, moderate levels of religiosity represented average scores on the religiosity scale of between 4.26 and 5.75 out of 6, whereas high religiosity represented scores of 6 out of 6 on the same scale. Thus, those in the high religiosity group endorsed all religiosity items at the highest level possible, which suggests an extreme commitment to religious beliefs. Previous research on religiosity has focused on some reasons why extremely high levels of religious involvement among African Americans may not be ideal, and points to three possible explanations. First, Hayward and Krause (2015), found that religious involvement among African Americans can impact the ways in which they cope with discrimination. Very high levels of religious involvement were correlated with both adaptive coping styles, such as looking for solutions or discussing the issue, and maladaptive coping styles, such as disregarding the issue or becoming distressed, which

served to either protect against or exacerbate the negative impact of discrimination. Thus, the people in the present study who endorsed the most extreme levels of religiosity may not have learned consistently effective coping strategies when dealing with stress.

Second, research has highlighted that negative interactions in the church are related to having more psychological distress (Ellison, Zhang, Krause, & Marcum, 2009), and that church members who are high ranking (e.g., clergy or elders) may experience high levels of support, but they also experience high levels of negative interactions in the church setting (Krause, Ellison & Wulff, 1998). This mixture of high amounts of both negative interaction and support among high ranking church members could account for the weaker buffering effect seen in the high religiosity group, as the church might not be a consistent source of comfort and affirmation against the negative effects of discrimination. Third, research by Nguyen, Chatters, Taylor, Aranda, Lincoln and Thomas (2017) found that among African American men, discrimination and psychological distress were most positively associated for participants who received high levels of “church-based support”. They postulated that instead of demonstrating a buffering effect of religious support, their findings aligned with the “resource mobilization perspective of social support”, under which one would expect those who had the most deleterious experiences with discrimination to seek more “church-based support”. Thus, it is plausible that the people in the current study with extreme religiosity might have been representative of those most harmed by discrimination, and therefore their higher levels of religiosity could have been indicative of a need for more support rather than indicative of poorer coping. The current study did not assess for different coping styles, experiences in the church, the amount of support participants sought from their religious networks, or how negatively discrimination experiences were perceived by

the participant, which might help to explain why moderate levels of religiosity seemed to be more protective than high levels. It is also important to note that the religiosity measure used in this study was not a measure of religious involvement or religious social support, but instead it assessed for one's belief in a higher power and one's belief in the influence of that power on life events. Therefore, while the type of religiosity assessed in the current study could be correlated with religious involvement and religious social support, it does not give any information about those variables for the participants in this sample. Future research in this area should directly assess for religious involvement, religious social support, and belief in a higher power, to gain a clearer understanding of how these variables correlate or differ among people in this demographic group. A better understanding of the outcomes related with each of these factors could help to elucidate why high religiosity groups may differ from moderate religiosity groups in order to better address causality for the differences between these two groups.

The proposed mechanism for the double moderation model postulated that those with high levels of discrimination in the presence of high levels of protective resources would be the most protected, such that the relationship between stressful life events and later life well-being would be weakest within this group of participants than any others, including those with little experience with discrimination. However, the pattern of results did not actually fit with this specific formulation of the model. Dienstbier (1989) proposed a stress inoculation theory, in which he referred to "toughness" as the result of some optimal level of exposure to stressors in circumstances that allowed someone to be able to recover from each stressor. Dienstbier (1989) suggested that such circumstances resulted in people becoming better able to cope with stressors than both those who had constant exposure to stressors and those who had no exposure to stressors. This theory is similar to the one proposed, however the results of the current research indicated that the

high discrimination in the presence of protective resources group was just as protected, rather than more protected, than the low discrimination in the presence of protective resources group. One possible explanation for this result could be that the depression measure used in this study did not capture the benefits that may be derived from stress inoculation. Dienstbier (1989) proposed that the response to stress inoculation results in a greater capacity to face challenges, improved emotional stability, and an enhanced immune system. Of these outcomes depression is most closely related to emotional stability, which is described by Dienstbier (1989) as low levels of sadness and anxiety or low levels of general distress. It is possible however, that the depression scale used in this study did not capture the proposed construct of emotional stability well enough to see lower levels of depression among those with more discrimination experiences. A limitation of the depression scale used in this study is that it is a modified version of the Center for Epidemiologic Studies Depression (CES-D) (Radloff, 1997) scale, which is shortened from 20 to 9 items and uses a yes or no response format instead of the typical 4-point Likert scale. Future research in this area should use the original form of the scale, as well as other measures of emotional stability, in order to learn more about how this construct may be impacted by stress inoculation.

The double moderation model with religiosity was not supported for predicting life-satisfaction. The reason for the lack of support is unclear. It is possible that religiosity serves to decrease the effect of discrimination on the relationship between stressors and negative effects (e.g., depression), but not to decrease the effect of discrimination on the relationship between stressors and positive effects (e.g., life satisfaction). A study by Barnes and Lightsey (2005) investigated the relationships among perceived racist discrimination, coping, stress, and life satisfaction in an African American sample. They

predicted, but failed to find, a moderating effect of problem-solving coping on the relationship between stress and life satisfaction. They did find, however, that problem-solving coping decreased the negative effects of stress. It is possible that a similar effect is occurring in the current finding, wherein coping (represented by religiosity in this study) may serve to reduce stress while still not having an impact on positive outcomes (e.g., higher life satisfaction). Research by Cohn, Fredrickson, Brown, Mikels and Conway (2009) found that changes in life satisfaction were predicted by positive emotions, but not by the absence of negative emotions. The researchers described this effect as a part of the “broaden-and-build theory of positive emotions”. They state that within this theory, positive emotions build up over time to create coping resources, but higher amounts of positive emotions are not indicative of lower amount of negative emotions. Future research within this population should therefore aim to study protective resources that capture both the impact of reducing stress and the impact of enhancing positive emotions, in order to ascertain whether the latter may improve life satisfaction.

The double moderation model was also not supported when eudaimonic well-being was the putative protective factor. The measure of eudaimonic well-being in this study was used in an attempt to capture the benefits that may be gained from generative concern and racial socialization. Generative concern describes a tendency to care for the next generation (Keys, 2009), and racial socialization refers to messages about race and culture that ethnic minority individuals receive from their caregivers (Brown & Tylka, 2011). However, the eudaimonic well-being measure may not map on well to these variables. This subscale is described as assessing one’s sense of life as having meaning or purpose (Ryff & Keys, 1995). This construct has been noted as one that is particularly relevant for ethnic minorities (Ryff, Keyes & Hughes, 2003) and older individuals (Ryff, 2013). Therefore, while relevant to the population being studied, eudaimonic well-being

does not directly assess for generative concern and racial socialization. Thus, it is possible that it did not capture the benefits that can be derived from those protective factors, so consequently their potential moderating effect could not be seen through this measure. Future research in this area should directly assess for generative concern and racial socialization to determine whether or not they could serve as protective factors in this context.

Eudaimonic well-being was a predictor of both lower depression symptoms and higher life satisfaction in this study, indicating that it may still be a relevant construct for this sample, even though it was not a moderator for the relationship between stress and later-life well-being. The results from this study indicated that those with more discrimination experience were more vulnerable to stress. Religiosity helped to reduce that vulnerability, but eudaimonic well-being did not. The items on the eudaimonic well-being scale asked about a sense of enjoyment and accomplishment in daily plans and activities. In contrast to the religiosity measure, which may have helped participants to externalize the occurrence of negative events by attributing them to a higher power out of their own control, this construct was more closely associated with a sense of self-efficacy for coping with daily life activities, which may not be helpful for dealing with the major potentially life changing stressors assessed in this study. Future research with this population should use this measure to study whether it may be a protective factor for coping with small daily stressors or microaggressions, to gain a better understanding of whether or not it may be a useful protective factor for coping with smaller day-to-day occurrences to which a sense of self-efficacy may be more applicable.

The proposed mechanism for the double moderation hypothesis, in which those with high levels of discrimination in the presence of high levels of protective resources

were expected to be the most protected, would have involved a learning effect of earlier discrimination experiences on the ability to cope with later life stressors. Specifically, it was proposed that some participants with prior discrimination experience would have had the experience in the presence of protective resources which would allow them to cope positively with the experience. They would then be able to learn from the positive coping experience and use the knowledge when coping with other stressful events that occurred later in life. This mechanism implies that individuals in the sample would have had their discrimination experience(s) before their stressful life events. However, this sequence of events is not likely for the discrimination experiences and stressors evaluated in this study. Many of the people who reported a discrimination event that preceded any of the stressful life events indicated that only one discrimination event did so, which may not be enough exposure to allow someone to learn from experience as proposed by the mechanism. Thus, it is possible that there were just not enough participants with enough exposure to this sequence of events to see the desired effect. Another potential reason for the lack of support could be related to the types of questions in the major discrimination measure, most of which asked about events that would have happened in adulthood (e.g. 'Have you ever been unfairly denied a promotion?'). Therefore, it is possible many participants in the sample had discrimination experiences in childhood before the stressful life events they reported, but this measure did not allow them to report those experiences. Additionally, both the discrimination and stress measures assessed for a limited number of specific experiences and may not accurately reflect the full range of stress and discrimination participants could have experienced. Future research in this area should assess for a wider range of experiences with discrimination and stressors, as well as directly assess for experiences that occurred at different times in the life, in order to

better assess for a potential learning effect of discrimination, and more accurately determine levels of discrimination and stressful life event experience.

Despite this rationale for what is needed for the proposed mechanism to occur, it is still plausible that even people without the implied sequence of events could still have experienced a learning effect of discrimination experience. Coping skills learned from discrimination experiences that occurred after stressful life events, could still have been used by the participants to help them cope with the ongoing effects of their earlier stressors. Future research in this area should directly ask participants whether they used lessons learned from experiences with discrimination as a coping mechanism for other life stressors, in order to gain a better understanding of what the potential learning effects of discrimination experience could be.

Another useful direction for future research with older African Americans could be to explore the impact of gender and socioeconomic differences on coping in this sample. Previous research has found that gender and socioeconomic status impact coping in both European American and ethnically diverse samples (Brewin, Andrews, & Valentine, 2000; Bonanno, Galea, Bucciarelli, & Vlahov, 2007).

Another major limitation associated with the measures was that the discrimination measure assessed broadly for experiences of major discrimination events but did not ask participants if they attributed these discrimination experiences to racial discrimination or other factors. Therefore, participants could possibly be attributing these discrimination events to other variables such as age, socioeconomic status, gender, or sexual orientation. In such circumstances, the study rationale may not fit well with their experiences. For example, research shows that religiosity may be less helpful for coping with sexual orientation discrimination than for coping with other sources of discrimination (Liboro,

2014). Future research using this measure or measures similar to it should ask participants whether they thought the discrimination was based on race, or whether they attributed it to other variables. Additionally, there was no measure to assess for the participant's subjective experience of the stressors or the discrimination events. For example, one of the stressful events asked whether the participant had experienced a natural disaster. There could be a wide discrepancy between the perception of such an event as stressful by someone who experienced a natural disaster and lost property or loved ones, and someone for whom that experience involved no serious threat of loss or damage. Future research should ask participants to rate how stressful the reported experience was for them.

It is also important to note the potential for a positivity presentational bias among those in the high religiosity group. Although this possible bias would not explain the major conclusions associated with the double moderation model, it is still important to consider this potential bias in the interpretation of the results. It is likewise important to consider the possibility of a selection bias, as it is conceivable that individuals who have been most impacted by life stressors and discrimination may not be willing to participate in or report these experiences in a research study. Therefore, the results of the study may potentially not be representative of the population of older African Americans, but instead, it may represent those who are doing well enough to participate in this type of research. Thus, the results of this study could underestimate the negative impacts of stress and discrimination and overestimate the buffering effects of religiosity on this population.

In conclusion, the current study adds to previous research that helps to understand the complex ways in which life stressors, discrimination and religiosity interact to impact the well-being of African-Americans in later-life. Religiosity, particularly at moderate levels, was found to be a protective resource against the cumulative negative impacts of

stressful life events and discrimination. The results from this study indicate that more research needs to be done to better understand the complexities of religiosity as a protective factor, and to better ascertain what other protective and life-enhancing resources may be relevant for this demographic group.

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