

Subjective Well-Being of People with Spinal Cord Injury: Does Leisure Contribute?

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This study attempted to identify factors that helped to explain the subjective well-being of people with spinal cord injury (SCI). A hierarchical multiple regression equation was used to determine the proportion of observed variance in the subjective well-being explained by the independent variables (perceived freedom in leisure, free time boredom, frequency of recreation participation, watching TV, leisure identity, length of injury, age, and income). Frequency of recreation participation ($\beta = .433$), free time boredom ($\beta = -.241$) along with income ($\beta = .213$) and age ($\beta = -.175$) variables explained a total of 53% of variance when predicting subjective well-being.

Raeburn and Rootman (1996) stated that quality of life is a representation of how good life is for a person. While definitions of a good life may vary from individual to individual, a good quality of life is a very important concept for most people, including individuals with disabilities. The importance of experiencing a good life has been recognized by various disablement models which embrace concepts associated with "subjective well-being" or "life satisfaction" (e.g., DeLateur, 1997; Fuhrer, 1994; 1995; Whiteneck, 1997). Although a person's health or functional ability is often times an immediate goal of rehabilitation (Renwick & Friefeld, 1996), an underlying assumption of this functional perspective is that improved health or functional status results in a direct improvement in one's subjective quality of life. Therefore, subjective well-being or quality of life has become a major goal as well as an important outcome in physical medicine and rehabilitation (Fabian, 1991; Pain, Dunn, Anderson, Darrah, & Kratochvil, 1998). Increasing attention has been given to individuals' subjective assessments of their quality of life as a measure in evaluating the effectiveness of professional intervention (Fabian, 1991; Gill & Feinstein, 1994).

Diener (1994) attempted to distinguish among various terms that indicate quality experience in daily life. He argued that the most global concept that incorporates the various terms noted in the more general study of happiness is that of subjective well-being. He characterized subjective well-being as a global, positive reaction to one's life. In a similar vein, Fuhrer (2000) noted that subjective well-being is "the degree to which people have positive appraisals and feelings about their lives, considered as a whole" (p. 483).

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Diener (1994) wrote that subjective well-being "includes all of the lower-order components such as life satisfaction and hedonic level. Life satisfaction refers to a conscious global judgment of one's life. Hedonic level or balance refers to the pleasantness minus unpleasantness of one's emotional life" (p. 108). Furthermore, subjective well-being is considered to be subjective in nature, residing in experience of the individual, which is somewhat in contrast to other global measures of well being such as quality of life (QOL). Lehman (1996) noted that "at a minimum, QOL covers person's sense of well being; often it also includes how they are doing (functional status) and what they have (access to resources and opportunities)" (p. 78). Therefore, QOL covers at least the subjective components of well being; however, it may also be considered to be inclusive of objective factors such as functioning and resource access.

A number of research studies (Clayton & Chubon, 1994; Crisp, 1992; Schulz & Decker, 1985) demonstrated that higher levels of quality of life, life satisfaction, and subjective well being are associated with increased levels of quality and richness of social contacts (i.e., number of friends, the frequency at which the persons with disabilities see them). Numerous outcome studies demonstrated that subjective well-being and life satisfaction of individuals with spinal cord injury (SCI) tend to relate to community functioning and social interactions, instead of injury levels or levels of functional independence (Clayton & Chubon, 1994; Evans et al., 1994; Fuhrer, 1996; Fuhrer, Rintala, Hart, Clearman, & Young, 1992; Siosteen, Lundqvist, Blornstrand, Sullivan, & Sullivan, 1990).

Social interaction as well as community activities often occur in a leisure context. Studies demonstrated that one's ability to enjoy leisure leads to a successful transition to integrated social circumstances and helps establish a satisfying life (e.g., Anke &

Fugi-Meyer, 2003; Decker & Schulz, 1985; Dunnum, 1990; Kinney & Coyle, 1992; Yerxa & Locker, 1990). Many individuals with SCI view leisure as the most preferred rehabilitation context (Dew, Lynch, Ernst, & Rosenthal, 1983). Thus, helping people with SCI use their free time constructively to improve their perceptions of well-being is increasingly important to rehabilitation and social service providers.

Currently, the important leisure variables that influence life quality for this population are not well examined. One exception was a study done by Kinney and Coyle (1992) who reported that leisure satisfaction explained 42% of the variance in the prediction of life satisfaction. Additional variables, such as financial status, self-esteem, health satisfaction, religious satisfaction, and marital status contributed an additional of 11% of explained variance, whereas other variables (i.e., satisfaction with standard of living, family satisfaction, civic satisfaction, satisfaction with accessibility, and depression) did not add any significant variance. While there are a limited number of studies examining life satisfaction of individuals with SCI using leisure-related variables, a number of studies employing individuals without SCI demonstrated close links between leisure and life satisfaction. Various research studies reported that frequency of participation in activities is related to life satisfaction (Anke & Fugi-Meyer, 2003; Kelly, Steinkamp, & Kelly, 1987; Lloyd & Auld, 2002; Sneegas, 1986). However, there are few investigations related to examining the life quality of individuals with SCI using leisure-related variables. To further explore variables that influence the subjective well-being of individuals with SCI, this study employed a number of leisure-related variables that might contribute to explaining the underlying topic. A discussion of the conceptual backgrounds for each variable can be found in the sections that follow.

Factors Contributing to Subjective Well-Being

Perceived freedom in leisure (PFL). Ellis and Witt (1986) asserted that perceived freedom in leisure is the primary defining criterion of leisure. On one hand, individuals with high scores on perceived freedom in leisure are likely to possess a high degree of competence, control, and intrinsic motivation in leisure (Witt & Ellis, 1989). On the other hand, Ellis and Witt noted that perceived freedom and learned helplessness represent opposite ends of a continuum. Individuals with low freedom may experience a lack of satisfaction in leisure participation and rely on others to provide a satisfying experience. Mannell and Kleiber (1997) stated that one's sense of freedom and control are fundamental needs and essential to a sense of well-being. Further, Lefcourt (1973) suggested that "the sense of control, the illusion that one can exercise personal choice, has a definite and positive role in sustaining life" (p. 424). Individuals with higher scores on PFL are more likely to experience higher perceptions of well-being.

Free time boredom. Iso-Ahola and Weissinger (1990) claimed that free time boredom occurs when one perceives that his or her leisure experiences are not satisfying one's needs for optimal arousal. Specifically, they defined leisure boredom as "a mismatch between desired [italic added] arousal-producing characteristics of leisure experiences, and perceptual or actual avail-

ability of such leisure experiences" (p. 5). This means that "available leisure experiences are not sufficiently frequent, involving, exciting, varied or novel" (Iso-Ahola & Weissinger, 1990, p. 5). While only a very limited number of researchers have attempted to explain free time boredom for people with and without SCI, existing studies (Caldwell & Weissinger, 1994; Iso-Ahola & Weissinger, 1987; Lee, Mittlesteadt, & Askins, 1999; Weissinger, Caldwell, & Bandalos, 1992) consistently reported negative outcomes associated with boredom (e.g., lack of competence in leisure, negative life view, substance abuse, etc). It may be that lower levels of free time boredom are associated with higher perceptions of well-being.

Watching T.V. The most typical leisure activity for individuals with SCI is watching T.V. (Anson & Shepherd, 1990; Yerxa & Locker, 1990), which is also typical for individuals without disabilities (Robinson & Godbey, 1997). Some researchers (Anson & Shepherd, 1990; Coyle & Kinney, 1990) have noted that this passive form of leisure participation can contribute to a negative life experience (i.e., social isolation). From an experiential perspective, Yerxa and Locker (1990) reported that watching T.V. was rated below average in satisfaction when compared to other free time activities for people with SCI. Csikszentmihalyi and Kubey (1981) also reported T.V. watching to be unchallenging and relatively un-involving. Based on these research findings, it is expected that lower levels of T.V. watching will be associated with higher perceptions of well-being.

Frequency of recreation participation. Researchers reported that recreation activity is less of a priority for those who have physical disabilities than for those who do not, due to fatigue, stress, limited physical access, and social devaluation (Cogswell, 1984; Dattilo, Caldwell, Lee, & Kleiber, 1998; Decker & Schulz, 1985). Many people with SCI discontinue participating in leisure activities after injury (Dew et al., 1983; Stambrook, Psych, MacBeath, Moore, Peters, Zubeck, & Friesen, 1991). Kleiber, Brock, Lee, Dattilo, and Caldwell (1995) also identified the loss of leisure ability as an illness experience for people with SCI. However, participation in community life and engagement in out-of-home activities have been identified as significant factors influencing quality of life (Fossati, 1990). Krause and Crewe (1987) reported that one of the most significant contributors to successful adjustment to SCI was one's level of activity participation. Hence, it is expected that more frequent participation in recreation activities will be related to higher perceptions of well-being.

Leisure identity. Traumatic injury such as SCI disrupts one's identity (Bury, 1982). Stopping work, modifying one's roles at home and in society, and receiving disability payments may influence a negative sense of one's identity. Furthermore, almost all people with SCI or other types of disabilities experience a devaluation of their identity by people without disabilities (Cogswell, 1984; Smart, 2001). A negative sense of identity and difficulties interacting with other people may possibly lead to lower levels of life satisfaction. On the other hand, leisure may be an excellent context in which self-expression and affirmation of one's self can occur. During leisure-related activities, a person can express and

affirm individual talents and capabilities (Shamir, 1992). According to Haggard and Williams (1992), leisure activities can facilitate affirmation of desirable self-images (i.e., ideal self). Taken all together, a stronger leisure identity is expected to be associated with a higher perception of well-being.

Age. Melmert, Krause, Nadler, and Boyd (1990), for example, showed that younger people, and people who acquired their impairments at an early age, reported higher levels of satisfaction with life. Decker and Schulz (1985) reported a negative correlation between subjective quality of life and age. Stensman (1994) reported that quality of life is less well perceived when impairments occur after the age of 35. Whiteneck et al (1993) reported that perceived quality of life tends to increase up until the age of 50 (on average) and then decrease slightly thereafter. It is expected that younger age is associated with higher perceptions of well-being.

Income. Clayton and Chubon (1994) reported that more than 50% of their sample with SCI had an annual income lower than \$15,000, with 28% below \$8,000. Boschen (1996) reported a significant positive correlation between income level and life satisfaction ($r = .42$), reflecting that lower levels of income are associated with lower levels of life satisfaction. Some researchers (Clayton & Chubon, 1994; Decker & Schulz, 1985; Melmert et al., 1990) reported that self reported life satisfaction and well being increase as respondents reported higher levels of income. Lee et al. (1999) and Caldwell and Weissinger's (1994) studies found that income was a significant predictor of boredom in leisure. It is expected that higher levels of income will be associated with higher perceptions of well-being.

Length of injury. SCI demands a life-long adjustment (Trieschmann, 1988). Length of injury, therefore, may play an important role when explaining the leisure experience of people with SCI. People who have just completed rehabilitation and have returned to the community often are overwhelmed by the many challenges faced in the community (Dattilo et al., 1998; Lee, Dattilo, Kleiber, & Caldwell, 1996). Inadequate mastery of challenges posed by SCI in the early stages of adjustment might lead to passive leisure involvement or individuals might exhibit low levels of activity participation (Kleiber et al., 1995). However, people who have longer experiences with SCI might have a higher degree of mastery on their own body and outside environment, and may be more active in leisure pursuits. Furthermore, people with a longer length of injury might have a better awareness of the resources available for leisure opportunities. It is expected that longer experiences with SCI will be associated with higher perceptions of well-being.

Purpose Statement

This study examined the subjective well-being of people with SCI by incorporating a set of leisure variables including perceived freedom in leisure, free time boredom, frequency of recreation participation, watching T.V., and leisure identity. This study goes beyond employment of a single leisure domain such as leisure satisfaction. The purpose of this study was to identify factors that helped to explain the subjective well-being of people with SCI.

Methods

The Respondents

The sample was drawn from the outpatient mailing list of the Shepherd Center in Atlanta, Georgia. A packet containing a cover letter explaining the nature of the study, a consent form, research questionnaires, and a self-addressed, stamped envelope was sent to the 500 individuals from the mailing list. To ensure confidentiality, the mailing labels were affixed to envelopes by staff at the rehabilitation hospital. The cover letter informed potential respondents that participation in the study was voluntary. To protect anonymity, respondents were not asked to identify themselves by name on the questionnaires.

While 117 individuals returned their responses by the designated date (one month from the distribution day), a second mailing occurred right after the designated date of response. The same packet of questionnaires was sent to all respondents along with a cover letter encouraging their cooperation. The cover letter encouraged those who had not responded previously to do so at their earliest convenience. The letter also instructed those who responded earlier to discard the questionnaire. This second mailing procedure yielded an additional 114 responses. Combining two mailings resulted in a total of 231 (117 + 114) responses. However, 25 responses were eliminated because large parts of the questionnaire were left blank (231-25=206). By eliminating the (a) returned questionnaire and (b) blank responses, this study achieved a 46.2% response rate (231/500 = .462).

The present study was approved by the human subjects review board of the rehabilitation hospital, and the principal investigator's academic institution at the time data were collected. All potential respondents were informed of the nature and the purpose of the study; the cover letter emphasized that participation in the study was strictly voluntary.

Demographic Characteristics of the Sample

The final sample consisted of 206 respondents, with a mean age of 40.6 years (range = 19 - 75, $SD = 13.3$; median = 39). The majority of respondents were male (72.7%), while females represented 27.3% of the sample. A total of 81.9% were white, 15.2% were African-American, and 2.9% represented Hispanic and Asians. 43.1% of the individuals were single, 38.1% were married, and 18.8% were divorced. 38.2% of the respondents were unemployed, 20.6% were employed full time, 7.4% were employed part-time, 11.3% were students, 18% were homemakers, and 4.5% identified as "others". 50.8% of the sample had less than 12 years of education, 18.2% had 13-15 years old education, 16.7 had 4 years college, and 14.3% of the sample had graduate work or more. Approximately 45.7% of the sample had an annual income below \$10,000, 28.4% reported \$10,001 - \$30,000, and 25.2% earned \$30,001 or more a year. The average length of injury was 9.3 years (range = 1 - 48 years, $SD = 7.63$). Just less than half (47%) had paraplegia and 53% had quadriplegia.

Dependent Variable

Subjective Well-Being. One of the experts on measuring the sense of well-being noted that individuals' subjective assessments

of their quality of life can be significantly different from assessments made by others (Campbell, 1981). Thus, inclusion of the subjective component in measuring one's well-being is very important. Considering its importance, Fabian (1991) advocated the incorporation of the subjective aspect when assessing a person's life quality. Gill and Feinsten (1994) echoed this approach by emphasizing the importance of personal perception. Dijkers (1997) further supported this approach by suggesting that "only the perspective of the patients/clients themselves is a useful guide to where resources can be utilized most effectively" (p. 839). Given the range of individual differences in life quality, it is essential to ask the person for his/her overall evaluation of life, rather than summing across satisfaction with specific domains. Taking the subjective approach, Ewert (2003) defined well-being as "an internal sense of satisfaction or the fulfillment of real as well as perceived health" (p. 200). This study took the subjective approach and considered Ewert's definition to assess the perceptions of well-being. Thus, the subjective well-being was assessed from three single item indicators that focus on subjective ratings using the following questions: (a) in general, how do you feel about your life since injury? (Response was based on a 5-point Likert scale: Very dissatisfied (1) to Very satisfied (5)); (b) how would you classify your general outlook on life? (Response was based on a 5-point Likert scale: "Very negative" (1) to Very positive (5); and (c) how do you rate your health at the present time? Response format for this question was Excellent (5), Good (4), Only Fair (3), Poor (2) and Very Poor (1). The overall score was created as the average of the three scales, thus scores could range from one to five. The Cronbach alpha of the life satisfaction measure was .85.

Predictor Variables

Perceived Freedom in Leisure (PFL) was measured using the Short Form Version B of the Leisure Diagnostic Battery (Witt & Ellis, 1989). The 25-item questionnaire used a five-point Likert scale (1 = strongly disagree to 5 = strongly agree). Witt and Ellis (1989) reported a high alpha reliability ranging between .90 and .92 and acceptable levels of convergent and discriminant validity. A high score indicates a high degree of freedom in leisure. Cronbach's alpha in this study was .96.

Free Time Boredom (FTB) was assessed through a mean score on two single-item indicators used by Caldwell and Weissinger (1994). Those two indicators were: (a) "In my free time, I usually don't like what I'm doing, but I don't know what else to do" and (b) "I am usually bored in my free time." Using a 5-point Likert scale, respondents were asked to answer from "Strongly disagree" (1) to "Strongly agree" (5). Higher scores indicate higher boredom in free time. In this study, Cronbach's alpha for this measure was .85.

Frequency of Recreation Participation (FRP) was determined by a mean score on "How frequently do you participate in the following categories of activities: (a) recreational activities and hobbies; (b) socializing with friends; (c) reading; and (d) going out for fun and relaxation. Response categories used for the measure were "Never," "Seldom," "Occasionally," "Frequently" and coded one to four, respectively. Cronbach's alpha for this

measure was .69. A higher score indicates more frequent recreation participation.

Watching T.V. was measured by degree of time spent watching T.V. by using the following single item: "How much do you spend time in watching T.V.?" Respondents were asked to rate the degree from "Never" (1) to "A lot" (10).

Leisure Identity was measured using the Leisure Identity Salience (LIS) scale adapted by Shamir's (1992) study. Unlike the original measure, this study only measured leisure identity, not considering the relative importance to work and family role identities. The original seven-item bipolar type questions (e.g., [Leisure] describes me vs. does not describe me; important for my self-definition vs. not important for my self-definition) used a 7-point Likert scale (7 being the salience side and 1 being the opposite). Participants responded to the following question: "How does leisure characterize you in each item?" Cronbach's alpha in this study was .74. A high score indicates higher salience of leisure in one's identity.

Length of Injury was calculated by subtracting "age when you had injury" from current age. Income was assessed from the following income categories: (1) under \$5,000, (2) \$5,001 - 10,000, (3) \$10,001 - 20,000, (4) \$20,001 - 30,000, (5) \$30,001 - 40,000, (6) \$40,001 - 50,000, and (7) \$50,001 and over.

Data Analysis

Data were analyzed using the SPSS program (Power Macintosh program version 6.1). Descriptive statistics (e.g., means, percentile, *SD*) were used to examine the demographic characteristics of the sample. Cronbach's alpha coefficients were calculated to explore the reliability of the measures (i.e., subjective well-being, PFL, FTB, Leisure Identity, Recreation Participation). Pearson's zero order correlation coefficients were calculated to examine the relationships between self-monitoring and other variables (i.e., subjective well-being, PFL, FTB, FRP, Leisure Identity, Degree of Watching T.V.), and among all demographic variables. A hierarchical multiple regression analysis was used to predict subjective well-being. This approach entered variables in planned blocks in order to assess contributions of study variables over and above the effects of demographic variables.

Findings

Means, standard deviations, and Cronbach's alpha reliability coefficients for all measures are presented in Table 1. Pearson's zero-order correlation coefficients for subjective well-being and predictor variables used in the regression model are presented in Table 2. The correlation coefficients among the independent predictor variables ranged from .148 to .514 in magnitude. According to Tabachnick and Fidell (1989), problems related to multicollinearity are not an issue with coefficients of this magnitude. A hierarchical multiple regression approach was used to determine the proportion of observed variance in subjective well-being explained by the independent variables (see Table 3). Although three of the socio-demographic variables were found to

Table 1
Means, Standard Deviations, and Alphas for all Measures

Variable Label	Mean	SD	Alpha	N
<i>Dependent Variable:</i>				
Subjective Well-Being	3.35	.825	.85	202
<i>Predictor Variables:</i>				
Income	3.35	2.02	*	187
Age	39.76	12.25	*	187
Length of Injury (in years)	9.75	8.01	*	
Watching T.V.	6.16	2.55	*	204
Frequency of Rec. Participation	3.00	0.65	.69	204
Leisure Identity	4.44	1.12	.74	193
Perceived Freedom in Leisure	3.44	0.70	.96	202
Free Time Boredom	2.58	1.27	.85	206

* = Cronbach's alpha not appropriate, or a single-item indicator

contribute significantly to the variance in the subjective well-being when considered without the leisure variables (Table 3, Block 1), only two remained significant in the total model. In the total model, four variables were found to be significant predictors of subjective well-being. In this sample, Frequency of Recreation Participation was the most influential predictor ($\beta = .433$) in explaining subjective well-being, followed by Free Time Boredom ($\beta = -.241$), income ($\beta = .213$), and age ($\beta = -.175$). Total R^2 for the model was .524. None of the other variables contributed significantly to predicting subjective well-being. The negative beta coefficients in Table 3 indicate that higher levels on subjective well-being were associated with lower levels of boredom during leisure. Lower age was also associated with higher perceptions of well-being.

Table 2
Pearson's Zero Order Correlation Coefficients for Subjective Well-Being and Predictor Variables

Predictor Variables	Correlation Coefficient	p
Frequency of Recreation Participation	.647	<.001
Watching T.V.	-.325	<.001
Perceived Freedom in Leisure	.388	<.001
Leisure Identity	-.173	<.014
Free Time Boredom	-.516	<.004
Length of Injury	.148	<.029
Income	.246	<.001
Age	-.259	<.001

Discussion

The purpose of this study was to identify factors that helped to explain the subjective well-being of people with SCI. While this study used primarily leisure and some demographic variables to predict subjective well-being, frequency of recreation participation, free time boredom along with income and age variables explained a total of 53% of variance when predicting subjective well-being. Therefore, frequency of recreation participation ($\beta = .433$), free time boredom ($\beta = -.241$), income ($\beta = .213$), and age ($\beta = -.175$) are the predictor variables that warrant discussion.

In a sense, the finding that frequency of recreation participation was the most influential in predicting subjective well-being, more so than perception of freedom in leisure and free time boredom is somewhat ironic. How is it possible that frequent participation in activity explains subjective well-being more than those

variables that explain the quality of experience? In other words, frequency of recreation participation lacks information about the experiential quality in recreation involvement, while other leisure variables such as perceived freedom in leisure and perception of boredom do explain an experiential aspect. Perceived freedom in leisure indicates one's perceptions of control and competence in activity participation, which become defining aspects of one's leisure function (Witt & Ellis, 1989). Free time boredom can be experienced when "available leisure experiences are not

Table 3
Multiple Regression Model of Subjective Well-Being

Predictor Variable	Multiple R	adjR ²	Beta	t	p
Block 1- All Demographic Variables	.444	0.177		9.74(F)	<.001
Age			-.357	-4.79	<.001
Income			.304	4.05	<.001
Length of Injury			.162	2.17	<.032
Gender			.088	1.22	.224
Block 2- All variables	.742	0.524		24.17(F)	<.001
Frequency of Recreation Participation			.433	6.31	<.001
Free Time Boredom			-.241	-3.56	<.001
Income			.213	3.56	<.001
Age			-.175	-2.89	<.004
Leisure Identity			-.108	-1.65	<.102
Length of Injury			.083	1.41	<.159
Perceived Freedom in Leisure			.098	1.27	<.208
Watching T.V.			-.055	-0.91	.367
Gender			-.001	-0.01	.991

sufficiently frequent, involving, exciting, varied or novel" (Iso-Ahola & Weissinger, 1990, p. 5).

Some researchers (Dew et al., 1983; Kleiber, et al., 1995; Lee et al., 1996; Stambrook et al., 1991) reported that many individuals with SCI experience discontinuity of recreation activity involvement after traumatic injury, and lack of such ability to continue recreation activity becomes a defining aspect of illness experience. Considering these research reports, one's ability to engage frequently in recreation activities may be more important in and of itself than the experiential and functional nature of leisure engagement. Some researchers (Fossati, 1990; Krause & Crewe, 1987) reported that level of community activity participation is a significant factor in predicting quality of life of individuals with SCI. Lee, et al. (1996) reported that individuals with SCI have an important need to seek and establish a sense of continuity in recreation participation. It may be that individuals with SCI perceive a sense of continuity as they frequently engage in recreation activities, and, thus, allows perceiving better well-being.

In this study, age and income were the only socio-demographic variables to predict subjective well-being, which supports the previous findings on these variables. The negative association between age and subjective well-being was well documented by numerous researchers (e.g., Decker & Schulz, 1985; Melmert et al., 1990; Stensman, 1994). In addition, previous studies (e.g., Boschen, 1996; Clayton & Chubon, 1994; Decker & Schulz, 1985; Melmert et al., 1990) reported a significant positive correlation between income level and self-reported life satisfaction. This finding further supports needs for rehabilitation to consider the income-generating abilities of people following serious disability.

Several methodological issues must be considered when interpreting the results of this study. First, this study did not use a full scale or other instruments designed to measure life satisfaction. Using a measurement instrument with high levels of reliability and validity will increase confidence when explaining the subjective well-being, free time boredom, and demographic variables. Second, due to this study's sample size, one should exercise caution in generalizing its results. Third, because participation was voluntary, the sample may represent those individuals with SCI who are more active and positive with their disability. Fourth, the response rate was low. The sample may be biased. Fifth, this study employed an ordinal scale for some measures, and equal degrees of change from one rating to the next, as would occur in an interval scale, cannot be assumed.

The general findings of this study support the important role of leisure in the lives of people with SCI. Considering the low proportion of employment status of people with SCI (e.g., Krause, 1992; 1996), rehabilitation specialists may need to take more of an active approach to promote leisure functioning in the lives of people with SCI. Overall, this study found that aspects of both vocational functioning, in that it affects income, and avocational functioning are critical elements in the rehabilitation of people with SCI.

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