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Gender and Race Variations in the Intersection of Religious Involvement, Early Trauma, and Adult Health

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Abstract

Purpose—This study aimed to determine gender and race variations in regards to the influence of religious involvement (RI) as a moderator of the effects of early traumatic stress (ETS) on health-related quality of life among adult survivors of child abuse.

Design—A cross-sectional predictive design was used to study Seventh-day Adventist adults in North America (N = 10,283).

Methods—A secondary analysis of data collected via questionnaires was done using multiple regression.

Results—Data revealed that women had a significantly higher prevalence of any or all ETS subtypes, except for physical abuse prevalence, which was the same for both genders. Blacks reported a significantly higher prevalence of at least one ETS subtype than did Whites, except for neglect, where Whites had a higher prevalence. Exposure to at least one ETS subtype was associated with worse negative effect on mental health (B = −2.08, p < .0001 vs. B = −1.54, p < .0001) and physical health (B = −2.01, p < .0001 vs. B = −1.11, p < .0001) for women compared to men. Among those exposed to all ETS subtypes (n = 447), Whites had significant worse physical health, with White women having almost two times the negative effect on physical health (B = −4.50, p < .0001) than White men (B = −2.87, p < .05). As for RI moderation, based on tests of three-way interactions of race–RI–ETS, there were no associated differences. However, tests of three-way interactions of gender–RI–ETS showed a significant buffering effect. Among those with high levels of negative religious coping (RC), women exposed to ETS had significantly worse physical health (B = −1.28) than men.

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Conclusions—Results give evidence of gender and racial differences on the magnitude of the ETS–health effect, as well as gender differences in ETS–health buffering by RC.

Clinical Relevance—Findings suggest gender and racial differences must be considered when devising holistic nursing interventions for improving health outcomes of early trauma survivors.

It is well known that early traumatic stress (ETS) has negative health consequences for survivors beyond the early years of exposure (Centers for Disease Control and Prevention [CDC], 2010; Felitti et al., 1998). ETS refers to adverse childhood experiences (ACEs) and includes verbal, physical, or sexual abuse, as well as family dysfunction, usually operationalized as witnessing adult domestic violence as well as substance abuse or incarceration among parents. While previous ACE studies have shown an association between these ETS experiences and poor mental and physical health outcomes later in adulthood, little is known about how these health outcomes differ by gender or race (Corso, Edwards, Fang, & Mercy, 2008).

The classic original large CDC ACE study (*N* = 26,229; CDC, 2010) explored gender and race differences in the prevalence of ACE in five states in the United States, and found that women had higher rates of sexual abuse than men (17.2% vs. 6.7%, respectively), Whites had higher prevalence of verbal (27% vs. 16% in Blacks) and physical (15% vs. 9% in Blacks) abuse, and Blacks had higher prevalence of witnessed domestic violence (38% vs. 25% in Whites). However, that study did not include neglect or emotional abuse, race within gender analysis, gender and racial differences on the ETS–health outcome link, or how protective coping factors vary by race or gender. The purpose of our study was to examine variations across gender and race related to the ETS association with health in adult survivors, and the role of forgiveness, gratitude, and religious involvement (RI) as moderators of that association.

Studies conducted in several countries have noted that gender is a critical determinant of health (World Health Organization [WHO], XXXX). According to this report, female gender is linked to an increased mental health risk for depression, where lifetime prevalence of depression is twice as high in females (21.3%) than in males (12.7%). Female gender is also a predictor of depression relapse and comorbid diagnoses of depression with other affective disorders, while alcohol and substance abuse reporting is higher among males (WHO, XXXX). These gender disparities in mental health are often linked to gender-based violence (Garcia-Moreno & Watts, 2011).

Wegman and Stetler (2009) evaluated physical health outcomes of ETS through a meta-analysis of 22 studies and reported that the negative effect on physical health is stronger for women than for men. This meta-analysis revealed gaps in the literature, with most studies examining the relationship of violence to physical health without consistently including several types of child abuse (physical, sexual, verbal), none including witnessed abuse, and most not including severity and frequency of abuse (Wegman & Stetler, 2009).

A review of the literature of 29 studies examining mental health outcomes with mixed gender samples (*N* = 2,051) revealed that childhood sexual abuse was associated with adult-onset depression in both men and women, with two studies reporting more than twice the

rate of depression within women as within men (prevalence of 69% vs. 27%; Weiss, Longhurst, & Mazure, 1999). In another long-term population-based study of men and women siblings (N = 4,804), childhood physical abuse was a predictor of a dose-related increase in depression and anxiety in adult women (Springer, Sheridan, Kuo, & Carnes, 2007).

In an attempt to understand the biological mechanisms behind these associations, Heim and colleagues (2000) conducted a case control study of a small sample (n = 49) of women with a history of childhood physical and sexual abuse compared to women with no history. They learned that women abused in childhood in this sample exhibited increased hypothalamus–pituitary–adrenal axis activation and autonomic responses to stress compared with the control group, with a sixfold elevation in adrenocorticotropic hormone, suggesting hypersecretion of corticotropin-releasing hormone. This elevation was particularly strong in women in the sample with current symptoms of depression and anxiety. Thus, these stress responses often continue after traumatic events in childhood have ended. They may last a lifetime and either exacerbate or are exacerbated by mental health conditions.

These negative effects of ETS on health may also be compounded or otherwise modified by race and ethnicity. We know that Black women experience high rates of diabetes, obesity, and lower access to quality health care than Whites and that these same health conditions are related to experiences of violence (Bent-Goodley, 2007; Schollenberger et al., 2003). We also know that Blacks, particularly African Americans, experience high rates of childhood and adult trauma from violence as well as barriers to accessing care for violent experiences, and that they often rely on their own individual and cultural strengths to cope (Brade & Bent-Goodley, 2009).

Factors for Resilience

While there is a link between ETS and poor health, there is also evidence that not all who experience ETS will develop negative health outcomes (Ai & Park, 2005). Although the impact on health is often related to the age when the trauma was experienced, as well as the number and severity of the traumas, resilience has also been shown to be important (Feder, Nestler, & Charney, 2009). Several factors may build resilience in individuals and influence the stress response, allowing people to have better health outcomes (Southwick, Vythilingam, & Charney, 2005). Many community, family, and physiological tactics are used as coping strategies, facilitating resilience for some people and in some contexts (Szanton & Gill, 2010). Such factors include cultivating positive emotions such as gratitude, forgiveness (Feder et al., 2009; Giacomo & McCullough, 2006; Krause, 2009), and religion or spirituality (Southwick et al., 2005).

Sternthal, Williams, Musick, and Buck (2012) found racial or ethnic variation in regards to mental health benefits of RI in a population-based sample of 3,103 Chicago residents. Ethnicity-stratified analysis revealed that church service attendance for Whites (but not Blacks) was inversely related to depression and anxiety symptoms. This difference was proposed to be explained by the fact that for Blacks church attendance is seen as a social norm, and not necessarily associated with IR. However, forgiveness was associated with

mental health benefits regardless of race. The regression analysis controlled for age, gender, income, education, marital status, and physical health (Sternthal et al., 2012).

Several studies show that women are more religious than men and more likely to use religious coping (RC) when facing stress (Brown et al., 2010; Ward, Wiltshire, Detry, & Brown, 2013). Many women survivors of trauma report the use of spirituality or RC as helpful, with RC being negatively associated with post-traumatic stress disorder and depression symptoms (Yick, 2008), but no male comparisons have been made. RC refers to what extent people use religious beliefs to cope with negative life stress. Some use it in a positive way, such as seeking and reminding themselves of God's love and care, while others use it in a negative way, such as thinking God is punishing them (Pargament, 1999).

Religious communities often promote culturally specific traditions and values (Yick, 2008). Culture in this sense is inclusive of values and norms of a particular faith tradition and or race or ethnicity. Cultural influences may differ between racial groups due to individual, institutional, or societal systems, such as church affiliation, social economic status, or education, and these can further influence coping mechanisms or create barriers to care (Bent-Goodley, 2007; Yick, 2008). For instance, studies show that Blacks in particular highly value their faith and often use their spirituality to cope with trauma or adversity and as a way to survive (Brade & Bent-Goodley, 2009). They sometimes go first to religious leaders in search of help rather than to formal providers, even though the faith leaders may not be fully aware of violence and trauma resources and may not define some experiences of violence as traumatic or problematic (Ward et al., 2013; Yick, 2008). These differences may be due to cultural norms among Blacks, not seen among Whites (Bent-Goodley, 2007). Thus, it is critical to understand differences in coping among racial groups in order to provide a foundation for the development of evidence-based culturally appropriate interventions, among different races or genders, that both faith leaders and healthcare providers may use (Brade & Bent-Goodley, 2009).

Studies examining gender or race variations of the use of RI by survivors of ETS are scarce. A few studies found that spiritual connection facilitated successful transitions from ETS exposure to survival for African American women (Hall, 2003) as well as in other gender-inclusive (primarily White) samples (Gall, 2006). No gender or racial differences were reported. These studies had limitations related to small noninclusive samples in regards to gender, race, or ethnicity; limited inclusion of abuse types; mental health confounding with spirituality instruments used (Reinert & Koenig, 2013); and no analysis of gender or racial differences.

No studies to our knowledge have examined racial and gender differences related to moderating effects of forgiveness, gratitude, RI, and IR in the setting of ETS predicting adult mental and physical health, while having adequate gender and race representation to allow for analysis of gender and race variations (Bent-Goodley, 2007). This study aims at mending the knowledge gaps in the literature by examining differences across gender and race regarding the prevalence of ETS, its association with mental and physical health outcomes, and the role of forgiveness, gratitude, and RI as protective resilience factors for health outcomes.

Methods and Design

Philosophical Framework

The primary framework to guide this study is the Society-to-Cells Model (Szanton & Gill, 2010). This model highlights the role of individual factors such as spirituality and coping strategies in the building of resilience of oneself, while considering the role of larger societal factors such as race and gender, as well as community factors such as diversity, culture, and values. Together, these factors—combined with the body's physiological response at the cellular level—impact health, recognizing that appropriate coping mechanisms may reduce the selective vulnerability of propensity to illness produced by the body's stress response. The Society-to-Cells Model suggests that nursing can contribute to improved health outcomes and foster resilience of the individual or survivor by considering all these factors (Szanton & Gill, 2010). The analysis was driven by research questions derived from this framework in order to determine the relationship of concepts deemed conceptually important.

Research Design and Data Source

This study used a cross-sectional predictive design to analyze data from the Biopsychosocial Religion and Health Study (BRHS-1R01AG02634; Lee et al., 2009). The BRHS is a large prospective study of participants randomly selected from a larger multistate, multiracial group of Seventh-day Adventists (SDAs) from the Adventist Health Study-2 (AHS-2, 5R01 CA094594; Butler et al., 2008), a long-term longitudinal study enrolling nearly 100,000 participants funded by the National Cancer Institute. The AHS-2 parent study recruited SDA members at 1,000 Black and 3,500 non-Black churches throughout North America by sending them recruitment materials. For the BRHS, 11,000 consented to participate by filling out questionnaires and returning them during 2006–2007. Of those, Blacks and Whites remained, bringing the sample to 10,283. SDAs are evangelical Protestants who hold a religious doctrine that promotes healthy lifestyle principles and advocates for temperance and healthy choices, such as regular exercise, a vegetarian diet, and avoidance of drugs, tobacco, and alcohol. Their lifestyle practices have been studied longitudinally and linked to longevity and better health outcomes when compared to the general population (Fraser et al., 2014).

Measures

ETS score was a binary score of whether participants had exposure to one or more of the following: physical abuse (e.g., how much they were kicked, slapped by parents), psychological abuse (e.g., how much parents insulted or swore at them), sexual child abuse (e.g., pressured to have sexual contact before age 13 or 18 years), neglect (e.g., how often they felt neglected), and witnessed parental abuse (e.g., how often a parent was violent toward the other parent). RI indicators included intrinsic religiosity (e.g., I experience the presence of the Divine), religious coping (positive religious coping [PRC]: e.g., when I face problems I try to make sense of it with God; negative religious coping [NRC]: e.g., when I face problems I feel God is punishing me), and related positive virtues of gratitude (e.g., I have so much in life to be thankful for) and forgiveness (e.g., how much I forgive others

who hurt me). Mental and physical health was measured by the SF12 (version 2), which measures mental and physical health related to quality of life (Table 1).

Data Analysis

Analysis was performed using Stata version 12 (Hamilton, 2009). Multiple linear regression was employed to achieve analysis of the data. Moderation by the RI variables (intrinsic religiosity, religious coping, forgiveness, and gratitude) was tested according to Judd, Kenny, and McClelland (2001) using regression procedures. Analysis controlled for age, gender, or race; annual income of participant; and education level. Two-way interactions of Gender*ETS or Race*ETS were used to determine gender or race differences on the effect of ETS (physical, emotional, sexual abuse, neglect, and witnessed abuse) on the primary outcomes (mental and physical health). Then, three-way interactions of Gender*RI*ETS (each RI variable accordingly) were used to determine gender or race variations of the moderation by RI of the effect ETS had on mental and physical health. Descriptive statistics of the sample were calculated for demographics, ETS variables, RI factors, and health outcomes. Data were summarized, and groups were compared using chi-square or *t* tests as appropriate. Power and precision were calculated for the three-way interaction because this was the rate-limiting analysis for power. We assumed unequal Ns for gender, and the effect detected was K = 0.18 for power 0.80 or 0.22 for power 0.90 reported as standard deviations in health outcome per unit increase in trauma score. In order to account for the missing data in the sample, we used multiple imputation.

Results

Sample Descriptives

This sample included 10,283 individuals (32% men, 68% women; 36% Blacks, 64% Whites) with an overall mean age of 62 (*SD* = 14) years and a range of 30 to 106 years (Table S2, available with the online version of this article). Blacks had a significantly lower mean age (mean = 58, *SD* = 13 years) than Whites (mean = 64, *SD* = 14 years). Fifty-four percent had at least a college degree, with significant differences between men (61%) and women (50%), and twice as many men as women had graduate degrees (31% vs. 15%). Significantly more women than men had less than a high school education (26% vs. 21%), and more Blacks than Whites had less than a high school education (26% vs. 23%). However, a slightly larger percentage of Black women had graduate education than White women (52% vs. 49%). Women reported earning less income than men, with 46% versus 20% of men reporting a salary of less than $21,000 annually. Significantly more White women than Black women had a lower annual income, with 26% versus 19% of Blacks earning less than $10,000, and 8% of Black women versus 6% of White women earning more than $75,000.

History of Early Traumatic Stress and Health-Related Quality of Life

The exposure to ETS was significantly different among men and women, with women having a higher prevalence of any exposure (69%) than men (65%; Table S4, available with online version of this article). There were no gender differences in physical abuse rates

(38%). However, women had a statistically higher prevalence for all other ETS types than men for emotional abuse (39% vs. 35%), neglect (28% vs. 21%), and witnessed abuse (29% vs. 26%), and over twice as much for sexual abuse (28% vs. 12%). Three times as many women as men were exposed to all five types of abuse (6% vs. 2%).

The exposure of ETS also varied significantly by race, with Blacks reporting a higher prevalence of ETS (75%) than Whites (64%). This prevalence among Blacks was seen for four out of five types of abuse measured in the ETS score: 48% versus 33% for physical abuse, 44% versus 34% for emotional abuse, 26% versus 21% for sexual abuse, and 31% versus 26% for witnessed abuse. However, in the case of neglect, Whites reported a higher prevalence (32%) than Blacks (24%), and prevalence remained significantly higher for Whites within gender, with White men having a higher prevalence (34%) than White women (30%). No racial differences in exposure to all five types of abuse were noted in this sample (5% for both Blacks and Whites).

Baseline Mental and Physical Health Quality of Life and Religious Involvement Variables

Mental health mean score was comparable across gender and race (mean score = 53). No significant gender differences were seen for mean physical health scores, although Black women seem to experience higher mean scores than their White counterparts (48 vs. 47; Table S3, available with the online version of this article). In terms of RI, women in this sample had small but statistically significant higher mean scores than men on IR (6.42 vs. 6.19), PRC (4.15 vs. 4.05), and gratitude (6.36 vs. 6.22). Men had a higher score for NRC (1.45) than women (1.41), and there was no gender difference for the forgiveness mean scores. In terms of race, Blacks had significantly higher mean scores than Whites for all RI indicators. While the higher scores for Blacks remained significant for most of the RI within gender, in the case of NRC there was no racial difference in mean score for men. Only Black women had a significant higher score compared to White women (1.48 vs. 1.38).

Relationship of Early Trauma and Health

There were no significant two-way interaction effects of gender by any ETS (exposure to one or more types of ETS) or race by ETS on health. Both Blacks and Whites had a significant reduction on health scores related to ETS (one or more types of abuse). However, we found significant gender and racial interactions with the secondary ETS score (at three types and all five types of abuse, respectively) in predicting both mental and physical health. We therefore proceeded with stratified analysis by gender and race for the secondary ETS score. Secondary findings were noted in that significant gender and racial differences were found among those exposed to all five types of abuse for both mental health (B = −1.98, $p < .0001$, confidence interval [CI] −1.94 to −0.83 for gender; B = −1.74, $p < .0001$, CI −2.20 to −1.28 for race) and physical health (B = −1.38, $p < .0001$, CI −1.94 to −0.83 for gender; B = −1.53, $p < .0001$, CI −2.07 to −.99 for race; Figure S1, Table S1, available with the online version of this article). When stratifying by gender, women had a significantly stronger (more than threefold) negative effect of ETS (all five types) on mental health than men (B = −3.20, $p < .0001$ for women versus B = −.16, p = not significant [ns] for men) and a greater effect for physical health (B = −3.30, $p < .0001$ for women vs. B = −2.60, $p < .05$ for men; see Figure S1, Table S1). These associations remained significant when controlling for

income and education. In terms of racial variations, Whites had a significantly stronger (twofold) negative effect of ETS (all five ETS types) on mental health than Blacks (B = −3.41, $p < .0001$ vs. B = −1.74, $p < .05$) and negative effect of ETS (all five ETS types) for physical health (B = −4.24, $p < .0001$ vs. B = −1.50, p = ns). The effects remained significant for Whites only when controlling for income and education.

Moderation of Religious Involvement, Forgiveness, and Gratitude

All RI indicators had significant positive associations with better mental and physical health in the overall sample, except for NRC, which had a negative association with health (Figure S2). Linear regression models were augmented to evaluate gender- and race-based differences in the extent to which RI changed (buffered or exacerbated) the deleterious effects of ETS on health, through the addition of gender–RI–ETS interactions and race–RI–ETS interactions (in separate analyses; Table S5). None of the race-based three-way interactions were statistically significant, consistent with no race-associated differences in RI buffering mechanisms. Two of the gender-based three-way interactions were significant: for PRC (gender–PRC–ETS, B = 1.43, $p < .05$, CI 0.14 to 2.73) and NRC (gender–NRC–ETS, B = −2.95 $p < .010$, CI −5.03 to −0.87), both regarding physical health. To elucidate this finding, gender-stratified analyses were conducted (Table S6, available with online version of this article). In men, we found that the deleterious effect of ETS on physical health was actually augmented with higher PRC (two-way interaction coefficient = −0.95, 95% CI −1.87 to 0.04) and muted with higher NRC (two-way interaction coefficient = 1.60, 95% CI 0.03 to 3.17). The three-way interactions therefore indicate a reversal of these effects in women.

To further elucidate these findings, plotting predicted physical health by RI and gender may be helpful (Figure S3, available with online version of this article). The plots reveal that both men and women without ETS exposure consistently had better health than those exposed to ETS. However, for women this discrepancy diminished at high PRC, while for men the discrepancy was maximal for high PRC. Unexpectedly, at low PRC, men with exposure to at least one ETS type were predicted to have better health than those without exposure to ETS. However, physical health increased with increasing PRC for men with and without ETS, but considerably more in the absence of ETS.

Discussion

The mean age, income, and education levels of this sample are higher than in most other studies of ETS survivors (Bradley, Schwartz, & Kaslow, 2005; Murken et al., 2010). As seen in other studies, women and Blacks had more exposure to any ETS than men and Whites, with Black women having the highest exposure of all groups (Felitti et al., 1998). The exposure to all five types of abuse was higher for women in both our study (6% for women vs. 2% for men) and the original CDC ACE study (8.5% for women vs. 4% for men).

The prevalence of ETS subtypes was noted to be significantly higher for women than men on all ETS types except for physical abuse, where the prevalence was the same (38%). Some of these findings are comparable to the 2009 CDC ACE report (CDC, 2010), where women

had no significant differences from men in the prevalence of physical abuse (although much lower in the CDC ACE sample than ours: 15% in women vs. 14% in men), verbal abuse (27% in women vs. 25% in men), and witnessed abuse (17% in women vs. 16% in men). As in our study they also found a more than twofold prevalence of sexual abuse in women compared to men (17% vs. 7%, respectively), although our rates were also higher. Prevalence of abuse by subtype of ETS among Blacks was much higher than among Whites for all types in our study, except for neglect, which was higher among Whites (24% in Blacks vs. 32% in Whites). This finding differs from the CDC ACE report, where Whites had a higher prevalence than Blacks for physical abuse (15% vs. 8.5%), verbal abuse (27% vs. 16%), and sexual abuse (12% vs. 11%; CDC, 2010). This could possibly be due to the larger representation of Blacks we have in our sample (64% White vs. 36% Black) versus the number of Blacks in the CDC ACE study (75% White vs. 10% Black). Similar to our findings, the CDC ACE report also found that Blacks experience a higher prevalence of witnessed abuse than Whites (18% vs. 15%), although again our sample had much higher rates reported. The significantly higher prevalence of all five types of abuse among women is congruent with the CDC ACE study (10.3% in women vs. 7% in men), the CDC ACE study having higher rates than ours (6% vs. 2%). The CDC ACE report did not include race-within-gender– or gender-within-race–stratified reports for comparison.

The lack of significant gender differences in regards to the use of forgiveness is supported by a recent meta-analysis (Froh, Yurkewicz, & Kashdan, 2009). Likewise, the racial differences for the higher use of forgiveness among Blacks agrees with data previously reported (McFarland, Smith, Toussaint, & Thomas, 2012). It is possible that the historical context of stigma and racism places Blacks in a position to use forgiveness and gratitude as the norm to help them survive that, and this may also be a coping style used more easily to deal with perpetrators of ETS. Additionally, as expected, women had higher levels of baseline gratitude than men (Froh et al., 2009). Although no racial comparisons were found in the literature about gratitude, Blacks had higher rates of gratitude than Whites in our sample. This is congruent with other studies that report Blacks having higher levels of RI and variables such as forgiveness as reported earlier in this paragraph (McFarland et al., 2012). This has implications for future testing and interventions considering gender and racial preferences in regards to its use.

A notable finding of this analysis, which has not been reported before, is that women survivors of ETS (particularly all five types) seem to have much worse scores for mental (three times as much) and physical health (nearly 50% increase) than men survivors, controlling for all covariates, including age, education, and income. In terms of racial differences, while Blacks and Whites have comparable negative effects of ETS on mental health (see Figure S1), Whites seem to have significantly stronger negative physical health effects from ETS exposure to all five types in particular—over twice as much (see Figure S1). This is unexpected, since previous research has proposed that Blacks would perhaps experience a worse effect of trauma on physical health (McFarland et al., 2012). According to McFarland et al. (2012), this physical health disparity could result from exposure to more frequent and damaging stressors than other racial groups, which could lead to even more biological dysregulation than trauma alone, thus more negatively impacting the physical health of Blacks. However, stressors that are related to poverty and discrimination might be

less serious for this better educated and more middle class income Black sample. Factors like routine use of RC and social support can be protective for this group.

A second explanation could be the lifestyle health behaviors in this particular group, which may contribute to better physical health and protect against the health problems related to ETS seen among Blacks in other studies (Felitti et al., 1998; McFarland et al., 2012). Poor Black women are usually less likely to be able to obtain or afford the highly nutritious diet we find among Black women in this sample (Fraser et al., 2014).

Another important finding of this study is that the role of PRC and NRC in moderating the effects of ETS on the physical health of survivors varies by gender, where among women with ETS exposure we see a more robust positive association of PRC to physical health as well as negative association of NRC to physical health than among men (see Figure S3). No other studies have to our knowledge reported on such findings. A positive association of PRC and physical health was clearly seen among women with a history of ETS—stronger than for men with ETS exposure. No studies have reported this in the literature to our knowledge, but this finding suggests the potential benefit of facilitating PRC especially among women survivors, as well as for men, although the association for men seemed less pronounced. It is possible that emotional regulation mechanisms may play a role in accounting for gender difference seen in regards to strength of association of PRC and NRC with physical health, as a few studies previously reported differences of emotional regulation by gender (Lysenko & Davydov, 2012). In light of these findings, future studies should further examine potential individual factors, including cultural issues that may help explain the gender and racial differences found in this study.

Limitations

We recognize that testing all Blacks together without differentiating them by places of origin or cultural background may prevent us from understanding some important differences within the Black community. However, some previous studies found few significant differences between African Americans and Caribbean Blacks in regards to RI (Taylor, Chatters, & Jackson, 2007). Thus, with a small percentage of Caribbean blacks in this sample it is likely there are no significant differences. In addition, similar to other studies examining forgiveness or gratitude, the use of self-report measures can be prone to social desirability effects. Adult survivors may have portrayed themselves as more forgiving or grateful since that is a valued trait among people of faith. Furthermore, recall bias of ETS (although the prevalence of victimization in this study is even higher than that in the general population) might be a limitation since participants' ages ranged from 30 to 103 years. However, the number of people older than 75 years was about 20% of the sample, and the prevalence of abuse was not significantly different from that of the entire sample. The cross-sectional nature of the study and the fact that it is a secondary analysis of data is another limitation. Due to a lack of longitudinal design, causal inference is not possible since we cannot establish temporality. Being a secondary analysis of data, we were not able to change the survey or add questions that could shed more light on the gender and race variations we aimed to examine. Finally, the sample is of SDAs; thus, generalizability of the findings to

the general population is limited. However, findings can be contextualized to populations of other faith groups with similar beliefs and similar lifestyles.

Conclusions

Our results imply that there are important gender and racial differences in prevalence of ETS, in the use of RI indicators, and in the moderation by RI of the ETS–health effect in this sample, which need to be investigated in the general population. Understanding the associations of individual coping preferences and social factors for Blacks, Whites, men, and women can help inform culturally appropriate ETS screening tools and nursing clinical interventions, as recommended by the American Academy of Pediatrics (Flaherty & Stirling, 2010). For instance, there is an indication from these findings that a promising avenue for clinical nursing intervention development and testing to reduce the negative effect of ETS on physical health should include interventions to reduce negative religious coping among women and men (see Figure S3), as those with high levels of NRC have accentuated negative effects of ETS on physical health. Faith community nurses and advanced practice nurses (e.g., family or pediatric nurse practitioners) may use such ETS screenings and interventions. Thus, this study places future nursing research on the path to examine more effective interventions to strengthen an individual's protective factors in an effort to improve mental and physical health outcomes for ETS survivors.

Supplementary Material

Refer to Web version on PubMed Central for supplementary material.

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References

Ai AL, Park CL. Possibilities of the positive following violence and trauma: Informing the coming decade of research. Journal of Interpersonal Violence. 2005; 20(2):242–250. [PubMed: 15601799]

Bent-Goodley TB. Health disparities and violence against women: Why and how cultural and societal influences matter. Trauma Violence & Abuse. 2007; 8(2):90–104.

Brade KA, Bent-Goodley T. A refuge for my soul: Examining African American clergy's perceptions related to domestic violence awareness and engagement in faith community initiatives. Social Work & Christianity. 2009; 36(4):430–448.

Brown JS, Cherry KE, Marks LD, Jackson EM, Volaufova J, Lefante C, Jazwinski SM. After Hurricanes Katrina and Rita: Gender differences in health and religiosity in middle-aged and older adults. Health Care for Women International. 2010; 31(11):997–1012. [PubMed: 20924874]

Butler TL, Fraser GE, Beeson WL, Knutsen SF, Herring RP, Chan J, Jaceldo-Siegl K. Cohort profile: The Adventist Health Study-2 (AHS-2). International Journal of Epidemiology. 2008; 37(2):260–265. [PubMed: 17726038]

Centers for Disease Control and Prevention. Adverse childhood experiences reported by adults—Five states, 2009. Morbidity and Mortality Weekly Report. 2010; 59(49):1609–1613. [PubMed: 21160456]

Corso PS, Edwards VJ, Fang X, Mercy JA. Health-related quality of life among adults who experienced maltreatment during childhood. American Journal of Public Health. 2008; 98(6):1094–1100. [PubMed: 18445797]

Cusack KJ, Frueh BC, Brady KT. Trauma history screening in a community mental health center. Psychiatric Services. 2004; 55(2):157–162. [PubMed: 14762240]

Feder A, Nestler EJ, Charney DS. Psychobiology and molecular genetics of resilience. Nature Reviews: Neuroscience. 2009; 10(6):446–457.

Felitti VJ, Anda RF, Nordenberg D, Williamson DF, Spitz AM, Edwards V, Marks JS. Relationship of childhood abuse and household dysfunction to many of the leading causes of death in adults. The Adverse Childhood Experiences (ACE) Study. American Journal of Preventive Medicine. 1998; 14(4):245–258. [PubMed: 9635069]

Flaherty EG, Stirling J Jr. American Academy of Pediatrics. Committee on Child Abuse and Neglect. Clinical report—The pediatrician's role in child maltreatment prevention. Pediatrics. 2010; 126(4): 833–841. [PubMed: 20945525]

Fraser G, Katuli S, Anousheh R, Knutsen S, Herring P, Fan J. Vegetarian diets and cardiovascular risk factors in black members of the Adventist Health Study-2. Public Health Nutrition. 2014:1–9.

Froh JJ, Yurkewicz C, Kashdan TB. Gratitude and subjective well-being in early adolescence: Examining gender differences. Journal of Adolescence. 2009; 32(3):633–650. [PubMed: 18760465]

Gall TL. Spirituality and coping with life stress among adult survivors of childhood sexual abuse. Child Abuse and Neglect. 2006; 30(7):829–844. [PubMed: 16846645]

Garcia-Moreno C, Watts C. Violence against women: An urgent public health priority. Bulletin of the World Health Organization. 2011; 89(1):2. [PubMed: 21346880]

Giacomo B, McCullough ME. Positive responses to benefit and harm: Bringing forgiveness and gratitude into cognitive psychotherapy. Journal of Cognitive Psychotherapy. 2006; 20(2):147–158.

Hall JM. Positive self-transitions in women child abuse survivors. Issues in Mental Health Nursing. 2003; 24(6–7):647–666. [PubMed: 12907381]

Hamilton, LC. Statistics with Stata: Updated for version 10. Belmont, CA: Brooks/Cole, Cengage Learning; 2009.

Heim C, Newport DJ, Heit S, Graham YP, Wilcox M, Bonsall R, Nemeroff CB. Pituitary-adrenal and autonomic responses to stress in women after sexual and physical abuse in childhood. Journal of the American Medical Association. 2000; 284(5):592–597. [PubMed: 10918705]

Idler, EL. Multidimensional measurement of religiousness/spirituality for use in health research: A report of the Fetzer Institute/National Institute on Aging Working Group. Kalamazoo, MI: Fetzer Institute; 1999. Forgivenessn.

Judd CM, Kenny DA, McClelland GH. Estimating and testing mediation and moderation in within-subject designs. Psychological Methods. 2001; 6(2):115–134. [PubMed: 11411437]

Koenig HG, Parkerson GR Jr, Meador KG. Religion index for psychiatric research. American Journal of Psychiatry. 1997; 154(6):885–886. [PubMed: 9167530]

Krause N. Religious involvement, gratitude, and change in depressive symptoms over time. International Journal for the Psychology of Religion. 2009; 19(3):155–172. [PubMed: 20333271]

Lee JW, Morton KR, Walters J, Bellinger DL, Butler TL, Wilson C, Fraser GE. Cohort profile: The Biopsychosocial Religion and Health Study (BRHS). International Journal of Epidemiology. 2009; 38(6):1470–1478. [PubMed: 19052114]

Lysenko NE, Davydov DM. Gender differences in regulating emotions in response to text with violent content. Human Physiology. 2012; 38(4):361–368.

McCullough ME, Emmons RA, Tsang J. The grateful disposition: A conceptual and empirical topography. Journal of Personality and Social Psychology. 2002; 82(1):112–127. [PubMed: 11811629]

McFarland MJ, Smith CA, Toussaint L, Thomas PA. Forgiveness of others and health: Do race and neighborhood matter? Journals of Gerontology. Series B: Psychological Sciences and Social Sciences. 2012; 67(1):66–75.

Pargament, KI. Religious/spiritual coping. In: Fetzer Institute. , editor. Multidimensional measurement of religiousness/spirituality for use in health research: A report of the Fetzer Institute/National

Institute on Aging Working Group. Kalamazoo, MI: Fetzer Institute/National Institute on Aging; 1999. p. 43-56.

Reinert KG, Koenig HG. Re-examining definitions of spirituality in nursing research. Journal of Advanced Nursing. 2013; 69(12):2622–2634. [PubMed: 23600849]

Ryff, CD.; Singer, BH.; Palmersheim, KA. Social inequalities in health and wellbeing: The role of relational and religious protective factors. In: Brim, OG.; Ryff, CD.; Kessler, RC., editors. How healthy are we?: A national study of well-being at midlife. Chicago, IL: University of Chicago Press; 2004. p. 90-123.

Schollenberger J, Campbell J, Sharps PW, O'Campo P, Carlson A, Dienemann J, Kub J. African American HMO enrollees: Their experience with partner abuse and its affect on their health and utilization of medical services. Violence Against Women. 2003; 9(5):599–618.

Southwick SM, Vythilingam M, Charney DS. The psychobiology of depression and resilience to stress: Implications for prevention and treatment. Annual Review of Clinical Psychology. 2005; 1:255–291.

Springer KW, Sheridan J, Kuo D, Carnes M. Long-term physical and mental health consequences of childhood physical abuse: Results from a large population-based sample of men and women. Child Abuse and Neglect. 2007; 31(5):517–530. [PubMed: 17532465]

Sternthal MJ, Williams DR, Musick MA, Buck AC. Religious practices, beliefs, and mental health: Variations across ethnicity. Ethnicity and Health. 2012; 17(1–2):171–185. [PubMed: 22296590]

Szanton SL, Gill JM. Facilitating resilience using a society-to-cells framework: A theory of nursing essentials applied to research and practice. Advances in Nursing Science. 2010; 33(4):329–343. [PubMed: 21068554]

Taylor R, Chatters L, Jackson J. Religious and spiritual involvement among older African Americans, Caribbean blacks, and non-Hispanic whites: Findings from the National Survey of American Life. Journal of Gerontological Behavior Psychology. 2007; 62(4):S238–S250.

Ward EC, Wiltshire JC, Detry MA, Brown RL. African American men and women's attitude toward mental illness, perceptions of stigma, and preferred coping behaviors. Nursing Research. 2013; 62(3):185–194. [PubMed: 23328705]

Wegman HL, Stetler C. A meta-analytic review of the effects of childhood abuse on medical outcomes in adulthood. Psychosomatic Medicine. 2009; 71(8):805–812. [PubMed: 19779142]

Weiss EL, Longhurst JG, Mazure CM. Childhood sexual abuse as a risk factor for depression in women: Psychosocial and neurobiological correlates. American Journal of Psychiatry. 1999; 156(6):816–828. [PubMed: 10360118]

World Health Organization. Gender disparities in mental health. (XXXX). Retrieved April 22, 2012, fromhttp://www.who.int/mental_health/media/en/242.pdf.

Yick AG. A metasynthesis of qualitative findings on the role of spirituality and religiosity among culturally diverse domestic violence survivors. Qualitative Health Research. 2008; 18(9):1289–1306. [PubMed: 18689540]

Clinical Resources

- National Hotline for Domestic Violence: http://www.thehotline.org/
- How to report child maltreatment: https://www.childwelfare.gov/responding/how.cfm, or call 1.800.4.A.CHILD (1.800.422.4453).
- Healthcare Professional resources on mobile app: R3, Circle Of 6, One Love Life.

Table 1

Variables and Psychometrics

Variables	Measure(s)	Items	Scores	Alpha
Covariates				
Age, gender, education, income (self)	Questionnaire	9		
Early trauma				
Neglect, witnessed IPV	Risky Family	2	↑ score =	.85
Physical, psychological	Ryff Relationship Scale	6	↑ rates	.81–.84
Sexual abuse (<13 yr, <18 yr)	Trauma Inventory Scale	2		.73
Religious involvement				
Intrinsic religiosity	DUREL	3		.71
Religious coping (positive and negative)	RCOPE	14	Reverse score (- RC)	.72–.83
Gratitude	McCullough et al. (2002)	6	↑ score =	. 61
Forgiveness	Idler (1999)	1	↑ rates	. 58
Mental health and physical health				
Mental health and physical health QOL	SF12 (equivalent SF36)	12	Composite scores	.84–.95

Note: Sources for the measures of early traumatic stress were: neglect and witnessed parental abuse (Risky Family [Felitti et al., 1998]), physical and mental abuse (Ryff Relationship Scale [Ryff, Singer, & Palmersheim, 2004]), and sexual abuse before age 13 and age 18 years (Trauma Inventory Scale [Cusack, Frueh, & Brady, 2004]). For religious involvement, sources were intrinsic religiosity (DUREL [Koenig, Parkerson, & Meador, 1997]), religious coping (RCOPE [Pargament, 1999]), gratitude (McCullough, Emmons, & Tsang, 2002), and forgiveness (Idler, 1999). DUREL = XXXX; IPV = XXXX; QOL = quality of life; - RC, XXXX; RCOPE = XXXX; SF12 = XXXX; SF36 = XXXX; ↑ = increased