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A pilot study on perceived stress and PTSD symptomatology in relation to four dimensions of older women's physical health

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Abstract

Objectives—The authors examined whether selected demographic and psychological factors would predict physical health dimensions in a sample of 53 cognitively high-functioning and ethnically diverse women (age 65–105).

Method—Predictors encompassed PTSD symptomatology and perceived stress (of a non-traumatic nature and beyond health status) in relation to all dimensions of physical health of the Medical Outcome Study 36-item Short Form Health Survey (MOS SF-36; J.E. Ware & C.D. Sherbourne, 1992). Age and income, well-known correlates of health in the target population, were included as potential predictors. The authors first tested the relationship between potential predictors and health dimensions via a canonical correlation analysis, and then employed full multiple regression analyses to simultaneously test the predictors in each health dimension model.

Results—Perceived stress was a significant predictor of lower levels of general health (GH), but not of physical role limitations (PRL) or physical functioning (PF). Conversely, PTSD symptomatology predicted more limitations in role fulfillment (and, to a lesser extent, impaired physical functioning), but not lower levels of GH. As expected, age and income were predictive of some physical health dimensions. The hypothesized predictors failed to account for a significant portion of variance in pain scores.

Conclusion—PTSD symptomatology and perceived stress might influence older women's physical health dimensions differentially; additional research on larger samples is needed to corroborate these findings.

Keywords

physical functioning; posttraumatic stress disorder; distress; ethnic minorities

Introduction

Posttraumatic Stress Disorder (PTSD) symptomatology and stress of a non-traumatic nature from a variety of sources can have an adverse impact on physical well-being, according to

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several conceptualizations of the deleterious effects of stress on health. Lazarus, DeLongis, Folkman, and Gruen (1985) stated that there would be no environmental stressors without individuals who are vulnerable to them, with people's internal and external resources determining stress outcomes such as physical health. It is critical to target women in studies on this topic because, according to prior research findings (e.g., Charles & Almeida, 2007), they tend to perceive stressors as more severe than men, with over 50% of women in the U.S. being exposed to at least one traumatic experience over the course of their life (Kessler, Sonnega, Bromet, & Hughes, 1995). In older age, the 6-month prevalence of subthreshold PTSD, not meeting the full diagnostic criteria for PTSD of the Diagnostic and Statistical Manual of Mental Disorders-IV-TR (DSM-IV-TR; American Psychiatric Association, 2000), is a high 13.1% (van Zelst, de Beurs, Beekman, Deeg, & van Dyck, 2003). Subthreshold PTSD often goes untreated in older populations, both as a result of PTSD's episodic course (Averill & Beck, 2000; Hyer, Summers, Braswell, & Boyd, 1995) and underreporting (Tyra, 1993). Yet, like full PTSD, it is associated with decreased well-being, impaired functioning, and higher utilization of health care services for medically unexplained somatic symptoms (van Zelst, de Beurs, Beekman, van Dyck, & Deeg, 2006).

Regarding PTSD symptomatology in relation to health, empirical evidence links a history of PTSD to both higher somatization symptomatology (e.g., Andreski, Chilcoat, & Breslau, 1998) and physical impairment among ethnically diverse women (e.g., Amaya-Jackson et al., 1999). A significant relationship also exists between chronic non-traumatic stress and increased likelihood of developing PTSD after exposure to trauma (e.g., Kubiak, 2005). A close look at the literature on PTSD and health reveals that there is a disproportionately higher amount of information available on men than women. This is perhaps due, at least partially, to gender differences in combat experience and related use of Veteran's Administration facilities. Nonetheless, empirically evidence on women who underwent potentially traumatic experiences illustrates the negative impact of PTSD on physical and mental health outcomes in populations including female veterans (e.g., Zinzow, Grubaugh, Monnier, Suffoletta-Maierie, & Frueh, 2007), women exposed to unrelenting stalking (e.g., Mechanic, 2004), and those experiencing intimate partner violence (e.g., Dutton et al., 2006; Pico-Alfonso et al., 2006). In regard to older women in particular, those with a history of emotional abuse report more digestive problems, chronic pain, heart problems, and high blood pressure (among other health conditions) than older women without such a history (Fisher & Regan, 2006). Yet, the literature contains very limited information on specific health manifestations of traumatic stress symptomatology in non-clinical samples of ethnically diverse older women.

As to stress and physical health, researchers have linked daily stress to the occurrence of health problems such as sore throat, flu, backaches, and headaches (e.g., DeLongis, Folkman, & Lazarus, 1988). Stress can precipitate immune functioning suppression and related illnesses, but can also impact the body's ability to regulate immune functioning by inducing autoimmune disease (Koenig & Cohen, 2002). Particularly relevant to this discussion is the concept of allostatic load, i.e., the cumulative physiological burden put on the body through attempts to adapt to the demands of life (Seeman, McEwen, Rowe, & Singer, 2001). In the long run, when challenges become chronic or the allostatic system remains turned on unnecessarily, adaptive physiological reactions to stressors cause body

changes often leading to illness (McEwen, 2000). The cumulative weight of coping with negative life events while possessing inadequate resources typically increases allostatic load, a situation most common among low-income individuals (McEwen & Seeman, 2006) and potentially applicable to this study's target population. Higher allostatic load predicts an enhanced risk for lower levels of physical functioning and higher incidence of cardiovascular problems (e.g., Seeman, Singer, Rowe, Horwitz, & McEwen, 1997) among older adults. Unlike research on PTSD, there is more empirical evidence on women than men regarding the negative impact of specific non-traumatic stressors on health. This has been demonstrated for older women in caregiver (not necessarily spousal) roles that often affect their physical functioning adversely (e.g., Pinquart & Sorenson, 2003). The same frequently happens upon experiencing stressors such as the death of one's spouse (e.g., Lee & Carr, 2007), especially among older women who viewed being married as their most valuable role (Krause, 2004). Concerning the scarce body of research on stress and health in non-Caucasian populations, Green, Baker, & Smith (2003) discovered that higher stress levels are related to chronic pain particularly among women of African-American descent.

Upon studying the stress-health link in older adults, researchers have acknowledged a variety of potentially stressful situations, including challenging economic circumstances (Pearlin & Skaff, 1998). People with a non-privileged status often have the highest chances of being exposed to stressors (Pearlin, Schieman, Fazio, & Meersnam, 2005). Advanced old age and low socio-economic status (SES) are known predictors of unfavorable health outcomes (e.g., Shavers, 2007), thus these two factors must be considered in studies on older women's physical health. The development of a disability occurs much more frequently among older adults without private health insurance coverage (Landerman et al., 1998), and poor self-rated health is significantly related to lack of health insurance, most common among low-income older individuals from ethnic minority backgrounds (Fillenbaum & Hanlon, 2006). Moreover, empirical evidence suggests that women in general, and ethnic minorities in particular, are especially susceptible to poorer health and earlier mortality related to low SES (e.g., Ghaed & Gallo, 2007; Jemal et al., 2008; Shavers, 2007). The above information underscores the importance of studying older women's socio-demographic health predictors.

Considerations of non-traumatic stress are generally absent in conjunction with the assessment of PTSD symptomatology in community-based geriatric samples. Literature is noticeably lacking on the simultaneous contribution of older women's symptoms of PTSD, non-traumatic stress, and key demographics to physical health. Also, with some exceptions (e.g., Son et al., 2007), many researchers have traditionally examined the relationship between health and stress utilizing one-dimensional health measures, thereby possibly missing clinically-relevant information on distinct facets of health. In the present study, we used selected demographics and self-reported stress reactions as potential predictors of older women's distinct health dimensions. The theoretical framework of this investigation is Engel's (1977; 1980) classic biopsychosocial model of medicine, which views health as affected by a variety of factors. In line with this conceptualization, we hypothesized that, together with more advanced age and lower income, higher PTSD symptomatology and perceived stress (of a non-traumatic nature and beyond health status) would predict lower scores on four dimensions of physical health.

Method

Participants

We secured a sample of 53 community-dwelling women, age 65-105, who resided in Los Angeles County, a good location for gathering an ethnically diverse sample. Respondents' characteristics are illustrated in Table 1; their scores varied across psychological, physical, and demographic factors. The latter included age, income, ethnicity, marital status and education. Ethnic minorities comprised almost half of the sample (47.2%).

Study eligibility was limited to women who were age 65 or older and able to speak and comprehend English. Respondents were excluded on the basis of: (1) significant cognitive impairment, assessed via using a screener for dementia, as detailed below; (2) residence in an institutionalized setting; and (3) inability to provide informed consent. Setting the above exclusion criteria allowed us to minimize the occurrence of approaching older women with severe cognitive difficulties (often residing in geriatric institutions).

Procedures

Sample recruitment strategies included utilization of connections of interviewers/research assistants within their respective ethnic communities and snowball sampling (implemented by asking participants to refer other older women to the study). Research assistants were trained in interviewing and assessment skills, as well as cultural competence and active listening. The study was conducted at respondents' homes or at locations near their places of residence (e.g., senior centers and libraries). Participants were first assigned a code number placed on their assessment packet (no names were recorded for confidentiality reasons), then screened using a measure to rule out dementia. Eligible respondents were individually administered the assessment battery described next. To minimize their fatigue and keep research procedures as homogeneous as possible, we instructed interviewers to: (1) hand write all answers; (2) take a short break in the middle of the assessment session; and then (3) administer the remainder of the battery.

Instruments

The assessment packet included five measures: (1) the Mini-Cog; (2) a demographic list; (3) the Brief Posttraumatic Stress Screening Scale; (4) the Older Women's Perceived Stress beyond Health Status Scale; and (5) the Medical Outcome Study 36-item Short Form Health Survey.

The Mini-Cog—First, each potential participant was screened for dementia via administration of the Mini-Cog (Borson, Scanlan, Brush, Vitaliano, & Dokmak, 2000). This tool includes an uncued three-item recall test (with one point assigned per word recalled) and a clock drawing test, scored as 0 if "abnormal" and 2 if "normal". A clock is considered normal when all numbers are in the right direction and order (as well as being spaced evenly within the circle), with the two clock hands correctly pointing to 10 past 11. A total score of 3 or higher indicates absence of major cognitive impairment. Borson, Scanlan, Chen, and Ganguli (2003) successfully validated this measure on a sample of older adults from diverse ethnic backgrounds. In the present study, the Mini-Cog was used only for screening

purposes, not in the data analyses. Respondents with scores ranging from 3 to 5 continued the assessment session, i.e., all the women originally approached.

Demographic List—This list, developed by Lagana`, is a 10-item tool containing questions on demographic variables such as age, ethnicity, marital status, education, and stated income.

The Brief Posttraumatic Stress Screening Scale—The Brief Posttraumatic Stress Screening Scale (BPSSS; Lagana` & Schuitevoerder, 2009) is the new abbreviated version of the 20-item Distressing Event Questionnaire (DEQ; Kubany, Leisen, Kaplan, & Kelly, 2000) that assesses PTSD symptomatology based on the DSM-IV-TR (American Psychiatric Association, 2000). This five-item tool uses two items to measure criterion B: re-experiencing, two to assess criterion C: avoidance/numbing, and one to measure criterion D: increased arousal. The BPSSS was designed to quickly screen for PTSD symptomatology in a fast-paced medical setting. Scores on this measure do not provide definite evidence for the formulation of a PTSD diagnosis, thus the total scores (ranging from 0 to 11) obtained in the present study cannot be clinically interpreted beyond the fact that higher scores indicate higher levels of PTSD symptomatology. The name “Brief Posttraumatic Stress Screening Scale” reflects the focus of this measure on quantifying posttraumatic stress reactions (within the past 30 days) related to an unspecified yet worse/most distressing experience ever had. Respondents were asked to refer to such an experience when answering questions on a Likert-type scale. Scores on each of the five symptom-related items range from 0, i.e., absent or did not occur, to 4, i.e., present to an extreme or severe degree. Kubany, the first author of the DEQ, created the BPSSS (as further detailed in Lagana` & Schuitevoerder, 2009) at the Honolulu National Center for PTSD by selecting the five DEQ items that had the highest correlational values (ranging from .75 to .91) with the total DEQ scores obtained in two PTSD studies (described in Kubany et al., 2000). In the aforementioned research on a non-clinical sample of ethnically diverse older women ($N = 94$) by Lagana` & Schuitevoerder, this short version of the DEQ demonstrated high intra-item reliability (Cronbach’s $\alpha = .86$). In the same study, the concurrent validity of the BPSSS with depression (assessed via the SelfCARE D, a geriatric depression scale; Abas, Hotopf, & Prince, 2002) was adequate ($r = .50$), considering that the two scales measure somewhat overlapping yet distinct psychiatric constructs.

The Older Women’s Perceived Stress beyond Health Status Scale—This nine-item tool (Prilutsky, 2006) quantifies stress caused by nine potential stressors, including (but not limited to) the emotional strain related to spousal loss, geographic isolation from loved ones, financial strain, and caregiving stress (without inquiring about the number of people cared for or their age cohort). It was developed specifically for use with ethnically diverse older women. The definition of stress as it applies to this measure is based on a cognitive/phenomenological framework, according to which an individual must perceive a demand or stressor and concurrently experience some degree of tension as a response to it (Hennon & Brubaker, 1994). In line with such a conceptualization, this short tool quantifies the recognition and perception of a variety of events as personally stressful. Respondents rated stress levels on a Likert-type scale, with scores ranging from 0, i.e., not at all stressful, to 5,

i.e., extremely stressful. The option “N/A” was available in case stressors were not applicable. This measure has shown strong discriminant validity ($r = .11$; Prilutsky, 2006) relative to depressive symptomatology quantified by the SelfCARE D (Abas, Hotopf, & Prince, 2002). In Lagana` and Prilutsky’s (2009) research in progress on 246 older women (mainly from non-European-American backgrounds), the tool in question demonstrated adequate intra-item reliability for a tool assessing reactions to a heterogeneous group of stressors from multiple domains (Cronbach’s $\alpha = .70$). Given that this instrument, unlike many of its kind, does not address stress related to experiencing health problems, its use is particularly appropriate when attempting to predict dimensions of physical health.

The Medical Outcome Study 36-item Short Form Health Survey—The MOS SF-36 (Ware & Sherbourne, 1992) contains eight scales, four on physical health and four on mental health; its questions have a 5-point response format (from strongly disagree to strongly agree), with higher scores indicating higher physical well-being. In the present study, we used all four scales on physical health to operationalize the outcome variables, i.e., general health (GH); physical functioning (PF, i.e., ability to engage in activities of daily living); physical role limitations (PRL, i.e., limitations in role that respondents were previously accustomed to filling); and bodily pain (BP, i.e., magnitude of pain and pain interference in accomplishing daily activities). This instrument is very reliable when administered to community-dwelling older adults, with high internal consistency (Cronbach’s $\alpha > .80$ for all MOS SF-36 scales; Lyons, Perry, & Littlepage, 1994). We utilized the MOS SF-36 software to first convert the raw data into standardized scores, and then convert such standardized scores into T scores with a mean of 50 and a standard deviation of 10. In the manual of the MOS SF-36, Ware, Kosinski, and Keller (1994) recommended that researchers do not overlook this normative standardization step, otherwise the reliability and validity of the MOS SF-36 scales could be compromised.

Analytic Strategy

We computed descriptive statistics for all variables and performed a canonical correlation for two sets of variables, i.e., the hypothesized predictors and the four health dimensions. The values in Table 1 were computed using the Statistical Package for the Social Sciences; not all total percentages add up to exactly 100, due to rounding. We planned to run a series of multiple regression analyses in the event that the canonical analysis confirmed the feasibility of their implementation. Regression models were specified to take into account the simultaneous contribution of the four potential predictors to variance in each of the four health dimensions. Concerning missing data, no individual failed to respond to any of the MOS SF-36, PTSD symptomatology, and stress questions. This was also the case for most demographics, with the exception of income, as five participants declined to provide information on this variable. Thus, the sample size for the canonical and multiple regression analyses dropped from 53 to 48.

Results

We first tested whether there was a significant relationship between predictors and the health dimensions, namely physical functioning (PF); bodily pain (BP); general health (GH); and

physical role limitations (PRL), while controlling for an overall type 1 error rate (α). The first canonical correlation showed a significant relationship between the two sets of variables, $\chi^2(16) = 33.187, p = .007$. The canonical loadings are shown in Figure 1.

The model tested accounted for approximately 38% of the variability between the two sets of variables (the remaining canonical correlation coefficients extracted were not significantly different from zero). This finding indicated that a significant and sizeable relationship (especially in view of the small sample size) existed between predictors and health outcomes. Thus, we performed four full multiple regression analyses as planned. The size of the final sample is statistically adequate because the corresponding N/k ratio is over 10 ($48/4 = 12$), hence the regression coefficient estimates can be considered stable, according to Tabachnick and Fidell (2007). Following those authors' guidelines, we added income to the regression models as a categorical variable.

Table 2 displays the F and R^2 values, as well as the standardized and nonstandardized regression coefficients regarding the analyses summarized below. Physical role limitation was analyzed in the first full multiple regression, achieving overall significance, $p = .016$. Both BPSSS scores, $t(4) = -2.663, p = .011$, and age, $t(4) = -2.015, p = .05$, were significant predictors of physical role limitation. Income and non-traumatic stress did not PRL. The second analysis, on physical functioning, was statistically significant overall, with both age, $t(4) = -3.586, p = .001$, and income, $t(4) = 2.100, p = .042$, predicting physical functioning. PTSD symptomatology, although not a significant predictor in this model, showed a trend in the same direction of age and income, $t(4) = -1.746, p = .088$. Non-traumatic stress was not a significant predictor. The third analysis, conducted to predict GH, obtained overall statistical significance: non-traumatic stress was a significant predictor, $t(4) = -2.199, p = .033$, and age showed a trend towards predicting GH, $t(4) = -1.781, p = .082$. Income and PTSD symptomatology did not achieve significance. Contrary to expectations, the fourth data analysis failed to produce significant results in regard to bodily pain, thus its findings are not displayed.

Discussion

We investigated the simultaneous contribution of selected factors (i.e., non-traumatic stress, PTSD symptomatology, age, and income) to four health dimensions in a sample of older women split almost equally between European-Americans and ethnic minorities. Data analyses produced interesting findings with regard to how non-traumatic stress and PTSD symptomatology can uniquely manifest in relation to distinct aspects of physical health. Certainly, these results should be interpreted with caution, given the pilot nature of the present investigation.

Higher levels of non-traumatic stress were predictive of lower GH. This result is consistent with existing empirical evidence on the stress-health link in non-European-American younger populations (e.g., Ravenell, Johnson, & Whitaker, 2006). However, in spite of worse health perceptions, women with higher non-traumatic stress levels did not report significant limitations in physical role or worsened physical functioning, maintaining normal levels of functioning and adequate role fulfillment. This is consistent with life-span

conceptualizations of high reserve capacities in older age (e.g., Staudinger, Marsiske, & Baltes, 1993). It also corroborates prior empirical evidence demonstrating that older women can often maintain normal functioning after experiencing major negative life events (e.g., Rossi, Bisconti, & Bergeman, 2007), although they frequently report health deterioration when facing stressors related to highly valued roles (e.g., Krause, 2004). Opposite to the above finding, women with higher PTSD symptomatology experienced more limitations in role fulfillment. There was a trend in the same direction regarding worse physical functioning, in line with Amaya-Jackson et al.'s (1999) results on a non-geriatric sample of ethnically diverse women. To offer one of many potential interpretations of the difference between the findings on perceived stress and PTSD symptomatology, perhaps respondents with higher perceived stress were experiencing acute stressors (reflected in their higher stress scores). Such circumstances could have affected the functioning of their immune system negatively, resulting in an acute illness (not assessed in this study) and concomitant lower health reports. Conversely, it is possible that the pathological nature of PTSD symptomatology impaired functioning at a more fundamental level, thereby decreasing ability for role fulfillment (and, to a lesser degree, for adequate physical functioning).

More advanced age was a risk factor for physical role limitations and physical functioning (with a trend in the same direction regarding GH), indicating an age-related decline in older women's ability to perform activities and fully engage in roles previously filled. This corroborates existing empirical evidence demonstrating that higher age is related to worse health reports and limited ability to fill roles (e.g., Gama et al., 2000; Hoeymans, Feskens, Kromhout, & van den Bos, 1997; Rohrer, Merry, Rohland, Rasmussen, & Wilshusen, 2008). It should be kept in mind that age, income, and physical health are closely interrelated in the literature, with economic status often decreasing with more advanced age and common concurrent declines in physical health. This might be particularly relevant to our target population, given that at least 3.3 million older Americans have income levels below the federal poverty line (U.S. Census Bureau, 2006), and nearly 70% of poor older adults are women (Gonyea & Hooyman, 2005). In the present study, higher income predicted better physical functioning, corroborating prior research findings (e.g., Shavers, 2007). Contrary to what was expected, the four hypothesized risk factors were not significantly related to bodily pain. Research on the stress-pain link has produced mixed findings and its discussion is beyond the scope of the present investigation. Interested readers are referred to work by researchers such as Zautra, Hamilton, Potter, and Smith (1999), Green et al. (2003), Skinner, Zautra, and Reich (2004), as well as Edwards, Moric, Husfeldt, Buvanendran, and Ivankovich (2008) for more information on this topic.

Although our findings on stress and PTSD symptomatology in relation to health dimensions are intriguing, this study is preliminary in nature, hence it has several limitations. Among them is the very modest sample size, which allowed the use of only a limited number of predictors. This precluded investigation of other potential risk and protective factors (as well as moderators and mediators) within the stress-health relationship, such as information on patient-health provider relationship, specific caregiving duties, and medication use, to name a few. We did not use a tool to assess history of traumatic events due to the risk of causing undue stress among participants. There is an ethical issue to bear in mind when probing into delicate traumatic material without an unquestionable reason to do so, which we did not

have in this preliminary study. The PTSD symptomatology tool quantified psychopathology that was considerable enough to obtain significant health-related results on this variable, given the non-psychiatric nature of the sample. Another limitation of this correlational study is that the results obtained do not imply causation. Limitations in physical and role functioning, as well as specific medical conditions (not assessed herein), can precipitate higher stress levels. Indeed, health variables can influence stress reactions (e.g., Taylor et al., 2008) and anxiety symptoms typically manifest as a result of older adults' physical illnesses such as pulmonary embolus or angina (e.g., Hocking & Koenig, 1995).

There are several ways in which the present findings could inform future research and related hypothesis testing. For instance, prospective studies on whether symptoms of PTSD and non-traumatic stress affect various dimensions of older women's physical health differentially could test which particular stressors precipitate worse health declines within separate health dimensions. This research could utilize well-established (although usually much lengthier) PTSD and stress tools, together with a traumatic event measure if at all feasible. Researchers should use bigger samples and recruit ethnic minorities in numbers large enough to conduct ethnic comparisons and test whether maintenance of high physical functioning in spite of stressful circumstances occurs across ethnicities. Moreover, our four predictors could be included in causal models to be validated in longitudinal research on traumatized as well as non-traumatized populations. Such studies could clarify, for instance, whether non-traumatic stress is more predictive of acute physical problems, while PTSD symptomatology predicts stable, mainly role-related impairments over time. It would be useful to add information on potentially relevant medical factors to these models, such as immune functioning and physical illness (from a reliable source such as respondents' health providers, if possible). This could ideally be coupled with physiological measures of health and a measure probing into cultural factors related to health perceptions. Investigators could then verify self-reports, relate respondents' health perceptions to formally diagnosed conditions, and examine whether cultural variables play a role in self-reports of different health dimensions. Health insurance coverage should be considered as another potential predictor (or control variable), because worse health is very common in low-income, ethnically diverse older adults who often do not have health insurance (Fillenbaum & Hanlon, 2006).

In conclusion, the present findings on PTSD symptomatology and perceived stress suggest that it might be salient to use multi-dimensional measures of health when investigating the stress-health link among ethnically diverse older women, to avoid missing clinically-relevant information. This study should be replicated with larger samples before attempting to generalize the findings obtained to our target population. Nonetheless, its results have potential for being applicable to health care settings and offer groundwork information alerting researchers and clinicians to the importance of both non-traumatic and traumatic stress in relation to various facets of older women's physical health.

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Figure 1.
Canonical Loadings for Two Variable Sets for Model 1

Table 1

Descriptive Statistics on the Sample (N = 53)

<i>Variable</i>	<i>Mean</i>	<i>SD</i>	<i>%</i>
Age (65-105)	74.8	8.70	
Ethnicity			
African-American			11.3
Asian-American			1.9
European-American			52.8
Mexican-American			22.6
Other Hispanic-American			5.7
Armenian			5.7
Stated Income			
Less than \$20,000			39.6
\$20,000 - \$39,999			24.5
\$40,000+			26.4
Refused to Answer			9.4
Marital Status			
Single			3.8
Divorced			15.1
Married			32.1
Widowed			49.1
Education			
Less than High School			24.5
Graduated from High School			34.0
Completed Trade School			3.8
Some College			18.9
Graduated from College (B.A./B.S.)			7.5
Post-Graduate Education			9.5
Refused to Answer			1.9
Non-Traumatic Stress Total	13.13	9.77	
PTSD Symptomatology Total	3.36	2.97	
MOS SF-36 Physical Functioning Total	55.82	29.15	
MOS SF-36 Role-Physical Total	59.91	42.56	
MOS SF-36 General Health Total	57.32	23.50	
MOS SF-36 Absence of Bodily Pain Total	61.66	23.07	

Table 2

Full Multiple Regression Analyses (N = 48)

Predictor Variables	Dependent Variable (Physical Role Limitation)		
	B	SE B	β
Demographics			
Age	-1.497	.743	-.269*
Income	-1.081	6.936	-.021
Mental Health Variables			
PTSD Symptomatology	-5.527	2.076	-.374*
Non-Traumatic Stress	-.409	.651	-.089

Predictor Variables	Dependent Variable (Physical Functioning)		
	B	SE B	β
Demographics			
Age	-1.716	.478	-.454***
Income	9.376	4.465	.269*
Mental Health Variables			
PTSD Symptomatology	-2.332	1.336	-.232 ⁺
Non-Traumatic Stress	.160	.419	.051

Predictor Variables	Dependent Variable (General Health)		
Variable	B	SE B	β
Demographics			
Age	-.686	.385	-.233 ⁺
Income	5.048	3.595	.186
Stress Variables			
PTSD Symptomatology	-1.321	1.076	-.169
Non-Traumatic Stress	-.742	.337	-.306*

Note: $R^2 = .242$; $F(4,43) = 3.427^*$;Note: $R^2 = .319$; $F(4,43) = 5.032^{**}$;*** $p < .01$ Note: $R^2 = .272$; $F(4,43) = 4.011^{**}$;*** $p < .01$ * $p < .05$ * $p < .05$ *** $p < .001$ ⁺ $p < .10$ * $p < .05$

⁺
p < .10

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