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# PSYCHO-SOCIAL MEASUREMENT IN THE AUDIT OF DIABETES SERVICES.

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## Introduction

The NHS White Paper "Working for Patients" described audit as "systematic, critical analysis of the quality of medical care, including the procedures used for diagnosis and treatment, the use of resources and the resulting outcome for the patient". In response to "Working for Patients", the British Diabetic Association (BDA) and the Research Unit of the Royal College of Physicians (RCP) established a joint working group to develop a feasibility study for the audit of diabetes services. The feasibility study audit is designed to collect information on both the process of care (e.g. waiting times in clinic, optic fundi assessment) and outcome measures (e.g. glycosylated haemoglobin levels, foot problems). The progress of the working group has been reported elsewhere. Williams *et al* described the main process and outcome measures being piloted in selected Health Districts in the United Kingdom<sup>1</sup>, whilst Wilson *et al* described the annual review forms being used and the structure and coding of the database<sup>2</sup>. The working group views patient satisfaction and "quality of life" to be extremely important and potentially measurable aspects of the

outcome of care. The measurement of such variables is normally conducted by using self report questionnaires which have been developed to tap underlying psychological processes. Whilst both generic and disease specific psychological and "quality of life" measures exist, these are not directly applicable to diabetes audit for two main reasons. First, most measures have been developed as research tools and thus require adaptation for audit. Second, whilst some generic measures have been used in audit it is by no means clear that they are suitable for measuring the changes one would expect in the course of managing a chronic disease such as diabetes. Thus funding was sought to develop measures that would be applicable to everyday use in diabetes audit.

## Methodological Issues

The developmental work currently underway has the central aim of developing robust, valid, reliable and easy to use audit instruments for the measurement of satisfaction, "quality of life" and well-being variables in people with diabetes. The issues of reliability and validity are central as it is imperative that questionnaires

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are developed that measure what they purport to measure (validity) and do so consistently (reliability). For example a patient satisfaction questionnaire may appear to indicate that the patient is satisfied with the treatment she or he has received. However the scores may reflect social conformity rather than real satisfaction. This may be because patients often find it difficult to complain or it could be because the measure is a measure of conformity due to the way it has been worded. In addition it is important that a measure gives the same result when re-administered to the same patient within a short space of time (test-retest reliability). Also an instrument should normally have internal reliability or consistency. Todd and Bradley<sup>4</sup> describe the development of psychological scales for use with people with diabetes in some detail and present an introduction to psychometrics for health professionals who may have little experience in this area.

Research instruments are often designed to be administered, scored and interpreted by highly trained staff, under carefully controlled conditions. For audit purposes what is required is a robust instrument which can be handed to patients by, for example, the receptionist. Such measures should be capable of being completed by the patient on the basis of the instructions at the top of the page without any need for further explanation. The instruments need to be sensitive enough to pick up changes that occur, for example with changes in treatment. On the other hand the instrument should not be so sensitive as to be contaminated by extraneous variables, such as whether the patient completes the questionnaire in the clinic, or takes it home and completes it the same evening and mails it back to the clinic.

The design of instruments must also take into account the wide variability between people. Whilst for research purposes we might design a measure which is aimed at an homogeneous population, for it to be of use in audit the measure must be applicable to a population which is likely to be quite heterogeneous, except in terms of their disease entity. Also it must be recalled that the literacy level of much of the population is lower than that of the average reader of this article. Thus, instrument developers must take literacy into account. There are a number of simple to use measures of readability available in the literature and some word processing packages will also produce readability quotients<sup>4</sup>.

### The Working Group Measures

In audit not only should the instruments come up to scratch in terms of their psychometric properties, but also they must be of sufficient ease to administer, score and interpret to enable them to become an integral part of everyday practice. The challenge then is to develop measures which fulfil these criteria. The approach we have adopted involves the development of a series of "core elements" for use with all adults with diabetes, thus permitting comparison across groups [e.g. Insulin Dependent Diabetes Mellitus (IDDM) and Non-Insulin Dependent Diabetes Mellitus (NIDDM)]. Also a series of additional items are under development for more in depth use with specific subgroups and circumstances being audited. Thus we hope that our measures will be of use in assessing, for example, the effect of changes in treatment on NIDDM patients' "quality of life", or the effect of use of continuous subcutaneous insulin infusion on psycho-social state, as well as identifying differences between clinics both in general practice and hospital

services.

Our minimum audit tool to measure diabetes-related psychological and behavioural outcomes is being developed for use in conjunction with the audit of metabolic and other outcomes of diabetes care which are the focus of the BDA/RCP study. The minimum audit tool includes self-report questionnaire items and tests of knowledge. It is intended to measure satisfaction with the service provided, psychological well-being, social effects of diabetes and its management, as well as knowledge of diabetes. "Add-on" tools will be developed to explore reasons for dissatisfaction, or other dysfunctional results.

We have built on the work of Clare Bradley and colleagues on well-being and satisfaction and the work of Keith Meadows and colleagues on knowledge measurement. Thus rather than "reinventing the wheel" existing questionnaires are being adapted as appropriate for audit purposes and redundancy removed so as to result in short, easy to use scales. Whilst these shorter scales may not have some of the finer discriminating properties of the research tools on which the audit instrument is based, the purpose of audit must remain clearly in focus - to highlight aspects of practice so as to facilitate improvement.

To measure "quality of life" we have developed a new instrument which it is hoped will prove able to give good insight into the impact of diabetes. Whilst this instrument has some similarities to the diabetes quality of life instrument (DQOL) developed as part of the diabetes control and complications trial (DCCT) in the United States<sup>5</sup>, it is in many respects very different. At present we are conducting a pilot study of our audit of diabetes "quality of life" measure (ADDQoL) in a hospital

diabetes outpatient clinic. Shortly we will be extending our development work to other hospitals taking part in the national BDA/RCP feasibility study. It is planned that at a later stage we will be extending the work into general practice to ensure that these measures are applicable to the primary care setting.

In overview then we are still at a reasonably early stage in the development of psychosocial measures for diabetes audit. The study currently underway represents an initial development for the UK of a diabetes-related "quality of life" index for routine use by clinicians in diabetes audit.

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