Getting the measure of PASCOM

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This pilot study evaluates the use of the data collection tool in auditing MSK podiatry and reviewing patient outcomes after intervention.

Outcome measures in healthcare settings give practitioners the ability to learn about the effectiveness of an intervention, improve performance for patient care, provide value-based care and improve overall efficiency of services (ICHOM, 2020). However, what really matters to patients is that the product of the healthcare intervention will influence their wellbeing as well as increase their lifespan (O'Connor and Neuman, 2006). Within musculoskeletal (MSK) podiatry the main outcome measures focus around pain, function, balance and quality of life (Hendry et al, 2019). Presentations of foot, ankle and lower limb pathology to MSK podiatric practice span several specialist areas, including rheumatology, paediatric, sports injury and mechanical overuse (Cosma and Gavan, 2017; Redmond et al, 2006; Sperryn and Restan, 1983).

Often the use of an outcome scale is favoured because of the ease of application, scoring and collation of data with direct interaction from the patient (Walmsley et al, 2010). The simplest measure is a visual analogue or numerical rating scale, which is most often completed by the patient but can also form part of an assessment discussion (Childs et al, 2005). More complex foot-specific measures have been adapted to collate multidimensional views on the problems experienced by the patient beyond that of a measure of pain (Riskowski et al, 2011). These measures can be generic or extend to specific scope of practice: surgery, balance changes and quality-of-life outcomes. The MOXFQ was initially designed to assess pain, walking/standing and social interaction outcomes after foot surgery (Morley et al, 2013; Dawson et al, 2006). This easy-to-use scoring system has also been implemented in other practice as it covers a broader dimension of foot disability (Bawono et al, 2018) and has also has the broadest scope of application as a patient-reported outcome measure (PROM) (Jia et al, 2017).

PASCOM software was originally developed to gather outcome data on podiatric surgery intervention but has been recently promoted in other areas of podiatric practice. The software enables users to gather data about patient demographics, specific diagnosis of complaint, numerical pain score and MOXFQ pre- and post-intervention as well as quality of life (see Figure 1, overleaf) (College of Podiatry PASCOM Working Party, 2018). Currently, the only published datasets using this software are audits of practice in podiatric surgery (Maher, 2017) and from developing a diabetic foot clinic (Morley and Webb, 2019). Therefore, the main aim of this audit was to measure and review patient outcomes collected utilising the PASCOM software to evaluate the data output during a course of MSK podiatry intervention.

PASCOM AND DATA AUDITING

There is a paucity of information about the effectiveness of MSK podiatry interventions. Outcome measures used to assess and evaluate services are vast and not yet directly specific to MSK practice. A visual analogue scale (VAS) and the Manchester-Oxford Foot Questionnaire (MOXFQ) are most frequently used in MSK care and are the main outcomes included in the PASCOM software. The aim of this audit is to review the effectiveness of PASCOM-10 in collating outcome measures of MSK podiatry contacts while also exploring the patient demographics and presentation.

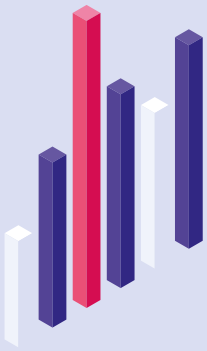
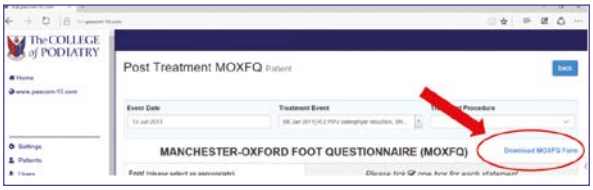


FIGURE 1: Snapshot of PASCOM-10 software indicating that the MOXFQ form is available to download. To register your practice, go to **pascom-10.com**



Methods

Over a 12-month period (August 2018 to August 2019), 86 new MSK referrals to Hammersmith and Fulham Podiatry Service, Central London Community Health NHS Trust, were invited to take part in an audit of the data collected from routine MSK podiatry assessment. Patients provided verbal consent, and they were informed of the main aim of the audit and data being collected.

Patients were registered on the PASCOM software at initial assessment: gender, age, diagnosed pathology and treatment were recorded by the MSK podiatrist and a pain numerical visual analogue scale (VAS) and MOXFQ was completed by the patient. An appropriate treatment plan was agreed and implemented with a review appointment arranged. On reviewing the patient, the VAS and MOXFQ was completed again; this continued until the period of care was completed and the patient was discharged or referred to another service. The number of appointments and final outcome from the episode of care was also recorded.

The VAS ranges from 0 to 10 with a score of 10 indicating the worst pain. The MOXFQ comprises three domains that evaluate and collate the patient's response to walking and standing (seven items from the questionnaire) direct pain (five items) and social interaction (four items). A Likert scale reporting the incidence from 'none of the time' to 'all of the time' is scored 0 to 4, with a score of 4 the most severe. This raw scale score is converted to a metric from 0 to 100 where 100 is the most severe, resulting in an individual score for each of the three domains (Dawson et al, 2006). Demographic and qualitative data were analysed statistically.

Results

From the overall data of 86 contacts, 49 complete sets of data were available before and after treatment. The remaining 37 had absent scores recorded for either one of more VAS and MOXFQ outcome measures and therefore were excluded from statistical analysis but remained in the demographic and descriptive reporting of the audit.

The complete population studied (n=86) consisted of 67 females and 19 males. Their average age was 47+/-18 years. The most frequently diagnosed MSK complaint was plantar fasciopathy seen in 32 of the contacts, with the least frequent condition observed being in the knee with patellafemoral pain presented only once over the time period.

Metatarsalgia was defined as a spectrum of soft tissue pathologies that create pain in the forefoot under one or more metatarsal (Besse, 2017). The combined frequency of all pathologies diagnosed are presented in Table 1.

The outcome measure for VAS and MOXFQ pain domain showed a statistically significant improvement after the intervention was completed with 4 points on the VAS numerical rating pain score [pre-intervention average 7.5 (+/-1.7); post-intervention average 3.5 (+/-2.5) $p>=0.0005$]. The MOXFQ domains showed similar improvements from pre- and post-treatment scores with the pain domain improving from 63.2 (+/-17.5) to 35 (+/-20.8) $p>=0.0005$, walking and standing improving from 62.9 (+/-21.8) to 32.8 (+/-22) $p>=0.0005$ and social interaction domain also improving from 56.5 (+/-19.5) to 33.4 (+/-22.5) $p>=0.0005$.

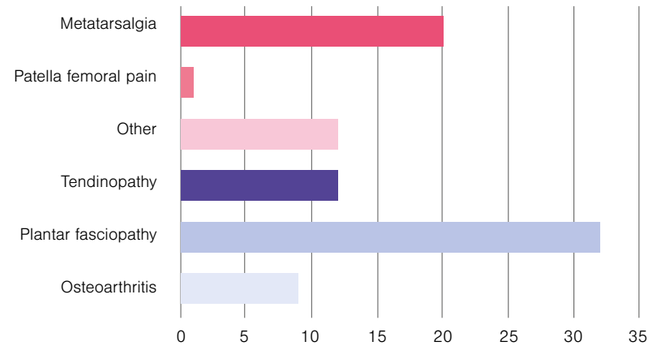
Discussion

The purpose of this audit was to capture outcome data using the PASCOM software regarding the frequency of pathology and pre- and post-treatment PROMs from patients presenting to an MSK podiatry service. From the sample included in the audit, females were more likely to present to the clinic than males. It is well observed in the literature that there is a higher prevalence of foot problems in females than males (Dufour et al, 2017; Hill et al, 2008). However, the exact cause of this difference is still unclear regarding whether the higher percentage of females is a true representation of gender bias to foot problems and anthropometrics or if there are more complex social and behavioural issues related to healthcare interactions, with females more likely to seek out treatment and advice (Mesa, 2018; Himmelstein and Sanchez, 2016).

Foot pathology in MSK podiatry is often significantly correlated to age (Dufour et al 2017; Menz et al 2006; Badlissi et al 2005). However, the results from this audit indicated that the patients in middle age are more likely to have MSK-related foot problems and that there is a wider demographic to the frequency of problems across all ages. These results support the continual development of MSK podiatry services in the NHS, which should therefore be available to all who have a foot problem rather than specifying accessibility only to the older adult (Thomas et al, 2019; MacFarlane, 2017). The type of pathology presented to the clinic is also reflective of the younger population, with the highest frequency being plantar fasciopathy. This is reported to be more prevalent in middle age and is related to activity and general health (Monteagudo et al, 2018; Palomo-López et al, 2018).

The incidence of osteoarthritis (OA) in the foot is more frequently seen as people age (Trivedi et al, 2010), and therefore it is possible that observations in this reported sample were lower than the normal prevalence due to the distribution of age in the group studied. Metatarsalgia, however, the umbrella term used to classify any soft tissue pain under one of more metatarsal region of the forefoot (Besse, 2017), gives a non-specific diagnosis to the presenting problem. Individual pathologies do not respond to a collective treatment, with Morton's neuroma having effective surgery requirements, and early conservative management being

TABLE 1: Diagnosis frequency of presenting primary complaint



important in plantar plate tears (Valisena et al, 2018). It is difficult to compare the incidence of forefoot pathologies as there is a vast array of terminology that overlaps and clouds the definitions of specific problems, although this audit has shown that the forefoot is a common area of MSK pain.

All of the outcome measures collated in this audit showed a statistically significant (but not clinically significant) improvement from the data captured pre-intervention and that reported post-intervention. This indicates that MSK podiatry intervention is effective at reducing the severity of pain, improving social interaction and walking and standing for patients, and that the PASCOM software is a useful tool to report this. VAS as an outcome measure is well established in MSK podiatry and has been used previously as an objective indication to the effectiveness of pain reduction in OA of the first metatarsophalangeal joint (Menz et al, 2019), heel pain (Melero-Suárez et al, 2018) and foot orthoses for rheumatoid arthritis (Gijon-Nogueron et al, 2018). However, MOXFQ, which was initially developed for surgical measures, has only been reported as being effective in other patient groups by a small number of papers (Bawono et al, 2018; Jia et al, 2017). The positive correlation between the VAS pain pre- and post-intervention and the pain domain of the pre- and post-intervention MOXFQ indicates that the two measures report the same perception of pain and are both valuable to indicate PROMS. Demonstrating this correlation supports the use of MOXFQ in the MSK setting and the value of further work on the specificity of this tool to the MSK patient.

Collating data on PASCOM was a worthwhile exercise and gathers suitable PROMS for MSK podiatry in one location that can be easily analysed and processed. Improving the consistency of practitioners measuring all outcomes in MSK podiatry clinics would enhance future reviews. An acknowledged limitation of this audit was the inconsistency of data collection, which could have been due to time constraints or cultural practices within the profession. Using the current PASCOM system in a busy NHS clinic may challenge the time available for a clinician to complete all inputs and a simpler format to the program could lead to improved compliance. Encouraging changes in practice, particularly at post-intervention review, would also help achieve a complete set of all outcome measures. Gathering rich data from MSK podiatry practices will support the development of best practice and enhance patient care.

CONCLUSION

PASCOM software, including the VAS and MOXFQ outcome measures, is an effective way to collate data on MSK presentations. The reported outcomes showed an improvement in patient perceptions of the interventions implemented and there was correlation in the pain data across the individual measures. Data accuracy and culture changes to capturing MSK outcome measures do need to improve with greater emphasis placed on the importance of understanding the need to assess and audit the value of MSK podiatry services.

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