CHAPTER 1: INTRODUCTION

1.1 INTRODUCTION

The field of rheumatology encompasses more than 100 diseases (Schumacher, 1988; Hunter, et. al. 1995; Melvin & Ferrell, 2000). Many of these affect hand function, to a greater or lesser extent (Melvin, 1989; Trombly & Radomski, 2002). Hand function in turn plays an important role in functional ability and occupational performance (Trombly, 1989; Trombly & Radomski, 2002; AOTA, 2002). The rheumatology client is commonly known to have difficulty with both performance components (e.g. hand function) and occupational performance (e.g. fastening buttons in dressing), which influence their quality of life (QOL)(Verbrugge et al, 1991; AOTA, 2002).

The domain of occupational therapy (OT) considers performance in three aspects, namely areas of occupation, performance skills and patterns (AOTA 2002). Functional ability would fall under the areas of occupation and would include among others: Activities of Daily Living (ADL), Instrumental Activities of Daily Living (IADL), education, work, leisure and social participation. Hand function would consist of a number of performance skills, which include motor, process and communication skills as well as the patterns of the individual which include habits, roles and routines (AOTA, 2002).

Occupational therapists in the field of rheumatology have always been concerned with the functional status of clients, especially those with chronic disabling conditions. Clients are considered for OT when they risk losing function due to pain, fatigue, loss of

strength and endurance, changes in range of motion (ROM) or loss of coping skills. One or more of these problems can interfere with a number of occupational areas, including the client's self care, work, interpersonal, social and leisure time activities (Melvin, 1989; Melvin & Ferrell, 2000; AOTA, 2002).

Tests and assessments used to evaluate the above mentioned aspects are essential, and should be reliable, valid and accurate, taking into consideration the client as an individual, as well as the impact of the rheumatic disease (Stucki et al. 1999).

Twenty to 25 years ago, the effectiveness of treatment was assessed using traditional outcome measures relating primarily to the degree of synovitis, e.g. the number of swollen and tender joints, duration of morning stiffness, 50-feet walking time, grip strength and proximal interphalangeal joint (PIP) circumference (Ferraz &Atra 1989; Hunter et. al., 1995).

It has since become evident from both the literature and the rheumatologists with whom the researcher worked, that the approach to rheumatic diseases has evolved and changed over the past 20 years. This is true for both the medical management and the rehabilitation of clients with rheumatic diseases (Guccione & Jette 1990).

Previously the rheumatologist's main concern related to the client's ROM and clinical findings e.g. rheumatoid factor and/or C-reactive protein (CRP) levels. In the mid

1980's, functional ability was seen as being important in the assessment of the value of the therapy (Bombardier & Raboud 1991).

Traditionally the South African OT assessed the rheumatology client by measuring ROM, muscle and grip strength. Pain was acknowledged by the OT as having a major influence on functional ability, but was difficult to assess until the 1980's. Functional ability was evaluated by standardised hand function or functional assessments such as the Smith Hand Function Evaluation (SHE) (Smith 1973) or Jebson Hand Function Test (Jebsen et al. 1969). However, the effectiveness of these standardised tests has been questioned with regard to evaluating the total impact rheumatic diseases have on a client's functioning (Guccione & Jette 1990). Also these standardised tests fail to be effective in evaluating whether or not a client is actually having difficulty taking care of his ADLs and IADLs. The measurement of task time e.g. undoing an isolated zipper, gives no indication of whether or not clients can manage to unzip their own clothing.

The limitations of the conventional assessments and the many changes in the medical management of the rheumatology client resulted in the development and use of multidimensional assessments (MDAs). A number of arthritis specific MDAs were available at the time of the study, e.g. the Arthritis Impact Measurement Scales (AIMS), Stanford Health Assessment Questionnaire (HAQ) and McMaster's Health Index Questionnaire (MHIQ) (Meenan, 1982; Fries, et al., 1980; Chambers, et al., 1982). The value of these MDAs lie in the fact that they emphasise many more aspects of a client's

life that can be affected by rheumatic diseases than previous functional arthritic assessments.

Most MDAs are questionnaires that are either self-administered or interviewer administered in a short period of time, approximately ten minutes. Multidimensional questionnaires look at a person as a whole and how they are affected by arthritis. Since OT's formulate treatment programmes based on viewing their clients holistically, they stand to benefit from using MDAs.

A sudden and unexplained increase in the number of clients with rheumatic diseases were needing services at the Kalafong utpatient rheumatology clinic . It was thus necessary that the previous time consuming methods of assessing rheumatic clients in out patient clinics be changed in order to manage the large numbers of clients efficiently. The use of MDAs was one method adopted to reduce assessment time without decreasing quality of service.

In spite of the time gain, on a clinical level the subjective MDAs could not totally replace the objective measurements. MDAs, however, can be used for two important purposes. Firstly, as screening tools to determine which clients will need further OT investigation. Secondly, they can be used to determine the total impact a client’s arthritis has on his/her functioning.

1.2 STATEMENT OF THE PROBLEM

At Kalafong hospital, (Pretoria, South Africa) where the researcher worked, the SHE was used to assess rheumatology clients. Although MDA's have become established as indispensable clinical assessment techniques in other countries e.g. the United States of America (USA), the United Kingdom (UK) and Canada, very few have been used in South Africa (SA), and none were being used at the rheumatology clinic at Kalafong hospital.

This research project was initiated by questions the researcher wanted to answer to improve the quality of client care, after having worked at the rheumatology clinic at Kalafong hospital for almost two years. The following three questions were identified as having the biggest influence on client management.

1. **What is the most appropriate assessment tool for the specific clients that attend the Rheumatology clinic at Kalafong hospital?**

   Kalafong hospital catered mainly for black clients, most of whom spoke little or no English and some Afrikaans. The two most commonly spoken languages were Sotho and Zulu. Another factor contributing to the complexity of the population was the high level of illiteracy among the clients attending the clinic. Clients of all ages, both sexes and all spheres of life attended this clinic. The majority, however, were from disadvantaged, low socio-economic backgrounds.

The researcher experienced many difficulties in dealing with the specific clients attending the clinic. One of the biggest problems was assessing these clients' abilities and functional difficulties. Due to communication difficulties and cultural differences, the researcher could spend an hour evaluating a client's hand function, only to discover that was not his/her biggest problem. The assessment process was time consuming and sometimes a futile exercise.

Many of the existing assessment tools are also one-dimensional, either dealing with the clients medical status or their functional status, but not both. For occupational therapy intervention to be effective the OT needs to consider both.

The cultural diversity and the specific context of this population that attended the clinic required that an appropriate comprehensive assessment procedure, that addressed their specific needs, had to be used.

2. **What was the most time efficient assessment procedure to determine effectively the abilities and problems of the specific clients that attend the Rheumatology clinic at Kalafong hospital?**

   The weekly out patient clinic was attended by between 25 and 40 clients and only one OT and one Occupational Therapy Assistant (OTA) available to treat them. The clinic run by the rheumatologist started at 08h30 and ended at 13h00. This required that the clients had to see the doctor, receive their medication, and be seen by the OT and other team members when necessary, before 13h00. With such limited staff to

manage the occupational therapy component it was important to divide the work effectively between the two staff members, considering the skills of both, the scope of practice and the clients' needs.

This limited time period and high number of clients and limited staff resources required a more time efficient but effective assessment procedure than was currently used in order to cope with the workload with limited staffing resources.

On their first visit client's needed a quick, simple screening assessment, in order to determine who would benefit from a full standardised hand function assessment such as the SHE. The SHE took between 20 and 25 minutes to administer. The SHE had been used in the OT department, but was found to be of little value as the first assessment used in this clinic. Based on clinical experience the SHE had been found to be more valuable for before and after evaluations when surgery was indicated, or in medico-legal cases where hand function had to be compared to a norm or standard. Even then, there were concerns about the SHE's reliability as it was not standardised on the population served by Kalafong hospital. This again raised the issue of appropriate assessments for the specific clients attending the clinic.

3. **Would an assessment procedure with a multidimensional approach be a more efficient assessment procedure to determine effectively the abilities and problems of the specific clients that attend the Rheumatology clinic at Kalafong hospital?**

The rheumatologist with whom the researcher worked wanted to adopt a MDA approach to assessment at the rheumatology clinic. The current literature emphasised that MDA's were being used in rheumatology to determine the influence rheumatic diseases have on a person's daily life, but that they did not claim to evaluate any aspect in greater detail.

In an attempt to resolve this clinical difficulty the researcher undertook an extensive review of the relevant literature, contacted the OT who previously worked at this clinic and spoke to other OT's working in the field of rheumatology. Having done that, the researcher was still no closer to answering the before mentioned three questions, or to having an appropriate evaluation tool. The researcher decided to develop an assessment tool specifically for this population.

1.3 THE PURPOSE OF THIS STUDY

The purpose of this study was to develop a more appropriate and time efficient questionnaire which would assess the specific abilities and problems of the unique population of clients attending the weekly Rheumatology Clinic at Kalafong hospital in Pretoria, South Africa. This questionnaire would be called the Steinmann-Obermeyer questionnaire (SOQ).

1.4 AIM OF THE STUDY

The aim of the study was to develop and test the validity of a hand function assessment for rheumatoid arthritis clients.

The objectives of this study were to establish

- To develop an appropriate hand function assessment(The Steinmann-Obermeyer questionnaire SOQ) for clients attending the Rheumatology Clinic at Kalafong Hospital.
- To establish the construct validity of the SOQ by assessing the face and content validity.
- To establish the criterion –related validity of the SOQ by assessing the, convergent, concurrent and discriminative validity compared to pain, severity of deformity and disease severity.
- To establish the criterion –related validity of the SOQ by assessing the predictive validity by assessing normal subjects with the SOQ.

To this end the following hypotheses were evaluated and tested:

1.4.1 The Steinmann-Obermeyer questionnaire (SOQ) is a valid method of evaluating the functional ability of rheumatology clients treated at Kalafong hospital out patient clinic.

1.4.2 There is no correlation between the severity of the rheumatic disease and the score obtained by the SOQ.

1.4.3 There is a correlation between the disease activity and the score obtained by the SOQ.

1.4.4 There is a significant correlation between the client's assessment of their level of pain and the score obtained by the SOQ.

1.5 IMPORTANCE OF THE STUDY

The importance of this study lies in the development of a specific multi dimensional assessment tool that can be used by the OT staff at Kalafong hospital, to assess large numbers of clients attending the weekly outpatient Rheumatology clinic efficiently and effectively. The value of this assessment tool lies in the fact that it will be developed to consider the unique characteristics and context of the population that accesses the services of the rheumatology clinic. The tool will also be specifically designed to determine the comprehensive data needed by an OT to plan effective treatment such as the functional abilities and difficulties of the clients, the severity of the rheumatic disease, whether the disease is active or not and the pain level of the client.