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# Early integrated palliative care in patients newly diagnosed with cancer in Ethiopia: a randomised controlled trial and cost-consequence analysis



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## Abstract

**Background** Deaths due to non-communicable diseases are rising worldwide, with low-income and middle-income countries (LMICs) particularly affected. Palliative care can reduce pain and suffering for patients with incurable disease. A gap in access to palliative care and research to support its implementation exists in LMICs, and cancer care is a particularly problematic area. We designed a pragmatic study to better understand the implementation of home-based palliative care, patient-reported outcomes, costs, and consequences in Addis Ababa, Ethiopia.

**Methods** A single-blind, single-site, randomised, controlled trial of standard cancer care versus standard cancer care plus early integrated palliative care in patients newly diagnosed with cancer was performed at the Black Lion Outpatient Oncology Clinic (Addis Ababa, Ethiopia). The palliative care intervention was home-based and delivered by Hospice Ethiopia nurses. Follow-up was done at 4–12 weeks and at 8–16 weeks at the discretion of the oncologist. Sample size was determined by ability to detect a change in mean African Palliative Care Association Palliative Outcome Score. A cost-consequence analysis was done for patients who completed all three study visits. Ethical approval was granted by Addis Ababa University and Yale University. All participants signed or thumb-printed written informed consent. The study is registered at ClinicalTrials.gov, NCT03712436.

**Findings** 98 adults were enrolled. The mean age was 49.5 years and 66% of participants were women. 27 participants completed all three study visits. Significant improvements in patient-reported outcomes were seen ( $p=0.0025$ ). Mean total health-care costs to the patient were Ethiopian birr (ETD) 40 430 (US\$979); mean palliative care costs to Hospice Ethiopia were ETD 765 (\$19) per patient. Those receiving standard cancer care reported higher out-of-pocket payments for medical care and increased lost wages of an informal caregiver. Out-of-pocket payments for medical care and lost wages were multiple times higher than an average yearly salary (ETD 5810 [\$141] and ETD 74900 birr [\$1814.9] respectively). By the end of study, health-care costs, health-use, and mortality had all increased.

**Interpretation** Delivery and integration of early, home-based, and low-cost palliative care into cancer care is possible in a LMIC setting. Widespread implementation of palliative care is likely to be a resource-sparing and poverty-reducing strategy in LMICs.

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## Contributors

ER, LG, MF, YM, and TW contributed to the design of the study. All authors contributed to the analysis, interpretation, and discussion of results. All authors have seen and approved the final version of the Abstract for publication. All authors had full access to all the data in this Abstract and had final responsibility for the decision to submit for publication.

## Declaration of interests

We declare no competing interests.

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