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ABSTRACT

Self-control and self-efficacy have played a central role in recent behavioral medicine work on the control of chronic physical pain. Little work investigating the concepts of self-control and self-efficacy has been done with the elderly in spite of the fact that coping strategies in the elderly have been associated with a variety of health and psychological factors. This study examined the relationship among self-control coping skills and the perception of chronic pain, self-reported physical health, and psychological adjustment in a population of community dwelling elderly (N=19). Eight subjects had a diagnosis of osteoarthritis of the knee; 11 subjects were robust and healthy. All subjects were administered a battery of assessment instruments before and after the arthritic patients had received pain control therapy. Data from the initial tests given to all subjects were analyzed to examine the relationship among the key variables without the component of treatment being a factor. The results showed that self-control and directive instrumental coping were critical factors in pain perception, physical health, and psychological adjustment. The data also suggest that social support is mediated by self-directing and coping mechanisms, and is not in itself the prime basis for adjustment, physical health, or pain perception. (NB)

Self-Control and Coping Skills as Factors in Pain Perception, Perceived Health and Psychological Adjustment in the Elderly

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Self-Control and Coping Skills as Factors in Pain Perception, Perceived Health and Psychological Adjustment in the Elderly

Self-control, self-regulation, self-direction and self-efficacy have been identified by social behaviorism theorists as a basic organizing force in behavior (Bandura, 1977, 1982, 1987; Staats, 1975). These concepts have played a central role in recent behavioral medicine work on the control of chronic pain (Gravelle, 1985; Holzman & Turk, 1986; Kerns, Turk, & Holzman, 1983; Turk, Meichenbaum & Genest, 1983). Little work, employing the notions of self-efficacy or self-control has been done with the elderly in spite of the fact that coping strategies in the elderly have been associated with a variety of health and psychological factors in this population (Cohen & Lazarus, 1979; Felton & Revenson, 1981; Gallagher, Slife, Rose & Okarma, 1982; Meeks, Carstensen, Pellegrini & Wright, 1986; Okun, Stock, Haring & Witter, 1984; Siegler & Costa, 1984; Zautura & Hempel, 1984).

The present study examined the relationships among self-control coping skills and the perception of chronic pain, self-reported physical health and psychological adjustment in a population of community dwelling elderly.

Methods

Subjects

Nineteen subjects were included in the study. Eight were selected as subjects in a study on the control of chronic pain in the elderly (Dietrich, Dlesk, Hekmat, Hansotia & Schwieger, 1986). These individuals had a diagnosis of osteoarthritis of the knee confirmed by physician examination and roentgenogram analysis. The remaining eleven individuals were robust healthy elderly. None of the subjects had significant cognitive deficits or physical problems other than osteoarthritis. The mean age of the group was 70.16 (SD = 4.8). Income ranged from $12,600 to $14,200. The mean Duncan Scale rating for occupation was 54.91 (SD = 20.27). Average years in school was 12.26 (SD 2.56).

Design and Procedures

All the subjects were administered a battery of instruments before and after the arthritic patients had received pain control therapy. The data used in the present study were the initial tests given to all subjects. This procedure was used to provide an analysis of the relationship among the key variables without the component of treatment being a factor. The Philadelphia Geriatric

Center Multilevel Assessment Instrument (MAI) (Lawton, Moss, Fulcomer, & Kleban, 1982) was used to assess the subjects' functioning in seven areas: physical health, cognitive functioning, performance of activities of daily living, personal adjustment, social support, meaningful time use and physical environment. The Eysenck Personality Questionnaire (EPQ) (Eysenck & Eysenck, 1975) was used for general personality assessment and The Wisconsin Brief Pain Inventory (BPI) (Daut, Cleeland, & Flanery, 1983) measured self-reports of pain. The Rosenbaum Self-Control Schedule (SCS) (Rosenbaum, 1980) measured self-control. The SCS defines self-control according to four dimensions: 1) use of cognitive and self-statements to control emotional physiological responses; 2) the application of problem solving strategies; 3) delay of gratification; 4) perceived self-efficacy. The Elderly Care Research Center Coping Scale (ECRC) (Kahana, Kahana, & Young, in press) was used to assess three types of coping strategies: instrumental, affective and diversionary. Multivariate correlational analyses were performed on all the variables.

Results

The Philadelphia Geriatric Center Multilevel Assessment Instrument

Significant correlations were found for psychological adjustment and physical health (r = .77, p<.001) especially for self-ratings of health (r = .69, p<.001). The correlations among the MAI subscales of social support, time use, independent living and physical health and psychological adjustment were not significant.

The Wisconsin Brief Pain Inventory

Significant negative relationships were found between self-reports of pain and general physical health (r = -.71, p<.001), self-ratings of health (r = -.73, p<.001), general psychological adjustment (r = -.69, p<.001), morale (r = -.66, p<.01, and absence of psychological symptoms (r = -.58, p<.01). Social support, however, was positively correlated with higher levels of pain reports (r = .53, p<.05).

Rosenbaum Self-Control Schedule

Self-control as measured by the SCS correlated significantly with the MAI subscales of physical health (r = .55, p<.05), psychological adjustment (r = .65, p<.01), and morale (r = .70, p<.001). The SCS also showed a negative relationship to neuroticism (r = -.61, p<.01).

The Elderly Care Research Center Coping Scales

Instrumental coping strategies on the ECRC scales were significantly related to self-reports of pain (r = -.46,

$p<.05$). Significant relationships were also found for affective coping strategies and neuroticism ($r = .72$, $p<.001$) as well as the MAI psychological adjustment scales ($r = -.45$, $p<.05$). While affective coping strategies were negatively related to psychological adjustment, a significant positive relationship with the MAI subscales of social support occurred ($r = .49$, $p<.05$). Social support also showed significant relationships to passive ($r = .46$, $p<.05$) and diversionary coping ($r = .47$, $p<.05$) strategies.

Discussion

These results indicate that self-control and directive instrumental coping are critical factors in pain perception, physical health and psychological adjustment. These data support the findings of Keefe and his colleagues that coping attempts, pain control and rational thinking in osteo-arthritis patients are predictors of lower pain levels, better health status and lower levels of psychological distress (Keefe, Caldwell, Queen, Gil, Martinez, Crisson, Ogden & Nunley, 1987). The findings are also consistent with those of Felton and Revenson (1984) and those of Lorig and her colleagues at the Stanford Arthritis Center (Gravell, 1985; Lenker, Lorig, Gallagher, 1984; Lorig, Laurin & Holman, 1984; Lorig, Lubeck, Kraines, Seleznick & Holman, 1985) with similar populations. Gale's and Funch's

(1984) work with factors associated with successful behavior therapy outcomes and Rodin's (1980) work on control and coping in aging populations also support the present findings.

These data also suggest that social support is mediated by self-directing and coping mechanisms, and is not in itself the prime basis for adjustment, physical health and pain perception, a finding consistent with the current literature (Medalie, 1985; Schradle, 1985; Thoits, 1984a, 1984b).

Limitations of the results must also be noted. First, active self-controlling mechanisms may be helpful with mild chronic pain in the elderly as represented by typical elderly populations with arthritis. However, different mechanisms may be necessary for more acute or catastrophic pain (Lawton, 1984). Further, different coping mechanisms may be helpful and desirable for certain aspects of pain and poor health behaviors (Cohen, Reese, Kaplan & Riggio, 1986). For example, passive and diversionary strategies may work well with the emotional aspects of pain and health problems for individuals with strong social support systems and poor instrumental coping skills.

Issues raised by the data include the question of under what circumstances are self-directing and controlling

strategies optimal adaptive mechanisms for the elderly. Relationships between age and coping behaviors derived from current work in behavioral medicine also need to be examined.

Demonstration programs with the elderly utilizing self-control techniques for pain and health behaviors which analyze specific predictive factors of outcomes are an important approach to resolving these issues. For example Dietrich, Dlesk, Hekmat, Kansotia and Schwieger (1985) employed semantic behavior therapy which includes self-directive and controlling strategies on both the cognitive and affective level with the group of eight elderly subjects in the present study and found significant reductions in pain levels and psychological adjustment after four weeks of treatment. We are currently conducting a larger study with thirty-five osteoarthritis patients over a year long period which will include measurements at the end of four weeks of basic training, three months of transfer and consolidation, and two months of follow up. In addition, initial measures of pain levels and coping strategies together with a variety of psychosocial measures will be analyzed to determine predictors of successful outcomes.

One interesting finding that has emerged from this current work to date is that scores on the Self-control

Schedule for the elderly were not significantly different from those of college students. The mean for the elderly group ($\bar{X}$ age, 70.11, SD = 6.31), 37.94 (SD = 23.44) was actually slightly higher than that of the younger group ($\bar{X}$ age, 21.63, SD = 2.49), 35.20 (SD = 8.31). However, the older group showed more variability in the self-control schedule as compared to the younger group. Furthermore, the older group's distribution of scores was more negatively skewed as compared to data gathered from younger college age students. This finding indicates that even under the stress of chronic pain, elderly individuals can maintain good self-controlling strategies, but that they show more variability in their responsiveness to distress. The fact that elderly individuals displayed favorable self-control strategies is indeed highly encouraging, and suggests that intervention programs designed for this population would be of significant therapeutic value.

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Multilevel Assessment Instrument Correlations

Psychological Adjustment (MAI)

Physical Health Total (MAI)	.77*
Health Self Ratings (MAI)	.69*

* p<.001

The Wisconsin Brief Pain Inventory Correlations

Physical Health Total (MAI)	-.71***
Health Self Ratings (MAI)	-.73***
Psychological Adjustment Total (MAI)	-.69***
Morale (MAI)	-.66**
Psychological Symptoms (MAI)	-.58**
Social Support (MAI)	.53*

*p<.05

**p<.01

***p<.001

Rosenbaum Self Control

Schedule Correlations

Physical Health (MAI)	.55*
Psychological Adjustment (MAI)	.65**
Morale (MAI)	.70***
Neuroticism (EPQ)	-.61**

*p<.05

**p<.01

***p<.001

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Coping Scales Correlations

Instrumental Coping	
Self Reports of Pain (BPI)	-.46*
Affective Coping	
Psychological Adjustment (MAI)	-.45*
Neuroticism (EPQ)	.72**
Social Support (MAI)	.49*
Passive Coping	
Social Support (MAI)	.46*
Diversionary Coping	
Social Support (MAI)	.47*

*$p<.05$

**$p<.001$