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Intra-and inter-rater reliability of the knee society knee score, post total knee arthroplasty at Johannesburg Hospital.

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INTRODUCTION

CHAPTER 1

INTRODUCTION

Osteoarthritis of the knee is a degenerative joint disorder caused by wear and tear of the joint cartilage leading to progressive swelling, pain and limitation of motion. It mainly affects people during their middle age (Parmet et al 2003) and in South Africa it is more common in women than men with an especially high incidence in a population with obesity (Solomon et al 1975). Osteoarthritis in the knee is considered to be a major problem as it causes severe disability (Hunter et al 2002). Treatment may be conservative, using medication, exercises and patient education, or surgical when all the conservative procedures fail.

Physiotherapy contributes a major part in the rehabilitation of patients following total knee arthroplasty, aiming at restoring the knee joint structurally and functionally (Rajan et al 2004).

Total Knee Arthroplasty (TKA) is found to be effective in pain relief (Hawker et al 1998; McAuley et al 2002) and to improve functioning (Hawker et al 1998; Walsh et al 2001) of the knee joint. Despite its merits, the knee replacement leads to various impairments which includes, knee flexion contracture, limited range of motion, quadriceps weakness, instability and malalignment (Bhave et al 2005). Physiotherapy aims to prevent these undesirable effects through appropriate treatment techniques which include continuous passive mobilisation, stretching, strengthening, active and

passive mobilisations, and functional electrical stimulation, gait training and patient education.

There is limited research on the efficacy of physiotherapy post Total Knee Arthroplasty in South Africa. In order to conduct this research, appropriate outcome measures are required. Effectiveness of the physiotherapy intervention has to be established by pre and post intervention assessment of the knee joint using reliable and valid outcome measures (Australian Physiotherapy Association (APA) position statement 2003).

The American Knee Society Clinical Rating System (AKSCRS) (Insall et al 1989) also known as the Knee Society Rating System (KSRS) or Knee Society Clinical Rating System (KSCRS) was developed by the American Knee Society. For the purpose of clarity the rating system hereafter will be mentioned as AKSCRS in this report. The AKSCRS, is a widely used outcome tool to measure pre and post operative structure and function of the knee joint following TKA (Stavem and Arnesen 2005; Lingard et al 2001).

The rating system has two components which are the knee score and the functional score. The knee score is composite score of pain, ROM, stability, flexion contracture, extension lag and alignment of the knee joint. The functional score is a composite score of walking, climbing up and down stairs and use of assistive devices. For the purpose of clarity, the knee score will be mentioned hereafter as Knee Society Knee Score (KSKS) in this report. As the functional score of the system has been proved to

be less responsive, the concern of this study is about the reliability of the KSKS which has been proved to be valid and responsive (Lingard et al in 2001). A study by Liow et al, 2000, says that reliable use of the rating system depends on the experience of the examiner administering the tool.

In the Johannesburg Provincial Hospital patients are treated by a physiotherapist until they are discharged and there is no outpatient physiotherapy programme unless they develop serious impairments. Even though the physiotherapists at Johannesburg Hospital use goniometry, which has been proved to be reliable, they lack an outcome tool which combines measurements of quadriceps weakness, flexion contracture, instability and malalignment into one score.

The KSKS is based on the subjective assessment of pain and objective measurement of stability, range of motion, flexion contracture, extension lag and alignment at the knee joint. The individual scores are combined to give the knee score which ranges from 0 to 100.

1.1 Significance of the study

The study establishes the reliability of the KSKS before administering it in further studies to predict the effects of physiotherapy on total knee arthroplasty patients at Johannesburg Hospital. In addition by establishing the inter and intra reliability of the tool a potentially useful measure is then available for clinicians

1.2 Research Question

Does the KSKS have intra- and inter-rater reliability when administered on post total knee arthroplasty patients at Johannesburg Hospital?

1.3 Aim

The aim of this study was to assess whether the KSKS can be reliably used by examiners in evaluating the knee joint of post TKA patients at the Johannesburg Hospital.

The objectives of the study were:

- To establish the inter rater reliability of KSKS
- To establish the intra rater reliability of KSKS