The research commercialisation office of the University of Oxford, previously called Isis Innovation, has been renamed Oxford University Innovation

All documents and other materials will be updated accordingly. In the meantime the remaining content of this Isis Innovation document is still valid.

URLs beginning www.isis-innovation.com/... are automatically redirected to our new domain, www.innovation.ox.ac.uk/...

Phone numbers and email addresses for individual members of staff are unchanged

Email : enquiries@innovation.ox.ac.uk
Overview of the Development Phases of the Oxford Ankle Foot Questionnaire for Children

Morriss C1; Doll H1; Theologis T2; Wainwright A2; Davis N2; Churchman D3; Willet K2; Fitzpatrick R2

Abstract

Objectives: The Oxford Ankle Foot Questionnaire for Children (OxAFQ-C) was developed to meet the need for a supplement clinical assessment methods to evaluate the effectiveness of interventions.

Methods: The development of the questionnaire was conducted in three phases.

Introduction and Objectives

Ankle and foot problems are a common reason for children to present in clinic, and often treated using orthoses. The Oxford Ankle Foot Questionnaire for Children was designed to supplement clinical assessment methods to evaluate the effectiveness of interventions from both the child and parent/ caregiver perspectives.

Methods

The development of the Questionnaire was conducted in three phases:

Phase 1 – Understanding the patients experience of their condition through qualitative research.

Focus groups were convened with children affected by foot and ankle problems and exploring a typical ‘day in the life of a child’ from their perspective. Here we present the development of a draft questionnaire of children’s foot or ankle problems from both the child and parent/caregivers perspective. We identify key issues to be important, and the results formed the basis of the questionnaire.

Phase 2 – Evaluation of test version in order to develop scales

Questions were constructed using 25 issues raised by children and parents/caregivers in Phase 1, and issues concerning the appearance of the foot, the way in which the child walked and swelling, which a total of 26 items. Items requiring a score on a five-point scale indicating how frequently the issue affects the child, from never (score = 4) to always (score = 0). A survey of 125 children and their parents was carried out to determine the scaling, reliability and validity of the questionnaire. Initial item analysis and factor analysis to devise the scales and refine the scoring.

Phase 3 – Prospective study and further testing

In the third phase, a prospective study was conducted with 80 children attending trauma and elective orthopaedic clinics to assess responsiveness and longitudinal validity of the domain scales. Children and parents completed questionnaires at an initial outpatient appointment (baseline) and again within two weeks (retest), and finally a third set of questionnaires to complete again after two months (follow-up). The follow-up questionnaires included an additional global rating of change ‘transition’ item asking respondents to indicate whether they thought, overall, the foot or ankle problem was the same, better or worse, on a seven-point scale using increments of ‘slightly’, ‘quite a bit’ and ‘a lot’ better or worse. The global rating of change provided a patient-based anchor for comparing the magnitude of changes in domain scores.

Results

In our study, trauma patients had poorer scores than elective patients at baseline, and showed greater improvement at follow-up. For trauma patients, mean changes in percentage scores were as expected large and all effect sizes were large (>0.8). For elective patients, mean changes in percentage scores were large and all effect sizes were moderate. The Minimal Detectable Change (MDC90), which is an indication of measurement error, ranged from 6 to 8 points. For elective patients, mean changes in percentage scores were large and all effect sizes were moderate. The Minimal Detectable Change (MDC90), which is an indication of measurement error, ranged from 6 to 8 points.

Conclusion

Having established that the Oxford Ankle Foot Questionnaire meets prevailing standards, the questionnaire can now be used for clinical and research purposes, to evaluate the effectiveness of interventions used to treat foot or ankle problems in children of 5 to 16 years. The application of this instrument will allow the evaluation of interventions from both the child’s and parent’s perspective, and it can also be used to judge whether children are able to walk, or who have a significant proximal lower limb component to their disability.

The Oxford Ankle Foot Questionnaire makes it possible to evaluate the effectiveness of many applicable interventions, or how changes in the child’s condition may affect their life and provides information on how the child feels it makes a difference, not only from a functional perspective, but also emotionally and socially.

It will also be possible to assess the use of orthoses in conditions that cause pain and loss of function. Potentially, different types of orthoses could be compared using this questionnaire to see which children find them more acceptable and usable. Orthoses could be compared with other interventions such as casting to assess which children rate foot orthoses the most highly when recovering from ankle and/or foot trauma, or orthoses compared with other methods of managing inflammatory conditions.