

A Prospective Analysis of the Shoe Fitting Service as Part of a Specialist Multidisciplinary Foot Clinic

C Gooday¹, K Panter², K Dhatariya¹

¹Diabetic Foot Clinic, Elsie Bertram Diabetes Centre, Norfolk and Norwich University Hospital NHS Foundation Trust, Norwich, UK ²Ken Hall Footwear Ltd, Kettering, UK

Background: Foot ulceration and subsequent amputation is a devastating - but preventable - complication of diabetes. It accounts for £1 in every £175 spent in the UK National Health Service¹. Table 1 shows where this money is spent. Effective interventions which reduce the incidence of diabetic foot disease could contribute to significant savings. Footwear is often cited as the most common cause of foot ulceration². In patients who are classified as high risk for foot ulceration or those who have a history of foot ulceration custom made footwear is recommended to prevent ulcer recurrence. The effectiveness of footwear in preventing ulceration is varied and influenced by the appropriateness of the design³. Adherence to wearing custom made footwear is often low, increasing the risk of ulceration⁴. Furthermore patients are often unable to say whether the shoes are comfortable or not because of the presence of neuropathy. Our multidisciplinary diabetic foot clinic is a tertiary centre of excellence for the management of diabetic foot complications. Within the service there is a weekly dedicated footwear clinic with >800 contacts per annum. Only patients with foot deformity which cannot be accommodated in an 'off the shelf' shoe are referred to this service. We have previously demonstrated high levels of patient satisfaction with this service⁵. A key factor in the successful prevention of recurrent ulceration is regular follow up by the foot protection team.

Aim: To analyse the type of patients referred for footwear, manufacture times, fit and comfort of the shoes and the proportion of patients who attended for follow up.

Methods: Data was available on 90% of the 170 new referrals from the diabetic foot clinic to the footwear service made between 2011 and 2014 (n=153). At baseline the most serious reason for referral was recorded. Patients were asked to complete a Likert Scale to grade the footwear from 1 to 6, with 1 being 'very uncomfortable' and 6 being 'extremely comfortable'.

Results: Average age at referral for shoes was 69.4 years (±SD12.6). 109 (71%) patients were male. Figure 1 shows the main reason for referral to the shoe fitting service. The average time from first appointment to shoe fitting was 9 weeks (range 3-20). 28% of shoes were issued within 4-5 weeks usually at their 1st fitting. 57% of patients with more complex foot deformity required a 2nd or 3rd fitting prior to issue. Figure 2 shows the proportion of difference types of footwear being provided by the service. Modified stock shoe with/without insole was the most commonly issued. After being issued with the shoes the patients were assessed 4-6 weeks later. In 75.4% of cases the shoes had not caused any problems, both the patient and the shoe fitter were happy with the fit. In 10% of cases the shoes required minor modifications. And in 1 patient the shoes were linked to the development of an ulcer which healed quickly after the shoes were modified. 14.3% of patients that were issued with shoes did not attend the re-assessment appointments and were lost to follow-up.

The results of the Likert scale are shown in figure 3, with 85% of patients grading the shoes as 5 or above.

The average cost of footwear was £357 (€497) [range £43-£670 (€60-€937)].

Patients were encouraged to bring their shoes in for repair. During the study period 57 shoes were brought back for repair with an average cost of repair £157 (€219).

Ulceration Type	Weekly Cost	
	£	€
Simple Ulceration	73	101
Osteomyelitis	189	263
Infected neuro-ischaemic ulcer	82	114
Charcot Foot	95	132

Reason for Footwear Referral Figure 1

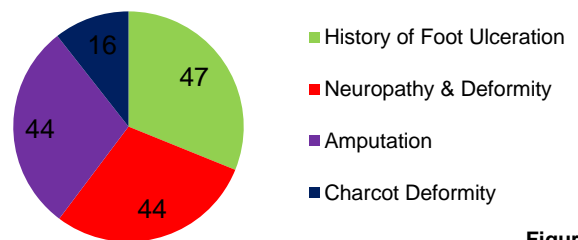


Figure 2

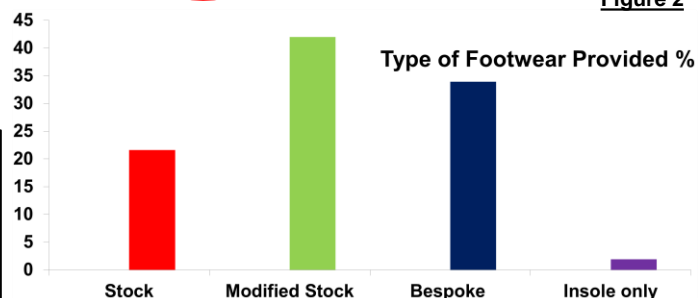
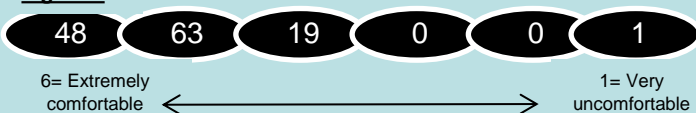


Figure 3



Conclusion: This analysis has shown that both the clinician and patient agree that the footwear provided in our clinic is a good fit with few problems. Patients found the shoes acceptable, with 89% returning to be provided with a second pair. However 14% of patients were lost to follow-up; The loss to follow up might be because of problems with fit, appearance or a lack of understanding of the importance of this footwear and requires further analysis. The high proportion of modified stock and bespoke footwear reflects the clinic's referral criteria of only providing footwear to those with foot deformity, and this is reflected in the average cost of the footwear £357, however this is substantially lower than the cost of healing a foot ulceration

References

- Kerr M et al Diabetic Medicine 2014;32(12):1498-1504.
- Reiber GE et al Diabetes Care 1999;22:157-62.
- Healy A et al Journal of Diabetes and Its Complications 2013;27: 391-400.
- Waijman R et al Diabetes Care 2013;36:1613-1618.
- Gooday C et al Diabetic Foot Journal 2011;14(1):33-35