THE RELATIONSHIP BETWEEN PAIN AND SLEEP IN SPINAL CORD INJURY PATIENTS

Diana Subramony Pillay

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Master of Science in Medicine

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DECLARATION

I, Diana Subramony Pillay declare that this dissertation is my work. It is being submitted for the degree of Master of Science in Medicine in the University of the Witwatersrand, Johannesburg. It has not been submitted before for any degree or examination at this or any other University.

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Date

ABSTRACT

Spinal cord injury (SCI) is a devastating injury affecting many South Africans.

The purpose of the study was to investigate the relationship between SCI pain and sleep issues during acute inpatient rehabilitation. Seventeen participants were recruited. There were 2 interviews in the study; the 1st interview was done on the day participants were recruited. The 2nd interview was conducted a day before participants were discharged. The time elapsed between the first and second interview was 7.9±2.4. The patients were discharged from the Auckland Rehabilitation hospital (Hope ward). In the 2nd interview the questionnaires for pain, sleep and mood measures were repeated, and two additional questions were asked and the answers recorded for analysis of content.

The key findings were; majority of the participants were Black, male (82%). The main cause of traumatic SCI was motor vehicle accident (59%). The common sites of injury were in the legs and neck/shoulder areas in both assessment (admission and discharge). The verbal descriptors that were commonly chosen in both assessments were, “sharp, shooting and tight.” Below level neuropathic pain, followed by musculoskeletal pain were the common types of pain reported. Pain interference was reported greatest in sleep and on average pain intensity was moderate (4-6 on 11-point Numerical Rating Scale). Strong correlations and positive relationships between Pain Catastrophizing Scale and subscales, and with the

Pittsburgh Insomnia Rating total scale and subscales were reported in this study. Environmental factors were reported to affect sleep. A high incidence of Restless Leg Syndrome was reported in this study (24%). Depression was commonly reported by participants in both assessments.

No significant association was found for the measures of sleep, Restless Leg Syndrome, depression and quality of life and the injury characteristics that were assessed. Significant associations were found at the 95% confidence levels for pain scores and injury characteristics (completeness of injury, level of injury and pain sites).

Further studies in this area of pain and sleep management is warranted. It is important that clinicians and researchers in this area find appropriate management for secondary issues which have a severe impact on the daily activities of SCI people, decreasing their quality of life.

Key words: *SCI pain, sleep disturbances, mood*

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RESEARCH OUTPUTS

07th Canadian IBRO-School Neuroscience, Montreal, QC & Toronto	13-21 May	D Pillay: Oral Presentation: The relationship between pain and sleep in spinal cord injury in a South African population
7th Annual Canadian Neuroscience Meeting 2013, Toronto	22-24 May	D Pillay: Poster presentation: The relationship between pain and sleep in the acute phase in spinal cord injury patients
25th African School in Neuroscience 2010, Durban	24-31 Oct	D Pillay: Oral Presentation: Overview on the relationship between pain and sleep in spinal cord injury in a South African population

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Abbreviations

SCI	Spinal cord injury
RLS	Restless-leg syndrome
AISA	American Spinal Cord Injury Association
NSCISC	National Spinal Cord Injury Statistical Centre
QASA	Quadpara Association of South Africa
ISCIPC	International Spinal Cord Injury Pain Classification
IASP	International Association for the Study of Pain
REM	Rapid eye movement
NREM	Non-rapid eye movement
EEG	electroencephalogram
TMD	Temporomandibular disorder
MPQ	McGill Pain Questionnaire
NWC	Number of words chosen
PPI	Present pain intensity
PPI(now)	Present intensity now
PRI	Present rating index
BPI	Brief Pain Inventory Interference Scale
PCS	The Pain Catastrophizing Scale
PIRS	The Pittsburgh Insomnia Rating Scale
IRLSSG	The International Restless Leg Syndrome Study Group.
CES-D	Centre for Epidemiological Studies-Depression Scale
IQR	Inter-quartile range

LOI	Neurological level of injury
NRS	Numerical Rating Scale
PSQI	Pittsburgh Sleep Quality Index