Cost-effectiveness analysis of a community-based treatment for podoconiosis lymhpoedema in the East Gojjam zone, Ethiopia

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Background: We conducted a pragmatic, randomised controlled trial of a hygiene and foot-care intervention for people with podoconiosis in the East Gojjam zone, northern Ethiopia. Participants were allocated to the immediate intervention group or the delayed intervention group (control). The 12-month intervention included training in foot hygiene, skin care, bandaging, exercises, and use of socks and shoes, and was supported by lay community assistants.

Methods: The cost-effectiveness analysis was conducted using the cost of productivity loss due to acute dermatolymphangioadenitis (ADLA), a complication characterised by fever, rigors, and a rapid increase in pain and swelling of the leg. The health outcomes in the cost-effectiveness analysis were health-related quality of life measured using the Dermatology Life Quality Index II (DLQI) and the number of ADLA episodes.

Results: The cost of the foot hygiene and lymphoedema management supplies was 376 EBT (£33) per person per year. The cost of delivery of the intervention, including transportation, storage, training of lay community assistants and administering the intervention was 1890 ETB (£179) per person. Participants who received the intervention had a lower number of ADLA episodes and less days away from economic activity due to ADLA (Table 1). Dermatological quality of life measured using DLQI was higher (scores were lower) in the intervention group compared to the control group (Table 1). Results of the cost-effectiveness analysis showed that the average cost per ADLA episode avoided was 43 ETB (£3.78). Probabilistic sensitivity analyses conducted using DLQI and ADLA episodes demonstrated that in 40% of cases the intervention was less costly and more effective than control and in 60% of cases it was more costly and more effective than the control (Figure 1).

Table 1. Trial outcomes used in the cost-effectiveness analyses

Outcome	Control mean (SD)	Immediate treatment mean (SD)
DLQI scores		
Baseline	10.22 (5.59)	10.91 (6.24)
3 months	10.52 (7.13)	9.03 (6.72)
6 months	11.26 (6.55)	8.92 (7.00)
9 months	12.04 (5.87)	8.72 (6.71)
12 months	11.38 (6.29)	8.80 (6.87)
Number of ADLA episodes/month		
Baseline	2.79 (1.83)	3.01 (3.01)
3 months	3.47 (2.58)	3.02 (2.12)
6 months	3.20 (2.65)	3.04 (2.09)
9 months	3.27 (2.73)	2.99 (2.34)
12 months	3.21 (2.10)	2.61 (1.54)
Days totally unable to work /month		
Baseline	5.58 (4.30)	5.65 (4.11)
12 months	5.08 (3.90)	4.38 (3.93)
Days with reduced activity/month		
Baseline	4.59 (4.43)	4.55 (4.50)
12 months	3.86 (3.30)	3.59 (3.47)

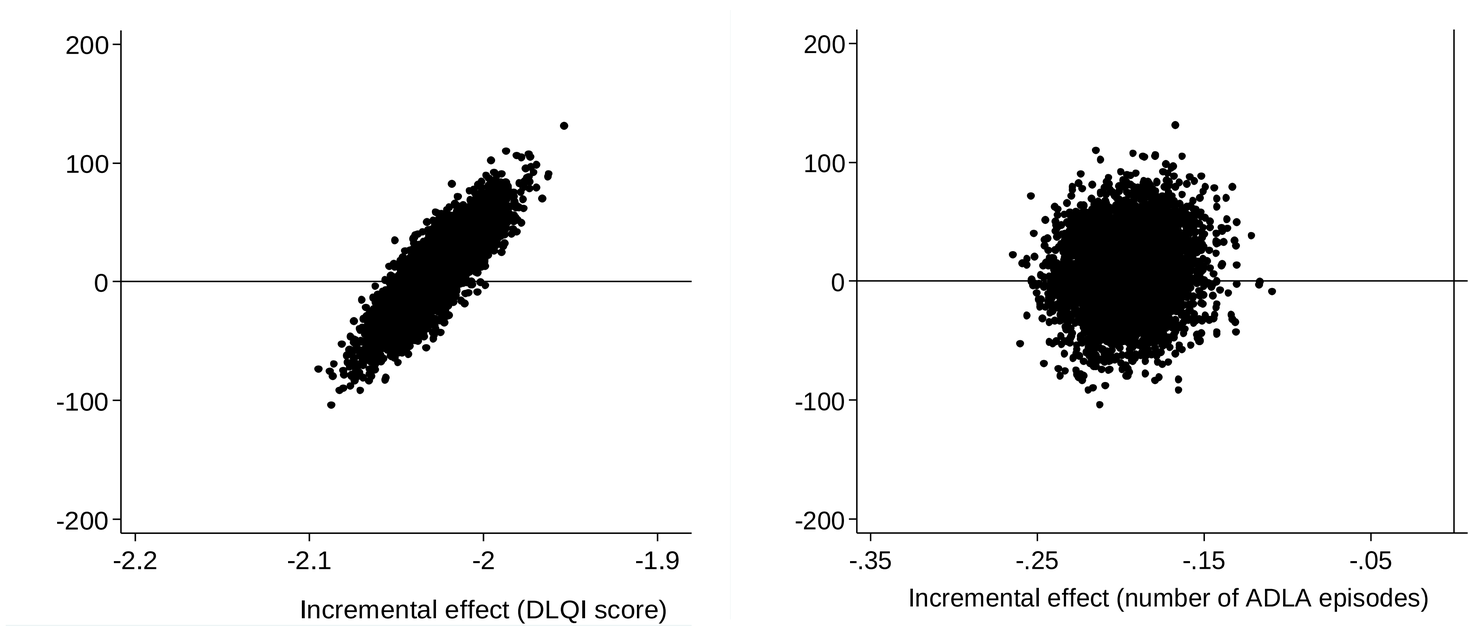

Figure 1. Cost-effectiveness planes generated using two effectiveness outcomes: DLQI and the number of ADLA episodes. The graph shows 5,000 bootstrap estimates adjusted using a generalised linear model.

Conclusions: Sensitivity and scenario cost-effectiveness analyses are currently in progress. Results will be disseminated through publications in scientific journals and at major conferences, in the wider community and to relevant stakeholders.

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