The Effect of Social Participation on Adults with Spinal Cord Injuries

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Disciplines
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The Effect of Social Participation on Adults with Spinal Cord Injuries

Prepared by; Nicolé Wandell (wand0518@pacificu.edu)

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CLINICAL SCENARIO:
There are approximately 262,000 people with spinal cord injuries (SCI) in the United States in 2009 (National SCI Statistical Center, 2010). Recovery from SCI is influenced by the interaction between many variables such as the unique personal, social, cultural and economic circumstances of the person who has been injured (Livneh & Antonak, 1997). Recent years have seen a growing understanding of the role of psychologic factors in the rehabilitation of patients with spinal cord injury (Trieschmann, 1980). Although research has suggested that those individuals who recover from depressive episodes engage in higher frequencies of leisure activity that those who do not recover (Elliot & Shewchuck, 1995), little research has systematically examined the relationship between specific dimensions of leisure participation and depressive behavior (Caldwell, Dattilo, & Kleiber, 1998). As occupational therapists we assist our clients by “supporting health and participation through engagement in occupation” (AOTA, 2008). For clients with SCI, intervention may include re-introduction to leisure activities and social participation and exploration of programs built around adaptations for SCI. As clinicians, occupational therapists recognize that providing the highest standard of care means having a comprehensive knowledge of the issue the client is experiencing. This includes any background information and involvement from the client’s friends and family whenever possible. In order to comprehend the research in the areas of social participation and leisure, this paper will provide a critical appraisal of research in these areas while highlighting the impact of social participation and leisure on levels of depression for persons with a SCI.

FOCUSSED CLINICAL QUESTION: What is the impact of social participation on depression symptoms for adults with spinal cord injuries?
SUMMARY of Search, ‘Best’ Evidence appraised, and Key Findings:

- 9 articles were found that addresses the clinical question.
- The cross sectional study by Tasiemski, Kennedy, Gardner, & Taylor (2005) has been deemed as the best evidence to date.
- The cross sectional study focuses on the association of sports and physical recreation on life satisfaction of persons with spinal cord injuries (SCI).
- The cross sectional study surveyed a set of individuals with SCI to identify their level of sports participation as well as their life satisfaction.
- The SCI individuals approached to take this study were: 1,748 randomly selected participants with SCI who fulfilled the criteria: SCI at level C5 or below, wheelchair dependent; aged 18–50 at the time of injury; at least 1 year post-injury.
- Completed replies were received from 985 individuals with SCI (198 women, 798 men).
- The study measured the individuals with SCI at one time through a data collection questionnaire.
- The study aimed to assess satisfaction with life domains in people with spinal cord injuries (SCI) and investigate whether participation in sports and physical recreation is associated with life satisfaction in SCI.
- The results identified significant differences between life satisfaction and sports participation. Apart from partnership relations, all the ‘sports’ participants, had higher satisfaction with financial situation, contacts with friends and acquaintances and family life than ‘not active’ participants.
- The cross sectional study by Kennedy, Lude & Taylor (2006) sent self report questionnaires to 1000 people with SCI residing in the community in the UK, Germany, Austria, and Switzerland. The questionnaires measured current needs, community integration, mood, appraisals, coping strategies, functional independence and perceived manageability.
- The cross sectional study by Loy, Datillo, Kleiber & Hutchinson (2002) sent surveys were sent to 546 individuals with SCI in order to measure leisure, level of depression and physical activity.
- The cross sectional study by Carpenter, Forwell, Jongbloed, & Backman (2007) surveyed a sample of 357 people with SCI and focused on results related to community participation among people with SCI.
The cross sectional study by MacDonald, Nielson, and Cameron (1987) sampled 53 SCI patients living in the community in Ontario, Canada and measured the incidence of clinical depression and personal activity levels of individuals with SCI.

**CLINICAL BOTTOM LINE:**

The one time cross sectional study by Tasiemski, Kennedy, Gardner, and Taylor (2005) showed that higher satisfaction with life in general was demonstrated in respondents with SCI involved in sports or physical recreation compared to those not participating in physical activities.

The cross sectional study by Kennedy, Lude and Taylor (2006) found that areas of unmet needs for a European community sample of people with SCI includes levels of occupation, sexual activity and pain relief.

The cross sectional study by Loy, Datillo, Kleiber and Hutchinson (2002) results indicated that individuals who did not display depression symptoms had a wider repertoire of leisure activities and perceived more freedom in their leisure.

The cross sectional study by Carpenter, Forwell, Jongbloed, and Backman (2007) results indicate that life satisfaction is more strongly related to community participation than impairment and activity limitations.

The cross sectional study by MacDonald, Nielson, and Cameron (1987) found that depression may limit the activities of paraplegics but not quadriplegics. 85% of respondents were clinically non-depressed and this may suggest an ability to cope with chronic adversity.

**Limitation of this CAT:**

The critically appraised paper has been individually prepared by a master’s of occupational therapy student as part of a university project and reviewed by a faculty member, but has not been externally peer-reviewed. The critically appraised paper has been peer reviewed by other novice occupational therapy colleagues.

**SEARCH STRATEGY:**

**Terms used to guide Search Strategy:**

- **Patient/Client Group:** Adults with spinal cord injuries (SCI)
- **Intervention (or Assessment):** Social Participation
- **Comparison:** No comparison
- **Outcome(s):** Decreased depression symptoms

<table>
<thead>
<tr>
<th>Date</th>
<th>Databases searched</th>
<th>Search Terms</th>
<th>Limits used</th>
</tr>
</thead>
</table>
| 9/27/10    | Medline-OVID       | Social Participation + SCI  
Retrieved=11  
Relevant=2 | Published after 1995 |
| 10/5/10    | Cinahl- Ebsco host | Socialization + SCI + Depression  
Retrieved=2  
Overlapped= 1  
Relevant= 1 | Published after 1995 |
| 10/5/10    | Cinahl- Ebsco host | Leisure + Spinal cord injury + Depression  
Retrieved= 8  
Overlapped= 0  
Relevant= 2 | Published after 1995 |
| 10/15/10   | Cinahl- Ebsco host | Spinal cord injury + Social participation + Depression  
Retrieved= 11  
Overlapped= 7  
Relevant= 1 | Published after 1995 |
| 10/15/10   | Science direct     | Spinal cord injury + Social participation + Depression  
Retrieved= 7  
Overlapped= 4  
Relevant= 1 | Published after 1995 |

**INCLUSION and EXCLUSION CRITERIA**

- **Inclusion:**
  - Inclusion criteria included studies that incorporated spinal cord injuries.
  - Inclusion criteria included studies that investigated the effectiveness of an intervention strategy.
  - Studies with an emphasis on adults with SCI and depression.
  - Studies with an emphasis on adults with SCI with involvement in social participation
  - All levels of evidence were included to capture best evidence available on the subject

- **Exclusion:**
  - Studies prior to 1995
  - Participants other than SCI survivors
  - Studies in other languages than English
RESULTS OF SEARCH

5 relevant studies that met the inclusion and exclusion criteria were located and categorized as shown in Table 1 (based on Levels of Evidence, Centre for Evidence Based Medicine, 1998)

<table>
<thead>
<tr>
<th>Study Design</th>
<th>Level</th>
<th># Located</th>
<th>Author (Year)</th>
</tr>
</thead>
</table>
BEST EVIDENCE

The following study/paper was identified as the ‘best’ evidence and selected for critical appraisal.


**The reason for selecting this paper:**

- No paper directly answers the clinical question.
- This paper found a positive correlation between social participation and decreased depression symptoms
- Largest sample size
- Significantly statistical findings supporting research question
- Significant OT practice implications

**SUMMARY OF BEST EVIDENCE**

**Table 2:** Description and appraisal of


**Aim/Objective of the Study/Systematic Review:**

The aim of the study was to assess satisfaction with different areas of life in people with SCI and investigate whether participation in sports and physical recreation is associated with life satisfaction in SCI.

**Study Design:**

A set of individuals with spinal cord injuries were surveyed to identify their level of sports participation as well as their life satisfaction.

**Setting:** The data for this study was gathered in three spinal cord injuries centers in the United Kingdom: The NSIC, Stoke Mandeville Hospital, Aylesbury; the Princess Royal Spinal Injuries Unit (PRSIU), Northern General Hospital, Sheffield; and the Queen Elizabeth National Spinal Injuries Unit (QENSIU), South Glasgow University Hospital, Glasgow.

**Participants:** This cross sectional study randomly selected 1,748 participants with SCI who fulfilled the criteria: SCI at level C5 or below, wheelchair dependent; aged 18-50 at the time of injury and at least one year post-injury, admitted to the spinal unit within 6 months of injury and resident in the UK. Potential study participants were identified from available outpatient records according to criteria for inclusion in the study. (N, diagnosis, eligibility criteria, how
recruited, type of sample (eg purposive, random), key demographics such as mean age, gender, duration of illness/disease, and if groups in an RCT were comparable at baseline on key demographic variables; number of dropouts if relevant, number available for follow-up)

**Intervention Investigated:**
The intervention provided was self-directed participation in leisure activities. Individuals were sent a packet including a letter explaining the study, a questionnaire booklet and a addressed and stamped envelope. Participants were asked questions relating to level of sports participation, life satisfaction, and mood (anxiety and depression). To increase the response rate, a reminder was sent out 4–6 weeks after the original questionnaire was sent out; a reminder letter was posted to all of the participants who did not respond to the first letter. The final study group consisted of those people with SCI who completed questionnaires mailed to them. Completed questionnaires were received from 985 individuals with SCI which is 58.7% of the whole sample. The response rate was 64.4% for NSIC, 51.0% for PRSIU and 53.7% for QENSIU. Of those who did not respond, 34 individuals could not be located because of a change of address and 29 people were found to have died.

**Outcome Measures**
All of the following questionnaires were mailed to the participants who filled out the self-report questionnaires.

**The Sports Participation Questionnaire:** Consisted of 26 items, covering demographic characteristics and sports participation pre and post injury. Participants were asked how many hours a week they participating in sports pre and post injury in a multiple choice, fixed-response format. They were also asked if the sport was individual or team based and how many years they had played the sport. The participants were also asked whether they were able to play their favourite sport post-injury and whether this was due to the injury or lack of resources. They were also asked how difficult it was to access information about sports for people with SCI. To indentify athlete status, the researchers asked the participants what the highest level of sporting achievement they had reached in terms of international, national and regional attainment. Participants were also asked to identify all the reasons why they played the sport post-injury and all the ways in which it was difficult to engage in the activity post-injury. To define the amount to which participants were involved in a sport, they were broken down into groups. The three categories were as follows; 1) Those who practiced physical activity 3-5 hours/week 2) Those who practiced physical activity 1-2 hours/week and less than 1hour/week were classified as participating in physical recreation and 3) other respondents were classified as not active in sports.
46.7% of the people with SCI who participated in the study were involved in some kind of sport or physical activity at the time that the questionnaire was administered. The most commonly practiced sports post-injury were swimming, archery, weight-training, basketball, and table tennis. The most common reason for participating in these sports was for improvement of physical condition. Half of the sample had not practiced their preferred sport since their injury because of their disability and 57.7% stated that information regarding sports for the disabled was difficult to access. Figure 1 shows the number of hours participants practiced sports before injury and also the amount they participated at the time of the questionnaire. Figure 2 shows the reasons why participants decided to undertake or continue sports activity after injury.

![Fig. 1. Number of hours practicing sport before and after SCI.](image-url)
Figure 2. Reasons given by participants why they decided to undertake or continue sports activity after SCI.

The Life Satisfaction Questionnaire (LSQ): The LSQ contains one question about global life satisfaction and eight questions about domain-specific life satisfaction: self-care ability, leisure situation, vocational situation, financial situation, sexual life, partnership relation, family life, contacts with friends and acquaintances. All nine questions are answered on a six point scale with 1= very dissatisfied and 6= very satisfied. The LSQ scale was dichotomized into 1-4/5-6 in order to distinguish individuals who were dissatisfied from those who were satisfied. The mean score for participants with SCI who were happy with their life as a whole was 4.22. This falls between “rather satisfying” and “satisfying.” The highest levels of satisfaction were in family life (4.76) and contact with friends and acquaintances (4.49). The lowest level of satisfaction was found in the area of sexual life (2.76). The total mean score for life satisfaction reported by all subjects was 3.94. Division into satisfied and dissatisfied groups showed that 67.4% of participants were satisfied with family life, 56.6% with their contact with friends, 54.9% showed satisfaction with partner relationships, 49.6% with self-care ability, 40% were satisfied with leisure, 35.5% with their financial situation and 21.5% were satisfied with their sexual life. Individuals with SCI who were not active in any kind of sports or physical recreation had lower satisfaction with life as a whole than those involved in sports or recreation activities. Significant differences were found between total life satisfaction and participation in sports. Overall, life satisfaction was correlated with those who had lower anxiety and depression scores.

The Life Satisfaction Questionnaire is a satisfactory QOL measure and previous research has used this measure with people with disabilities such as patients with other physical disabilities including SCI. This measure has good reliability, validity, practicality, responsiveness, interpretability, and cross-country applicability.

The Hospital Anxiety and Depression Scale (HADS): This assessment is a 14 item self-report questionnaire that measures anxiety (HADS-A) and depression (HADS-D). Seven items require answers on a 4-point scale and evaluate possible feelings in the past week. The total anxiety and total depression scores were calculated by adding all seven item scores within each subscale. The HADS has Cronbach alpha values ranging from 0.68 to 0.93 for HADS-A, and from 0.67 to 0.90 for HADS-D [3] and demonstrated good internal consistency. Test-retest reliability has been established to be good (0.85). Concurrent validity has been evaluated using the State-Trait Anxiety Inventory and the Beck Depression Inventory.

Validity
The cross-sectional design of this study inherently produces less reliable results, since the
sample was only investigated at one time period. No analyses regarding the impact of level of
injury or length of time post-injury on sports’ participation were conducted; however, previous
research showed that there is correlation between these two factors and sports participation
post-SCI. Also, no analysis regarding differentiation of complete versus incomplete injuries
was done. Regardless of completeness of injury, the wheelchair was the main source of daily
locomotion for all participants with SCI. This somehow “equalizes” study subjects in their
abilities to participate in sports post-SCI. Only half the identified sample participated in the
study. This introduces the possibility that the sample was biased and thus reduces the ability to
generalize the results to other people with SCI. Even though the author says that this is
absolute best, there were too many other variables to tell. They did not comment on any other
uncontrolled variables. The authors did not comment on methodology, rigour or validity.

Original Author’s Conclusion:

Despite serious physical, social and psychological challenges incurred as a result of SCI,
participants in this study were satisfied with their life overall. Though participants reported
decrease in time spent participating in sports, and difficulty when participating in these
activities, 47% of the participants with SCI who responded to the study were involved in sports
or physical recreation after injury and their life satisfaction was significantly higher than
among those not active in sports. The best predictors of life satisfaction were mood, marital
status, loss of independence and sports participation. The numbers of hours participating in
sports decreased significantly after injury. There was a greater decrease in numbers
participating in team sports in comparison to the decrease seen in numbers participating in
individual sports. The highest level of satisfaction existed within social domains such as:
family life and contacts with friends. The lowest level of satisfaction was found in regard to
the participant’s sexual life and vocational situation. Higher satisfaction with life in general
was demonstrated in respondents with SCI involved in sports or physical recreation compared
to those not participating in physical activities. Steps should be taken to increase awareness
amongst the SCI population about the possibilities of engaging in new and traditional sports
and both the psychological and physical benefits of doing so. Factors should be examined that
may be associated with increased sports participation such as financial status, individually
tailored programs and positive feedback. Further research is needed to examine the
significance of an active sporting life-style and its influence on everyday life and the perceived
QOL in the SCI population. Further research is also required to identify and clarify differences
in QOL of SCI population between different nations.
Summary/Conclusion:
The results indicate the effectiveness of social participation in leisure activities, improving quality of life and reducing depression in people with SCI. The main finding of the study was that individuals who were surveyed who participated in sports or physical recreation had a higher satisfaction with life in general than those who did not participate in physical activity. Even though participants reported a decrease in the time they spent participating in sports and also reported difficulties with becoming involved in these activities, 47% of those surveyed with SCI were involved in physical recreation after their injury and their life satisfaction was considerably higher than among those not active in sports.

Table x: Characteristics of included studies

<table>
<thead>
<tr>
<th>Study (APA Format)</th>
<th>Summary (aim, intervention, outcome, findings)</th>
</tr>
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</table>
| Kennedy, P., Lude, P., & Taylor, N., (2006). Quality of life, social participation, appraisals and coping post spinal cord injury: a review of four community samples. *Spinal Cord, 44*(2), 95-105. doi: 10.1038/sj.sc.3101787 | **Aim:** To study the needs of people with SCI and to identify areas of unmet needs in order to help rehabilitation professionals increase social participation among SCI individuals.  
**Intervention:** Self-directed participation in leisure activities.  
**Outcomes used:** Craig Handicap Assessment and Reporting Technique, Life satisfaction Questionnaire, Hospital Anxiety and Depression Scale, Appraisal of Life Events Scale, Spinal Cord Lesion Related Coping Scale, Functional Independence Measure  
**Findings:** Participants were psychologically well-adjusted, indicating normal levels of anxiety and depression, and using effective coping strategies. Full social participation was limited for the majority of participants. Areas of unmet needs for a European community sample of people with SCI include; levels of occupation, sexual activity and pain relief. This demonstrate the need to consistently readdress such issues as part of a person’s long-term rehabilitation in order to achieve and maximize effective social participation |
**Intervention:** Self-directed participation in leisure activities.  
**Outcomes used:** The Center for Epidemiological Studies Depression Scale, Leisure activity survey (unspecified), Compendium of physical activity, Five point Likert scale measuring perceived freedom in leisure, The Leisure Identity Salience Scale  
**Findings:** Active engagement in leisure does play a significant role in the adjustment and well-being of individuals with SCI. Results indicated that individuals who did not display depression symptoms had a wider repertoire of leisure activities and perceived more freedom in their leisure. |
**Intervention:** Self-directed participation in leisure activities.  
**Outcomes used:** Researchers designed a self-report, mail survey, with item generation in consultation with consumer representatives. This survey used questions involving; employment, social activities, computer use, transportation and community access, physical activity, accessing information and resources, home support services, relationships with others, access to professional services, life satisfaction  
**Findings:** There was overall satisfaction with access to community buildings. Being physically active was important to a
Aim: To study the effects of depression and injury level (paraplegics/quadriplegics) on respondents’ daily activity (ADL) patterns for 53 spinal cord injured (SCI) persons living in the community.

Intervention: Self-directed participation in leisure activities.

Outcomes used: Beck Depression Inventory, Clinical Depression Measure, Multiple Affect Adjective Checklist, Activity Pattern Indicators

Findings: 85% of survey participants were clinically non-depressed. This result suggests an ability to cope with chronic adversity after SCI.

**IMPLICATIONS FOR PRACTICE, EDUCATION and FUTURE RESEARCH**

The available body of research on social participation and its effects on depression for persons with a traumatic SCI suggests that re-integration into leisure activities may decrease levels of depression for persons that have sustained an SCI. Depression, even at mild levels, may adversely affect the performance of some activities while not affecting others. Occupational therapy services focusing on increasing social participation through desired occupations are likely to have the greatest impact because they allow for prolonged and enhanced involvement in activities that are meaningful and provide enjoyment. Occupational therapy can address areas where satisfaction is low and in doing so, help individuals with SCI achieve and maximize social participation. Knowing that staying involved in activities increases life satisfaction will allow occupational therapists to provide services at a clinical level. An active lifestyle provides a path to health and psychological well-being while living a sedentary lifestyle often leads to adverse effects on the health of individuals with SCI.
Occupational therapists can work to decrease depression symptoms in individuals with SCI by increasing the level of participation in desired activities. Furthermore, services provided after medical stabilization and adjustment to disability will likely promote increased involvement. An example would be to help an individual who sustained an SCI begin to become involved in social activities as soon as possible post-injury. Some other implications for practice include increasing activity levels as a treatment and/or preventative intervention for depression in SCI and understanding the importance of the factors involved in the psychological adjustment of individuals who sustained a SCI. More research is needed in these areas. One idea for a study would be to design a longitudinal study to track changes in level so depression as a result of varying levels of social participation. Some limitations from the studies reviewed include; instruments used to measure leisure participation did not all have well-established psychometric support, participation was not the primary construct investigated and therefore no specific standardized measure was developed or used to specifically assess participation, potential selection bias may not be a representative sample of persons with SCI, and researchers did not follow up on the non-respondents so it is impossible to make comparisons between the profiles of those that responded to the survey and those that did not. Further research should be designed to address these issues.

REFERENCES


