

ABSTRACT

Linda R. Dunnum. THE CORRELATION BETWEEN LIFE SATISFACTION AND PHYSICAL FUNCTIONING OF SPINAL CORD INJURED INDIVIDUALS FOLLOWING DISCHARGE FROM REHABILITATION. (Under the direction of Pauline Vincent) School of Nursing, May 1987.

The purpose of this study was to determine if a correlation exists between life satisfaction and physical functioning among spinal cord injured individuals. Telephone interviews were conducted with 31 spinal cord injured persons. Data were collected using two tools: Barthel Index and LSES. Pearson Correlation Coefficients were calculated to determine the correlation between life satisfaction and physical functioning.

A correlation was found to exist between LSES scores and Barthel scores, but the square of the coefficient indicates that less than one-half of the variance in LSES scores is explained by the variance in Barthel Index scores. The mean scores for Goals and Finances were the lowest of the eight subscales, and the correlations between each of these two subscales and Barthel scores was low.

The subscales of Goals, Finances and Mood had the lowest correlations with the Barthel Index score, of the eight subscales. Goals, Mood and Finances might be conceptualized as being a part of three of the four adaptation modes (role function, interdependence, and self concept) proposed by Roy (Reihl and Roy, 1980) that are other than physiologic (the fourth mode). The data suggest the importance of nurses

focusing on these modes of adaptation. Nurses may enhance adaptation by increasing life satisfaction although no changes in physical functioning in spinal cord injured individuals is possible.

Replication of this study needs to be done using a larger sample size. In view of the large number of subjects who could not be reached by telephone, personal interviews might be needed. The conclusions of this study are limited because the subjects were drawn from only one rehabilitation program. Replications should be done using subjects from various rehabilitation programs. Further study is needed to determine the reliability and validity of the LSES when it is used for persons under the age of 55 years.

THE CORRELATION BETWEEN LIFE SATISFACTION AND
PHYSICAL FUNCTIONING OF SPINAL CORD INJURED
INDIVIDUALS FOLLOWING DISCHARGE FROM REHABILITATION

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Linda R. Dunnum

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I. INTRODUCTION

Spinal cord injury (SCI) is described as a high cost disability requiring numerous personal lifestyle changes. According to the National Head and Spinal Cord Injury survey conducted in 1974, there were approximately 150,000 persons in the United States who had experienced spinal cord injuries and 7,000 to 10,000 new spinal cord injuries that occur per year. The majority of these injuries involved persons between the ages of 15 and 30 (Kalsbeek, 1980).

During World War I, 80% of servicemen with SCI died within the first week of injury. In the past 50 years, the military has made major advances in the care of the critically injured. During World War II, care of traumatized victims improved significantly, and was further refined during the Korean and Vietnam conflicts. The Vietnam and Korean conflicts were testing grounds for the first regional emergency medical services systems. These systems offered services which were previously unavailable, and which had significant impact on battlefield mortality. Well-trained paramedical personnel in the field, good communication systems and rapid transportation with advanced technology made survival from traumatic injuries a reality. As a result of advanced medical and nursing care, the life expectancy of a spinal cord injured individual is comparable to that of a non-injured individual (Boyd, 1980).

The provision of life preserving measures for the spinal cord injured individual entails great financial and social support. The cost of SCI in 1974 was \$234 million, an average of \$8,863 per injured individual. The cost can be attributed to the long duration of hospitalization, the great cost for inpatient services and extensive rehabilitation. Lifetime care cost estimates are \$325,000 to \$400,000 for a quadriplegic and \$180,000 to \$225,000 for a paraplegic (Kalsbeek, 1980). The costs indirectly impact on the economy because most injured individuals are in their prime wage earning years and their injury may prohibit them from returning to the work force.

The cost of ongoing medical services during subsequent years following spinal cord injury is staggering. After the first few years, the average annual medical expense is approximately \$5,000. The majority will spend much less than \$5,000 but this is offset by the extremely high costs of medical services used by a small minority. It is estimated that approximately 200,000 spinal cord injured persons are living in the United States today. Multiplying this number by the \$5,000 mean expense, the current total annual cost of medical maintenance is approximately one billion dollars. Combining initial costs and maintenance costs, the total annual medical cost associated with spinal cord injury is probably in the neighborhood of 1.5 billion dollars. Other

costs not included in this figure are the expense for attendant care, environmental modification, vocational rehabilitation, custodial costs, loss of income and income maintenance. In all probability, the total annual medical and societal costs exceed two billion dollars (Young, et al. 1982).

Economic impacts of SCI and the changes in prognosis for injured individuals have led to assumptions about life satisfaction of spinal cord injured individuals. The assumptions are: first, because these individuals cannot lead "normal" lives they may be better off not living; and second, there is less life satisfaction in spinal cord injured individuals than in the larger population (Weinberg, 1984).

Roy's conceptual framework for nursing suggests that these two assumptions may be premature. According to Roy (Reihl and Roy, 1980), man has four adaptive modes: physiologic, self-concept, role function and interdependence. Man uses any of these four modes to adapt to changes in the environment. In Roy's model, the environment is conceptualized as being both internal and external. This suggests that an individual who has experienced a spinal cord injury may use the self-concept, role function and interdependence modes to achieve adaptation while being unable to use the physiologic mode to achieve this end. Adaptation

and a high level of life satisfaction may be achieved although an individual has experienced a spinal cord injury.

The purpose of this study was to determine if there exists a correlation between life satisfaction and physical functioning among spinal cord injured individuals. The goal of nursing, according to Roy (Reihl and Roy, 1980) is to promote adaptation in four adaptive modes. If no correlation is identified between physical functioning and life satisfaction, it would suggest that nursing must examine more than one mode of adaptation in planning care to increase life satisfaction of spinal cord injured individuals.

II. REVIEW OF THE LITERATURE

A few studies have been reported which examined life satisfaction of spinal cord injured individuals. The review of the literature focuses on these studies.

Three studies reported in the literature utilized the concept of depression to examine life satisfaction in a spinal cord injured population. Decker and Schulz (1985) reported findings of a study of 100 spinal cord injured individuals who were 40 years of age or older. Their study examined the degree of life satisfaction and depression, and factors correlating with life satisfaction. To measure life satisfaction, they utilized the Life Satisfaction Index - A; and to measure depression, the Center for Epidemiologic Studies Depression Scale. Fifty percent of their population reported dissatisfaction on five of the 18 items on the Life Satisfaction Index - A. Their data suggest that severity of the SCI was not correlated with self-perceived well-being, although there was a general tendency to report lower levels of well-being from the SCI individuals with greater disabilities than from SCI individuals with less disabilities. General conclusions made from their data analysis were that spinal cord injured individuals report only a "slightly" lower sense of well-being than do non-disabled individuals. Despite physical disabilities, the spinal cord injured subjects were able to formulate perceptions of positive life

satisfaction.

Another study that examined these areas was done by Pinkerton and Griffin (1983). Their study included 24 spinal cord injured females who had participated in a formal rehabilitation program and were living at home. The study was designed to examine the rehabilitation program and make recommendations for areas needing attention in the rehabilitation process. The investigators gathered their data through an interview procedure which consisted of a structured questionnaire and open-ended questions. They also gathered data through examination of the medical records of their respondents. The questionnaire they developed was based on Trieschmann's three categories of function relating to successful life: 1) Prevention of medical complications - utilization of activities of daily living and mobility skills, 2) Maintenance of a stable living environment, and 3) Productivity. All subjects reported some degree of frustration, with one-third indicating they were frustrated "frequently". Causes of frustration were generally related to limitations resulting from their disability. Twenty-two subjects reported experiencing episodes in which they felt "depressed". Over one-half of the subjects also admitted having had thoughts of suicide. The majority reported they were able to cope with thoughts of suicide by obtaining support from family members and/or

professionals. Perceptions of life satisfaction indicated that most had positive feelings about their overall situation. Areas examined for life satisfaction were: living arrangements, family relationships, finances, sex life, social life, general health, transportation, and work. The areas of transportation and sexual relationships evoked the greatest number of negative responses. General conclusions drawn from the study were (1) more emphasis must be placed on coping skills and social interaction in rehabilitation programs, and (2) further research is needed in the area of depression and suicide rates in spinal cord injured individuals. The researchers concluded positive life satisfaction in their subjects from the evidence of reported satisfaction with living arrangements, family relationships, social activities and pursuit of further education. The investigators did not describe the method they utilized to conclude that the areas listed would adequately measure life satisfaction.

The third study was reported by Meyers, et al. (1985). They measured activities of daily living using the Katz scale, and depression using a modified Zung scale. The investigators' research question was: "Do spinal cord injured individuals have a significantly higher risk of hospital admission than other clients with disabling conditions?" The researchers studied 96 spinal cord injured patients.

Most (93%) of their subjects were quadriplegic. The remainder (7%) were paraplegic. Most (87%) of their subjects were male. The researchers classified their subjects according to the levels of their lesions. Data were gathered through interviews which addressed demographic characteristics; health status; morale; activities of daily living (ADL) status; instrumental ADL status; use of orthosis, patient care appliances and social services; and use of inpatient, outpatient and emergency medical care. The investigators used data on morale and self-assessment of health to determine degree of life satisfaction. More than half (54%) reported they were moderately satisfied, compared to 19% "high", 18% "little", and 10% "not at all" satisfied. The mean depression scale score for the sample was 18 (median 17; SD 4.4). The investigators reported that 27% of their subjects stated that, apart from their disability, they are in "excellent" health; 50% "good" health, 17% "fair" and 6% "poor". The investigators concluded, through statistical analysis, a "strong" negative relationship between the number of hospital admissions and self-assessment of health.

The review of the literature describes life satisfaction as measured using a depression scale, a life satisfaction scale and a morale and health assessment. Findings of these studies report generally positive feelings of life

satisfaction in spinal cord injured individuals and only a "slightly" lower sense of well-being than non-disabled individuals. The review of literature does not describe studies correlating life satisfaction and physical functioning. This study was conducted to determine if a correlation exists between life satisfaction and physical functioning.

To measure life satisfaction, this study used the Life Satisfaction in the Elderly Scale (LSES) developed by Salamon and Conte (1984). The authors based the development of their tool on earlier research done by Neugarten et al. (1961). Neugarten et al. identified five categories to define life satisfaction: 1) taking pleasure in daily activities; 2) regarding life as meaningful; 3) goodness of fit between desired and achieved goals; 4) positive mood; 5) positive self-concept. Salamon and Conte (1984) indicated that one major drawback of the work of Neugarten et al. is the lack of reliability testing and little validity testing. In addition, Conte and Salamon (1982) suggested that the domain of life satisfaction is broader than the five categories identified by Neugarten et al. The LSES includes eight categories. Conte and Salamon (1982) incorporated the five categories described by Neugarten et al. plus three others: perceived health, perceived financial security, and social contacts.

The tool was utilized in two studies to establish

reliability scores. One study included 408 individuals who were from 55 to 90 years of age. The study was conducted in five testing sites. Three of these sites were publicly funded neighborhood-based senior citizen centers in large metropolitan areas, and two sites were churches. Cronbach's Coefficient Alpha was used to measure internal consistency of the tool. Scores were computed for the entire tool and for each of the eight subscales. Reliability for the LSES total score is $r = .93$. The range of r for the eight subscales was from .60 to .79 (Salamon and Conte, 1984).

The second study included a group of 241 individuals who were identified through their affiliation with one of several health care providers. These providers included: 1) health care services on-site at one of three senior centers, 2) five office-based physicians, 3) three intermediate care facilities, 4) three skilled nursing facilities, 5) two hospitals, and 6) visiting nurse services. With the data from this sample, the reliability of the LSES was found to be $r = .92$ (Salamon and Conte, 1984).

Validity testing of the LSES was done using several approaches. Multivariate analysis was used for self-validation to reveal the relationship between the hypothesized scales and the resultant factor structure. Cattrell's Scree Test indicated that eight factors appear to adequately summarize the data. These eight factors

accounted for more than 60% of the total variance in a principal components factor analysis. Yates corrected chi-square and point biserial correlations revealed high correlations in all subscale categories (Salamon and Conte, 1984).

Measuring a level of physical functioning can be a cumbersome task in the SCI individual. Mahoney and Barthel (1965) described an index for measuring functional levels of self-care and mobility in the physically impaired. The Barthel index includes 15 self-care, sphincter control and mobility factors. Test-retest reliability scores are reported at .87 and .89 respectively and intercoder reliability was above .95 (Granger, et al., 1979).

The Barthel index is helpful in operationally defining disability. A Barthel score below 60 reflects serious limitations in personal care independence. Barthel scores below 40 represent unquestionable and severe disability. The Barthel index has a high degree of reliability and validity. The Barthel index's validity was established when it was found to have a high correlation with the Kenny self-care scale and the Katz index at one point and over time (Donaldson, et al., 1973).

III. METHODOLOGY

The study was conducted on spinal cord injured individuals who had completed the rehabilitation program at a Regional Rehabilitation Center in North Carolina. Permission was obtained from the medical director of the Regional Rehabilitation Center to carry out the study.

Patients who had been discharged no less than six months and no more than three years prior to data collection were asked to participate in the study. Participants were selected from the Center's spinal cord injury population by systematic sampling of every third person with a random start. Each subject was initially contacted by a mailing which included a letter from the medical director of the Center and a copy of the Life Satisfaction for the Elderly Scale (Appendix C). The letter described the study and included the name of the investigator. Participants were then contacted by telephone and asked to participate. Informed consent was obtained at the time of telephone contact (Appendix A).

Data were collected by the researcher through a telephone interview. Data collected included: 1) Demographic (Appendix B); 2) Level of life satisfaction (Appendix C); and 3) Level of physical functioning (Appendix D). Following collection of this information, respondents were asked two additional items (items 8 & 9 Appendix B).

These items were added in light of the findings of Pinkerton and Griffin (1983). They reported that sexual relationships and transportation evoked the greatest number of negative responses in relation to life satisfaction.

The purpose of this study was to determine if there exists a correlation between life satisfaction and physical functioning among SCI individuals. The following operational definitions were utilized for the study:

- 1) life satisfaction - numerical score on Life Satisfaction for the Elderly Scale.
- 2) physical functioning - numerical score on Barthel Index.

Data analysis examined scores on physical functioning (possible range from 1-100) and scores on life satisfaction (possible range from 40-200). Individuals' scores on physical functioning were correlated with individuals' scores on life satisfaction using Pearson's Correlation test with $p \leq .05$ as the significance level. Responses to items 8 and 9 (Appendix B) were collated. Respondents who report "dissatisfied" or "very dissatisfied" to item 8 were considered dissatisfied with their sexual situation. Respondents who report "always" or "often" to item 9 were considered to be dissatisfied with transportation. These are reported as descriptive data.

Two assumptions of this study are that the Life

Satisfaction in the Elderly Scale measures life satisfaction accurately in a population below the age of 55 years, and that the Barthel Index measures physical functioning. A third assumption was that the interviewer obtained accurate and truthful responses from the subjects.

Limitations of the study include:

- 1) subjects were drawn from only one rehabilitation program,
- 2) only subjects with telephones were included in the study, and
- 3) reliability and validity testing on Life Satisfaction in the Elderly Scale has been determined only for populations who are 55 years of age or older.

IV. FINDINGS

Using the technique of systematic sampling with a random start, the name of every third spinal cord injured individual who had completed the rehabilitation program at a regional center was selected. Their records were reviewed to determine if each met the criteria for inclusion in the study: 1. Discharged from the rehabilitation program occurred between 6 to 72 months of the time of data collection, 2. Individual could be contacted by telephone, 3. Individual is at least 18 years of age, 4. Individual is not institutionalized (e.g. hospital, nursing home, etc.)

Sixty-five records were reviewed in the sampling. Of the 65 records, 33 were excluded from the study for the following reasons: 20 - unable to contact by telephone, 10 - greater than 72 months since discharge from the rehabilitation program, and 3 - below age 18. Thirty-two subjects were eligible for inclusion in the study and, of these, 31 agreed to participate.

The age range of the sample was 18 years to 78 years, with a mean of 35 years. The sample had a larger percentage of males (61%) than of females (39%). Marital status was reported as: 51% single, 31% married, 10% divorced, 10% widowed, and 5% with no data available. Ranges of time of discharge from rehabilitation were: 6 to 15 months - 7 subjects, 16 to 27 months - 14 subjects, and 28 to 36 months - 10 subjects, and all participants resided in Eastern North

Carolina.

Subjects were asked to respond to items on two questionnaires. The Life Satisfaction in the Elderly Scale (LSES) was used to collect data relating to life satisfaction. The LSES is composed of 40 items with five possible responses to each item. The responses are scored on a 5-point Likert type scale where 1 = most negative, 5 = most positive and 3 = midpoint. The LSES has a possible score range of 40-200.

The Barthel Index was used to measure physical functioning. The index has a possible score range of 1-100. The score is computed from responses to 15 items which address physical functioning in relation to personal care activities.

The range of response scores for the sample on the LSES was 84-164 with $\bar{x} = 133$. The midpoint of possible scores on the LSES (range 40-200) is 120. That is, the subjects reported a tendency toward a positive level of life satisfaction. This finding supports those of Pinkerton and Griffin (1983) who found positive feelings of life satisfaction in their study of spinal cord injured individuals.

The range of response scores on the Barthel Index was 1-100 with $\bar{x} = 65$, and a standard deviation of 33. This means that at least one subject had full physical functional ability and some subjects were below the "severe disability"

score of 40.

The research question was: Is there a correlation between the level of physical functioning and degree of life satisfaction in spinal cord injured individuals? To answer this, Pearson Correlation Coefficient was used to determine the correlation of LSES and Barthel scores. The coefficient was .6571 ($p < .000$). That is, there is a correlation between the level of physical functioning and life satisfaction. However, the square of the coefficient ($r^2 = .43$) indicates that less than one-half of the variance in the LSES scores is explained by the variance in the Barthel Index scores.

To determine if the identified tendency toward a positive level of life satisfaction was evident in the eight subscales of the LSES, subscale means were calculated. The eight subscales are: 1. Daily Activities, 2. Meaning, 3. Goals, 4. Mood, 5. Self Concept, 6. Health, 7. Finances, 8. Social Contacts. Each subscale is composed of 5 items. Daily Activities addresses unspecified daily activities which are a part of an individual's routine. The Meaning subscale examines attitudes towards one's present life situation, feeling useful and having a sense of purpose. Goals addresses relative satisfaction with one's present stage of development in comparison to previous life stages. Mood examines general positive affect, happiness or

optimism, not necessarily linked with any activity or specific aspect of one's living environment, situation or social milieu. Self Concept addresses personal self regard and self appraisal. Health examines self assessment and overall physical well-being. Finances addresses satisfaction with one's financial situation in the present and recent past. Social Contacts examines perceived satisfaction with the number and quality of the social contacts which are characteristic of the subject's usual routines. Each item in the subscale was scored with a 5-point Likert type scale with 1 = most negative, 5 = most positive and 3 = midpoint. The mean scores for each LSES subscale was calculated (Table I).

Table I
Mean Scores for LSES Subscales

<u>Subscale</u>	<u>Mean Scores</u>
Social Contacts	3.85
Mood	3.65
Self Concept	3.46
Meaning	3.39
Daily Activities	3.21
Health	3.06
Goals	3.01
Finances	2.93

The mean scores for the subscales of Social Contacts, Mood, Self Concept, Meaning, and Daily Activities are above the midpoint of 3. That is, the sample had positive perceptions in these areas. The mean scores for the subscales of Health and Goals are at the midpoint. The mean score for the subscales of Finances is the lowest of the eight and is below the midpoint (i.e. negative).

The review of the literature identified two areas of dissatisfaction for spinal cord injured individuals which were not addressed in the LSES. These two areas were sexual situation and transportation. The researcher collected data in these two areas by asking subjects to respond to two additional items: 1. I am _____ with my sexual situation. 1 = very dissatisfied, 2 = dissatisfied, 3 = somewhat satisfied, 4 = satisfied, and 5 = very satisfied; and 2. I worry about transportation _____ 1 = always, 2 = often, 3 = sometimes, 4 = rarely, 5 = never. These questions were scored using a 5-point Likert type scale where 1 = most negative, 5 = most positive, and 3 = midpoint. The mean score for sexual situation was 3.5 and the mean score for transportation was 3.2. These findings are positive and would not support the data of Pinkerton and Griffin (1983) who found dissatisfaction relating to sex and transportation in spinal cord injured individuals.

The LSES subscale means showed the subscales of Goals

and Finances as having the lowest means. Nurses need to give more attention to these two areas. But, are the subscale scores on Goals and Finances highly correlated with Barthel Index scores? If a high correlation exists, the potential for nursing interventions having an impact on them might be remote for most spinal cord injured individuals. To answer this question, correlations were calculated for the Barthel Index and each of the LSES subscales (Table II).

Table II

Correlation between LSES Subscales and Barthel Index

<u>Subscale</u>	<u>Correlation</u>	
	r	r ²
Self Concept	.8003	.64
Meaning	.6280	.39
Health	.5434	.30
Daily Activities	.5227	.27
Social Contacts	.5031	.25
Goals	.4640	.22
Mood	.4439	.20
Finances	.0895	.01

The lowest correlations were with the subscales of Goals, Mood and Finances. The correlation of these factors is minimally related to physical functioning. These low correlations suggest that there is potential for nursing to

have an impact on the levels of satisfaction on these factors.

Nurses in acute care settings might initiate referrals to social services and vocational rehabilitation counselors early, to aid in identification of financial resources for spinal cord injured patients. Collaboration between nursing, social services and vocational rehabilitation may enhance the discharge planning process and facilitate identification of sources of income and financial assistance. This collaboration could ease the financial burden that the spinal cord injured individual faces upon return to the community setting.

Nurses can aid the spinal cord injured individual in identifying realistic goals. Nursing assessments should identify previous goals and how they relate to the individual's present physical ability. The assessment might suggest the need to assist the spinal cord injured individual in setting different goals which are more realistic and within the realm of the person's present level of physical functioning.

Nurses may assist SCI individuals in establishing a generally positive affect (mood). Allowing adequate time for the SCI individual to ventilate frustrations and listening may assist in establishing an environment conducive to a positive mood. Nursing may increase mood despite the level

of physical functioning. The use of support groups to allow SCI individuals to ventilate frustrations and gain support from other SCI individuals may also be a strategy used by nurses to foster a positive mood.

The subscales of Goals, Finances, and Mood had the lowest correlations with the Barthel Index scores of the eight subscales. Goals, Mood and Finances might be conceptualized as being a part of three of the four adaptation modes (role function, interdependence, and self-concept) proposed by Roy (Reihl and Roy, 1980) that are other than physiologic (the fourth mode). The data suggest the importance of nurses' focusing on these modes of adaptation. Nurses may enhance adaptation by increasing life satisfaction although no changes in physical functioning in spinal cord injured individuals is possible.

Replication of this study needs to be done using a larger sample size. In view of the large number of subjects who could not be reached by phone, personal interviews might be needed. The conclusions of this study are limited because the subjects were drawn from only one rehabilitation program. Replications should be done using subjects from various rehabilitation programs. Further study is needed to determine the reliability and validity of the LSES when it is used for persons under the age of 55 years.

V. SUMMARY

The purpose of this study was to determine if a correlation exists between life satisfaction and physical functioning among spinal cord injured individuals. Telephone interviews were conducted with 31 spinal cord injured persons. Data were collected using two tools: Barthel Index and LSES. Pearson Correlation Coefficients were calculated to determine the correlation between life satisfaction and physical functioning.

A correlation was found to exist between LSES scores and Barthel scores, but the square of the coefficient indicates that less than one-half of the variance in LSES scores is explained by the variance in Barthel Index scores. The mean scores for Goals and Finances were the lowest of the eight subscales, and the correlations between each of these two subscales and Barthel scores was low.

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Appendix A

Statement for Informed Consent

My name is Linda Dunnum. I am a graduate student in nursing at East Carolina University. You received a letter recently about a study I am conducting. This study may help nurses improve the care they are giving to spinal cord injured individuals. I would like to ask the questions you received in the mail. This will take about 30 minutes of your time.

All of the answers you give me today will be confidential. The report of the study will be of grouped responses.

If you should have any questions about this project after we talk today you can contact me at 758-3981 or 757-4867.

Your participation is voluntary and refusal to participate will not affect the care you are getting at the Rehabilitation Center. You may discontinue your participation at any time.

I would appreciate it if you would be willing to participate. Your answers are important to this study. I am asking selected people from the Rehabilitation Center to participate.

Are you willing to take part in this study?

Appendix B

1. Study #: _____
2. Date of Injury: _____
3. Address: _____
4. Date of Interview: _____
5. Age: _____
6. Sex: _____
7. Marital Status: _____

The literature has identified two areas of concern for spinal cord injured individuals which were not addressed in the questionnaire. I would like to ask you some additional questions that will help to evaluate these two areas.

Sexuality

8. I am _____ with my sexual situation.
- a. very dissatisfied
 - b. dissatisfied
 - c. somewhat dissatisfied
 - d. satisfied
 - e. very satisfied

Transportation

9. I worry about transportation:
- a. always
 - b. often
 - c. sometimes
 - d. rarely
 - e. never

Appendix C

Life Satisfaction Scale

Michael J. Salamon and Vincent A. Conte

Name _____ Date _____

Age _____ Sex _____ Marital Status _____

INSTRUCTIONS

Printed on the following pages are statements which tell us your feelings about life in general. Mark an "X" over the word or phrase to the right of each statement which is closest to the way you feel. Answer all 40 items.

EXAMPLE

1. My daily routine is:

very boring
 boring
 average
 satisfying
 very satisfying

2. I am most satisfied
with my life situation:

never
 almost never
 sometimes
 often
 always



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1. My daily routine is: very boring boring average satisfying very satisfying
2. I am most satisfied with my life situation: never almost never sometimes often always
3. I think about what I would like to accomplish: very often often sometimes seldom never
4. I am ___ in a bad mood. always often sometimes seldom never
5. Physically I am: unhealthy somewhat unhealthy average healthy very healthy
6. I take medication: very often often sometimes seldom never
7. I have enough money to enjoy myself: never rarely sometimes often always
8. I try to spend time with people: never rarely sometimes often always
9. I have ___ friends. no few some many a great many
10. I generally plan ___ activities. no few some many a great many
11. In general I feel: very unsatisfied unsatisfied average satisfied very satisfied
12. I feel pain: always often sometimes seldom never
13. Compared to any other time in my life, I am now: very unsatisfied unsatisfied average satisfied very satisfied
14. In my life I have achieved: nothing very little something a lot a great deal
15. How important are you to others: not at all important of little importance somewhat important important very important

16. Being with other people is _____ pleasurable.
- never rarely sometimes often always
17. My current income is:
- very inadequate inadequate fairly adequate adequate very adequate
18. I find the company of others to be:
- very uncomfortable usually uncomfortable somewhat comfortable usually comfortable very comfortable
19. I worry about finances:
- always often sometimes seldom never
20. My financial situation is:
- very bad bad fair good excellent
21. In looking back, I feel that I have done _____ of the things that I've wanted to do.
- very few few some almost all all
22. My schedule of activities is:
- very unsatisfying not really satisfying occasionally satisfying satisfying very satisfying
23. As I look back on my life, I am:
- completely dissatisfied dissatisfied partially satisfied satisfied very satisfied
24. The things I do every day give me:
- no pleasure little pleasure some pleasure a lot of pleasure a great deal of pleasure
25. My usual mood is:
- severe depression mild depression sometimes happy usually happy always happy
26. My intelligence is:
- far below average below average average above average superior
27. My physical appearance is:
- very unattractive somewhat unattractive average somewhat attractive very attractive
28. I am generally:
- quite ill ill in average health healthy very healthy

29. The time I spend with friends is:
- | | | | | |
|-------------------------|----------------------|----------------------|--------------------|-------------------|
| completely unsatisfying | usually unsatisfying | sometimes satisfying | usually satisfying | always satisfying |
|-------------------------|----------------------|----------------------|--------------------|-------------------|
30. People say that I am:
- | | | | | |
|------------|-------------|-----------------|-------------------------|------------------------|
| very moody | often moody | sometimes moody | usually in good spirits | always in good spirits |
|------------|-------------|-----------------|-------------------------|------------------------|
31. My present situation is:
- | | | | | |
|----------------|-----------|----------|-------------|------------------|
| very difficult | difficult | I get by | pleasurable | very pleasurable |
|----------------|-----------|----------|-------------|------------------|
32. When it comes to taking care of myself, I:
- | | | | | |
|--------------------------|------------------------|--------------------------|------------------------|-----------------------|
| totally depend on others | often depend on others | am sometimes independent | am usually independent | am always independent |
|--------------------------|------------------------|--------------------------|------------------------|-----------------------|
33. I regard my life as:
- | | | | | |
|-----------------|-----------------------|---------------------|------------|-----------------|
| without meaning | having little meaning | having some meaning | meaningful | very meaningful |
|-----------------|-----------------------|---------------------|------------|-----------------|
34. People think that I am financially well off:
- | | | | | |
|-------|--------|-----------|-------|--------|
| never | rarely | sometimes | often | always |
|-------|--------|-----------|-------|--------|
35. I visit my doctor:
- | | | | | |
|------------|-----------|-----------|--------|--------------|
| very often | regularly | sometimes | rarely | almost never |
|------------|-----------|-----------|--------|--------------|
36. I am happy with the way things turn out:
- | | | | | |
|-------|--------------|-----------|-------|------------|
| never | almost never | sometimes | often | very often |
|-------|--------------|-----------|-------|------------|
37. I consider myself to be:
- | | | | | |
|--------------------|---------------------|-----------------------|--------------------|-------------------|
| always pessimistic | usually pessimistic | sometimes pessimistic | usually optimistic | always optimistic |
|--------------------|---------------------|-----------------------|--------------------|-------------------|
38. I am ___ with my outlook on life.
- | | | | | |
|-------------------|--------------|-----------------------|-----------|----------------|
| very dissatisfied | dissatisfied | somewhat dissatisfied | satisfied | very satisfied |
|-------------------|--------------|-----------------------|-----------|----------------|
39. I am satisfied with the way things are:
- | | | | | |
|-------|--------------|-----------|-------|------------|
| never | almost never | sometimes | often | very often |
|-------|--------------|-----------|-------|------------|
40. I am pleased with my daily activities:
- | | | | | |
|-------|--------|-----------|---------|--------|
| never | seldom | sometimes | usually | always |
|-------|--------|-----------|---------|--------|

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Appendix D

Barthel Index

Independent		Dependent		
Intact	Limited	Helper	Null	
10	5	1	1	Drink from cup/ Feed from Dish
5	5	3	0	Dress upper body
5	5	2	0	Dress lower body
0	0	2	0	Don brace or prosthesis
5	5	0	0	Grooming
4	4	0	0	Wash or bathe
10	10	5	0	Bladder continence
10	10	5	0	Bowel continence
4	4	2	0	Care perineum/cloth at toilet
15	15	7	0	Transfer, chair
6	5	3	0	Transfer, toilet
1	1	0	0	Transfer, tub or shower
15	15	10	0	Walk on level 50 yards or more
10	10	5	0	Up and down stairs, 1 flight
15	5	0	0	Wheelchair/50 yds-- if not walking
				Barthel Total Score

Reference: Granger (1982)

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