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An education based ergonomic intervention programme for Gauteng call centre workers with upper extremity repetitive strain injuries

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AN EDUCATION BASED ERGONOMIC INTERVENTION PROGRAMME FOR GAUTENG CALL CENTRE WORKERS WITH UPPER EXTREMITY REPETITIVE STRAIN INJURIES.

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WitsETD

Johannesburg 2010

DECLARATION

I SANCHA ELIOT declare that this research is my own work. It is being submitted for the Degree of Master of Science in Occupational Therapy in the University of the Witwatersrand, Johannesburg. It has not been submitted before for any degree or examination at this or any other university.

…… [Signature of candidate]

……day of…….. [month], 20

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To my family, a big thank you for your patience and support.

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ABSTRACT

Ergonomic interventions, addressing work and lifestyle factors, seem more effective in reducing computer related upper limb repetitive strain injury (RSI).This study considered the efficacy of such a programme on the resolution of RSI symptoms.

A cross sectional survey, of 325 computer workers in a medical aid company call centres, in Gauteng, South Africa was used to establish a point prevalence of 30.23% for RSI symptoms, which correlates with those found elsewhere.

An occupational therapy ergonomic intervention was then designed and piloted for efficacy. A randomised control trial conducted on 37 participants with RSI used the programme and computer generated “Break Software”. The six week intervention included the assessment of: three physical outcome measures and lifestyle factors for, the experimental and control groups. Results indicated positive effects on pain, grip strength, and lifestyle factors including feelings of inefficiency, pressure at the end of the day, depression and work capacity, but little extrapolation of ergonomic knowledge to the workplace.

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OPERATIONAL DEFINITIONS

1. Repetitive strain injury (RSI) - cumulative chronic upper extremity pain, for which no alternative diagnosis is made and which is related (but not limited to) highly repetitive movements, movements at extremes of reach, static muscle loading, awkward sustained positions and overuse (Sanders, 2004, van Tulder, Malmivaara and Koes, 2007)

RSI are characteristically shown to have a slow insidious onset with initial localised pain, which becomes diffuse. (Palmer, 2003.)

2. Tenosynovitis and Tendonitis – Inflammation of one or more tendon sheaths or one or more tendons. As the above are difficult to discern clinically without thorough examination (and have the same treatment) they were collectively termed tenosynovitis in this research. (Palmer, 2003)

3. Compression Neuropathy – Entrapment in a specific anatomical area where nerves pass under restrictive pulleys or retinaculae. Sensory fibres are more readily and quickly affected than motor fibres. Symptoms (proximal or distal to the compression) may be vague, however may include one or more of the following: pain, numbness, weakness and tingling. (Kasch, 2002)

For the purposes of this study the following characteristics of RSI were accepted:

- multifactorial causes,
- mechanical and physiological mechanisms are involved,
- a relationship to the duration and intensity of work exists, and
- work cycle and environment have an impact.(Sanders, 2004)

4. Work Related Upper Limb Disorders

Type I WRULD – These have clearly defined and localised symptomology, diagnoses and treatments. They include: carpal tunnel syndrome, lateral epicondylitis and De Quervain's tenosynovitis

Type II WRULD – Non traumatic upper limb pain with poorly defined symptoms and causation are included in this class. They incorporate the regional pain syndromes. (Povlsen and Rose, 2008)

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5. Ergonomics

Ergonomics can be described as the interface between an individual, their work task/job, the work environment and the tools they utilise to perform the task at hand. It should take into account the individual (physical characteristics and capabilities), the task and the work environment.

Ergonomics as used by Occupational Health practitioners involves the study of the work and the individual fit. It must include the study of the organisation's social, economic, political and legislative environment. Work organisation i.e. psychosocial work place risk factors as well as physical work place risk factors must be considered as well as the individual. (Sanders, 2004)

6. Point Prevalence

Point prevalence is not defined by a time interval and is therefore not a rate. It may be defined as the number of cases of a disease that exist in a defined population at a specified point in time. (Mann, 2003)

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ABBREVIATIONS

CTD – Cumulative Trauma Disorders

EU – European Union

IOD - Injury On Duty

MSD – Musculoskeletal Disorders

NIOSH - National Institute for Occupational Safety and Health

OCD –Occupational Cervico-brachial Disorders

OOS – Occupational Overuse Syndrome

RSI – Repetitive Strain Injury

SASHT – South African Society of Hand Therapists

SLE – Systemic Lupus Erythematous

UE – Upper Extremity

UL – Upper Limb

UED - Upper Extremity Disorders

ULD – Upper Limb Disorders

USA – United States of America

VAS – Visual Analogue Scale

WRULDS - Work Related Upper Limb Disorders

WRMSDS - Work Related Musculoskeletal Disorders

WCA –Workman's Compensation Act

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