



Ethnobotanical study of plants used in management of diabetes mellitus in Eastern Uganda

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ABSTRACT

Ethnopharmacological relevance: Diabetes mellitus (DM) is the fourth leading cause of morbidity and mortality among non-communicable diseases affecting about 422 million people worldwide and an estimated 1.5 million deaths directly attributed to diabetes each year with a prevalence of approximately 4.1% in Uganda. The disease is on an unprecedented rise in developing countries yet access to conventional diabetes medication is a huge challenge due to limited resources. Moreover, the current management and treatment options are life-long, expensive and associated with undesirable side effects. Consequently, there is widespread use of complementary and alternative medicines, mostly herbal medicines in the management of DM in Uganda.

Aim of the study: To conduct an ethnobotanical study about medicinal plants for the management of DM in Eastern Uganda, a resource-limited area with rich plant biodiversity.

Materials and methods: An ethnobotanical survey was conducted in eight districts of Eastern Uganda. Eighty-six TMPs were interviewed using semi-structured questionnaires. Data on screening of DM, medicinal plant harvesting, herbal medicine preparation, packaging, posology and toxicities were generated. Data analysis was conducted using SPSS software version 26.

Results: Sixty-one plant species belonging to 38 families and 59 genera were used by the TMPs in the preparation of herbal remedies for the management of symptoms of DM. The most commonly used plant species were *Kigelia africana*, *Tamarindus indica*, *Aloe vera*, *Erythrina abyssinica*, *Entada abyssinica*, *Carica papaya*, and *Maytenus senegalensis*. The most frequently used life forms were trees (63.2%) and herbs (20%) belonging to families Fabaceae (11.4%) and Asteraceae (10%). Roots and leaves were the most used plant parts harvested predominantly from the wild. Most herbal remedies were prepared as decoctions and administered orally with no reported toxicities.

Conclusion: A wide range of medicinal plants are used by TMPs for management of diabetes in Eastern Uganda. Scientific evaluation of the antidiabetic potential, phytochemistry and toxicology of these remedies is needed to validate their use and inform the production of improved herbal medicines or discover novel molecules for effective management of DM.

1. Introduction

Diabetes mellitus (DM) is a group of heterogeneous disorders

characterized by hyperglycemia and glucose intolerance resulting from insulin deficiency, impaired effective insulin action or both (Ozougwu, 2013). Diabetes was the direct cause of 1.5 million deaths in 2019 and

List of abbreviations: BUFHS, Busitema University Faculty of Health Sciences Research and Ethics Committee; DM, Diabetes mellitus; GLP-1, Glucagon like peptides; ICF, Informant Consensus Factor; LMICs, Low-and middle-income countries; SSA, Sub-Saharan Africa; TMPs, Traditional medicine practitioners.

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