Published in final edited form as:

J Health Psychol. 2012 May ; 17(4): 545–555. doi:10.1177/1359105311421045.

Bodily pain and coping styles among four geriatric age groups of women

Luciana Laganà¹ and Christina Marie Hassija²

¹California State University Northridge, USA

²University of Wyoming, USA

Abstract

No research is available regarding the association between coping styles and bodily pain by age-specific sub-groups in non-clinical older populations. To address this research gap, we recruited 317 older women (age 55–105, mainly from minority ethnic backgrounds) and divided our sample into sub-groups by decade. Regression analyses on the total sample and the age group of 65–74 demonstrated that denial and venting were inversely related to pain. Findings for the age groups 55–64 and 75–84 were non-significant. Among women age 85 or older, seeking emotional support was inversely associated with pain, while active coping was related to higher pain reports.

Keywords

coping styles; developmental processes; elderly population; ethnic minorities; pain

Pain, according to the classic definition endorsed by the International Association for the Study of Pain, is ‘an unpleasant sensory and emotional experience associated with actual or potential tissue damage or described in terms of such damage’ (Merskey and Bogduk, 1994: 210). Estimates of older adults’ bodily pain vary from a base of 18 percent to a very high 82 percent (eg, Reyes-Gibby et al., 2007). Debilitating pain in later life predicts lower levels of well-being, such as decreased happiness, even when controlling for subjective health (Angner et al., 2009). The enduring patterns in which people handle pain are reflected in their affect, attitudes, and interpersonal relationships that, in turn, have critical ramifications for physical health and treatment responses (Cipher et al., 2002). Unfortunately, although older adults are known to experience a variety of pain-related illnesses (Koenig et al., 2001), their pain is seldom assessed and managed adequately (Herr and Garand, 2001), which could produce a significant degree of stress. According to Lazarus and Folkman (1984), when individuals face stressful circumstances such as experiencing pain, they typically engage in coping, for example, cognitive and behavioral efforts to manage external or internal stressors. Thus, coping is a psychological variable that could impact pain significantly in older age (Corran et al., 1997).

© The Author(s) 2011

Corresponding author: Luciana Laganà, Department of Psychology, California State University Northridge, 18111 Nordhoff St 8255 PSY, Northridge, CA 91330-8255, USA. Luciana.Lagana@csun.edu.

Reprints and permission: sagepub.co.uk/journalsPermissions.nav

Within the past several years, while many coping conceptualizations and definitions have become available, researchers typically have agreed that Lazarus and Folkman's broad definition of coping best classifies coping responses (Sorkin and Rook, 2006). Lazarus and Folkman (1984) defined coping behaviors as either problem-focused (in which the problem causing distress is judged as amenable to change) or emotion-focused (when the individual believes that nothing could be done to modify the stressor). An insufficient amount of research on whether and how coping styles relate to bodily pain is available on older women, and almost none regarding those from non-European-American backgrounds. Older women have a significantly greater chance of experiencing unrelenting pain and related physical limitations than their male counterparts (US Department of Health and Human Services, 2007), thus it is important to determine coping predictors in this population. Lazarus and Folkman's classic approach is situational, as they conceptualized coping as flexibly dependent upon specific stressful circumstances. Indeed, as stated by the aforementioned authors, because both problem- and emotion-focused coping have adaptive potential, scholars must examine the *context* of a stressor to determine whether the coping styles employed are truly effective. Coping styles can also be viewed, as implied from now on, not as situational but as a preferred mode of functioning under stressful circumstances. In this regard, certain coping modalities (for instance, emotion-focused styles) could be implemented as the preferred method of coping over other (even possibly more efficient) ways of coping. One must also consider several socio-demographic factors that are likely to contribute to less-than-optimal pain management among older women, particularly ethnic minorities, including typically limited education (eg, Bryant et al., 2008), and restricted financial means (eg, Administration on Aging, 2002). These factors are likely to be critical in the successful approximation of social and developmental contexts applicable to many older women's experience of pain and related coping styles.

There is an under-emphasis on developmental issues in the prior literature regarding the coping-pain link. Emotion-focused coping, by definition, is a process that coincides with a general tendency toward introspection as people grow older. This tendency is recognized in classic maturational theories of aging such as the interiority theory (Neugarten, 1977), which emphasizes that, with age, a developmental process takes place, leading to an increased tendency to turn inward and become more reflective. Soares and colleagues (2004) suggested that older women tend to employ more passive strategies for pain coping due, at least partially, to decreased capabilities to effectively manage their pain in more active ways as they age.

As theorized by Lazarus and Folkman (1984) and Aldwin (1994), it may be counter-productive to employ problem-focused coping strategies when dealing with stressors that are difficult to control. Upon attempting to locate empirical evidence on such strategies, we found no relevant prior studies on planning, yet we reasoned that, in view of the previous discussion, this coping strategy holds potential for demonstrating linkages to higher pain levels in older women. Active coping has similar potential, having been associated with higher pain in adult men and women with rheumatoid arthritis (Newth and Delongis, 2004), but there is no geriatric evidence on this topic. Concerning emotion-focused coping and pain, Neugarten's (1977) classic theory provides support for the potentially adaptive quality

of focusing on handling internal reactions accompanying stressful situations (such as experiencing pain in older age). This theoretical construct applies to the coping strategy of acceptance, but we were unable to locate relevant empirical evidence on this topic. We encountered the same situation for religious coping. Prior research shows that prayer is used to cope with pain more commonly by older adults with medical conditions, such as sickle cell disease, than by their younger counterparts (Sanders et al., 2010), but there is no evidence on this issue regarding our non-clinical target population. Nonetheless, in line with Neugarten's theory, we reasoned that older women could rely on their religious/spiritual faith to determine modes of acceptance for living with pain. This could facilitate enhanced handling of their pain-related discomfort, with possible positive repercussions on pain symptomatology.

Denial is a potentially critical emotion-focused coping strategy that may prove to be a salient approach for coping with bodily pain in our population of interest. Indeed, after attempting unsuccessfully to implement problem-focused strategies in the management of bodily pain, older women may benefit from utilizing denial in secondary cognitive appraisal stages, as this would allow them to re-conceptualize pain as uncontrollable and proceed to deny its existence. In line with this conceptualization, Rapp et al. (2000) reported that increased ignoring of pain was a protective factor for physical function and disability among older adults living with knee pain. Furthermore, emotional support may play a critical role in the pain-coping link, because pain is a key factor in limiting overall independence and causes a need for greater external support (Lansbury, 2000). Although we found no empirical evidence linking pain and emotional support in non-medical samples of multiethnic older women, in line with Pearlin and Schooler's (1978) conceptualization that interpersonal coping behaviors may minimize the emotional consequences of health problems, the process of seeking emotional support could have a protective function on health outcomes, thus facilitating adjustment to pain and consequent positive repercussions on pain reports. Lastly, venting could be beneficial within the pain context typically experienced by older women by offering them an opportunity to express their frustration and release discontent with the irreversibility of their pain and/or lack of effective treatment. In research by the first author, higher pain levels were significantly related to inhibiting the expression of angry feelings among younger individuals living with HIV (Laganà et al., 2002).

Most of the available research on the coping-pain link covers clinical, rather than non-clinical populations (Lachapelle and Hadjistavropoulos, 2005). Additionally, the fact that most of the available findings are on younger samples is particularly problematic, because pain is not usually well-predicted by coping variables in younger populations (Keefe et al., 1987). Also, the trajectory of pain symptomatology in older age is more gradual than in younger populations, when pain is often due to acute conditions such as accidents (Lachapelle and Hadjistavropoulos, 2005). Thus, applications of the available research findings on the coping-pain link to ethnically diverse older women are questionable. Most importantly, there is an unmet need for the examination of the relationship between coping styles and bodily pain beyond the commonly employed research approach, in which older individuals have been studied as one large age group. More age-sensitive investigations should be conducted to examine significant developmental issues that could emerge

concerning differences in coping with pain as women grow older. In an effort to overcome the above-mentioned research limitations, we posed a new question herein: whether the association of coping styles and pain varied by age in four geriatric age sub-groups. We expected five emotion-focused coping styles (ie, turning to religion, venting, seeking emotional support, acceptance, and denial) to be related to older women's lower pain levels, and anticipated the opposite for two problem-focused styles (ie, planning and active coping).

Method

Participants

We gathered an initial sample of 317 women (age 55 to 105) for this federally-funded study. All participants resided in Los Angeles County, California, a sound location for recruiting an ethnically diverse sample. Respondents' statistics are shown in Table 1, which includes means and standard deviations, as well as score ranges and percentages whenever applicable. A near-normal age distribution was achieved. Respondents represented a variety of ethnic backgrounds: over 58 percent of them were non-European-American. Almost half of the sample lived below the poverty level (ie, a household income of less than \$20,000 per year). Education levels varied widely, with almost half of the respondents holding a high school education or less (47.5). This figure is almost identical to that of the general population of Los Angeles County (47.3%; Los Angeles County Department of Health Services, 2002–2003), which indicates the probability of having gathered a representative sample. To be eligible for research participation, respondents were required to be at least 55 years old (the age chosen in several of the aforementioned studies), and fluent in English, to minimize confounding the findings with acculturation levels. In order to obtain a sample as representative as possible of our target population (ie, non-institutionalized, community-dwelling older women), residency in an assisted living facility was included as an exclusion criterion. This choice also allowed us to minimize confounding our results with severe cognitive impairments, which are common among residents of such facilities (eg, Kopetz et al., 2000). Moreover, we implemented a dementia screener to include only community-dwelling older women who were relatively high-functioning.

Procedures

Interviewers/research assistants (RAs) were undergraduate and graduate students trained for over three months by the first author in gerontology theories, research methods, as well as interviewing and cultural competence skills. RAs recruited older women via purposive sampling (ie, using their connections in their ethnic communities at locations such as senior centers and community organizations) and snowball sampling (ie, asking respondents to refer other older women to us). In the sample, we were able to include a combination of respondents who were socially isolated and those who had community contacts, increasing its likelihood of being representative of the population of community-dwelling older women. RAs administered the assessment protocol in a one-on-one format at locations geographically convenient to those recruited, usually at respondents' homes or nearby (eg, at libraries or senior centers). They assigned a code number to each participant and placed it on her assessment packet; no names were recorded for confidentiality reasons. Next, they administered the dementia screener and, if a woman was eligible for research participation,

the rest of the assessment battery. The latter was administered by reading each question to the respondent and hand-writing all the answers, to ensure the most homogeneous assessment procedure. Informed consent was obtained from all participants, who completed the research procedures in approximately 45 minutes to one hour, with a short break at midpoint to minimize fatigue.

Variables assessed and corresponding measures

Dementia—We screened potential research participants for dementia using the Mini-cog (Borson et al., 2000). This instrument contains an un-cued three-item recall test, with one point assigned for each word recalled, and a clock drawing test, which is scored as 0 if ‘abnormal’ and 2 if ‘normal’. A normal clock illustrates all the numbers evenly spaced within the circle, in the right direction and order, with both hands correctly pointing to 10 past 11. Absence of major cognitive impairment is indicated by total scores of 3 or higher. This tool was successfully validated on a sample of ethnically diverse older adults by Borson and colleagues (2003). We utilized the Mini-Cog only to screen participants but not in the data analyses. All the women originally recruited obtained scores ranging from 3 to 5 and were all eligible for study participation.

Demographic information—Respondents completed a brief demographics list, created by the first author, which provided information on variables such as age, ethnicity, marital status, education, annual household income, and employment status.

Coping styles—We used the Brief COPE (Carver, 1997), a 28-item self-report measure of 14 conceptually differentiable coping reactions, to assess coping styles. We measured general coping styles (not specific coping strategies related to pain) and only included the coping styles contained in our aforementioned conceptualization of the coping-pain link. This choice allowed us to circumscribe the scope of the study. The coping styles assessed were: turning to religion, venting, seeking emotional support, acceptance, denial (emotion-focused), as well as planning and active coping (problem-focused). As stated by Carver, the integrity of this tool is not compromised when researchers use only the coping styles that best fit the rationale of their research. Respondents rated the frequency with which they employed these coping styles to manage stressful events within the last three months. Ratings were based on a 4-point Lik-ert-type scale ranging from 1 (‘I have not done this at all’) to 4 (‘I have been doing this a lot’). We computed the totals for the seven coping scales by calculating the unweighted sums of their items. The scales used herein have acceptable to strong internal consistency, with Cronbach’s alpha coefficients ranging from .50 to .82, as reported by Carver. This measure has been used successfully in prior research regarding older adults’ health-related quality of life (eg, Driscoll et al., 2008).

Reports of bodily pain—We measured perception of pain using the Bodily Pain scale of the Medical Outcome Study 36-Item Short-Form Health Survey (MOS SF-36; Ware and Sherbourne, 1992). Different MOS SF-36 scales were used previously on a smaller portion of the present sample to examine the relationship of general health and physical functioning (not pain) to coping styles different from those selected herein (Laganà & Zarankin, 2010). The full measure consists of 36 items; two of them (ie, numbers 7 and 8) comprise the

Bodily Pain scale. ‘How much bodily pain have you had during the past 4 weeks?’ was rated on a 6-point Likert-type scale (from 1=none to 6=very severe), and ‘During the past 4 weeks, how much did pain interfere with your normal work (including both work outside the home and housework)?’ on a 5-point Likert-type scale (from 1=not at all to 5=extremely). Thus, the total pain score used in the data analyses quantified bodily pain severity and the adverse impact of pain on daily functioning. This pain scale has strong internal consistency, with researchers reporting a Cronbach’s alpha of .80 or higher in community-dwelling samples of older adults (eg, Walters et al., 2001).

Analytic strategy—We first calculated the descriptive statistics for all variables within each of the four age groups, as reported in Table 1, then conducted a hypothesis-driven, hierarchical multiple regression analysis to evaluate the significance of pain predictors within the entire sample. The first block contained age, education, and income (ie, the demographics controlled for in several of the previously cited studies), and the second block included the factors hypothesized to predict pain, for example, turning to religion, venting, seeking emotional support, acceptance, and denial, plus planning and active coping. Next, to identify age-specific coping styles potentially related to bodily pain, we performed four multiple regression analyses on the sample’s four age groups: 55–64, 65–74, 75–84, and 85+ years. Such regression models were specified to account for the simultaneous contribution of demographic and coping variables to reported pain levels. They were full, not hierarchical, because only the regression model for the entire sample was supported by theoretical considerations and/or empirical evidence.

We maintained the same type of regression model (ie, full) throughout the multiple regression analyses relative to the four age groups. However, although it would have been ideal to use the exact same predictors in all age-specific analyses, it was not methodologically appropriate to test all of them in the 85+ group due to its small sample ($N = 30$, with 28 participants with complete data). Given that we could only include three predictors in this model (one per every 10 research participants; Tabachnick and Fidell, 2007), we chose two emotion-focused coping styles: denial (of an internal nature) and seeking emotional support (an under-studied interpersonal coping style). We also chose a problem-focused one, active coping, as goal-oriented behaviors could adversely impact dimensions of well-being in the presence of unattainable goals (Wrosch et al., 2003), such as pain relief in very old age. Concerning missing data provisions, we based the results of the frequency analyses and of the multiple regression analyses on the data collected on 288 (out of 317) women with complete information on all the variables included in such analyses. When we compared those 288 participants to the 29 with incomplete data on demographics, coping, or pain characteristics, there were no significant differences.

Results

The overall hierarchical regression model regarding pain was statistically significant, $F(10,277) = 3.14, p < .001, R^2 = .10$. The factors entered in the first block were age, education, and income. At first, education was positively related to bodily pain; however, it lost significance when considered simultaneously with the coping scales, as illustrated in Table 2. For the purposes of concision, the latter displays only the significant findings of the

multiple regression analyses conducted. Participants who indicated the utilization of denial to deal with stressful situations reported significantly less pain, as did those who employed venting. None of the problem-focused coping styles were related significantly to pain.

Next, we performed full regression analyses for each of the four age groups to examine whether the coping-pain link varied by decades of life. For the age groups 55–64 ($N = 56$) and 75–84 ($N = 74$), the regression models were not significant. Concerning the age group 65–74 ($N = 130$), the mean age was 69.32 ($SD = 2.72$), and the overall regression model on pain was statistically significant, $F(9,120) = 3.28, p < .001, R^2 = .20$. Better educated participants reported experiencing more pain. Those who used denial to cope with stressful events reported significantly less pain; the same was true for venting, mirroring the coping results with the entire sample. Neither problem-focused coping style was significantly related to pain. In the 85+ age group, the mean age was 88.71 ($SD = 4.70$). The regression model on pain was statistically significant, $F(3,24) = 3.15, p < .05, R^2 = .28$, with active coping being related to greater pain. Seeking emotional support was significantly and inversely related to pain.

Discussion

Consistent with this study's conceptualization of the coping-pain link in our target population, the use of emotion-focused coping was associated with lower levels of self-reported pain: the opposite of our findings for problem-focused coping. Significantly, the implementation of age-specific data analyses yielded intriguing findings that would not have surfaced had we tested only the overall model. Concerning descriptive statistics of interest, ethnic minorities represented the majority of the sample; thus, although the scope of this study did not include conducting ethnicity-specific analyses, our research findings offer a contribution to the scarce ethnogeriatric literature in this area. The mean of the self-reported pain scores was slightly higher than the average for the US population (Ware et al., 1994), which is a clinically relevant finding, especially in view of the fact that older populations have a tendency to under-report pain (Gibson et al., 1994). This result corroborates prior literature that indicates under-treatment of pain among ethnic minority populations (see a review of this topic by Green et al., 2003) and highlights the need for clinical interventions designed to target potentially malleable pain-related variables such as coping strategies within our target population. Upon implementing the regression analyses on the entire sample, we identified a significant, inverse relationship between denial and bodily pain. This result substantiates existing empirical evidence on denial and pain among older adults by Rapp et al. (2000). Moreover, the use of venting was associated significantly with reduced pain. This result confirms similar findings by the first author, who discovered that emotional control is related to higher pain levels among younger individuals living with HIV (Laganà et al., 2002).

Although age was not significantly related to bodily pain when considered within the entire sample, age considerations became salient once coping styles that were potentially associated with pain were examined in age-specific contexts. Concerning the four full regression analyses, two groups did not achieve any significant results (55–64 and 75–84). Due to the unavailability of relevant empirical evidence on these age-related findings, trying

to explain them would be merely speculative at this point. In the 65–74 age group, denial and venting achieved significance in the expected direction. The coping findings of this age group and the total sample were near-identical, suggesting that, in older age, coping might be relevant to pain particularly when women are 65 to 74 years of age. A possible interpretation of this finding is that, developmentally, this corresponds to a time during which women may experience significant pain compared to other periods in their lives, precipitating the need to draw upon their coping skills more heavily to deal with specific stressors. Although not verifiable in the present study, this conjecture is corroborated by the results of a British study in which Webb et al. (2003) found the prevalence of self-reported back pain to peak between ages 65 and 74. A significant yet minor finding for this age group was that women with higher levels of education reported greater pain. We could speculate that this was due to their more intellectual predisposition to ruminate and obsess over their pain, but it could not be verified herein.

In the oldest group, significantly higher pain levels were associated with the use of active coping in order to manage stressful events. This is a noteworthy finding, given the strong effect size achieved despite the modest group size, and is in line with Aldwin's (1994) as well as Lazarus and Folkman's (1984) conceptualization of problem-focused coping as a style that could lead to energy depletion and exhaustion when targeting a stressor of an uncontrollable nature. Moreover, seeking emotional support was associated with lower pain levels, corroborating Pearlin and Schooler's (1978) conceptualization of the protective health-related function of interpersonal coping behaviors. Pain may also make it increasingly difficult for older adults to access their social networks, either emotionally or physically.

The present investigation has several limitations, many of which could be addressed in future research. For instance, because this study is cross-sectional (like most of the research cited herein), its findings, by definition, do not imply causation. Interested psychologists should conduct longitudinal investigations of the coping-pain link with larger samples of older women (especially with regard to those over the age of 85). Also, purposive sampling was used, which limited the representativeness of our sample. Moreover, although the results from the oldest group account for a sizeable amount of pain score variance, they should be interpreted with caution, as we obtained a N/k ratio slightly lower than 10 ($28/3 = 9.3$). This may have resulted in somewhat unstable estimates of regression coefficients (Tabachnick and Fidell, 2007). It should also be noted that we did not assess other coping styles, potentially critical culture-related predictors of pain reports, such as levels of acculturation, nor did we gather medical data to corroborate pain reports and cover medical issues including medication use, disease-specific pain, and pain characteristics. In future studies, it would be interesting to examine the potential interrelationships of pain symptomatology and coping with cultural mismatching and miscommunication in patient-physician interactions, which could be contributing factors in the under-treatment of older women's bodily pain. In addition, although we asked participants how they coped with stressful events, in line with many studies on the coping-pain link (eg, Hart et al., 2000) we did not assess 'pain coping' in particular. Had we specified that the stressor was 'experiencing pain', still no exact quantification of pain would have been available, as we

did not use a comprehensive pain instrument. Nevertheless, given that several pain researchers have used a single item to assess pain, for example, Reyes-Gibby et al. (2007) with a sample of community-dwelling, ethnically diverse older adults, our choice of a well-known 2-item pain scale is consistent with other research in this area.

In conclusion, compared to our findings with the total sample, the magnitude of the relationship between coping and pain doubled in the 65–74 age group, and almost tripled in the 85+ group. As summarized previously, the present findings have interesting potential explanations and developmental implications. We hope to have shown that, in later life, the coping-pain link should be studied by age groups/decades, to minimize overlooking potentially important information.

Acknowledgments

This research was supported by a National Institutes of Health SCORE grant (2 S06 GM048680-12A1), a National Institute of General Medical Sciences grant (5SC3GM094075), and a National Institutes of Health NIGMS MARC grant (2 T34 GM00835), Luciana Laganà, Principal Investigator. The content of this article is solely the responsibility of the authors and does not necessarily represent the official views of the National Institute of General Medical Sciences or the National Institutes of Health. We thank Dr. Scott Plunkett, our statistical consultant, for his careful supervision of all the data analyses, as well as the students of the first author in her gerontology classes and the CSUN Adult Behavioral Medicine Laboratory for aiding with data collection.

References

- Administration on Aging. The many faces of aging: Resources to effectively serve minority older persons. 2002. Available at: <http://www.aoa.dhhs.gov/minorityaccess/stats.html>
- Aldwin, CM. Stress, Coping, and Development: An Integrative Perspective. New York: Guilford Press; 1994.
- Angner A, Ray MN, Saag KG, Allison JJ. Health and happiness among older adults: A community-based study. *Journal of Health Psychology*. 2009; 14(4):503–512. [PubMed: 19383651]
- Borson S, Scanlan JM, Brush M, Vitaliano P, Dokmak A. The Mini-Cog: A cognitive ‘vital signs’ measure for dementia screening in multi-lingual elderly. *International Journal of Geriatric Psychiatry*. 2000; 15(11):1021–1027. [PubMed: 11113982]
- Borson S, Scanlan JM, Chen P, Ganguli M. The Mini-Cog as a screen for dementia: Validation in a population-based sample. *Journal of the American Geriatrics Society*. 2003; 51(10):1451–1454. [PubMed: 14511167]
- Bryant CM, Taylor RJ, Lincoln KD, Chatters LM, Jackson JS. Marital satisfaction among African Americans and Black Caribbeans: Findings from the national survey of American life. *Family Relations*. 2008; 57(2):239–253. [PubMed: 21151891]
- Carver CS. You want to measure coping but your protocol’s too long: Consider the Brief COPE. *International Journal of Behavioral Medicine*. 1997; 4(1):92–100. [PubMed: 16250744]
- Cipher DJ, Fernandez E, Clifford PA. Coping style influences compliance with multi-disciplinary pain management. *Journal of Health Psychology*. 2002; 7(6):665–673. [PubMed: 22113408]
- Corran TM, Farrell MJ, Helme RD. The classification of patients with chronic pain: Age as a contributing factor. *Clinical Journal of Pain*. 1997; 13(3):207–214. [PubMed: 9303252]
- Driscoll HC, Serody L, Patrick S, Maurer J, Bensasi S, Houck PR, et al. Sleeping well, aging well: A descriptive and cross-sectional study of sleep in “successful agers” 75 and older. *American Journal of Geriatric Psychiatry*. 2008; 16(1):74–82. [PubMed: 18070833]
- Gibson SJ, Katz B, Corran TM, Farrell MJ, Helme RD. Pain in older persons. *Disability and Rehabilitation*. 1994; 16(3):127–139. [PubMed: 7919396]
- Green CR, Anderson KO, Baker TA, Campbell LC, Decker S, Fillingim RB, et al. The unequal burden of pain: Confronting racial and ethnic disparities in pain. *Pain Medicine*. 2003; 4(3):277–294. [PubMed: 12974827]

- Hart S, Gore-Felton C, Maldonado J, Lagana' L, Blake-Mortimer J, Israelski D, et al. The relationship between pain and coping styles among HIV-positive men and women. *Psychology and Health*. 2000; 15(6):869–879.
- Herr K, Garand L. Assessment and measurement of pain in older adults. *Clinics in Geriatric Medicine*. 2001; 17(3):457–478. [PubMed: 11459715]
- Keefe FJ, Caldwell DS, Queen KT, Gil KM, Martinez S, Crissom JE, et al. Pain coping strategies in osteoarthritis patients. *Journal of Consulting and Clinical Psychology*. 1987; 55(2):208–212. [PubMed: 3571674]
- Koenig, HG.; McCullough, ME.; Larson, DB. *Handbook of Religion and Health*. New York: Oxford University Press; 2001.
- Kopetz S, Steele CD, Brandt J, Baker A, Kronberg M, Galik E, et al. Characteristics and outcomes of dementia residents in an assisted living facility. *International Journal of Geriatric Psychiatry*. 2000; 15(7):586–593. [PubMed: 10918338]
- Lachapelle DL, Hadjistavropoulos T. Age-related differences among adults coping with pain: Evaluation of a developmental life-context model. *Canadian Journal of Behavioral Science*. 2005; 37(2):123–137.
- Laganà L, Chen X, Koopman C, Classen C, Kimerling R, Spiegel D. Depressive symptomatology in relation to emotional control and chronic pain in persons who are HIV-positive. *Rehabilitation Psychology*. 2002; 47(4):402–414.
- Laganà L, Zarankin K. A cross-sectional study on health and physical functioning in relation to coping strategies among community-dwelling, ethnically diverse older women. *BMC Women's Health*. 2010; 10(10) <http://www.biomed-central.com/1472-6874/10/10>.
- Lansbury G. Chronic pain management: A qualitative study of elderly people's preferred coping strategies and barriers to management. *Disability and Rehabilitation*. 2000; 22(1–2):2–14. [PubMed: 10661753]
- Lazarus, RS.; Folkman, S. *Stress, Appraisal, and Coping*. New York: Springer; 1984.
- Los Angeles County Department of Health Services. Los Angeles County health survey. Los Angeles: Office of Health Assessment and Epidemiology, Los Angeles County; 2002–2003.
- Merskey, H.; Bogduk, N. *Classification of Chronic Pain*. Seattle, WA: International Association for the Study of Pain Press; 1994.
- Neugarten, BL. Personality and aging. In: Birren; Schaie, KW., editors. *Handbook of the Psychology of Aging*. 1. New York: Van Nostrand Reinhold; 1977. p. 626–649.
- Newth S, Delongis A. Individual differences, mood, and coping with chronic pain in rheumatoid arthritis: A daily process analysis. *Psychology and Health*. 2004; 19(3):283–305.
- Pearlin LI, Schooler C. The Structure of Coping. *Journal of Health and Social Behavior*. 1978; 19(1): 2–21. [PubMed: 649936]
- Rapp SR, Rejeski WJ, Miller ME. Physical function among older adults with knee pain: the role of pain coping skills. *Arthritis Care and Research*. 2000; 13(5):270–279. [PubMed: 14635295]
- Reyes-Gibby CC, Aday LA, Todd KH, Cleeland CS, Anderson KO. Pain in aging community-dwelling adults in the United States: Non-Hispanic Whites, Non-Hispanic Blacks, and Hispanics. *Journal of Pain*. 2007; 8(1):75–84. [PubMed: 16949874]
- Sanders KA, Labott SM, Molokie R, Shelby SR, Desimone J. Pain, coping and health care utilization in younger and older adults with sickle cell disease. *Journal of Health Psychology*. 2010; 15(1): 131–137. [PubMed: 20064892]
- Sorkin DH, Rook KS. Dealing with negative social exchanges in later life: Coping responses, goals, and effectiveness. *Psychology and Aging*. 2006; 21(4):715–725. [PubMed: 17201492]
- Soares JJF, Sundin Ö, Grossi G. The stress of musculoskeletal pain: A comparison between primary care patients in various ages. *Journal of Psychosomatic Research*. 2004; 56(3):297–305. [PubMed: 15046966]
- Tabachnick, BG.; Fidell, LS. *Using Multivariate Statistics*. 5. Boston, MA: Allyn & Bacon; 2007.
- US Department of Health and Human Services. Aging well, living well. 2007. Available at: <http://www.womenshealth.gov/ow/>

- Walters SJ, Munro JF, Brazier JE. Using the SF-36 with older adults: A cross-sectional community-based survey. *Age and Ageing*. 2001; 30(4):337–343. [PubMed: 11509313]
- Ware JE Jr, Sherbourne CD. The MOS 36-item short-form health survey (SF - 36): I. Conceptual framework and item selection. *Medical Care*. 1992; 30(6):473–483. [PubMed: 1593914]
- Ware, JE., Jr; Kosinski, M.; Keller, SD. SF-36 Physical and Mental Health Summary Scales: A User's Manual. Boston, MA: Health Assessment Lab, New England Medical Center; 1994.
- Webb R, Brammah T, Lunt M, Urwin M, Allison T, Symmons D. Prevalence and predictors of intense, chronic, and disabling neck and back pain in the UK general population. *Spine*. 2003; 28(11):1195–1202. [PubMed: 12782992]
- Wrosch C, Scheier MF, Miller GE, Schultz R, Carver CS. Adaptive self-regulation of unattainable goals: Goal disengagement, goal reengagement, and subjective well-being. *Personality and Social Psychology Bulletin*. 2003; 29(12):1494–1508. [PubMed: 15018681]

Table 1

Descriptive statistics for the four sub-samples.

Variable	Age<65 / 65–74/75–84/ 85+ M(SD)	Age<65 / 65–74/75–84/85+ Percentage	Age<65 / 65–74/75–84/85+ Range
Age	60.75(2.43) / 69.32(2.72) / 78.93(2.73) / 88.75(4.68)		55–64 / 65–74 / 75–84 / 85–105
Ethnicity			
African-American		10.7 / 9.2 / 6.8 / 3.6	
Asian-American		12.5 / 6.9 / 6.8 / 7.1	
Mexican-American		14.3 / 19.2 / 10.8 / 10.7	
Other Hispanic		10.7 / 8.5 / 8.1 / 10.7	
Native-American		0.0 / 2.3 / 0.0 / 7.1	
European-American		39.3 / 36.2 / 48.6 / 53.6	
Armenian		5.4 / 1.5 / 1.4 / 7.1	
Middle Eastern		0.0 / 1.5 / 0.0 / 0.0	
Other		7.1 / 14.6 / 17.6 / 0.0	
Marital Status			
Single		3.6 / 8.5 / 8.1 / 0.0	
Divorced		21.4 / 16.9 / 8.1 / 0.0	
Married		57.1 / 51.5 / 24.3 / 17.9	
Widowed		16.1 / 20.8 / 55.4 / 82.1	
Living with significant other		1.8 / 0.0 / 0.0 / 0.0	
Divorced and living with significant other		0.0 / 0.0 / 2.7 / 0.0	
Other		0.0 / 2.3 / 1.4 / 0.0	
Employment Status			
Not employed		36.4 / 69.0 / 95.9 / 96.4	
Part-time (<30 hrs/wk)		18.2 / 18.3 / 2.7 / 3.6	
Full-time (30+ hrs/wk)		45.5 / 12.7 / 1.4 / 0.0	
Yearly income			
< \$ 20,000		41.1 / 39.2 / 54.1 / 71.4	
\$20,000 – \$ 39,000		19.6 / 31.5 / 27.0 / 17.9	
\$40,000+		39.3 / 29.2 / 18.9 / 10.7	
Education			
< High school		14.3 / 30.0 / 33.8 / 29.6	
High school		7.1 / 17.7 / 29.7 / 25.9	
Trade school		1.8 / 7.7 / 1.4 / 3.7	
Some college		35.7 / 21.5 / 14.9 / 22.2	
Bachelor's Degree		25.0 / 13.8 / 8.1 / 11.1	
Some Graduate school		5.4 / 1.5 / 1.4 / 7.4	
Master's Degree		8.9 / 4.6 / 9.5 / 0.0	
PhD, MD and/or JD		0.0 / 3.1 / 1.4 / 0.0	
Refused to answer		1.8 / 0.0 / 0.0 / 0.0	
Pain	67.52(23.82) / 64.68(24.05) / 59.78(22.31) / 61.29(24.67)		12–100 / 0–100 / 0–100 / 12–100
Brief COPE Scales			

Variable	Age<65 / 65–74/75–84/ 85+ M(SD)	Age<65 / 65–74/75–84/85+ Percentage	Age<65 / 65–74/75–84/85+ Range
Active Coping	5.29(1.73) / 4.78(1.65) / 4.58(1.98) / 4.43(2.10)		2 – 8 for all Coping scales
Planning	5.43(1.68) / 4.79(1.91) / 4.88(2.03) / N/A		
Denial	2.75(1.07) / 2.79(1.14) / 2.65(1.35) / 2.82(1.61)		
Seeking Emotional Support	5.34(1.59) / 5.19(1.86) / 5.55(1.74) / 4.43(1.62)		
Venting	3.59(0.99) / 3.65(1.50) / 3.89(1.48) / N/A		
Acceptance	5.55(1.75) / 5.56(1.83) / 5.76(1.73) / N/A		
Turning to Religion	5.13(2.24) / 5.67(2.19) / 5.54(2.29) / N/A		

Table 2

Significant findings of the multiple regression analyses.

Hierarchical multiple regression analysis predicting pain for the entire sample ($N = 288$)						
Independent Variables	Model 1			Model 2		
	B	SE B	β	B	SE B	β
Education	.72	.31	.14*	.49	.33	.10
Denial				-1.48	.52	-.18**
Venting				-.93	.47	-.13*
R^2 change		.04			.07	
F for R^2 change		3.63*			2.86**	

Full multiple regression analysis predicting pain for women age 65–74 ($N = 130$)				
Independent Variables	Dependent Variable (Pain)			β
	B	SE B		
Education	1.23	.50		.23*
Denial	-1.70	.81		-.19*
Venting	-1.38	.63		-.20*

Full multiple regression analysis predicting pain for women age 85–105 ($N = 28$)				
Independent Variables	Dependent Variable (Pain)			β
	B	SE B		
Active Coping	2.88	1.19		.56*
Seeking Emotional Support	-4.25	1.46		-.63**

*
 $p < .05$ **
 $p < .01$