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Oswestry Disability Index Scoring Made Easy

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Abstract

INTRODUCTION

Low back pain effects up to 80% of the population at some time during their active life. Questionnaires are available to help measure pain and disability. The Oswestry Disability Index (ODI) is the most commonly used outcome measure for low back pain. The aim of this study was to see if training in completing the ODI forms improved the scoring accuracy.

PATIENTS AND METHODS

The last 100 ODI forms completed in a hospital's spinal clinic were reviewed retrospectively and errors in the scoring were identified. Staff members involved in scoring the questionnaire were made aware of the errors and the correct method of scoring explained. A chart was created with all possible scores to aid the staff with scoring. A prospective audit on 50 questionnaires was subsequently performed.

RESULTS

The retrospective study showed that 33 of the 100 forms had been incorrectly scored. All questionnaires where one or more sections were not completed by the patient were incorrectly scored. A scoring chart was developed and staff training was implemented. This reduced the error rate to 14% in the prospective audit.

CONCLUSIONS

Clinicians applying outcome measures should read the appropriate literature to ensure they understand the scoring system. Staff must then be given adequate training in the application of the questionnaires.

Keywords: Outcome-measure questionnaires, Oswestry Disability Index, Scoring system, Audit

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Low back pain is one of the commonest causes of disability and affects most members of society at some time in their lives.[1–3] Several questionnaires are available to help measure the functional status of a patient.[4–8]

The Oswestry Disability Index (ODI)[7,9] is the most commonly used outcome-measure questionnaire for low back pain in a hospital setting. It is a self-administered questionnaire divided into ten sections designed to assess limitations of various activities of daily living. Each section is scored on a 0–5 scale, 5 representing the greatest disability. The index is calculated by dividing the summed score by the total possible score, which is then multiplied by 100 and expressed as a percentage. Thus, for every question not answered, the denominator is reduced by 5. If a patient marks more than one statement in a question, the highest scoring statement is recorded as a true indication of disability. The questionnaire takes 3.5–5 min to complete and approximately 1 min to score.[7]

The aim of this study was to see if training in completing the ODI forms improved the scoring accuracy.

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Patients and Methods

One hundred consecutive ODI forms were reviewed retrospectively and errors in scoring recorded. The correct method of scoring was explained to the staff and further training provided. A chart with all possible scores was also developed as a scoring aid (Fig. 1). Laminated posters of the chart were displayed in the out-patient clinics. A smaller, pocket version of the scoring chart was also provided to the staff.
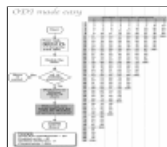
Figure 1

The scoring system of the ODI.

Following this education process, a prospective audit was conducted on 50 consecutive questionnaires that had one or more unmarked sections.

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Results

This retrospective study showed 33 out of 100 forms were incorrectly scored. In two forms, all 10 sections were completed but the scores had been added up incorrectly. The remaining 31 questionnaires had one or more unmarked sections that had been considered not applicable by the patient. The section most commonly unanswered related to the patient's sex life. The prospective study of the 50 forms with one or more sections not answered reduced the error rate from 100% (31 of 31) in the initial audit to 14% (7 of 50).

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Discussion

Fairbank *et al.*[7] recommend that, with ODI questionnaires where one or more sections are unanswered, the correct score should be calculated by reducing the denominator by 5 for every unanswered section. Our retrospective study showed that the staff in the out-patient clinic were calculating the score out of

50 even when one or more sections had been left unanswered. Hence, the calculated scores were lower than the actual score. Whilst this difference has only a slight impact with low scores, the effect is greater with high scores and obviously even greater when more than one section of the form was left unanswered (Figs 1 and 2).
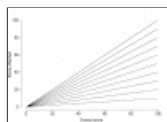
Figure 2

The relationship between the score obtained and the correct score. The lines represent the number of sections answered from only 1 (bottom) to all 10 (top).

Following staff training and the creation of the ODI scoring chart, the error reduced from 100% (31 of 31) to 14% (7 of 50) in cases where one or more sections of the form were not completed. In the cases of 7 forms (14%) not correctly scored, it was found that the staff members were absent at the time of the training session.

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Conclusions

Outcome measures form an important part of patient assessment during treatment and also help in research and maintenance of the standards of medical care. This audit demonstrates the importance of training all staff in the correct application of an outcome measure. The chart was shown to be a useful aid in maintaining the correct application of the instrument.

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