DECLARATION

I Michelle Ann Yazbek, declare that this thesis is my own work. It is being submitted for the degree of Doctor of Philosophy at the University of the Witwatersrand, Johannesburg, South Africa. It has not been submitted before for any degree or examination at this or any other University.

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Michelle Yazbek

Signed this 18 th day of June 2015

DEDICATION

For my parents who have loved and nurtured me, guided me and above all insisted on a good education for me, especially as a woman who grew up in a patriarchal culture.

For this, I am eternally grateful.

ABSTRACT

Pain is a subjective sensation and is difficult to measure. Quantifying pain provides a measure of assessing effectiveness of treatment and behaviour of the patient's pain. In Africa unlike in the developed world, a paucity of research into the measurement of pain exists. Historically, Anglo-American scales have been used to measure pain in Africa.

Aim: The aim of this thesis was to develop a back pain scale for use in Tswana speaking South Africans.

Methods: Four hundred and forty participants from different education, gender and age groups participated in five studies. Study One developed new scales: Colour Analogue Scale(CAS green- red), modified Wong-Baker Faces Pain Scale (WBFPS three faces) , Ascending Injection Scale, Injection Size Scale, Ascending Coin Scale, Coin Heap Scale and previously used scales Visual Analogue Scale (VAS), CAS (white-red), WBFPS (six faces). Study Two tested these scales in 100 asymptomatic participants. "No pain" ""worst pain" was marked on original and reversed scales. Since no significant difference existed between the original and reversed versions, reversed versions were not taken further. In Study Three 40 back pain sufferers developed a Tswana Verbal Descriptive Scale. This was then tested together with the scales from the previous studies, in Study Four, in 250 Tswana individuals with back pain. Pain perception was marked on all scales. Study Five tested the Ascending Injection Scale and the Ascending Coin Scale (best scales from Study Four) and a right angle Triangle Scale in 50 back pain sufferers. "No pain", "worst pain" and "present pain" perception was marked on all scales.

Results: The Ascending Injection Scale was found to be the best understood pain scale in Tswana speaking, back pain sufferers.

Conclusion: The Ascending Injection Scale can be used to test back pain severity in Tswana speaking South Africans. I recommend that this scale be translated into the other black languages spoken in South Africa for testing and possible use.

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LIST OF DEFINITIONS AND ABBREVIATIONS

IASP	International Association for the Study of Pain
VAS	Visual Analogue Scale
VAS1	Visual Analogue Scale marked only with 0 and 10
VAS2	Visual Analogue Scale marked in centimeters from 0 to 10
CAS	Colour Analogue Scale
NRS	Numerical Rating Scale
NRS-11	An eleven point Numeric Rating Scale
VRS	Verbal Rating Scale
VRS-4	A four point Verbal Rating Scale
VDS	Verbal Descriptor Scale
Asc Inj	Ascending Injection Scale
Inj Size	Injection Size Scale
Asc Coin	Ascending Coin Scale
Coin Heap	Coin Heap Scale
WBFPS 6	Wong-Baker Faces Pain Scale (six faces)
WBFPS 3	Wong-Baker Faces Pain Scale (three faces)
FPS-R	Faces Pain Scale- Revised
PCPS	Pakistani Coin Pain Scale
SOPA	Survey of Pain Attitudes Scale
CPG	Chronic Pain Grade

PCS	Pain Catastrophizing Scale
TPS	Thermometer Pain Scale
PCCQ	Pain Control Centre Questionnaire
MPQ	McGill Pain Questionnaire
SFMPQ	Short Form McGill Pain Questionnaire
PSFS	Patient Specific Functional Scale
BPI	Brief Pain Inventory
PBAPI	Pain Beliefs and Perception Inventory
PTM	Pressure Threshold Meter
PTL	Pressure Tolerance Level
PPT	Pressure Pain Tolerance
PT	Pain Threshold
PPI	Present Pain Intensity
CPP	Chronic Pelvic Pain
LBP	Low Back Pain
TMD	Temporomandibular Pain Disorder
AD	Alzheimer's Disease
ADL	Activities of Daily Living
BPS	Bio-psychosocial Model
CBT	Cognitive Behavioural therapy
PI	Perfusion Index
CPT	Cold Pressor Task

PAG Periaqueductal Grey matter

RVM Rostral Ventromedial Medulla

Pain perception= the conscious experience of discomfort when the pain threshold is reached.

Pain threshold= the point at which sufficient pain- transmitting stimuli has reached the brain.

Pain tolerance= the amount of pain the person can endure.

Nociceptive pain= pain as a result of normal activation of the sensory system by noxious stimuli.

Neuropathic pain= pain caused by damage to or dysfunction of nerves, spinal cord or brain.

Psychogenic pain= persistent pain with evidence of psychological disturbances.

Idiopathic pain=pain with no apparent cause.

Somatic pain= pain generated from deeper connective tissue such as muscles, tendons and joints.

Visceral pain= pain arising from internal organs.

Acute pain= pain lasting from seconds to three months.

Chronic pain = pain lasting more than three months.

The following are Definitions for this thesis.

Ends of the scales= at the left, lower end of the scale, nought depicts “no pain and at the right, higher end of the scale ten depicts “worst possible pain”.

Spread of the scales= the extent of the scale being used by the participants. This is calculated by subtracting the number marked by the participants for “no pain” (at the left, lower end of the scale) from the larger number (marked by the participants at the right, upper end of the scale), for “worst pain” e.g. if 1 is marked for “no pain” and 9 is marked for “worst pain”, then the spread of the scale is 9-1=8.

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