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Older Adults' Pain Communication: The Effect of Interruption

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Abstract

The effect of interrupting older adults as they talk about their osteoarthritis pain was examined in a secondary analysis using a nonrandomized two-group design. Participants were part of a study in which older adults orally responded to a series of three pain questions asked by a videotaped practitioner presented on a computer screen. The initial 96 participants were given visual and auditory cues to touch the computer screen to continue to the next question. The remaining 216 participants received only the visual cue after the auditory cue was noted to interrupt participant responses. Older adults' pain communication was audiotaped, transcribed, and content analyzed using 16 a priori criteria from the American Pain Society's (2002) *Guidelines for the Management of Pain in Osteoarthritis, Rheumatoid Arthritis, and Juvenile Chronic Arthritis*. Older adults in the uninterrupted group responded with significantly more pain information, $M = 6.3$ ($SD = 3.69$), than the interrupted group, $M = 5.3$ ($SD = 3.22$); $F(1,300) = 4.49$, $p = .04$, $\chi^2 = 0.004$. Adjusting for sample size differences, older adults in the interrupted group described 56% less information about the source of their pain, 41% less about the quality of their pain, 29% less about their pain treatments, 24% less about the timing of their pain, and 15% less about their pain intensity. The brief, innocuous interruption diminished the amount of important pain information communicated by the older adults. Deliberate interruptions by practitioners might further reduce communication of important pain information.

Despite older adults' ability to describe clinically important pain information to practitioners (McDonald, in press) older adults might omit important pain information during their health care visits when interrupted by their health care practitioner. Primary care physicians interrupted opening statements by patients during 77% of the visits. The patients completed only 1 out of 52 interrupted statements (Beckman & Frankel, 1984). The rate of physician interruption 12 years later remained essentially the same, at 72% (Marvel, Epstein, Flowers, & Beckman, 1999). The purpose of the present study was to examine how interruption affects older adults' description of clinically important pain information.

A concept analysis by Brixey et al. (2007) identified the following as essential components of interruption. Interruption consists of "a break in the performance of a human activity initiated by a source internal or external to the recipient, with occurrence situated within the context of a setting or a location. This break results in the suspension of the initial task by initiating the performance of the unplanned task with the assumption that the initial task will be resumed" (Brixey et al., 2007, p. E38).

Interruption has been identified as a way to gain control during a conversation according to the attuning strategies associated with Communication Accommodation Theory (Coupland, Coupland, Giles, & Henwood, 1988). From this perspective, patients' description of their pain information might be curtailed rather than resumed when practitioners interrupt

patients. The present study tested the hypothesis that older adults interrupted as they communicate about their pain describe less pain information than older adults who are not interrupted.

METHODS

Design

A nonrandomized two-group design was used. The study was a secondary analysis of data from a randomized post-test- only double-blind study testing how the phrasing of health care practitioners' pain questions affected the amount of important pain information provided by older adults (McDonald, Shea, Rose, Fedo, in press).

Sample

A total of 312 community-dwelling older adults were included in the present study, with 96 participants in the interrupted group and 216 participants in the uninterrupted group. Eligible participants were required to self-report having osteoarthritis pain, be \$60 years of age; and speak, read, and understand English. People with malignant pain were excluded.

Procedure

The present and the primary study were both approved by the University Institutional Review Board. Data collection took place between July 2006 and July 2007 at 15 elderly housing sites. In the primary study, after obtaining informed consent, participants were randomized to view and orally respond to three computer-generated video clips of a health care practitioner asking questions about their pain. To increase experimental realism participants were told that the researchers were testing a way to gather health information from patients while patients wait in the practitioner's office for their visit. Participants were instructed to respond to the practitioner questions as if responding to their own practitioner. The first 96 participants were instructed by visual and auditory instructions to touch the computer screen to continue to the next question. The remaining 216 participants were instructed only by the visual instructions after it was noted that participants' pain communication might be affected by the auditory instructions. Both groups received their respective form of instructions a total of two times. All responses were audiotaped, transcribed, checked for accuracy, and content analyzed by two trained independent raters, blind to participant condition. In the primary study, participants were randomly assigned to respond to the Brief Pain Inventory Short Form (BPI-SF) either before or after responding to the practitioner questions to control for a potential confounding effect of measuring baseline pain.

Content Analysis

Content analysis results from the primary study (McDonald et al., in press) were used to compare pain communication outcomes between the interrupted and uninterrupted older adults. In the primary study, the American Pain Society (2002) *Guidelines for the Management of Pain in Osteoarthritis, Rheumatoid Arthritis, and Juvenile Chronic Arthritis* was used as a priori criteria to identify 16 important osteoarthritis pain management content areas. The 16 osteoarthritis pain management content areas were type of pain (nociceptive/neuropathic), quality of pain, source, location, intensity, duration/time course, pain affect, effect on personal lifestyle, functional status, current pain treatments, use of glucosamine, effectiveness of prescribed treatments, prescription analgesic side effects, weight management to ideal body weight, exercise regimen or physical therapy and/or occupational therapy, and indications for surgery. The raters used Krippendorff's (2004) method to content analyze the older adults' responses to the practitioner's open-ended pain question.

The unit of analysis was any word or phrase that described one of the 16 criteria. One point was given for each word or phrase, with repeated use of the same word or phrase counted only once across the three questions. Each distinctly different word or phrase about the same criterion was credited 1 point. Inter-rater reliability for the content analysis was adequate. The coded data were entered into an SPSS database, and frequencies were obtained.

RESULTS

Frequencies for the interrupted and uninterrupted group demographics are presented in Table 1. Demographics for the full sample demographics have been published previously (McDonald et al., in press). Means and standard deviations for the interrupted and uninterrupted group on age, pain intensity, functional interference from pain, and percentage of pain relief are presented in Table 2. The specific pain content communicated by the interrupted and uninterrupted group is presented in Table 3. Frequencies for the interrupted group pain content were adjusted by multiplying frequencies for the interrupted group by 2.25 to control for the sample size difference and therefore avoid inflating group differences. The adjusted frequencies are presented in the last column of Table 3.

Comparisons of the interrupted group to the uninterrupted group were conducted for age, gender, ethnicity (Hispanic or non-Hispanic), race (White or non-White), marital status (married or unmarried), pain intensity, functional pain interference, pain relief, seeing a practitioner for pain management, seeing a practitioner for arthritis management; and group membership and timing of the BPI-SF in the primary study. Significant group differences emerged for ethnicity, $\chi^2(1, n = 305) = 37.91, p = .001$; race, $\chi^2(1, n = 312) = 8.71, p = .003$; and marital status $\chi^2(1, n = 312) = 3.81, p = .05$. The group frequencies are presented in Table 1. Significantly more Hispanic, unmarried, and non-White older adults were interrupted.

The interrupted group was compared with the uninterrupted group for the amount of important osteoarthritis pain information described by the older adults while controlling for ethnicity (Hispanic/non-Hispanic), race (White/non-White), and marital status (married/unmarried). Older adults who were uninterrupted described significantly more pain information, $M = 6.3$ ($SD = 3.69$), than older adults who were interrupted, $M = 5.3$ ($SD = 3.22$); $F(1,300) = 4.49, p = .04, \chi^2 = 0.004$. The ethnicity, race, and marital status covariates were not significant.

Comparison of the interrupted group adjusted pain content frequencies with the uninterrupted group frequencies revealed five content areas where a substantial amount of pain information diverged between the two groups. The interrupted group communicated 56% less about the source of their pain, 41% less about the quality of their pain, 29% less about their pain treatments, 24% less about the timing of their pain, and 15% less about their pain intensity.

DISCUSSION

A relatively innocuous computer-generated interruption resulted in a small but significant reduction in the amount of clinically important osteoarthritis pain information communicated by older adults. The interruption was not intended to disrupt communication. Intentional interruption by a practitioner might result in even greater loss of pain information due to the controlling nature of interruption when used as a communication strategy (Coupland et al., 1988). The auditory interruption occurred twice in the present study. Physician-initiated interruption during the history portion of a health care visit, a similar clinical context, was found to occur more than twice as much, at a mean of 4.3 times per

patient (Realini, Kalet, & Sparling, 1995), suggesting that more practitioner-initiated interruptions occur in clinical practice. More interruptions might further reduce the amount of important pain information communicated by older adults.

Interruption decreases the ability to perform tasks (McDaniel, Einstein, Graham, & Rall, 2004). The task for the present study was communication of pain information. The interruption reduced information regarding pain source, quality, treatments, timing, and intensity. According to the American Pain Society (2002) Guidelines for the Management of Pain in Osteoarthritis, Rheumatoid Arthritis, and Juvenile Chronic Arthritis, practitioners should assess each of these aspects of pain to optimize pain outcomes for older adults.

The present results conflict with findings from a descriptive study where interruption did not diminish physicians' ability to identify patient concerns during an office visit (Dyche & Swiderski, 2005). Communication of older adults' health concerns, particularly if the concerns precipitate the office visit, might be a more readily retrievable task than communicating important pain information. Older adults might not always understand what information is important to communicate about their pain and therefore might be less likely to complete the task of communicating specific pain information when interrupted. Interruptions that change the topic of the conversation or curtail the amount of information might suggest to the older adult that their information is not important. Pain management based on a more complete pain assessment is more likely to assist older adults to reduce their pain.

Practitioners might respond with concern that the time constraints of a health care visit require practitioners to interrupt to effectively assess and treat patients. No relationship was found between practitioner-initiated interruption of patients' opening statements and physician perception of time pressure or medical difficulty, however (Dyche & Swiderski, 2005). Other factors, therefore, might precipitate physician-initiated interruptions.

Patients also initiate interruptions during health care visits. In a study of 40 patient and physician interactions, the number of interruptions initiated by physicians and patients was similar. Of the patient-initiated interruptions, 75% were used to communicate information or to answer questions (Realini, Kalet, & Sparling, 1995). Patient-initiated interruptions might therefore enhance communication of pain information.

Study limitations warrant cautious interpretation of the results. The study was a secondary analysis, and, as a result, groups were not randomly assigned to the interruption and noninterruption condition. Group differences emerged for ethnicity, race, and marital status, but no group differences emerged for the remaining nine variables. To control for these group differences, ethnicity, race, and marital status were used as covariates in the analysis. The primary study was conducted at 15 housing sites with data collection taking place simultaneously at two housing sites until no additional participants were recruited from sites. Housing site might explain group differences for ethnicity, race, and marital status, with older adult characteristics possibly more similar within each site than between sites due to selection effects in choosing to live at a housing site. It is possible that some unmeasured variables could also explain the group difference in pain communication, e.g., current ability to communicate with their primary care practitioner. The interruption did not take place in the context of an actual office visit, nor was the interruption from a practitioner. Intentional interruption by a practitioner during an office visit might have a different effect on communicated pain information; however, this effect might result in even greater information loss, owing to the intentional nature of the interruption.

Several areas for future research are suggested by the results. A randomized controlled clinical trial comparing interrupted with uninterrupted older adults would provide clearer

evidence for the effect of interrupting older adults. Descriptive correlation research also needs to be conducted with older adults and practitioners during actual clinical visits to clarify if the findings are generalized to clinical settings. Audiorecording discussion during the office visit would permit analysis of the amount of important pain information described by older adults and the relationship of the amount of pain information to practitioner-initiated interruptions. Older adults' pain could be measured immediately after the office visit with an open-ended question about their osteoarthritis pain, followed by a standardized pain measure, such as the BPI-SF, to determine what, if any, important pain information was omitted during the visit. A randomized controlled clinical trial could also test the effect of practitioner training in patient-centered communication (Moral, Alamo, Jurado, & Torres, 2001) for the effect on interruption and on communicated pain information. Alternately, patient education in communicating their pain information could also be tested with a randomized controlled clinical trial.

Interrupting older adults as they communicate about their chronic osteoarthritis pain might result in loss of important information for their pain management. Omission of one item of information might lessen the opportunity to revise pain management strategies and improve pain outcomes for older adults. Practitioners should consider allowing their older adult patients to complete talking about their pain before asking them further questions or interrupting them in other ways.

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TABLE 1

Group Frequencies for Demographic Variables, n (%)

Demographic	Uninterrupted Group n = 216	Interrupted Group n = 96
Women	157 (73.0)	68 (70.8)
Hispanic	3 (1.4)	21 (21.9)
Race		
American Indian	3 (1.4)	1 (1.0)
Asian	1 (0.5)	0 (0.0)
Black	47 (21.9)	27 (28.1)
Pacific Islander	0 (0.0)	1 (1.0)
White	158 (73.5)	54 (56.3)
Multiracial	6 (2.8)	13 (13.5)
Education		
<High school	73 (34.0)	38 (40.4)
High school	79 (36.7)	39 (41.5)
>High school	63 (29.3)	17 (18.1)
Married	50 (23.3)	13 (13.5)
Treatment for arthritis	158 (73.5)	71 (74.7)
Treatment for pain	140 (65.1)	60 (63.2)

TABLE 2

Group Means and Standard Deviations (SD)

Variable	Uninterrupted Group	Interrupted Group
	n = 216	n = 96
Age	75.3 (8.00)	76.3 (9.45)
Pain relief [*]	67.3 (27.61)	67.2 (31.78)
Pain intensity [†]	4.5 (1.66)	4.8 (2.33)
Functional pain [‡]	4.1 (2.42)	4.5 (2.60)

^{*} Pain relief was measured on the BPI-SF 0–100% scale.

[†] Pain intensity was computed as the mean of the four BPI-SF 0–10 pain intensity items.

[‡] Functional pain was computed as the mean of the seven BPI-SF 0–10 functional interference items.

TABLE 3

Pain Content Frequencies, n

Pain Content	Uninterrupted Group	Interrupted Group	Weighted Frequency*
	n = 216	n = 96	
Type	9 (9)	2 (2)	5
Quality	27 (21)	7 (7)	16
Source	97 (67)	19 (15)	43
Location	429 (178)	176 (72)	396
Intensity	198 (133)	75 (52)	169
Time	188 (126)	63 (46)	142
Affect	23 (19)	10 (8)	23
Lifestyle	39 (28)	18 (16)	41
Functional	102 (69)	49 (31)	110
Treatment	165 (103)	52 (37)	117
Glucosamine	1 (1)	1 (1)	2
Effective	68 (57)	29 (23)	65
Side effects	1 (1)	0 (0)	0
Weight reduction	1 (1)	0 (0)	0
Exercise	10 (10)	5 (5)	11
Surgery	2 (2)	0 (0)	0

* The weighted frequencies were calculated by multiplying frequencies for the interrupted group by 2.25 to adjust for the sample size difference between the groups.