

Engagement In Daily Occupations And Life Satisfaction Among People With Spinal Cord Injuries

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Fifteen community-based subjects with spinal cord injury were compared with 12 age- and sex-matched cohorts on demographic characteristics, pattern of engagement in daily occupations, levels of satisfaction in performance of home-management and social/community problem-solving skills, overall life satisfaction, and locus of control. Significant differences were found in employment, annual income, and use of time for work and activities other than sleep, rest, self-maintenance, and play. Subjects with spinal cord injury had lower levels of satisfaction than nondisabled counterparts with performance of home-management and social/community problem-solving skills. A significant relationship between satisfaction with performance and overall life satisfaction was found for the total sample (N = 27). No

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significant differences were found in overall life satisfaction or locus of control between the disabled and nondisabled subsamples.

A basic assumption of occupational therapy is that engagement in occupations, or one's daily configuration of activities, is related to life satisfaction (Yerxa, 1967). This study explored that relationship as well as other relevant variables in a purposive sample of people who had spinal cord injuries and who were living in the community. Data from this group were compared with a sample of nondisabled people who shared similar demographic characteristics.

BACKGROUND

Occupational therapy is concerned with preparing severely disabled persons for adaptation to the challenges of community living (Reilly, 1969). It is assumed that patients will achieve some degree of participation in and satisfaction with community life when they return home after having been hospitalized, in spite of the extra challenge of living with a chronic disability. However, little is really known about how community-based disabled people use their time, the patterns of activity they engage in, or the extent to which their engagement in activity is related to their overall life satisfaction. Nor is it known how satisfied they are with their performance of daily living skills. Although previous research with nondisabled people supports a relationship between participation in active leisure pursuits and life satisfaction (Flanagan, 1982), no comparisons have previously been made between disabled and nondisabled people on these variables.

Since the days of Adolph Meyer and Eleanor Clark Slagle, occupational therapy has focused on the degree to which an individual's use of time contributes to his or her healthfulness (Kielhofner, 1977). It was proposed by these pioneers of occupational therapy that people with chronic disability needed to develop a balance of work, play, rest, and sleep in their daily lives in order to achieve harmony with the natural rhythms of the universe and to have a sense of well-being (Meyer, 1922). This study represented a beginning in exploring how people with disabilities actually use their time, how they categorize their time use, and the degree to which their engagement in activity is related to life satisfaction and happiness.

PURPOSE

The purpose of this study was to assess three areas of interest:

1. How community-based people with spinal cord injuries used their

time engaged in daily occupations (*daily occupations* refers to all activities with which a person occupies time);

2. How satisfied such people were with their performance of home-management and social/community problem-solving skills; and

3. What, if any, relationships existed between engagement in occupations and overall life satisfaction.

Research questions addressed include the following:

1. What were the demographic characteristics of a sample of 15 people living in Los Angeles County who have spinal cord injuries?

2. How did these demographic characteristics compare to those of a sample of 12 sex- and age-matched subjects without disabilities?

3. What was the activity configuration (pattern of engagement in daily occupations) of the sample with spinal cord injury?

4. How did that activity configuration compare to one for nondisabled subjects?

5. What level of satisfaction did subjects with disability have with their performance of home-management and social/community problem-solving skills?

6. How did their level of satisfaction with those skills compare to that of the nondisabled subjects?

7. What relationships existed between activity configuration and overall life satisfaction among both samples?

8. What relationships existed between satisfaction with performance of home-management and social/community problem-solving skills and life satisfaction among both samples?

METHOD

Subjects who had spinal cord injuries and who were living in the community in noninstitutional settings were selected from a file of medical clinic patients who routinely return to a large medical center for follow-up. One hundred fifty-two potential disabled subjects' names were obtained from the files; 58 of these agreed to participate and were sent packets containing instruments and consent forms. Subjects with spinal cord injury were asked to contact a friend who was of the same age and sex but who was not disabled to serve as a comparison subject. Fifteen subjects with spinal cord injury and 15 matched cohorts completed all instruments. However, three of the cohorts were eliminated because they too had chronic disabilities. Therefore, the final sample included 15 subjects with spinal cord injury and 12 nondisabled subjects. All subjects were paid \$10.00 for participating.

The following instruments were employed:

1. A general questionnaire included demographic, life style and life satisfaction, and happiness questions.
2. An Activity Configuration Log was modified from a clinical instrument developed by C. Allen, OTR, on which subjects recorded all of their occupations for eight days and nights, beginning on a Monday and ending on a Monday. Subjects entered what they actually did and classified each activity as self-maintenance, work, rest, sleep, play, or other.
3. The Satisfaction with Performance Scaled Questionnaire (SPSQ) asked subjects to indicate the amount of time during which they felt satisfied with the way they performed home-management skills and social/community problem-solving skills (Yerxa & Burnett, 1982). Satisfaction with performing these skills was rated on a 5-point scale from "all of the time" to "none of the time."
4. The Cantril Ladder (Cantril, 1965), used as one measure of overall life satisfaction, required each subject to mark his or her position on a 10-step ladder between "the best possible life for you" and the "worst possible life for you."
5. One satisfaction question and one happiness question were taken from Robinson and Shaver's (1973) work as additional measures of overall life satisfaction. Both required subjects to rank these qualities on a 3-point scale.
6. The Rotter I-E Scale (Rotter, 1966) measured subjects' perceptions of the degree to which they believed that their lives are internally controlled by what they do or externally controlled by forces, such as "luck," outside themselves.

RESULTS

The demographic characteristics of the entire sample were analyzed first. Comparison of the two subsamples showed that the mean ages of 38.1 and 38.4 years for the spinal cord injured and nondisabled, respectively, were almost identical, as were the sex and ethnic distributions. The disabled subsample had 10 males and 5 females, and the nondisabled group had 8 males and 4 females. The majority of each subsample were Caucasian (9 to 7) with 3 Hispanics, 1 Black, and 1 Asian in both subsamples. Slightly more of the individuals with spinal cord injuries were single (7 to 5) or divorced (3 to 1). Only 5 (4 quadriplegics, 1 paraplegic) of the subsample of 15 people with spinal cord injury were employed, whereas all of the nondisabled persons were, except one retiree. The five people with spinal cord injury who were employed held positions as a nurse-coordinator, executive secretary, community liaison for spinal cord injured patients, computer operator, and teacher for a disabled

students' service. The majority of persons in both groups had received education past high school (13 to 9). Sixty percent of the spinal cord injured subjects had annual incomes of \$10,000 or less; only 17% of the nondisabled subsample fell into this category.

Eleven of the 15 disabled subjects had a diagnosis of quadriplegia with the mean time post onset of 15.64 years (range from 6 to 31 years). Due to the small number of subjects with paraplegia (4), statistical analyses for possible differences between subjects with quadriplegia and paraplegia were not feasible. None of the disabled subjects lived alone; the majority (9) lived with a family member or spouse. Thirteen of the 15 reported receiving help in their daily activities. With respect to mobility, 14 reported that they were able to get around in both the home and community. Eight considered themselves manual wheelchair independent, five were electric wheelchair independent, and four needed assistance in wheelchair activities. Fourteen of the 15 had received inpatient occupational therapy; none had received it as outpatients.

The typical subject with spinal cord injury, in summary, was a 34-year-old male with quadriplegia, onset over 15 years ago; was single or divorced; was living with a family member or attendant; was unemployed; had an annual income of less than \$10,000; was able to move about the home and community; was independent in either a manual or an electric wheelchair; and had received occupational therapy but only as an inpatient. He was similar in demographic characteristics to members of the nondisabled comparison group except that he was unemployed and had a lower annual income.

The measurement characteristics of the instruments will now be described. All of the instruments had sufficiently documented reliability and validity; however, the Activity Configuration Log had not been previously assessed for its psychometric qualities. Therefore, test-retest reliability correlations were computed based on the amounts of time classified into the six categories for the first Monday's and the second Monday's log for the subsample with spinal cord injury, the nondisabled subsample, and the combined sample (see Table 1). Statistically significant correlations were obtained for four of the categories (self-maintenance, work, play, and other). A second, internal consistency reliability measure was completed by correlating the second Monday's time use with the mean time use for the previous 5-day work week (see Table 2). Statistically significant correlations were obtained for five of the six categories, with play as the exception. It was concluded that the Activity Configuration Log was sufficiently reliable for use as a research tool.

The daily patterns of occupations or activity configurations of the two

Table 1
 Test-Retest Reliability Correlations, Activity Configuration, First Monday/
 Second Monday Using the Pearson r

Activity Category	Subsample		Total Sample
	SCI ^a	Nondisabled	
Self-maintenance	.75	.63	.71**
Work	.47	.38	.64**
Rest	.32	.26	.29
Sleep	.20	.49	.27
Play	.36	.80	.45*
Other	.72	.14	.74**

^aSCI = spinal cord injured.

* $p < .05$.

** $p < .01$

Table 2
 Internal Consistency for Activity Configuration, Second Monday—5-Day Mean,
 Using the Pearson r

Activity Category	Subsample		Total Sample
	SCI ^a	Nondisabled	
Self-maintenance	.84	.69	.73**
Work	.50	.21	.68**
Rest	.49	.54	.47*
Sleep	.62	.35	.55**
Play	.18	.82	.37
Other	.85	.95	.88**

^aSCI = spinal cord injured.

* $p < .05$.

** $p < .01$

subsamples were examined. The mean hours per 24-hour day, based on a 7-day week, were computed for each of the activity categories into which subjects classified their daily occupations (see Table 3). The spinal cord injured subsample spent a little less time than the nondisabled subsample in self-maintenance, considerably less time in work, a little more time in rest, a similar amount of time in sleep and play, and considerably more time in other. The categories of work and other were compared using a two-tailed t test for independent samples (see Table 4). The difference in mean time spent in both the work and other categories was

Table 3
Mean Hours Per 24-Hour Day Engaged in Occupations
(7 Days: Activity Configuration)

Category	SCI ^a Subsample (<i>n</i> = 15)		Nondisabled Subsample (<i>n</i> = 12)	
	Mean	SD	Mean	SD
Self-maintenance	3.34	2.24	3.74	2.27
Work	3.58	2.97	6.11	2.29
Rest	3.00	1.55	2.29	1.27
Sleep	7.19	1.10	7.37	.99
Play	2.56	2.09	2.79	2.04
Other	4.30	3.64	1.66	1.57
Total	23.97		23.96	

Note: *N* = 27.

^aSCI = spinal cord injured.

Table 4
Two-Tailed *t* Tests for Independent Samples, Mean Hours Per 24-Hour Day
Engaged in Occupations (7 Days: Activity Configuration)

Category	Subsample	Mean	<i>t</i>	<i>p</i>
Work	Nondisabled	6.11	2.42	< .05
	SCI ^a	3.58		
Other	Nondisabled	1.66	2.35	< .05
	SCI ^a	4.30		

Note: *N* = 27.

^aSCI = spinal cord injured.

statistically significant at the $p < .05$ level. The other four categories were not significantly different.

The areas of life satisfaction and happiness were compared next. On the Cantril Ladder (Cantril, 1965), on which a high score represents a high degree of life satisfaction, the mean score of the nondisabled subsample was higher than that of the spinal cord injured subsample (6.50 to 5.86) (see Table 5). However, a two-tailed *t* test revealed that this was not a statistically significant difference.

The life satisfaction question from Robinson and Shaver (1973) asked, "In general, how satisfying do you find the way you're spending your life these days?" Fewer of the spinal cord injured subsample than the

nondisabled sample reported being "completely satisfied" (1 to 4). However, chi-square analysis revealed that this was not a significant difference. A second question, concerning happiness, asked, "Taking all things together, how would you say things are these days? Would you say that you're very happy, pretty happy, or not too happy?" Again, approximately the same distribution of scores was found for both the spinal cord injured and nondisabled subsamples.

Scores on the Rotter I-E Scale (Rotter, 1966) were compared to assess locus of control. The subsample with spinal cord injury had a slightly higher mean score (8.20) than the nondisabled group (5.58); a higher score indicates a more external than internal locus of control (see Table 6). However, the mean of 8.20 is comparable to Rotter's normative mean, and the difference between the means of the two samples was not significant. In summary, then, in comparing the disabled subsample with the nondisabled subsample on measures of life satisfaction, happiness, and locus of control, no statistically significant differences were found.

Table 5

Two-Tailed *t* Test for Independent Samples, Cantril Ladder Life Satisfaction Scores

Subsample	Mean	SD	Range	<i>t</i>	<i>p</i>
SCI ^a	5.86	1.70	3-8	1.078	NS ^b
Nondisabled	6.50	1.31	4-9		

Note. *N* = 27.

^aSCI = spinal cord injured.

^bNS = not significant.

Table 6

Two-Tailed *t* Test for Independent Samples, Locus of Control Scores from Rotter I-E Scale

Subsample	Mean	SD	Range	<i>t</i>	<i>p</i>
SCI ^a (<i>n</i> = 15)	8.20	14.34	2-18	1.24	NS ^b
Nondisabled (<i>n</i> = 12)	5.58	12.81	3-10		

Note. *N* = 27.

^aSCI = spinal cord injured.

^bNS = not significant.

Satisfaction with performance of home-management and social/community problem-solving skills was measured by the Satisfaction with Performance Sealed Questionnaire (SPSQ) (Yerxa & Burnett, 1982). All scores were converted to percentage scores of the total items answered because subjects could indicate that a particular item or items did not apply to them. Five (4 males, 1 female) of the 15 subjects with spinal cord injuries marked all 24 home-management skills items "This item doesn't apply to me." Therefore, the comparison of the means for the subsample with spinal cord injury and the nondisabled subsample is based on 10 and 12 subjects, respectively (see Table 7). The difference of over 15 points was significant at $p < .001$, with the spinal cord injured subsample showing a lower level of satisfaction than the nondisabled subjects with performance of home-management skills. For satisfaction with social/community problem-solving skills, the disabled subsample again demonstrated lower scores than the nondisabled group based on the entire subsample of 15 (Table 8). This difference was also significant at the $p < .001$ level.

A final question concerned possible relationships between the use of time and life satisfaction. All attempts to relate the time use of the two

Table 7

Two-Tailed t Test for Independent Samples, Home Management Subscale of SPSQ

Subsample	Mean	SD	Range	t	p
SCI ^a ($n = 10$)	61.85	27	19-92	13.14	< .001
Nondisabled ($n = 12$)	76.66	22	41-96		

Note. $N = 22$.

^aSCI = spinal cord injured.

Table 8

Two-Tailed t Test for Independent Samples, Social/Community Problem-Solving Subscales of SPSQ

Subsample	Mean	SD	Range	t	p
SCI ^a ($n = 15$)	72.06	16.51	37.8-92.9	6.18	< .001
Nondisabled ($n = 12$)	85.09	13.78	67.2-100		

Note. $N = 27$.

^aSCI = spinal cord injured.

subsamples to their levels of life satisfaction, using chi-square analyses, failed to demonstrate a relationship between these variables; however, it was demonstrated that relationships appeared to exist between satisfaction with performance of home management and social/community problem solving and overall life satisfaction in the entire sample (see Table 9). A product-moment correlation of $.62$, $p < .01$, was found between satisfaction with social/community problem solving and life satisfaction as measured by the life satisfaction question. Additionally, a correlation of $r = .44$, $p < 1.05$, was found between satisfaction with home-management skills and overall life satisfaction.

In summary, no significant relationships were found between activity configuration and overall life satisfaction in the two subsamples. However, significant correlations were discovered between satisfaction with performance and overall life satisfaction in the total sample.

DISCUSSION

The activity configuration of this subsample of people with spinal cord injuries was very similar to that of the able-bodied comparison group regarding time spent in self-maintenance, rest, sleep, and play. Because the disabled subjects spent slightly less time in self-maintenance than the nondisabled group, it seems likely that many time-consuming self-maintenance tasks may be performed by an attendant or family member when the individual who is long-term post injury lives in the community. The fact that 5 of the 15 people with spinal cord injury considered all home-management skills "not applicable to me" lends further support to this speculation. It appears that whole areas of daily-living skills may be eliminated from the individual's activity configuration by delegation to others. Although this arrangement might seem contrary to occupational therapy's emphasis on the need for personal independence in all

Table 9
Correlations of SPSQ and Overall Life Satisfaction Scores (Pearson r)

Measure	N	r
SPSQ Social/Community-Cantril Ladder	27	.23
SPSQ Home Management-Life Satisfaction Q	22	.44*
SPSQ Social/Community-Life Satisfaction Q	27	.62**
SPSQ Home Management-Cantril Ladder	22	.32

* $p < .05$.

** $p < .01$.

areas of daily living, it does leave time and energy available for other activities that could be more personally fulfilling. An implication of this result for occupational therapists might be to teach severely disabled patients to be competent managers of their environments, including developing patients' skills in instructing family members or attendants to perform selected tasks of daily living.

Although the disabled subsample spent less time in work than the non-disabled subsample—probably because 10 of the 15 subjects were unemployed—the extra time was shifted to the “other” category, which contained a large variety of activities, rather than to the categories of play, rest, sleep, or self-maintenance. Content analysis of the activities included in the “other” category, to be done in the future, should reveal the types of activities that replaced work. A few examples were “watch TV,” “think about girls,” “drive,” “sort mail,” and “study the Bible.”

The subsample with spinal cord injury appeared to be similar to the nondisabled subsample in all measures of life satisfaction and happiness as well as locus of control. This finding is similar to that of Green, Pratt, and Gregsby (1984). These researchers found that a sample of 71 people with spinal cord injury, at least 4 years post onset, had more positive self-concepts in the areas of personal self, moral-ethical self, and social self than the normative sample on the Tennessee Self Concept Scale. The only lower score was found on the physical self-scale. It is apparent from this study and that of Green et al. (1984) that people with chronic and severe disability, who live in the community in non-institutional settings, are capable of achieving life satisfaction and happiness, along with a belief in personal control over their lives, in degrees that are comparable to those of nondisabled people. This may be possible in spite of higher rates of unemployment and lower income levels for disabled people. These findings also lend support to the adaptive capacities of human beings, particularly the ability of people to adapt to the extra challenge of living with a chronic, severe disability while attaining reasonable degrees of life satisfaction. Thus, support is also provided for the value of preserving life and providing rehabilitation, including occupational therapy, for this population.

One of the significant findings of interest to occupational therapists was the positive relationship between satisfaction with performance of home-management and social/community problem-solving skills and overall life satisfaction. Occupational therapists might play an important role by discovering areas of performance in which patients report low levels of satisfaction and helping patients to develop new adaptive skills in these areas. Such intervention could have an impact on overall life satisfaction, should satisfaction with performance be increased. De Jong,

Branch, and Corcoran (1984) found that unmet needs for occupational therapy among patients with spinal cord injuries were statistically significant predictors of a restrictive living arrangement at follow-up in the community. In contrast, the severity of disability was not related to living arrangement status.

The Green et al. (1984) study also suggested the importance of self-perceived independence to self-concept. Subjects with spinal cord injury who saw themselves as "as physically independent as they were capable of being" had higher self-concept scores than those who stated that they were not as independent as they could be. The five subjects in this study who believed that all of the items of home management, which demanded a myriad of physical abilities, did not apply to them may have eliminated these skills from consideration in their lives. This might be one way of perceiving oneself "as independent as one is capable of being." Wacker, Harper, Powell, and Healy (1983) also found a positive relationship between self-reported independence and satisfaction with life outcome among 180 multihandicapped adults.

The results of this study should be generalized with caution due to the small sample size, restricted geographical area, possible lack of representativeness of the participating sample in comparison to the invited sample, and the fact that all subjects had received rehabilitation at the same medical center. However, demographic characteristics in the areas of employment, socioeconomic level, and sex do seem comparable to those used in other studies of people with spinal cord injuries that have employed larger samples (De Jong et al., 1984; Green et al., 1984).

Additional research to explore further the validity and implications of this study includes replications with larger samples who live in other geographical areas, represent a shorter time post onset, have different types of disabilities, or live in institutional rather than community settings.

CONCLUSIONS

This sample of people who have spinal cord injuries and who live in the community in noninstitutional settings was similar to a nondisabled comparison group in life satisfaction, happiness, and locus of control. Significant differences were found in employment, annual income, and use of time for work and activities other than sleep, rest, self-maintenance, and play. Differences were also found in satisfaction with performance of home-management and social/community problem-solving skills. Finally, a significant relationship was found between satisfaction with performance in those domains and overall life satisfaction. Additional studies are needed to explore these relationships more

fully and to elucidate further the adaptive capacities of people with severe and chronic disabilities.

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