Correlates of Life Satisfaction and Depression in Middle-Aged and Elderly Spinal Cord–Injured Persons

(quality of life, social perception, social support, spinal cord injuries)

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Advances in health care science allow more people with spinal cord injuries to live to old age. The purpose of this study was to determine those factors that contribute to the well-being of middle-aged and elderly spinal cord–injured people. One hundred spinal cord–injured people, ranging in age from 40 to 73 years, completed an extensive structured interview. In general, respondents reported a degree of well-being on the same measures of satisfaction and depression that was slightly lower than that of similarly aged nondisabled people. Pearson correlations indicated that people experiencing high levels of well-being reported high levels of perceived control, had higher levels of social support, and judged their health status to be good. These people also viewed their disability more favorably, tended to have higher incomes and more education, were employed, and were more religious than those indicating lower levels of well-being. The severity of the spinal cord injury was not correlated highly with subjective well-being, although there was a tendency for those with greater disability to report lower levels of well-being. People who were younger, who incurred their disability at a younger age, and who blamed themselves and felt they could have avoided the injury also tended to report higher levels of well-being.

The individuals most at risk for incurring spinal cord injury are teen-aged and young adult males, and the increased longevity of this population has resulted in an ever-increasing number of middle-aged and elderly spinal cord–injured persons (1). In the past two decades, we have learned much about the attitudes, feelings, and coping mechanisms of spinal cord–injured people soon after the injury has occurred, but little research exists long after the event has occurred. The purpose of this study was to identify those factors that contribute to the psychological well-being and life satisfaction of middle-aged and elderly people with spinal cord injuries at least five years after injury.

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Adjustment to Spinal Cord Injury

People who sustain a severe spinal cord injury face numerous adaptation demands. In addition to having problems associated with loss of mobility and sensation, the spinal cord–injured person undergoes tremendous psychological stresses (2). Spinal cord injury represents a threat to self-esteem, desire, job, and love relationships. In a society where disability is frequently accorded a negative status, individuals must combat misconceptions that devalue them as human beings. As the injured person grows older, his or her loss of health, income, and significant others may pose additional adaptation demands.

In their review of the extensive literature on psychological adjustment of disabled people, DeLoach and Greer (3) suggested that the way in which a person interprets a disability influences adjustment to the negative event. In particular, they concluded that people who are severely disabled don't necessarily experience lower life satisfaction than do able-bodied people because they can redefine situations and adopt a value system that allows them to feel good about themselves. Although many factors are related to successful adjustment to spinal cord injury, the literature (1–8) suggests that social support is crucial in enabling the injured person to make physical, social, and cognitive life changes. Therefore, one focus of this study was to examine the role of social support in facilitating the long-term adjustment of paralyzed individuals. Based on a number of studies (9–14), social support was conceptualized as consisting of instrumental, affective, and cognitive support.

Instrumental support was viewed as the provision of tangible aid, such as financial assistance, transportation, or help in carrying out activities of daily living. Cognitive support was defined as the communication of information that helps the individual to negotiate his or her world. It ranged from the specific “how to” variety to more subtle types of information enabling the person to appraise the appropriateness of his or her feelings, beliefs, attitudes, and goals. Affective support was viewed as the communication of direct positive affect (i.e., the receiving of feedback that the person is loved, respected, and belongs). To more fully understand how social support mechanisms facilitate coping with life, a social- psychological perspective, learned helplessness, was also examined.

The theory of learned helplessness (15, 16) says that when individuals are exposed to uncontrollable outcomes, they develop expectations that future outcomes will also be uncontrollable. This in turn leads to the motivational, cognitive, and emotional deficits associated with helplessness and depression. The learned helplessness theory suggests that social support may facilitate coping with severe disability by fostering a perception of control and feelings of competence. Because the spinal cord–injured person has lost so much control over his or her body and environment, issues of competence and control are very important.

Support people may help the injured person regain or increase his or her perception of control over the psychosocial and physical environment in a variety of ways, such as ensuring that the individual that they are available and can be counted on. In a more active way, this can be accomplished by fostering positive self-attributions and encouraging direct action through statements such as, “Keep on trying, you've never been a quitter.” Support people may also foster a perception of control by helping the injured person appraise the situation as less threatening and one that can be coped with. They can provide information for the injured person to use in active problem-solving strategies, and they can help the injured person realign his or her values in accordance with remaining assets. Thus, the family and significant others are crucial in providing the injured person an emotional climate conducive to the perception of control and positive view of self.

Because little research has focused on the well-being of middle-aged and elderly people with spinal cord injuries, the first question posed in this study was, “What is the degree of life satisfaction and depression?” The second question was, “What factors are correlated with life satisfaction and depression?” In particular, how important are social support and feelings of control in facilitating long-term adjustment to spinal cord injury?

Methods

Respondents

The sample consisted of 100 spinal cord–injured people living in noninstitutional community settings. To be included in the sample the person had to have paraplegia or quadriplegia, be 40 years of age or older, have no progressively deteriorating disease, have had five years or more since the injury occurred, and be willing to participate. Subjects were located through agencies that have contact...
with spinal cord-injured people in the Pacific Northwest. A total of 106 individuals were approached as possible participants. Four persons declined, and two persons were excluded from the sample because they had a deteriorating disease condition. The respondents were all Caucasian and were predominantly (90%) male. The age of subjects ranged between 40 and 73 years, with a mean age of 56 years. The subjects' ages at time of injury ranged between 12 and 68 years, with a mean age of 35 years. The causes of spinal cord injury corresponded closely to national statistics on causes of injury (1). Subjects were classified as follows: paraplegia, incomplete (40%); paraplegia, complete (27%); quadriplegia, incomplete (29%); and quadriplegia, complete (4%).

**Instruments**

Data were collected using a questionnaire designed for this study and two established instruments for measuring life satisfaction and depression. The major categories of data collected were demographic, health, disability perception, social support, perceived control, and life satisfaction and depression. Health was measured by a Likert-type item that indicated the subject's perception of general health status. Scales were constructed from the items on the questionnaire to measure social support and perceived control.

The Social Support Scale was composed of 11 Likert-type items measuring instrumental, affective, and cognitive support. Subjects were asked to name up to five persons who were important sources of help, support, or guidance. After identifying these persons, subjects were asked to indicate how much each person helped them on the 11 items. Scores on this scale could range from 0 (no help) to 275 (high support on all items from five persons). Reliability analysis of this scale indicated a Cronbach's alpha of .70. In addition to obtaining a scale score for social support, subjects were asked to indicate on Likert-type scales how satisfied they were with the overall quality and quantity of the social support they received.

The Perceived Control Scale was composed of five Likert-type items with a potential score range of 5 to 25. Subjects indicated to what extent they felt able to achieve or obtain what was important to them, to make their interactions with people end up the way they expected, to count on themselves to cope successfully when stressed, and to solve problems in their lives and to what degree they perceived the good things that happened to them were the result of their own actions. The Cronbach's alpha for this scale was .81, indicating a relatively high degree of internal consistency.

The Life Satisfaction Index-A (LSIA-A) is an 18-item self-report scale designed to measure subjective psychological well-being (17). Scores on this scale range from 0 to 18, with 18 being the most positive response. Intercoefficients have been demonstrated between the LSIA-A and other measures of life satisfaction (e.g., LSIA, .989; LSIZ, .952; Philadelphia Geriatric Center Morale Scale, .779; and Canavan, .799) (18). Reliability analysis of the LSIA-A in this study of spinal cord-injured people resulted in a Cronbach's alpha of .76.

The Center for Epidemiologic Studies Depression Scale (CES-D) is a 20-item self-report scale designed to measure depression symptoms in the general population. Scores on this scale range from 0 to 60, with 60 being the most depressed response. Radloff (19) reports that the internal consistency (Cronbach's alpha = .85), split-halves reliability (r = .77), test-retest reliability (r = .54), and validity of the scale are high, and correlations between the CES-D and age, social class, and gender are minimal. Reliability analysis of the scale in this study of spinal cord-injured persons resulted in a Cronbach's alpha of .83.

**Procedure**

Structured interviews (approx. 1 hour each) were conducted over a nine-month period by two skilled psychiatric nurses. Interviewers asked participants to verbally respond to the items on the questionnaire and to the outcome measures of life satisfaction and depression. Each respondent thus answered the same questions in the same order.

**Data Analysis**

All computer-assisted data analysis was conducted using the Statistical Package for the Social Sciences (20) and the SPSS Update (21). Statistical approaches included descriptive techniques, Pearson correlation analyses, and reliability analyses.

**Results**

**Degree of Life Satisfaction and Depression**

Scores for this sample on the LSIA-A ranged from 0 to 18, with a mean score of 10.76, a mode of 9.0, and a median of 10.88. These scores were compared with those reported by Harris and Associates (22) who used the LSIA-A (N = 4,254). The scores of the spinal cord-injured sample do reflect lower levels of life satisfaction than do the scores reported for nondis-
jured people (65+ years, mean score 12.2) and the general adult public (mean score 13.2) as reported by Harris and Associates. Over 50% of the spinal cord-injured people in this study gave responses indicating dissatisfaction on 5 of the 18 items on the LSIA-A. Responses included the following: that they were not as happy now as when they were younger (66%), that these were not the best years of their lives (73%), that their lives could be happier than they are now (78%), that they would change their past if they could (63%), and that the lot of the average person is getting worse, not better (51%). The reasons subjects gave for some of these responses were related to their disability; for example, some volunteered the information that the part of their past they would change would be their injury.

Using the CES-D, subjects were asked to indicate how often they had felt or behaved in particular ways during the past week. Scores ranged from 0 to 37, with a mean score of 9.74 and a median of 7.5. The mean score of the spinal cord-injured sample was similar to the mean (9.25) of a probability sample of 2,514 persons from a general adult population in a study conducted by Radloff (19). The similarity in scores between the spinal cord-injured sample and the general population suggests that the disabled group is not particularly at risk of depression.

In addition to the scales measuring life satisfaction and depression, several individual questions relevant to well-being were asked. The most frequent response to the question, “What are the major difficulties in your life at this time?” was dependency and immobility (38%), followed by health problems, finances, relationships with others, and pain. Subjects were also asked to identify fears about the future. The fear of having an inadequate income was most frequently mentioned (32%), followed by fear of deteriorating health, dependency on others, losing others and loneliness, death, going to a nursing home, and pain.

Correlates of Life Satisfaction and Depression

Many variables considered in this study showed a positive correlation with the measures of subjective well-being. Those independent variables with a Pearson correlation coefficient of \( r = .3 \) or higher are shown in descending order of significance in Table 1. The variables accounting for the greatest amounts of variance in the outcome measures are perceived control, social support measures, and perceived health. It is interesting that the highest correlate of depression is perceived control. This is consistent with the learned helplessness theory of depression (15, 16). In addition to the variables already noted, people reporting higher levels of well-being viewed their disability more favorably, tended to have more education, were employed, and required less assistance with activities of daily living.

The severity of the spinal cord injury was not correlated highly with perceived well-being, although there was a tendency for those with greater disabilities to report lower levels of well-being. People who were younger and who had incurred their disability at a younger age also tended to report higher levels of well-being, as did those who blamed themselves and felt they could have avoided incurring the disability. Although correlations were low, people who had higher incomes and were more religious also tended to report greater well-being.

Discussion

In general, the spinal cord-injured people in this study reported a level of well-being that was only slightly lower than that reported in studies of nondisabled people on the same measures of life satisfaction and depression. Despite physical disability, the majority of participants in this study appeared able to form a perception of life and self that was relatively positive.
reporting high life satisfaction perceived a high degree of control over their lives, were very satisfied with the quantity and quality of social support they received, and perceived their overall health status as good. They could see positive meaning in their disability and did not view their disability as the worst thing that could happen to them.

Respondents viewed their disabilities in the following ways: as the worst or almost the worst thing that could happen (54%), as neither the worst nor the best (41%), and as the best or almost the best thing that could happen to them (5%). It is relatively easy to imagine how a respondent would perceive paralysis as the “worst thing that could happen,” but what about those who said it was “the best thing that could happen”? Perhaps the response of one such person gives some insight into this question: “Before, I was drifting; since then I have gone to school and my outlook on life has changed drastically toward the positive.”

A large number of respondents (64%) said there has been some purpose of positive meaning in their disability. The most frequently mentioned types of meaning were those related to personal growth, such as “an increased awareness of self,” “becoming a better person,” “value change,” and “seeing other people as more important.” It appears that over time, many people with spinal cord injuries go through a process of reorganizing their values and perceptions of themselves to cope with their new status as a disabled person. This reorganization process most likely entails a search for positive meaning or purpose in their disability so they can accept and integrate this new element into their lives. The ability to attribute positive meaning or purpose to a disability most probably enhances a perception of control over how one feels about one’s self and one’s life situation (i.e., you are not doomed to feel miserable because of the disability; you have a choice of how to feel). When a severe injury is incurred, it is often perceived as a close brush with death, accompanied by a clear realization of human vulnerability. Thus, a severe trauma may make a person stop and think what life is really about and thus lead to dramatic value and attitude changes.

As noted in Table 1, the perception of control was the variable most highly correlated with life satisfaction and the absence of depression. With a potential score of 25 on the control scale, the mean and median scores for this sample were 19.0 and 19.7. It might be expected that spinal cord-injured people would perceive dependence on others and lack of control over their lives. But this was not true for the sample in general; however, among people experiencing the most severe injuries (quadruplegia, complete), the perception of control was lower.

As expected, social support was positively correlated with life satisfaction. With a potential social support scale score of 275, the scores in this sample ranged from 0 (no support) to 247, with a mean of 92.9, a mode of 49.0, and a median of 83.5. Of particular significance is the small number of support people named by many respondents. The mean number of support people identified was 2.3, the mode 1.0, and the median 1.9. The largest number of respondents (41%) named only one support person, which was usually a spouse. The small number of support people makes those with spinal cord injuries vulnerable to the potential loss of these supports. Spouses, in particular, provided much emotional, physical, and home maintenance support. It was the impression of the interviewers that many of the respondents would have numerous coping problems if they lost a spouse. Unfortunately, as this population ages, as divorce becomes more socially acceptable, and as more women enter the workforce, it is possible that spouses will be less available for support.

It was interesting that being employed showed a significant positive correlation with life satisfaction, whereas income showed only a slight positive correlation. This suggests that employment, regardless of financial remuneration, may have a positive influence on life satisfaction. Most of the respondents in this study (74%) were unemployed, which indicates that attention could be directed toward factors associated with this high rate of unemployment. Those employed identified a variety of occupations, and one-half of those employed were professionals. This may indicate a high degree of career commitment among professional people or that professional jobs frequently do not require a large degree of physical mobility. Among those working, job satisfaction was very high.

Respondents were low users of community services and agencies. Most (85%) said they never used any community services or agencies. Others (6%) reported using services and agencies once a week or more; these people tended to be older or more severely disabled. As this population ages, however, it is possible that more of them will require community assistance. Therefore, a thorough assessment
of the needs of this population and the factors that may influence use of services (e.g., availability, acceptability, accessibility, cost, types of services provided) is indicated before investing resources in programs.

Implications for Occupational Therapy

This study identifies some of the factors related to the well-being of people with spinal cord injuries. An understanding of these factors provides direction for the occupational therapist in the assessment of risk factors and in interventions with individual patients and population aggregates. Perhaps the finding of most interest to the occupational therapist is that the perception of control was the variable most strongly associated with well-being. A central aim of occupational therapy is to help people achieve a maximum degree of wellness and productivity and maintain a sense of independence and control. The therapist works toward this goal in many ways. In addition to teaching the patient and family ways of managing activities of daily living, the therapist should help the injured person and his or her family make the psychological and social changes that will have a long-term impact on well-being.

For example, the therapist may help spinal cord-injured people become aware of the importance of social support and develop the skills necessary to build and maintain a support system. The therapist may work with family members to help them reinforce a positive self-image and foster feelings of competence and control in the injured person. By projecting a favorable view of "life after injury," the therapist helps injured people and family members reorganize their value systems in ways that emphasize remaining assets.

Among health team members, the occupational therapist has long had a tradition of helping disabled people focus on ways to use their remaining physical, intellectual, and psychosocial assets, rather than concentrating on lost abilities. Spinal cord-injured people need not only physical rehabilitation but also help in adjusting psychologically and socially to their injuries. In the long run, the occupational therapist's interventions in helping the injured person perceive control over the physical and psychosocial environment may be central to subsequent life satisfaction.

This study examines the well-being of people with spinal cord injuries at only one point in their lives. Of value would be a longitudinal study of such people from the time of injury throughout their lives. Such a study would shed light on the relationship between the occupational therapist's interventions and the patient's long-term adjustment to disability. However, in the absence of such data, occupational therapists can use correlational data from studies such as this one to plan and evaluate approaches to the care of people with spinal cord injuries.

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REFERENCES