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Development of a hand function questionnaire to evaluate occupational performance in rheumatology clients

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DEVELOPMENT OF A HAND FUNCTION QUESTIONNAIRE TO EVALUATE OCCUPATIONAL PERFORMANCE IN RHEUMATOLOGY CLIENTS

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A dissertation submitted to the Faculty of Health Sciences, University of the Witwatersrand, in fulfilment of the requirements for the degree of Master of Science (Occupational Therapy)

Johannesburg, 2008

Ethical clearance No:-R14/49

I, Izél Obermeyer, declare that this dissertation is my own work. It is being submitted for the degree of Master of Science (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.

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Third day of September, 2008

For
Danielle, Brigitte and Alexander

ABSTRACT

Purpose of this study was to develop an appropriate and valid hand function assessment: the Steinmann-Obermeyer questionnaire (SOQ) for clients attending the Rheumatology Clinic at Kalafong Hospital.

To achieve this

- the construct validity of the SOQ had to be examined by assessing the face and content validity.
- the criterion –related validity of the SOQ was assessed using convergent, concurrent and discriminative validity compared to pain, severity of deformity and disease severity.
- the criterion –related validity of the SOQ was further assessed using the predictive validity by assessing normal subjects with the SOQ.

Objective: The objective of this study was to test the following **null hypotheses**:

1.4.1 The SOQ is not 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 no correlation between the disease activity and the score obtained by the SOQ.

1.4.4 There is no correlation between the client's assessment of their level of pain and the score obtained by the SOQ.

Method. The SOQ consisted of 48 questions, was translated into Sotho and Zulu and was administered and analysed on 96 arthritic clients between 18 and 69 years of age. An occupational therapy assistant (OTA), who spoke both the tribal languages fluently, completed the questionnaire with each client. An interviewer-administered format was used because many of the clients were illiterate.

Results. After the analyses were completed, three questions were excluded and the final questionnaire consisted of 45 questions. This questionnaire was found to be a valid method of evaluating the functional ability of rheumatology clients treated at Kalafong hospital. Clients with severe functional limitations scored high on the questionnaire and those with minimal functional difficulty scored low on the questionnaire.

The questionnaire scores correlated significantly with the pain levels experienced by the clients and their disease activity. The statistical analyses also showed that there is no correlation between the questionnaire score and the deformities of the clients. Inter-rater reliability was established.

Conclusion. The 45-question occupational performance evaluation was developed, analysed and proven to be valid and sensitive for use with rheumatology clients with hand function difficulties at the Kalafong rheumatology clinic.

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NOMENCLATURE

1. DEFINITION OF TERMS

1.1 FUNCTIONAL ASSESSMENT

Melvin and Ferrell (2000) and Hunter et al. (1995) indicated that the major goal of OT in the management of clients with arthritis and related disorders was the attainment of maximal independence in daily activity. In this regard, clients with increasing physical disability feel that an important aspect of the OT programme is self-care instruction. The levels of function in bathing, feeding, and dressing and hygiene activities should be evaluated and the necessary training and assistive devices provided to help the client maintain or regain maximal independence.

Consequently, functional assessment is thus known as an assessment of a client's functional ability in the performance of ADL. In the OT practice framework, functional assessment would form part of determining a client's occupational profile (AOTA 2002).

1.2 HAND FUNCTION

When referring to hand function in the field of rheumatology, it is important to note that the emphasis has changed. In the 1950's, hand function was described anatomically as the client's ability to move his fingers actively through a full ROM. In the 1960's the strength of grasp was defined as a valid criterion for measuring hand function (Carthum, et al. 1969). In the field of rheumatology, it is evident that also in the 1960's, many physicians realised the

importance of assessing pain and the client's psychological ability to cope therewith (Ansell 1969);(Carthum, et al. 1969).

In this study the term hand function is used to describe the extent to which a client can use his/her hands to perform functional tasks. It takes into consideration the influence pain and psychological factors have on a client's ability and motivation to use his/her hands, and therefore not only the physical function of grasp strength and ROM. It thus looks at the client's performance skills, in the context of areas of occupation (AOTA 2002).

2. ABBREVIATIONS

2.1	Activities of daily living/Instrumental Activities of daily living	=	ADL/IADL
2.2	Arthritis Impact Measurement Scales	=	AIMS
2.3	McMaster Toronto Arthritis Patient Preference Disability Questionnaire	=	MACTAR
2.4	Health Assessment Questionnaire/ Stanford Health Assessment Questionnaire	=	HAQ
2.5	McMaster Health Index Questionnaire	=	MHIQ
2.6	Range of movement/motion	=	ROM
2.7	Smith Hand Function Evaluation	=	SHE
2.8	Sickness Impact Profile	=	SIP
2.9	Occupational Therapist/Therapy	=	OT
2.10	Occupational Therapy Assistant	=	OTA

2.11	Quality of life	=	QOL
2.12	Metacarpal phalangeal joint	=	MCP
2.13	Proximal interphalangeal joint	=	PIP
2.14	Carpal metacarpal joint	=	CMC
2.15	Distal interphalangeal joint	=	DIP
2.16	South Africa/South African	=	SA
2.17	Steinmann-Obermeyer Questionnaire	=	SOQ
2.18	United States of America	=	USA
2.19	Rheumatoid Arthritis	=	RA
2.20	Osteo Arthritis	=	OA
2.21	Degenerative Joint Disease	=	DJD
2.22	American Rheumatism Association	=	ARA
2.23	Visual Analogue Scale	=	VAS
2.24	Erythrocyte Sedimentation Rate	=	ESR
2.25	C-reactive Protein	=	CRP
2.26	United Kingdom	=	UK
2.27	Juvenile Rheumatoid Arthritis	=	JRA
2.28	Systemic Lupus Erythmatosis	=	SLE
2.29	Systemic Sclerosis	=	SS
2.30	Mixed Connective Tissue Disease	=	MCD
2.31	Multidimensional Assessment	=	MDA
2.32	American College of Rheumatology	=	ACR
2.33	Health-related quality of life	=	HRQOL

3 STATEMENT OF WORDS USED THROUGHOUT THE DISSERTATION

31 When the words client or clients are used, they can also mean patient or patients, irrespective of their gender.

3.2 The newly developed questionnaire will be termed the Steinmann-Obermeyer Questionnaire (SOQ).