

IMPACT OF SPINAL CORD INJURY ON QUALITY OF LIFE IN CHRONIC WHEELCHAIR PATIENTS

**A Dissertation Synopsis Submitted to
Department of Physiotherapy, LSPPS**

Supervised by:

Dr. Himani Mehta

M.P.T. (Neurology)

Submitted by:

Amanpreet Kaur

11206126



LOVELY
PROFESSIONAL
UNIVERSITY

Phagwara, Punjab

May 2018

CERTIFICATE

This is to certify that **Miss. Amanpreet kaur, Register No: 11206126** has selected the MPT dissertation titled **“Impact of spinal cord injury on quality of life in chronic wheel chair patients.”** for synopsis presentation under my guidance and supervision.

Signature of supervisor

Dr.Himani Mehta (PT)

Assistant Professor

Department of physiotherapy

Lovely school of physiotherapy and paramedical sciences

Lovely Professional University

CERTIFICATE

This is certifying that **Miss. Amanpreet kaur, Register No: 11206126** has selected the MPT Dissertation title **“Impact of spinal cord injury on quality of life in chronic wheel chair patients.”** for synopsis presentation under my guidance.

Signature of Head of the Department

Prof. Dr.K.Immanuel Jeya Singhraj (PT)

COD/ HOD

Department of physiotherapy

Lovely school of physiotherapy and paramedical sciences

Lovely Professional University

DECLARATION

I hereby declare that the dissertation titled, “**Impact of spinal cord injury on quality of life in chronic wheel chair patients.**” submitted for the MPT Synopsis is entirely my original work.

Amanpreet Kaur

Reg no.11206126

MPT Neurology

Department of physiotherapy

Lovely professional university

TITLE	PAGE NO.
INTRODUCTION	6-8
NEED OF STUDY	8
SIGNIFICANCE OF STUDY	8
AIMS AND OBJECTIVES	9
REVIEW OF LITERATURE	10-12
RESEARCH DESIGN AND METHODOLOGY	13
STUDY DESIGN	13
STUDY SETTING	13
POPULATION AND SAMPLING	13
SELECTION CRITERIA	13-14
OUTCOME MEASURES	14
PROCEDURE	15
STATISTICAL TOOLS	15
REFERENCES	16-17
ANNEXURE	18-26

INTRODUCTION

The spinal cord is the major part of the central nervous system (CNS) that contains white matter and grey matter through which motor and sensory information travels between brain and body. It consists of collection of nerves that travels from the bottom of the brain down your back ⁽¹⁾. There are total 31 pairs of spinal nerves: i.e. 8 cervical, 12 thoracic, 5 lumbar, 5 sacral and 1 coccygeal ⁽²⁾.

Spinal cord injury (SCI) is a hazardous disorder. Morbidity and Fatality risk is so high in SCI ⁽³⁾. In developing countries incidence of SCI is 25.5/million/year that ranges from 2.1 to 130.7/million/year and among them males comprised 82.8% with a mean age of 32.4 years. 71% population fall under the age group of 20-49 years ⁽³⁾. Ratio among male and female is 4.2:1. (Males>Females)

Spinal cord can be due to traumatic and non-traumatic damage. Traumatic damage can be due to direct trauma to the spinal cord for example: motor vehicle accident, gunshot wound, fall from height etc, whereas non-traumatic damage can be due to indirect trauma from disease or pathological influence-vascular malfunctions (thrombosis, embolus), vertebral subluxation, infections such as syphilis or transverse myelitis, spinal neoplasm's, syringomyelia, abscesses of the spinal cord, and neurological diseases like multiple sclerosis and amyotrophic lateral sclerosis ⁽²⁾. It has been found that around 79% of patients from rural areas among them about farmers 23.3% and labors 22.9% . Among the causes of injury 53% fall from height,28% suffered from road traffic accidents whereas 10.7% fall of heavy object over head and back,3.0% fall with heavy object over head,4.0% fall due to electric shock (found to be not so common causes) whereas complete paralysis found in 20.5% cervical region and 23.3% in thoracic region.

Spinal cord injury can be Tetraplegia and Paraplegia. Tetraplegia involves the complete loss of the motor and sensory function of both upper and lower limbs and trunk as well as the respiratory muscles and the lesion is present at the cervical segment of spinal cord whereas Paraplegia involves the complete loss of motor and sensory function of both the legs including part of the trunk and the lesion is present in any segment of thoracic, lumbar and sacral area of spinal cord⁽²⁾⁽¹⁾. It has been found that complete SCIs and paraplegia was more common than incomplete injuries and tetraplegia ⁽⁴⁾.

Level of injury of spinal cord can be assessed according to the dermatomal and myotomal level. Dermatome is the area of the skin which get its sensory information coming from specific nerve root i.e. supplied by a particular spinal nerve whereas Myotome is the set of muscles that has a specific spinal nerve innervations. The most commonly used scale for the assessment of the spinal cord is the ASIA (American Spinal Injury Association) impairment scale. Frankel modified the ASIA impairment scale. In this scale the grading is given according to the degree of impairment. It consists four grades i.e.; A-complete injury, B, C, D -incomplete injury and E-normal.

Clinical syndromes involved in spinal cord injury are: a) Central cord syndrome happens when there is an injury in the cervical area of the spinal cord that produces the sensory sparing of the sacral area. Weakness is more in the arms than in the legs. b) Brown-Sequard syndrome is indicated by an injury in the spinal cord which produces motor and proprioceptive loss on the ipsilateral side and sensitivity to pain and temperature loss on the contra lateral side. c) Anterior cord syndrome refers to the lesion in which there is a preservation of proprioception and loss of pain, temperature and motor function. d) Conus medullaris syndrome caused by an injury of the conus and lumbar nerve root that result in the bladder and bowel dysfunction. e) Cauda equina syndrome is a lesion to the lumbosacral nerve root that results in loss of bowel and bladder control ⁽¹⁾.

There are many problems that can be faced by SCI patients like pain, bladder and bowel dysfunction, respiratory impairment, spasticity, pressure sores, sexual dysfunction, postural hypotension, musculoskeletal pain, contractures and ADL's. All these problems affect the life of spinal cord patients ⁽²⁾.

WHO has described the 'Quality of life' as "Individual's perception of their position in life in the context of culture and value systems in which they live, and in relation to their goals, expectations, standards and concerns" ⁽⁵⁾.

There are many scales that are used in order to check the quality of life of spinal cord patients they are divided into "objective quality of life" and "Subjective quality of life". Objective quality introduce to fullfill the cultural and societal definitions of material prosperity, social condition, and physical welfare whereas subjective quality of life

contemplate individuals assessment of their emotions, joy, or satisfaction with esteem to their expectations and attainment. Objective quality of life includes 6 scales i.e. Short-form 36 (SF-36), Craig Handicap Assessment and Reporting Technique (CHART), Short-form 12 (SF-12), Sickness Impact Profile (SIP68), Reintegration to Normal Living Index (RNL), and Community Integration Questionnaire (CIQ). Subjective quality of life includes 6 measures i.e. Satisfaction with life scale (SWLS), Quality of Life Index (QLI), Life Satisfaction Questionnaire (LISAT-9/-1), World Health Organization Quality of Life BREF scale (WHOQOL-BREF), Perceived Quality of Life (PQOL) and global QoL. ⁽⁶⁾

NEED OF THE STUDY

In this present scenario, spinal cord injuries are becoming highly prevalent due to surge in number of road traffic tragedies and other traumatic causes. Based on the level of the injury most of the patients will be either bedridden or wheelchair dependent after spinal cord injury.

We are living in 21st century and modernization has made our life quite easy, but in this modern world people with spinal cord injury are still struggling and competing with challenges of daily living. Being a physiotherapist this is our duty to find out the current status of life, a spinal cord injury patient is living and to look for the factors which affects their quality of life.

SIGNIFICANCE OF THE STUDY

India is one of the most populated country which ranks 2nd in the world. Increase in population is directly related to increase in traumatic injuries due to increase in vehicles on road. This can be one of the major reasons which lead to increase in traumatic injuries. Spinal cord injuries put a burden not only on the individual but their family, society and economical status too. It has straight way affected the quality of life. It is very essential to understand one's life after spinal cord injury which will tell us not only about the challenges they are facing but help us to plan out the strategies to minimize the affect of those factors and to bring improvement in their quality of life.

AIM OF THE STUDY

1. To analyze the quality of life in spinal cord injury patients.
2. To find out the factors affecting quality of life in spinal cord injury patients.
3. To find out the difference in quality of life between gender.

OBJECTIVE OF THE STUDY

To evaluate the Impact of spinal cord injury on quality of life in chronic wheelchair patients

Review of literature

Etiology behind SCI

N Mathur and N Kumar et.al (2015)⁽³⁾ conducted a study on “Spinal Cord Injury: Scenario in an Indian State”. Study was conducted in jaipur and they concluded the causes of injury, (53%) of fall from height, (28%) from road traffic accidents, (10.7%) due to fall of heavy object over head, (3.0%) back fall with heavy object over head and (4.0%) fall from electric shock. They has also found the complete paralysis in (20.5%) cervical and (23.3%) in thoracic injuries.

Mohammad Kazaem Sayyah et.al (2013)⁽⁴⁾ done a systematic review on the “Epidemiology of traumatic spinal cord injury in developing countries: A systematic review” in which they took 64 studies from 28 countries and concluded that motor vehicle crashes (41.4%) and falls (34.9%) were the two main leading causes of SCI in the developing countries. Among them complete SCI injury (56.5%) was found to be more common as compared to incomplete SCI (43.0%) and paraplegia (58.7%) was found to be common as compared to tetraplegia (40.6%).

Complications and Physical problems faced by spinal cord patients:

Selami Akkuş et.al (2015)⁽⁷⁾ conducted a study on “Chronic complications of spinal cord injury” in which they concluded that there are Acute and long-term secondary medical complications in patients with SCI that are commonly affected and had a negative impact on the quality of life and functional independence of patients. Complications that was included respiratory, cardiovascular, urinary and bowel, spasticity, pain syndromes, pressure ulcers, osteoporosis and bone fractures.

Psychological problems faced by SCI patients:

Sher-Wei Lim et.al and Yow-Ling Shiue et.al (2017)⁽⁸⁾ conducted a study on “Anxiety and Depression in Patients with Traumatic Spinal Cord Injury: A Nationwide Population-Based Cohort Study” they used Poisson regression to estimate the incidence rate ratios of anxiety or depression between patients with tSCI and other health conditions. From this

study they concluded that tSCI patients have a high risk of anxiety or depression post-discharge, especially among the younger tSCI patients (age <50 years), compared with the other health conditions group.

Physiotherapy and spinal cord injury:

David H.Zemon MSPT et.al (2005)⁽⁹⁾ done a study on “Effectiveness of automated locomotor training in patients with chronic incomplete spinal cord injury: A multicenter trial” they took twenty patients with a chronic, motor incomplete SCI, classified by the ASIA Impairment Scale with grades C (n=9) and D (n=11) injury. Locomotor training was provided using robotic-assisted, body-weight-supported treadmill training 3 to 5 times a week over 8 weeks. Single training sessions lasted up to 45 minutes of total walking time, with gait speed between 0.42 and 0.69m/s. They concluded that intensive locomotor training on a treadmill with the assistance of a driven-gait orthosis (DGO) results in improved over ground walking.

Quality of life in SCI patients:

Sandy L. Stevens MS (2016)⁽¹⁰⁾ conducted a study on “Physical Activity and Quality of Life in Adults with Spinal Cord Injury” he did cross sectional investigation in which he took men (n=32) and women (n=30) with complete and incomplete spinal cord injury below C6 level. A measure of QOL was taken for each participant through an interview survey and their physical activity levels were determined using physical activity scale. Through his study it was found out that positive relationship exists between physical activity and quality of life. So, physical activity improves the quality of life of the patients with SCI.

Jaroslav et.al (2015)⁽¹¹⁾ conducted a study on the “Analysis of selected determinants of health-related quality of life in persons with spinal cord injury” in which he took 100 patients for his study and all were wheelchair dependent among them 22 were females and 78 were males. He used Sf-36 questionnaire and concluded that higher levels of HRQOL were characterized by lower age at the time of study and the time of injury.

Mohammad hosein et.al (2014)⁽⁵⁾ have done a study on the “quality of life among veterans with chronic spinal cord injury and related variables” in which he took 50 patients, all males with chronic spinal cord injury. 3 scales were used in his study and he also documented the presence or absence of pressure sores and spasticity. Through his study he concluded that quality of life among veterans with chronic spinal cord injury was found to be low and further more studies are needed to understand the change in life among sci patients.

Sweet, S. N. and Tomasone et.al (2013)⁽¹²⁾ has done a study on “Investigating intermediary variables in the physical activity and quality of life relationship in persons with spinal cord injury”. They took adult participants who were engaging in at least some leisure time physical activity (LTPA) over an 18-month period. They measured intermediary variables of depression, participation, functional independence and self-efficacy at 6-months and then QOL was evaluated at 18-months. They had suggested that LTPA improve QOL in adults with SCI.

L A May et.al (2002)⁽¹³⁾ have done a study on the “measuring quality of life of persons with spinal cord injury: external and structural validity” in which he used many scales in his study to check external and structural validity and he concluded that further more investigations are required for structural component of validity.

RESEARCH DESIGN AND METHODOLOGY

STUDY DESIGN: The design for the present study is Observational survey design.

STUDY SETTING: The study will be conducted in the department of physiotherapy, Shri Baldev Raj Mittal Hospital, Lovely Professional University, Punjab.

The participants of the study will be taken from

- Out-patient department of physiotherapy.
- Nasa Hub and Super specialty hospital, Jalandhar.

POPULATION AND SAMPLING:

Patients with spinal cord injury more than 2 years, age between 20-49 years, samples will be taken by convenient sampling method.

A convenience sample is where the participants are selected in part or as whole, based on the satisfaction of the researcher (availability and accessibility). Here least efforts have been taken to ensure the sample is the representative of the population.

The total size of the sample included in the study is 100.

SELECTION CRITERIA:

INCLUSION CRITERIA:

1. Age between 20 to 49 years.
2. Gender both males and females.
3. Chronic spinal cord injury (more than 2 years).
4. Wheelchair bound patients.
5. Paraplegic and Quadriplegic.

EXCLUSION CRITERIA:

1. Any other neurological disorder.
2. Neuro muscular disorder.
3. Any other deformity.

OUTCOME MEASURES:

Objective - Short form 36 questionnaire is a health survey that assesses eight health phenomena. It includes

1. General health
2. Limitations of activities
3. Physical health problems
4. Emotional health problems
5. Social activities
6. Pain
7. Energy and emotions
8. General health

Subjective - Satisfaction with life scale (SWLS) is a 5-item scale designed to measure worldwide cognitive judgment of one's life satisfaction. Scale ranges from 7 (strongly agree) to 1 (strongly disagree).

PROCEDURE

After inclusion and exclusion criteria 100 subjects with spinal cord injury will be included in the study through convenient sampling. An informed consent will be signed from each patient and a demographic profile of patient will be taken. Each patient will be introduced with the quality of life questionnaire which includes sf-36 and satisfaction with life scale (SWLS). The sf-36 scale includes 8 items like health, pain, social activity, emotion, physical problems etc. and SWLS includes 5 items through which we will be able to evaluate the QOL (quality of life) of a person with SCI.

STATISTICAL TOOLS

SPSS software will be used to analyze the result. Data analysis will include the use of descriptive statistics and the unpaired t-test.

REFERENCES

1. Creasey G, Wilberger J, Maynard FM, Bracken MB, Creasey G, Ditunno JF, et al. International Standards for Neurological and Functional Classification of Spinal Cord Injury . American Spinal Injury ... International Standards for Neurological and Functional Classification of Spinal Cord Injury. 1997;(June).
2. Edition F. Rehabilitation.
3. Mathur N, Jain S, Kumar N, Srivastava A, Purohit N, Patni A. Spinal Cord Injury : Scenario in an Indian State. Spinal Cord [Internet]. 2014;53(5):349–52. Available from: <http://dx.doi.org/10.1038/sc.2014.153>
4. Review S. Epidemiology of Traumatic Spinal Cord Injury in Developing Countries : 2013;65–85.
5. Ebrahimzadeh MH, Soltani-moghaddas SH, Birjandinejad A. Quality of Life Among Veterans With Chronic Spinal Cord Injury and Related Variables. 2014;3(2).
6. Wilson JR, Hashimoto RE, Dettori JR, Fehlings MG. Spinal cord injury and quality of life : a systematic review of outcome measures. 2(1):37–44.
7. Sezer N, Akkuş S, Uğurlu FG. Chronic complications of spinal cord injury. 2015;6(1):24–33.
8. Lim S, Shiue Y, Ho C, Yu S, Kao P, Wang J, et al. Anxiety and Depression in Patients with Traumatic Spinal Cord Injury : A Nationwide Population-Based Cohort Study. 2017;1–14.
9. Wirz M, Zemon DH, Rupp R, Scheel A, Colombo G, Dietz V, et al. Effectiveness of automated locomotor training in patients with chronic incomplete spinal cord injury: A multicenter trial. Arch Phys Med Rehabil. 2005;86(4):672–80.
10. Stevens SL, Caputo JL, Fuller DK, Morgan DW. Physical activity and quality of life in adults with spinal cord injury. J Spinal Cord Med. 2008;31(4):373–8.

11. Tasiemski T. Prace oryginalne Original papers Analiza wybranych czynników determinujących jakość życia związanych ze stanem zdrowia osób po urazie rdzenia kręgowego. 2015;3–13.
12. Sweet SN, Ginis KAM, Tomasone JR. Investigating intermediary variables in the physical activity and quality of life relationship in persons with spinal cord injury. *Heal Psychol.* 2013;32(8):877–85.
13. May LA, Warren S. Measuring quality of life of persons with spinal cord injury: External and structural validity. *Spinal Cord.* 2002;40(7):341–50.

ANNEXURE: I

INFORMED CONSENT

Please carefully read and sign this form.

1. I believe that it is important that I give the exact health history and information to my physiotherapist so that any planned treatments and therapies are in my best interest.
2. I understand that information given by me will be kept confidential and private during the study.
3. I have read and understand the contents of this form. I hereby grant permission to my physiotherapist to perform the survey that may be necessary to plan out the strategies for improving our quality of life (QoL).

ANNEXURE: II

DEMOGRAPHIC DATA

Name: _____ Age: _____ Gender: _____ Date: _____

Occupation: _____ Phone no.: _____

Address: _____

Chief Complaint: _____

Mode/cause of injury: _____

Type of Impairment:

Paraplegic/Quadriplegic _____

—

Mode of ambulation: Independent if NOT then,

- Walker type....
- Crutches type

Wheelchair Dependent if yes,

- Manual wheelchair
- Motorized wheelchair

Bound to wheelchair since _____

Any special training or rehabilitation taken: YES/NO

if yes, for how long _____

ANNEXURE: III

SF-36 QUESTIONNAIRE

Name: _____ Ref. Dr: _____ Date: _____
ID#: _____ Age: _____ Gender: M / F

Please answer the 36 questions of the **Health Survey** completely, honestly, and without interruptions.

GENERAL HEALTH:

In general, would you say your health is:

Excellent Very Good Good Fair Poor

Compared to one year ago, how would you rate your health in general now?

- Much better now than one year ago
- Somewhat better now than one year ago
- About the same
- Somewhat worse now than one year ago
- Much worse than one year ago

LIMITATIONS OF ACTIVITIES:

The following items are about activities you might do during a typical day. Does your health now limit you in these activities? If so, how much?

Vigorous activities, such as running, lifting heavy objects, participating in strenuous sports.

Yes, Limited a lot Yes, Limited a Little No, Not Limited at all

Moderate activities, such as moving a table, pushing a vacuum cleaner, bowling, or playing golf

Yes, Limited a Lot Yes, Limited a Little No, Not Limited at all

Lifting or carrying groceries

Yes, Limited a Lot Yes, Limited a Little No, Not Limited at all

Climbing several flights of stairs

Yes, Limited a Lot Yes, Limited a Little No, Not Limited at all

Climbing one flight of stairs

Yes, Limited a Lot Yes, Limited a Little No, Not Limited at all

Bending, kneeling, or stooping

Yes, Limited a Lot Yes, Limited a Little No, Not Limited at all

Walking more than a mile

Yes, Limited a Lot Yes, Limited a Little No, Not Limited at al

Walking several blocks

Yes, Limited a Lot Yes, Limited a Little No, Not Limited at all

Walking one block

Yes, Limited a Lot Yes, Limited a Little No, Not Limited at all

Bathing or dressing yourself

Yes, Limited a Lot Yes, Limited a Little No, Not Limited at all

PHYSICAL HEALTH PROBLEMS:

During the past 4 weeks, have you had any of the following problems with your work or other regular daily activities as a result of your physical health?

Cut down the amount of time you spent on work or other activities

Yes No

Accomplished less than you would like

Yes No

Were limited in the kind of work or other activities

Yes No

Had difficulty performing the work or other activities (for example, it took extra effort)

Yes No

EMOTIONAL HEALTH PROBLEMS:

During the past 4 weeks, have you had any of the following problems with your work or other regular daily activities as a result of any emotional problems (such as feeling depressed or anxious)?

Cut down the amount of time you spent on work or other activities

Yes No

Accomplished less than you would like

Yes No

Didn't do work or other activities as carefully as usual

Yes No

SOCIAL ACTIVITIES:

Emotional problems interfered with your normal social activities with family, friends, neighbors, or groups?

Not at all Slightly Moderately Severe Very Severe

PAIN:

How much bodily pain have you had during the past 4 weeks?

None Very Mild Mild Moderate Severe Very Severe

During the past 4 weeks, how much did pain interfere with your normal work (including both work outside the home and housework)?

Not at all A little bit Moderately Quite a bit Extremely

ENERGY AND EMOTIONS:

These questions are about how you feel and how things have been with you during the last 4 weeks. For each question, please give the answer that comes closest to the way you have been feeling.

Did you feel full of pep?

All of the time Most of the time A good Bit of the Time Some of the time A little bit of the time None of the Time

Have you been a very nervous person?

All of the time Most of the time A good Bit of the Time Some of the time A little bit of the time None of the Time

Have you felt so down in the dumps that nothing could cheer you up?

All of the time Most of the time A good Bit of the Time Some of the time A little bit of the time None of the Time

Have you felt calm and peaceful?

All of the time Most of the time A good Bit of the Time Some of the time A little bit of the time None of the Time

Did you have a lot of energy?

All of the time Most of the time A good Bit of the Time Some of the time A little bit of the time None of the Time

Have you felt downhearted and blue?

All of the time Most of the time A good Bit of the Time Some of the time A little bit of the time None of the Time

Did you feel worn out?

All of the time Most of the time A good Bit of the Time Some of the time A little bit of the time None of the Time

Have you been a happy person?

All of the time Most of the time A good Bit of the Time Some of the time A little bit of the time None of the Time

Did you feel tired?

All of the time Most of the time A good Bit of the Time Some of the time A little bit of the time None of the Time

SOCIAL ACTIVITIES:

During the past 4 weeks, how much of the time has your physical health or emotional problems interfered with your social activities (like visiting with friends, relatives, etc.)?

All of the time Most of the time Some of the time A little bit of the time None of the Time

GENERAL HEALTH:

How true or false is each of the following statements for you?

I seem to get sick a little easier than other people

Definitely true Mostly true Don't know Mostly false Definitely false

I am as healthy as anybody I know

Definitely true Mostly true Don't know Mostly false Definitely false

I expect my health to get worse

Definitely true Mostly true Don't know Mostly false Definitely false

My health is excellent

Definitely true Mostly true Don't know Mostly false Definitely false

ANNEXURE: IV

SATISFACTION WITH LIFE SCALE

Reference:

Diener, E., Emmons, R. A., Larsen, R. J., & Griffin, S. (1985). The Satisfaction with Life Scale. *Journal of Personality Assessment*, 49, 71-75.

Description of Measure:

A 5-item scale designed to measure global cognitive judgments of one's life satisfaction (not a measure of either positive or negative affect).

Participants indicate how much they agree or disagree with each of the 5 items using a 7-point scale that ranges from 7 strongly agree to 1 strongly disagree.

Abstracts of Selected Related Articles:

Pavot, W. G., Diener, E., Colvin, C. R., & Sandvik, E. (1991). Further validation of the Satisfaction with Life Scale: Evidence for the cross-method convergence of well-being measures. *Journal of Personality Assessment*, 57, 149-161.

The structure of subjective well-being has been conceptualized as consisting of two major components: the emotional or affective component and the judgmental or cognitive component (Diener, 1984; Veenhoven, 1984). The judgmental component has also been conceptualized as life satisfaction (Andrews & Withey, 1976). Although the affective component of subjective well-being has received considerable attention from researchers, the judgmental component has been relatively neglected. The Satisfaction With Life Scale (SWLS; Diener, Emmons, Larsen, & Griffin, 1985) was developed as a measure of the judgmental component of subjective well-being (SWB). Two studies designed to validate further the SWLS are reported. Peer reports, a memory measure, and clinical ratings are used as external criteria for validation. Evidence for the reliability and predictive validity of the SWLS is presented, and its performance is compared to other related scales. The SWLS is shown to be a valid and reliable measure of life satisfaction, suited for use with a wide range of age groups and applications, which makes possible the savings of interview time and resources compared to many measures of life satisfaction. In addition, the high convergence of self- and peer-reported measures of subjective well-being and life satisfaction provide strong evidence that subjective well-being is a relatively global and stable phenomenon, not simply a momentary judgment based on fleeting influences.

Pavot, W. G., & Diener, E. (1993). Review of the Satisfaction with Life Scale. *Psychological Assessment*, 5, 164-172.

The Satisfaction With Life Scale (SWLS) was developed to assess satisfaction with the respondent's life as a whole. The scale does not assess satisfaction with life domains such as health or finances but allows subjects to integrate and weight these domains in whatever way they choose. Normative data are presented for the scale, Self Report Measures for Love and Compassion Research: *Satisfaction*

which shows good convergent validity with other scales and with other types of assessments of subjective well-being. Life satisfaction as assessed by the SWLS shows a degree of temporal stability (e.g., .54 for 4 years), yet the SWLS has shown sufficient sensitivity to be potentially valuable to detect change in life satisfaction during the course of clinical intervention. Further, the scale shows discriminant validity from emotional well-being measures. The SWLS is recommended as a complement to scales that focus on psychopathology or emotional well-being because it assesses an individual's conscious evaluative judgment of his or her life by using the person's own criteria.

Diener, E., Sandvik, E., Seidlitz L., Diener, M. (1993). The relationship between income subjective well-being: Relative or absolute? *Social Indicators Research*, 28, 195-223.

Although it appears that income and subjective well-being correlate in within-country studies (Diener, 1984), a debate has focused on whether this relationship is relative (Easterlin, 1974) or absolute (Veenhoven, 1988, 1991). The absolute argument advanced by Veenhoven states that income helps individuals meet certain universal needs and therefore that income, at least at lower levels, is a cause of subjective well-being. The relativity argument is based on the idea that the impact of income or other resources depends on changeable standards such as those derived from expectancies, habituation levels, and social comparisons. Two studies which empirically examine these positions are presented: one based on 18 032 college studies in 39 countries, and one based on 10 year longitudinal data in a probability sample of 4 942 American adults. Modest but significant correlations were found in the U.S. between income and well-being, but the cross-country correlations were larger. No evidence for the influence of relative standards on income was found: (1) Income *change* did not produce effects beyond the effect of income level per se, (2) African-Americans and the poorly educated did not derive greater happiness from specific levels of income, (3) Income produced the same levels of happiness in poorer and richer areas of the U.S., and (4) Affluence correlated with subjective well-being both across countries and within the U.S. Income appeared to produce lesser increases in subjective well-being at higher income levels in the U.S., but this pattern was not evident across countries. Conceptual and empirical questions about the universal needs position are noted. Suggestions for further explorations of the relativistic position are offered. Self Report Measures for Love and Compassion Research: *Satisfaction*

Scale:

Instructions: Below are five statements that you may agree or disagree with. Using the 1 - 7 scale below, indicate your agreement with each item by placing the appropriate number on the line preceding that item. Please be open and honest in your responding.

- 7 - Strongly agree
- 6 - Agree
- 5 - Slightly agree
- 4 - Neither agree nor disagree
- 3 - Slightly disagree
- 2 - Disagree
- 1 - Strongly disagree

_____ In most ways my life is close to my ideal.

_____ The conditions of my life are excellent.

_____ I am satisfied with my life.

_____ So far I have gotten the important things I want in life.

_____ If I could live my life over, I would change almost nothing.

Scoring:

Though scoring should be kept continuous (sum up scores on each item), here are some cut-offs to be used as benchmarks.

- 31 - 35 Extremely satisfied
- 26 - 30 Satisfied
- 21 - 25 Slightly satisfied
- 20 Neutral
- 15 - 19 Slightly dissatisfied
- 10 - 14 Dissatisfied
- 5 - 9 Extremely dissatisfied