The Accumulation of Life Stressors and Income Status as Predictors of Depressive Symptoms in Women

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Abstract

The author examined the relationship between number of stressful life events, income status, and depressive symptoms in African American women. It was hypothesized that more stressful life events and low-income status would increase depressive symptoms in the women in the study. There were 103 participants whose ages ranged from 18 to 77 years old. The two levels of stressful life events were many or fewer. The two levels of income were impoverished or not impoverished. Income was further analyzed by dividing it into seven incremental income categories. Raw scores on the BDI-II were analyzed to determine if any, some, or all of the grouping variables were related to them. A 2 x 2 ANOVA revealed a main effect for stressors, $p < .05$, but no main effect for impoverishment status, $p > .05$. A 2 x 2 x 2 ANOVA revealed no main effect for stressors, $p > .05$, or impoverishment status, $p > .05$, or for incremental income in the lowest 2 categories, $p > .05$. A 2 x 7 ANOVA revealed a main effect for stressors, $p < .05$, but no main effect for incremental income categories 1-7, $p > .05$. No interaction effects were observed in any of the statistical analyses, $p > .05$.

In 2002, the World Health Organization identified major depression as the leading cause of disability in the world. Approximately 19 million adult Americans will have at least one episode of depression each year (Tranter, O'Donovan, Chandarana, & Kennedy, 2002). Depression can be debilitating for persons who are affected by it and for the families and acquaintances who are affected by it. The symptoms of depression include sadness, anhedonia (the inability to experience pleasure from activities usually found enjoyable), suicidality, psychomotor slowing, low self-esteem, guilt feelings, problems with energy needed to perform tasks, problems with concentration needed for cognitive involvement, problems with sleep, and problems with appetite (Zimmerman, McGlinchey, & Chelminski, 2006). A major depressive episode must include at least five of these symptoms (at least one of which must be sadness or anhedonia) most of the time for at least 2 weeks (APA, 2014). While the length of time varies for major depressive episodes, the symptoms must persist for at least 2-weeks to meet the minimum criteria.

Some people experience depressive symptoms but do not have depression. The distinction between depression and depressive symptoms is not always easy to determine. Usually, depression exists at the end of the spectrum where the symptoms are more in number, greater in severity, and/or longer in duration when compared to depressive symptoms that exist at the opposite end of the spectrum. The symptoms of depression can range from severe to subclinical levels. Sometimes the symptoms are so mild they are difficult to detect.

There are treatments for people with depression. Treatments are usually individualized and may include various combinations of medications, psychotherapy, social support, self-care, physical care and/or alternative therapies.

An appropriate diagnosis is important for optimal management of symptoms. Instruments such as the Beck Depression Inventory-II (BDI-II) (Beck, Steer, & Brown, 1996) or the Center for Epidemiologic Studies Depression Scale (CESD-D) (Radloff, 1997) can be used to detect depressive symptoms.

A diagnosis of depression, such as major depressive disorder (MDD), usually requires a formal evaluation based on a comparison of the individual's mental health history and presentation of signs and symptoms with predetermined criteria such as those in the DSM-V.

Depressive Symptoms in Women

Depression occurs more often in women than in men (Chermac, Booth, & Curran, 2006; Goodwin, 2006; Kessler, McGonagle, Swartz, Blazer, & Nelson, 1993; Mosack & Shore, 2006). Women are at least twice as likely as their male counterparts to demonstrate depressive symptoms (Chermac, Booth, & Curran, 2006; Goodwin, 2006; Kessler et al., 1993; Mosack & Shore, 2006). Women are three times more likely than are men to demonstrate depressive symptoms which are the result of stressful life events (Macidjewski, Prigerson, & Mazure, 2001).

The expression of depressive symptoms in women, especially younger women of childbearing and childrearing age, increases the risk for mental health problems (Glied & Kofman, 1995). Married women have higher rates of depression than unmarried women, but the reverse is true for men. In unhappy marriages, women are three times as likely as men to display depressive symptoms (McGrath et al., 1990). High levels of depressive symptoms occur among individuals with economic problems and those of lower socioeconomic status. Individuals who are less educated and who are unemployed are at higher risk for depressive symptoms (McGrath et al., 1990).

Individuals who view their life as meaningful or who feel that they are experiencing a good quality of life are less likely to experience depressive symptoms than are individuals who view their quality of life as poor. Meaning in life has been defined as a sense that one's life has a purpose or investing time and energy into the attainment of desired goals. These desired goals have been identified as purpose, value, efficacy, and self-worth (Ling, Hicks, Krull, & DelGaiso, 2006).

Life Stressors

Life stress is known to predict depressive symptoms. Additionally, Polytraumatization and repeated exposure to traumas raises the risk for depressive symptoms. Women who face life stressors such as low SES, financial strain, physical inactivity, low social support, and poor physical health are at an increased risk for depressive symptoms (Bromberger et al., 2004). In this study, life stressors were investigated. A life stressor according to Lazarus and Folkman (1984) is as a condition in which the relationship between the individual and the environment is appraised by the person as taxing or exceeding his or her resources and endangering his or her well-being.

Lazarus and Folkman's 1984 definition of a life stressor coupled with Brown and Harris' (1978) model of vulnerability factors which suggest that vulnerability factors increase the risk of depressive symptoms following negative life events, provide a justification for investigating the role of life stressors as predictors of depressive symptoms. The seven life stressors that were selected for the study were: sexual/physical abuse, physical health problems, mental health problems other than depression, a lack of religious or spiritual experience, a lack of social support, a lack of feelings of safety within one's environment, and a lack of quality or meaningfulness in life.

Sexual abuse as a child or as an adult and/or intimate partner violence were included as life stressors in the study. Sexual and/or physical abuse such as childhood sexual abuse, adult sexual assault, and male partner violence against women increase the risk for depressive symptoms in women (Chermack et al., 2006; Sachs-Ericsson et al., 2005). Women with a history of childhood sexual abuse (CSA) are two times more likely to experience depressive symptom than are women in the general population without a history of CSA (Molnar, Buuka, & Keesler, 2001).

The risk for depressive symptoms is increased when one has physical health problems (Medley & Sachs-Ericsson, 2005). Approximately 25% of individuals with medical conditions (e. g., diabetes, cardiovascular heart disease, cerebrovascular accident (CVA), and cancer) develop depressive symptoms (Ettinger et al., 2005; Lamberg, 2005; Tan et al., 2005; O'Malley, Forrest, & Miranda, 2003). Persons diagnosed with serious health problems frequently experience depressive symptoms (Jones, Beach, & Forehand, 2001). Therefore, women with a history of physical health problems or who were currently experiencing physical health problems were included among the other six life stressors in this study.

Likewise, due to the high co-occurrence of depression and other mental illnesses, the inclusion of mental health problems other than depression was included as life stressor.

Mental health problems other than depression often exist comormidly with depressive symptoms and multimorbidly with each other (Aronen & Soininen, 2000; Bardone, Mofitt, Caspi, & Dickson, 1996; Lewisohn, et al., 2003). Mental health problems tend to run in families. Some mental health problems which occur concurrently with depressive symptoms include: PTSD (Samuelson et al., 2006); alcohol abuse (Samuelson et al., 2006); anxiety disorders (Clark, Beck, Antony, Swinson & Steer, 2005; Weinstock & Whisman, 2006); schizophrenia (Mortiz & Wooward, 2006); some personality disorders (Weinstock & Whisman, 2006); and disordered eating (Harrington, Crowther, Henrickson, & Mickelson, 2006; Measelle, Hogansen, & Stice, 2006; Olivardia, Pope, Borowiecki & Cohane, 2004).

Persons who identify themselves as religious or spiritual usually report achieving a greater sense of meaning in life than those who did not identify themselves as such. Knowledge of this data prompted the inclusion of the lack of religious or spiritual experience as a life stressor for this study. Persons who identify themselves as religious or spiritual report that they maintain a sense of hope and optimism, cope with life's difficulties more easily, and deal constructively with their own mortality (Hathaway et al., 2004; Hathaway, 2003; Krause, 1998; Maddi et al., 2006; Sethi & Seligman, 1983). Persons who reported a belief in spirituality, reported that their reliance on their spiritual resources was a protective mechanism when stressful events occurred in their lives (Krause, 1998; Maddi et al., 2006).

Because persons who perceive that they have limited social support are at an increased risk for developing depressive symptoms (Lincoln, Chatters, & Taylor, 2005; Plant & Sachs-Ericsson, 2004; Southwick, Vythilingam, & Charney, 2005; Wilson, Washington, Engel, Ciol, & Jensen, 2006), the lack of social support was included as a life stressor. According to Griffin, et al., 2006, formal social support involves purchased services such as those provided by health care practitioners or social service agencies. Contrastingly, Griffin and colleagues, defined informal social support as assistance from individuals and groups. Informal support includes emotional resources that are given to people. Emotional support can include personal attention, affection, understanding, and companionship. Because of the increased risk of depressive symptom by persons who perceive that they have limited social support predicts an increase in depressive symptoms, a lack of social support was included in the list of life stressors.

The perception of safety within one's environment has implications for the presence or absence of depressive symptoms. The characteristics of a neighborhood can affect the lives of the inhabitants. The entire ecological environment can be predictive of depressive symptoms (Cutrona et al., 2005; Galea et al., 2005; Hill & Angel, 2005; Reed et al., 2005). Persons who live in disadvantaged neighborhoods demonstrate an increased risk for depressive symptoms (Cutrona et al., 2005).African American women, because of their history of being the largest subgroup of the nation's poor and poorly housed, are more likely than others minority groups to be burdened by housing costs and to live in substandard housing (Reed et al., 2005). Contextual settings can affect one's disposition towards or against depressive symptoms..

The final life stressor that was selected was that of the perception by each participant of the quality of her life or the meaningfulness of her life. Various authors have suggested that quality and meaningfulness of life are concepts that must be viewed according to a person's perceptions of his/her position in life within the context of the culture and value systems in which he/she lives (Bonomi, Patrick, Bushnell, & Martin, 2000; Harper & Power, 1998; Steger, Frazier, Kaler, & Oishi, 2006). Quality of life usually includes one's overall well-being. A good quality of life typically includes material well-being, financial and occupational security, health, suitable relationships, involvement at some level with one's environment and intellectual and psychological development.

Purpose

The purpose of this study was to investigate the relationship between women who endorsed three or more life stressors, their income status and the presence of depressive symptoms. Scores on the BDI-II measured depressive symptoms. The seven life stressors examined in this study were selected because of the empirical documentation that shows that each is known to be a risk factor for depressive symptoms.

In this study, there were four groups of women, who were defined by two dichotomous variables-numbers of stressors and income status. The two levels of number of stressors were "many" and "fewer." Number of stressors was coded as "many" for those participants who endorsed three or more of the life stressors in the study or "fewer" for those participants who endorsed fewer than three of the life stressors.

The two levels of income were impoverished and not impoverished. Each participant's household size and income range were compared to the 2005 United States federal income guidelines to determine her status as either impoverished or not impoverished. Raw scores on the BDI-II were analyzed to determine if either or both of the grouping variables were related to them

Methods

Participants

The women in this study were selected from the general non-clinical population within the greater metropolitan communities of Jackson, Mississippi and Louisville Kentucky. Since no formal diagnosis of depression was made for these participants, those who met the criteria of being at risk for depression based on the screening instrument were regarded as having depressive symptoms instead of depression. It should be noted that, although no formal diagnosis for depression was made, the possibility for depression was not ruled out.

There were 103 African American women who participated in the study. The women in the study were employees of the Jefferson County Public School District in Louisville, Kentucky, employees in the Jackson Public School District in Jackson, Mississippi, students at Jackson State University, and employees at the University of Mississippi Medical Center located at the Medical Mall in Jackson, Mississippi. The participants' ages ranged from 18 years old to 77 years old.

Instruments

Confidential Questionnaire: The Confidential Questionnaire is a one-page, 11-item questionnaire that was developed for this study to obtain information related to each participant's demographic data and whether she endorsed or denied experience as it relates to the life stressors of sexual/physical abuse, mental health problems other than depression, physical health problems, and a lack of safety in her environment. The reader is referred to Appendix A to view the questionnaire.

The Daily Spiritual Experience Scale (DSES) (Underwood & Teresi, 2002): The DSES measures a person's perception of the transcendent (God, the divine) in daily life and his or her perception of experience with the divine. The items are designed to measure experience rather than particular beliefs or behaviors therefore; they are intended to go beyond the boundaries of a particular religion (Underwood & Teresi, 2002).

The DSES includes 16 items. Participants who report "some religious" experience had mean scores that were indicative of more frequent daily spiritual experiences than those who reported "no religious" experience (Underwood & Teresi, 2002). Women expressed more frequent daily spiritual experiences than men on the DSES. African American women demonstrated higher levels of religiousness when compared to European American women in that the mean scores for African American women were 37.78, SD=14.87 but, the European American women's mean scores were 52.79, SD= 18.58 (Underwood & Teresi, 2002). For this study, a woman's score of 48 or higher on the DSES was indicative of a lack of spiritual or religious experience. This score represented the mid-point in the scale.

The reader is referred to Appendix A to view the DSES.

The Multidimensional Scale of Perceived Social Support (MSPSS) (Zimet et al., 1988): The MSPSS is a 12-item self-report measure of perceived social support from family (4 items), from friends (4 items), and from a significant-other (4 items) (Zimet et al., 1988). For each statement, participants rated their level of agreement by circling a number from 1 to 7 on a 7-point Likert scale.

The MSPSS yields a global score, and each subtest on the scale (family support, friend support, or significant-other support) yields a score. Higher scores on the MSPSS indicate higher levels of perceived social support. The MSPSS has been shown to have good internal consistency in an adult sample with Cronbach alphas for the subtests of .98 for the subtest of family support, .86 for the subtest of friend support, and .85 for the subtest of significant-other support (Young, 2006).

In this study, the global score of 48 was used as the cut-off score. This score was selected because it represents the mid-point on the scale. Scores of 48 or lower on the MSPSS were indicative of a participant's perception of a lack of social support. The reader is referred to Appendix A to view a copy of the MSPPS. The Satisfaction with Life Scale (SWLS) (Diener et al., 1985): The SWLS is a widely used and well-validated measure of life satisfaction. Satisfaction with life represents the cognitive aspect of subjective well- being (Diener et al., 1985). Respondents used a 7-point scale to rate the scale's five items.

The SWLS has demonstrated good reliability as well as convergent and discriminant validity (Steger et al., 2006). Internal consistency has been reported by various authors with Cronhbach alphas reported as .84 (Steger et al., 2006), .89 (Alfonso & Allison, 1992), .85 (Pavot, Diener, Colvin, & Sandvik, 1991), and .87 (Diener et al., 1985). Test-retest reliability has been reported as .83 for a 2-week interval (Alfonso & Allison, 1992), .84 for a 1-month interval (Pavot et al., 1991), and .82 for a 2-month interval (Diener et al., 1985).

According to the authors of the SWLS, individuals are likely to have different criteria for a good life and different standards for success in different areas of their life. Therefore, items on the SWLS were written to reflect a global view of satisfaction with life rather than to address a specific culture-bound context. This format allows respondents to weigh domains of their life in terms of their own values as they are related to satisfaction of life (Pavot & Diener, 1993). The reader is referred to appendix A to view a copy of the SWLS.

The Beck Depression Inventory–II (BDI-II) (Beck et al., 1996): The BDI-II is one of the most frequently used measures for the identification of the severity of depressive symptoms both for clinical and research purposes. The BDI-II consists of 21 items assessing depressive symptoms experienced during the past 2 weeks. Each item contains four statements reflecting varying degrees of symptom severity. Participants circled the number ranging from 0 to 3 that best described her experience with depressive symptoms.

Content validity for the BDI-II is based on its parallel with criteria for depression that are listed in the DSM-IV. Convergent and discriminate validity data are related to its similarity to and difference from other instruments; the BDI-II is positively ($p < .001$) related to both the *Beck Hopelessness Scale* ($r = .68$) and the *Scale for Suicide Ideation* ($r = .37$); the correlation between the *Beck Anxiety Inventory* and the BDI-II scores was .60 ($p < .001$) (Beck et. al, 1996).

The psychometric properties of the BDI-II are well established for both African American and European American clients (Grothe et al., 2005). Grothe and colleagues found that among low-income African American outpatients (N=220), the BDI-II demonstrated good reliability, good item-total intercorrelations, good criterion-related validity, and good internal consistency with coefficient alphas of at least .90. The reader is referred to Appendix A to view the scale.

Statistical Methods

The seven life stressors that were collapsed to form one independent variable were a history of sexual and/or physical abuse, a history of physical health problems, a history of mental health problems other than depression, a lack of religious or spiritual experience, a lack of social support, a lack of safety in one's neighborhood, and a lack of quality or meaningfulness of life. The cumulative number of stressors endorsed was operationalized in this study as a range of number of stressors – fewer (0-2) or many (3-7). The women who endorsed none, one, or two of the life stressors were grouped as having endorsed "fewer" life stressors, while those women who endorsed three or more of the life stressors were grouped as endorsing "many" life stressors.

Number of Stressors was analyzed in a 2 X 2 factorial analysis of variance (ANOVA) with number of stressors and impoverishment status serving as grouping variables. Impoverishment status was investigated to determine its role in increasing depressive symptoms. The two levels of number of stressors were fewer or many. Income was analyzed as the second factor in the 2 X 2 ANOVA. The two levels of income were "impoverished" and "not impoverished." The dependent variable in the study was severity of depressive symptoms as indicated by a participant's BDI-II scores.

The information about each participant's income was derived from a confidential questionnaire that was designed for this study. On the questionnaire, participants were asked to circle the income range that most closely approximated their annual household income. The income-range choices were presented in seven increments of approximately $10,000. The last category was income that was above $71,000. The income information and the household-size information obtained from the questionnaire were compared to the United States federal guidelines for poverty to determine each participant's status as impoverished or not impoverished.

Income was further analyzed as the second factor in a 2 x 2 x 2 ANOVA with number of stressors, the lowest two incremental income categories, and impoverishment status serving as grouping variables.

Additionally, income was further analyzed as the second factor in a 2 X 7 ANOVA with number of stressors and income incremental categories as the grouping variables. Lastly, the relationship between the number of stressors and the incremental income categories was analyzed using Spearman's rank correlation. The Spearman's rank correlation was used because the data were ordinal.

Procedures

After being informed about the study, each participant was provided a copy of the consent form. After reading the consent form, the participant was asked if she had questions. If questions were raised regarding the study, they were answered. The participant was asked to sign the consent form. The participants were given an unsigned copy of the consent form to keep. Each participant completed the one-page 11-item Confidential Questionnaire. The questionnaire contained spaces for information regarding: living arrangements; income status; age; information as to whether a participant endorsed a history of sexual and or physical abuse; physical health problems; a history of mental health problems other than depression; and lastly, space was provided for each participant to indicate her perception of the safety within her neighborhood.

After the completion of the confidential questionnaire, the participant was asked to complete four standardized scales.

Results

The mean age of the women was 31.8 years. Each life stressor was endorsed by some of the women (see Table 1). Number of stressors was coded as "many" for those participants who endorsed three or more of the life stressors or "fewer" for those participants who endorsed none, one, or two of the life stressors. There were 38 (36.9%) participants whose number of endorsed stressors placed them in the Many Stressors group. Participants in the Many Stressors group consistently demonstrated higher BDI-II scores when compared to participants in the Fewer Stressors group (see Table 2). There were 65 (63.1%) participants whose number of endorsed stressors placed them in the Fewer Stressors group.

Table 1

Frequencies and Percentages of Endorsement of Life Stressors

Life Stressor	Frequency	Percentage
History of Sexual/Physical Abuse	32	31.1
History of Physical Health Problems	54	52.4
History of Mental Health Problems Other than Depression	52	50.5
Perception of Experience with the Divine	15	14.6
Perception of Social Support	17	16.5
Perception of Safety in One's Neighborhood	20	19.4
Perception of Quality of Life or Meaningfulness of Life	20	19.4

Table 2

Means (SDs) as a Function of Number of Stressors and Impoverishment Status on BDI-II Scores

Stress Level	Impoverished	Not Impoverished	Total
Many	14.67 (9.61) N= 12	12.97 (8.51) N= 26	13.50 (8.86) N= 38
Fewer	9.61 (7.48) N=18	8.10 (5.81) N= 47	14.54 (8.36) N = 65
Total	11.63 (8.71) N = 30	9.84 (7.23) N = 73	10.36 (7.69) N = 103

Impoverishment status was coded as "impoverished" or "not impoverished." There were 30 (29.1%) impoverished participants and 73 (70.9%) participants who were not impoverished. Impoverishment was not associated with consistently higher BDI-II scores.

A 2 x 2 ANOVA with number of stressors and impoverishment status as grouping variables and BDI-II scores as the dependent variable, revealed a main effect of number of stressors, F (1, 99) = 9.09, $p < .05$, but no main effect of impoverishment status,

F (1, 99) = .954, $p > .05$. There was no interaction of number of stressors and impoverishment status, F (1, 99) =.004, $p > .05$.

Incremental Income Categories

Although an investigation of impoverishment status did not reveal a main effect, a more fine-grained assessment of income and its relationship with BDI-II scores in African American women was undertaken. The data were disaggregated into seven incremental income categories. The incremental income categories were 10,000-20,000, 21,000-30,000, 31,000-40,000, 41,000-50,000, 51,000-60,000, 61,000-70,000, and 71,000 or above.

BDI-II scores were tabulated as a function incremental income categories and impoverishment status. In most categories, across income increments, there was no trend for impoverished women to have either consistently higher or consistently lower BDI-II scores than non-impoverished women. Impoverishment status, per se, did not appear to have a consistent relationship with BDI-II scores (see Table 3).

Table 3

Effects of Impoverishment Status and Incremental Income Categories on BDI-II Scores

Income Increments (in dollars)	Impoverished	Not Impoverished	Total
10,000-20,000	14.11 (8.70) N = 19	11.83 (6.87) N = 12	13.22 (8.00) N = 31
21,000-30,000	4.50 (3.27) N = 6	11.72 (6.68) N = 18	9.91 (6.74) N = 24
31,000-40,000	2.00 N = 1	6.88 (3.87) N = 8	6.33 (3.97) N = 9
41,000-50,000	11.00 N = 1	12.17 (6.61) N = 6	12.00 (6.32) N = 7
51,000-60,000	----- N = 0	14.36 (10.32) N = 11	14.36 (10.32) N = 11
61,000-70,000	----- N = 0	8.80 (4.86) N = 5	8.80 (4.86) N = 5
Above 71,000	----- N = 0	5.44 (5.24) N = 16	5.44 (5.24) N = 16
Total	11.41 (8.61) N = 27	10.13 (7.25) N = 76	10.46 (7.61) N = 103

Approximately half (55) of the study's participants were within the lowest two incremental income categories. Therefore, BDI-II scores of women in the two lowest incremental income categories were further investigated. A 2 x 2 x 2 ANOVA with the two lowest incremental income categories and impoverishment status as grouping variables and BDI-II scores as the dependent variable, did not reveal main effects for impoverishment status, F (1, 54) = .197, p > .05; for stressors, F (1, 54) = .177, p >.05, or for the lowest two incremental income categories, F (1, 54) = .096, p >.05. There were no interaction effects for impoverishment status and stressors, F (1, 54) = .184, p >.05, or for the lowest two incremental income categories and stressors, F (1, 54) = .435, p > .05. (see Table 4).

Table 4
Mean (SD) BDI-II scores as a Function of Number of Stressors, Incremental Income of Categories 1 and 2, and Impoverishment Status

Incremental Income Categories	Impoverished		Not Impoverished	
	Fewer Stressors	Many Stressors	Fewer Stressors	Many Stressors
10,000-20,000	11.13	16.27	9.14	15.60
	(8.49) N = 8	(8.58) N = 11	(5.89) N = 7	(6.87) N = 5
21,000-30,000	3.00	7.50	11.35	13.00
	(2.16) N = 4	(3.52) N = 2	(6.95) N = 14	(6.38) N = 4
Total	11.8		11.76	
	(8.75) N = 25		(8.63) N = 30	

At each combination of incremental income-levels and impoverishment status, the BDI-II scores of women who endorsed fewer stressors and those who endorsed many stressors were compared. For women within each income level, at each level of impoverishment, women who endorsed many stressors had higher BDI-II scores than did women who endorsed fewer stressors (see Table 4).

Number of Stressors and Incremental Income Categories

Because impoverishment status did not have a significant relationship to BDI-II scores in this study, an analysis involving each of seven incremental income-levels and the number of stressors was investigated. All participants regardless of their impoverishment status were categorized based on their incremental income and the number of stressors they endorsed (see Table 5). Those women who endorsed many stressors demonstrated higher BDI-II scores than did the women who endorsed fewer stressors. There was one income increment for which this pattern did not hold. Women in the income incremental category of 31,000-40,000 showed a higher mean BDI-II score for the Fewer Stressors group than for the Many Stressors group. These results should be viewed with caution due to the inequality in the number of subjects in the groups.

A 2 x 7 ANOVA with number of stressors and all seven incremental income categories as grouping variables and BDI-II scores as the dependent variable, revealed a main effect for stressors, F (1, 89) = 8.506, $p < .05$, but not for incremental income categories, F (6, 89) = 1.20, $p > .05$. There was no interaction for stressors and incremental income categories F (1, 89) = .607, $p > .05$ (see Table 5).

Table 5
Effects of Incremental Income (in dollars), Categories, and Number of Stressors on BDI-II Scores

Income Increments	Fewer Stressors	Many Stressors	Total
10,000-20,000	10.20 N = 15 (7.21)	16.06 N = 16 (7.86)	13.22 N = 31 (8.00)
21,000 -30, 000	9.50 N = 18 (7.11)	11.25 N = 6 (5.91)	9.92 N = 24 (6.74)
31,000 - 40,000	6.50 N = 8 (4.21)	5.00 N = 1 (---)	6.33 N = 9 (3.97)
41,000 - 50,000	9.00 N = 4 (5.94)	16.00 N =3 (5.00)	12.00 N = 7 (6.32)
51,000 - 60,000	9.33 N = 6 (5.13)	20.40 N = 5 (2.26)	14.36 N = 11 (10.32)
61,000 - 70,000	4.50 N = 2 (2.12)	11.67 N = 3 (3.78)	8.80 N = 5 (4.86)
Above 71,000	4.85 N = 13 (4.71)	8.00 N = 3 (7.81)	5.43 N = 16 (5.24)
Total	8.18 N = 66 (6.22)	14.54 N = 37 (8.21)	

Correlational Analysis

A final investigation of the data utilizing a non-parametric correlational analysis was completed. A Spearman correlation was completed in lieu of a Pearson because the incremental income categories contain ordinal data. The only significant correlation that resulted was the one between BDI-II raw scores and the raw number of endorsed stressors, 0.01 level (2-tailed), N = 103, r_s = .416. Parametric and non-parametric test results were in agreement.

Discussion

The data analyses revealed that the women who endorsed three or more of the seven life stressors that were examined in this study, reported more depressive symptoms, as measured by higher BDI-II scores, than did the women who endorsed fewer than three of the life stressors. The mean BDI-II score for the group of women who endorsed three or more of the stressors was 14.54, whereas the mean BDI-II score for the group of women who endorsed fewer than three of the stressors was 8.18.

The results of the study appeared to be congruent with several of the authors whose works were previously outlined in the study. The results of this study, similar to the findings of King's work (2005), seem to suggest that for persons with membership in multiple oppressed groups, such as African American women, there may be an increased risk for negative outcomes. One such negative outcome may be an increased risk of depressive symptoms. Lazarus and Folkman (1984) asserted that life stressors are taxing or they exceed one's resources and Monroe and Harkness (2005) proposed that co-occurring stressors can lead to psychological distress such as depressive symptoms.

Based on the data analyses, income status: impoverished or not impoverished, nor, incremental income categories (1-7), provided a consistent pattern of higher BDI-II scores for the women in the study. Although, no consistent pattern of increase in depressive symptoms was found based on income, impoverishment status is generally considered to exacerbate most maladies. It is assumed that impoverished and depressed women would be at an increased risk for negative outcomes.

The data analyses did not support a consistent pattern of increases in BDI-II scores based on income. It is assumed, however, that women, who have low SES, are at an increased risk for decreased access to health and mental health services when compared to others women who do not have low SES. Many of the participants in this study were students. When asked to list their financial status, most college-aged students or college-aged persons, identify their financial status in terms of their earned income, which tends to be limited. Students and/or college-aged persons' assessment of their financial status may be negatively skewed if they report their earned income but, fail to include financial resources derived from other sources such as family support and financial aid. There was not an interaction for number of stressors and income noted in the study.

The findings of the study may be extrapolated to the health community to provide evidence of the need for education and intervention when working with women who have multiple life stressors. The accumulative effect of life stressors can impact one's mental health and quality of life as greatly as SES (Plant & Sachs-Ericsson, 2005; Monroe and Harkness, 2005). Therefore, practitioners who work with women with depressive symptoms and multiple life stressors might be proactive in suggesting stress reduction as part of intervention plans.

Limitations

The geographic demarcations of the study might have been restrictive. If the study had been conducted in less urban areas, the results might have been different. Additionally, although the age range was from 18 - 77 years of age, almost one-half of subjects in the study were of college age. Future studies should consider greater equality among the various age groups and include comparisons of student participants with non-student participants. College-aged students are usually semi-independent and, therefore, likely to meet federal impoverishment guidelines based on their self-earned income. However, many students continue to receive support from their families, which might have skewed the results related to impoverishment status in this study.

Another possible limitation that may be addressed in future research is that of numerical equality in each of the groups. In this study, the distribution across the grouping variables was small in some cells because of the number of participants who met the stated criteria.

In future research, if the life stressor of sexual abuse is included, childhood sexual abuse and recent sexual assault may be viewed as two life stressors instead of one. Further, concerning the life stressor of sexual abuse, participants should be asked whether they received treatment for the reported abuse which opens the possibility of diversity between those who have and who have not received treatments.

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APPENDIX A

Assessment Instruments

Satisfaction with Life Scale

Below are five statements with which you may agree or disagree. Using the scale below, indicate your agreement with each item by placing the appropriate number on the line preceding each of the five statements. Please be open and honest in your responding.

- 7= Strongly agree
- 6 = Agree
- 5 = Slightly agree
- 4 = Neither agree nor disagree
- 3 = Slightly disagree
- 2 = Disagree
- 1 = Strongly disagree

____In most ways, my life is close to my 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.

____If I could live my life over, I would change almost nothing.

Multidimensional Scale of Perceived Social Support (Zimet, Dahlem, Zimet & Farley, 1988)

Instructions: We are interested in how you feel about the following statements. Read each statement carefully. Indicate how you feel about each statement.

Circle the "1" if you Very Strongly Disagree
Circle the "2"if you Strongly Disagree
Circle the "3" if you Mildly Disagree
Circle the "4" if you are Neutral
Circle the "5" if you Mildly Agree
Circle the "6" if you Strongly Agree
Circle the "7" if you Very Strongly Agree

1. There is a special person who is around when I am in need. 1 2 3 4 5 6 7 SO

2. There is a special person with whom I can share my joys and sorrows. 1 2 3 4 5 6 7 SO

3. My family really tries to help me. 1 2 3 4 5 6 7 Fam

4. I get the emotional help and support I need from my family. 1 2 3 4 5 6 7 Fam

5. I have a special person who is a real source of Comfort to me. 1 2 3 4 5 6 7 SO

6. My friends really try to help me. 1 2 3 4 5 6 7 Fri

7. I can count on my friends when things go wrong. 1 2 3 4 5 6 7 Fri

8. I can talk about my problems with my family. 1 2 3 4 5 6 7 Fam

9. I have friends with whom I can share my joys I and sorrows. 1 2 3 4 5 6 7 Fri

10. There is a special person in my life who cares About my feelings. 1 2 3 4 5 6 7 SO

11. My family is willing to help me make decisions. 1 2 3 4 5 6 7 Fam

12. I can talk about my problems with my friends. 1 2 3 4 5 6 7 Fri

The items tended to divide into factor groups relating to the source of the social support, namely family (Fam), friends (Fri) or significant other (SO).

Daily Spiritual Experiences

You may experience the following in your daily life. If so, how often?

1. I feel God's presence.
1-Many times a day
2-Every day
3-Most days
4-Some days
5-Once in a while
6-Never or almost never

2. I experience a connection to all of life.
1-Many times a day
2-Every day
3-Most days
4-Some days
5-Once in a while
6-Never or almost never

3. During worship, or at other times when connecting with God, I feel joy, which lifts me out of my daily concerns.
1-Many times a day
2-Everyday
3-Most days
4-Some days
5-Once in a while
6-Never or almost never

4. I find strength in my religion or spirituality.
1-Many times a day
2-Everyday
3-Most days
4-Some days
5-Once in a while
6-Never or almost never

5. I find comfort in my religion or spirituality.
1-Many times a day
2-Every day
3-Most days
4-Some days
5-Once in a while
6-Never or almost never

6. I feel deep inner peace or harmony.
1 -Many times a day
2 -Every day
3 -Most days
4 -Some days
5 -Once in a while
6 -Never or almost never

7. I ask for God's help in the midst of daily activities.
1 -Many times a day
2 -Every day
3 -Most days
4 -Some days
5 -Once in a while
6 -Never or almost never

8. I feel guided by God in the midst of daily activities.
1 -Many times a day
2 -Every day
3 -Most days
4 -Some days
5 -Once in a while
6 -Never or almost never

9. I feel God's love for me, directly.
1 -Many times a day
2 -Every day
3 -Most days
4 -Some days
5 -Once in a while
6 -Never or almost never

10. I feel God's love for me, through others.
1 -Many times a day
2 - Every day
3 -Most days
4 -Some days
5 -Once in a while
6 -Never or almost never

11. I am spiritually touched by the beauty of creation.
1 -Many times a day
2 -Every day
3 -Most days
4 -Some days
5 -Once in a while
6 -Never or almost never

12. I feel thankful for my blessings.
I -Many times a day
2 -Every day
3 -Most days
4 -Some days
5 -Once in a while
6 -Never or almost never

13. I feel a selfless caring for others.
1 -Many times a day
2 -Every day
3 -Most days
4 -Some days
5 -Once in a while
6 -Never or almost never

14. I accept others even when they do things I think are wrong.
1 -Many times a day
2 -Every day
3 -Most days
4 -Some days
5 -Once in a while
6 -Never or almost never

The following 2 items are scored differently.

15. I desire to be closer to God or in union with Him.
1 -Not at all close
2 -Somewhat close
3 -Very close
4 -As close as possible

16. In general, how close do you feel to God?
1 -Not at all close
2 -Somewhat close
3 -Very close
4 -As close as possible

Beck Depression Inventory - Second Edition BDI-II

Name: _____ **Marital Status:** _____ **Age:** _____

Sex: _____ **Occupation:** _____ **Education:** _____

Instructions: This questionnaire consists of 21 groups of statements. Please read each group of statements carefully, and then pick out the one statement in each group that best describes the way you have been feeling during the past two weeks, including today. Circle the number beside the statement you have picked" If several statements in the group seem to apply equally we1l, circle the highest number for that group. Be sure that you do not choose more than one statement for any group, including Item 16 (Changes in Sleeping Pattern) or Item 18 (Changes in Appetite).

1. **Sadness**
0 I do not feel sad.
1 I feel sad much of the time.
2 I am sad all the time.
3 I am so sad or unhappy that I can't stand it.

2. **Pessimism**
0 I am not discouraged about my future.
1 I feel more discouraged about my future than I used to be.
2 I do not expect things to work out for me.
3 I feel my future is hopeless and will only get worse.

3. **Past Failure**
0 I do not feel like a failure.
1 I have failed more than I should have.
2 As I look back, I see a lot of failures.
3 I feel I am a total failure as a person.

4. **Loss of Pleasure**
0 I get as much pleasure as I ever did from the things I enjoy
1 I don't enjoy things as much as I used to.
2 I get very little pleasure from the things I used to enjoy.
3 I can't get any pleasure from the things I used to enjoy.

5. **Guilty Feelings**
0 I don't feel particularly guilty.
1 I feel guilty over many things I have done or should have done.
2 I feel quite guilty most of the time.
3 I feel guilty all of the time.

6. **Punishment Feelings**
0 I don't feel I am being punished.
1 I feel I may be punished.
2 I expect to be punished.
3 I feel I am being punished.

7. **Sell-Dislike**
0 I feel the same about myself as ever.
1 I have lost confidence in myself.
2 I am disappointed in myself.
3 I dislike myself.

8. **Sell-Criticalness**
0 I don't criticize or blame myself more than usual.
1 I am more critical of myself than I used to be.
2 I criticize myself for all of my faults.
3 I blame myself for everything bad that happens.

9. **Suicidal Thoughts or Wishes**
0 I don't have any thoughts of killing myself.
1 I have thoughts of killing myself, but I would not carry them out.
2 I would like to kill myself.
3 I would kill myself if I had the chance.

10. **Crying**
0 I don't cry anymore than I used to.
1 I cry more than I used to.
2 I cry over every little thing.
3 I feel like crying, but I can't.

11. **Agitation**
0 I am no more restless or wound up than usual.
1 I feel more restless or wound up than usual.
2 I am so restless or agitated that it's hard to stay still.
3 I am so restless or agitated that I have to keep
moving or doing something.

12. **Loss of Interest**
0 I have not lost interest in other people or
1 I am less interested in other people or things than before.
2 I have lost most of my interest in other people 2b my appetite is
much greater than usual.
3 It's hard to get interested in anything.

13. **Indecisiveness**
0 I make decisions about as well as ever.
1 I find it more difficult to make decisions than usual.
2 I have much greater difficulty in making very long.
3 I have trouble making any decisions.

14. **Worthlessness**
0 I do not feel I am worthless.
1 I don't consider myself as worthwhile and useful usual.
2 I feel more worthless as compared to other I used to do.
3 I feel utterly worthless.

15. **Loss of Energy**
0 I have as much energy as ever.

1 I have less energy than I used to have.
2 I don't have enough energy to do very much.
3 I don't have enough energy to do anything.
16. **Changes in Sleeping Pattern**
0 I have not experienced any change in my sleeping pattern.
1a I sleep somewhat more than usual.
1b I sleep somewhat less than usual.
2a I sleep a lot more than usual.
2b I sleep a lot less than usual.
3a I sleep most of the day.
3b I wake up 1-2 hours early and can't get back to sleep.

17. **Irritability**
0 I am no more irritable than usual.
1 I am more irritable than usual.
2 I am much more irritable than usual.
3 I am irritable all the time.

18. **Changes in Appetite**
0 I have not experienced any change in my appetite.
Ia My appetite is somewhat less than usual.
1b my appetite is somewhat greater than usual.
2a My appetite is much less than before.
2b My appetite is much greater than usual.
3a I have no appetite at all.
3b I crave food all the time.

19. **Concentration Difficulty**
0 I can concentrate as well as ever.
1 I can't concentrate as well as usual.
2 It's hard to keep my mind on anything for very long.
3 I find I can't concentrate on anything.

20. **Tiredness or Fatigue**
0 I am no more tired or fatigued than usual.
1 I get more tired or fatigued more easily than usual.
2 I am too tired or fatigued to do a 1ot of the things I used to do.
3 I am too tired or fatigued to do most of the things I used to do.

21. **Loss of Interest in Sex**
0 I have not noticed any recent change in my interest in sex.
1 I am less interested in sex than I used to be.
2 I am much less interested in sex now.
3 I have lost interest in sex completely.

Confidential Questionnaire

Research Project: The accumulation of stressors and increases in depressive symptoms in African American women

1. Please circle the choice that best describes where you live.

House apartment other (specify)_____

2. Are you renting, buying, or do you own the place in which you live?
_____

3. Do you feel safe in your neighborhood? _____

4. Please circle the income that is closest to your household income.
10,000-20,000
21,000-30,000
31,000-40,000
41,000-50,000
51,000-60,000
61,000-70,000
Above 71,000

5. How many people live in your household?

6. How many children, ages 12 and under, live in your household?

7. Have you experienced being physically assaulted?

8. Have you experienced being sexually assaulted?

9. Have you been treated for or do you have mental health problems such as
a. problems with your nerves? _____
b. feeling excessively tired (without medical reason)? _____
c. feeling anxious, tense or "up-tight"? _____

10. Do you have health problems? If yes, please circle all that apply.
heart problems
stroke
back problems
diabetes cancer
kidney problems
vision problems
HIV/AIDS
Ulcers
OB/GYN problems
arthritis
liver problems
high blood pressure
List any other health problems that you have_____

11. Please write your age on this line_____

APPENDIX B

2005 HHS Poverty Guidelines

THE 2005 HHS POVERTY GUIDELINES

One Version of the [U.S.] Federal Poverty Measure

[Latest Poverty Guideline]
[*Feder?J1 Register* Notice with 20Q5 Guidelines - fuil Text]
[Prior Poverty Guidelines and *Federal Register* References Since 1982]
Frequently Asked Questions (FAQs)]
[Further Resources on Poverty Measurement, Poverty Lines, and Their History]
Computations for the 2005 Poverty Guidelines]

There are two slightly different versions of the federal poverty measure:

- The poverty thresholds, and
- The poverty guidelines.

The **poverty thresholds** are the original version of the federal poverty measure. They are updated each year by the **Census Bureau** (although they were originally developed by Mollie Orshansky of the Social Security Administration). The thresholds are used mainly for **statistical** purposes - for instance, preparing estimates of the number of Americans in poverty each year. (In other words, all official poverty population figures are calculated using the poverty thresholds, not the guidelines.) Poverty thresholds since 1980 and weighted average poverty thresholds since 1959 are available on the Census Bureau's Web site. For an example of how the Census Bureau applies the thresholds to a family's income to determine its poverty status, see "How the Census Bureau Measures Poverty-" on the Census Bureau's web site.

The **poverty guidelines** are the other version of the federal poverty measure. They are issued each year in the *Federal Register* by the **Department of Health and Human Services** (HHS). The guidelines are a simplification of the poverty thresholds for use for **administrative** purposes - for instance, determining financial eligibility for certain federal programs. (The full text of the *Federal Register* notice with the 2005 poverty guidelines is available here.)

Persons in Family Unit	48 Contiguous States and D.C.	Alaska	Hawaii
1	$ 9,570	$11,950	$11,010
2	12,830	16,030	14,760
3	16,090	20,110	18,510
4	19,350	24,190	22,260
5	22,610	28,270	26,010
6	25,870	32,350	29,760
7	29,130	36,430	33,510
8	32,390	40,510	37,260
For each additional person, add	3,260	4,080	3,750

The separate poverty guidelines for Alaska and Hawaii reflect Office of Economic Opportunity administrative practice beginning in the 1966-1970 period. Note that the poverty thresholds the original version of the poverty measure - have never had separate figures for Alaska and Hawaii. The poverty guidelines are not defined for Puerto Rico, the U.S. Virgin Islands, American Samoa, Guam, the Republic of the Marshall Islands, the Federated States of Micronesia, the Commonwealth of the Northern Mariana Islands, and Palau. In cases in which a Federal program using the poverty guidelines serves any of those jurisdictions, the Federal office which administers the program is responsible for deciding whether to use the contiguous-states-and-D.C. guidelines for those jurisdictions or to follow some other procedure.

The poverty guidelines apply to both aged and non-aged units. The guidelines have never had an aged/non-aged distinction; only the Census Bureau (statistical) poverty thresholds have separate figures for aged and non-aged one-person and two-person units.

Programs using the guidelines (or percentage multiples of the guidelines - for instance, 125 percent or 185 percent of the guidelines) in determining eligibility include Head Start, the Food Stamp Program, the National School Lunch Program, the Low-Income Home Energy Assistance Program, and the Children's Health Insurance Program. Note that in general, cash public assistance programs (Temporary Assistance for Needy Families and Supplemental Security Income) do NOT use the poverty guidelines in determining eligibility. The Earned Income Tax Credit program also does NOT use the poverty guidelines to determine eligibility. For a more detailed list of programs that do and don't use the guidelines, see the Frequently Asked Questions (FAQs).

The poverty guidelines (unlike the poverty thresholds) are designated by the year in which they are issued. For instance, the guidelines issued in February 2005 are designated the 2005 poverty guidelines. However, the 2005 HHS poverty guidelines only reflect price changes through calendar year 2004; accordingly, they are approximately equal to the Census Bureau poverty thresholds for calendar year 2004. (The 2004 thresholds are expected to be issued in final form in August 2005; a preliminary version of the 2004 thresholds is now available from the Census Bureau.)