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Prevalence and predictors of traditional medicine use among persons with diabetes in Africa: a systematic review

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The utilization of traditional medicine (TM) is prevalent among the general population in Africa; however, its use among individuals with diabetes in the region remains underdocumented. This review aimed to synthesize the available literature to identify the prevalence and predictors of TM use among persons with diabetes in Africa. A systematic search was conducted across multiple databases, including MEDLINE, Embase, CINAHL, and AMED, covering studies published from 2000 to April 2023. Of 1560 records identified, 24 articles met the inclusion criteria. The prevalence of TM use varied significantly, ranging from 12.4% to 77.1%, with a median prevalence of 50%. TM was commonly used concurrently with conventional medicine (CM) (35.4–88.4%), with a majority (63.8–91.3%) not disclosing TM use to healthcare providers. Female gender, long diabetes duration, use of oral antiglycaemic medication and family history of diabetes emerged as the most common factors that predicted the use of TM. This review highlights the widespread use of TM among individuals with diabetes in Africa, often in conjunction with CM. The high prevalence of undisclosed TM use emphasizes the urgent need for healthcare providers to actively inquire about TM use during clinical consultations to address potential herb–drug interactions and adverse effects.

Keywords: Africa, alternative medicine, diabetes, systematic review, traditional medicine.

Introduction

Diabetes is a pressing global health concern, particularly in the context of the African continent, emphasizing the need for focused attention.[1] As of 2021, there were approximately 537 million adults ages 20–79 y worldwide affected by diabetes, and this figure is projected to rise alarmingly to 783 million by 2045.[2] Although the prevalence of diabetes in Africa is relatively low compared with other regions, the continent is expected to experience a significant burden in the future, with an estimated 138% increase in diabetes prevalence leading to 55 million people living with the condition by 2045.[2] Epidemiological studies have indicated a high prevalence of diabetes-related complications and motility in Africa, partly due to limited access to healthcare resources and inadequate diabetes management.[3,4]

Central to managing diabetes is maintaining blood glucose levels within normal parameters, often achieved through insulin and oral antidiabetic medications. While these medications are globally recognized as the mainstream therapy for managing diabetes,[5] individuals with diabetes often turn to other treatment options such traditional medicine (TM) as a means of managing their condition. Research has indicated that >50% of diabetes patients globally use various forms of complementary and alternative therapy, including TM.[6] While the use of TM among diabetes patients has not been comprehensively determined in Africa, anecdotal evidence suggests that TM is frequently employed as the initial treatment option for individuals in this region with chronic diseases, including diabetes. This is not surprising, as the World Health Organization indicates an 80% prevalence of TM use among the general population in Africa.[7]

TM in Africa encompasses ancient healing practices and therapeutic systems that include divination, spiritualism and herbalism.[8] The use of TM is said to offer several benefits that are particularly significant to the Africa continent. First, TM is relatively more affordable compared with conventional medicine (CM),[8,9] and this can provide a more cost-effective alternative for managing diabetes. Additionally, TM is often readily available and accessible to people in African communities, especially in rural areas where conventional healthcare facilities may be limited.[8,9] This accessibility may allow individuals with diabetes to seek treatment without significant barriers. Moreover, TM incorporates cultural values and beliefs that foster holistic

healing and wellness.[8,9] However, despite the potential of TM to alleviate the burden of diabetes in Africa, it use may also pose certain risks and challenges. In Egypt, it has been noted that the use of TM is associated with poor compliance with conventional antidiabetic medication and poor control of diabetes.[10] In Nigeria, Ezuruike and Prieto[11] found that 50% of diabetes patients use TM herbal medicine concurrently with CM. Alarmingly, a significant number of these patients were unaware of the specific herbal medicines they were using, thus increasing the risk of unidentified herb–drug interactions. Studies have indicated that persons who use TM in Africa often conceal this practice from their healthcare providers.[12] These are concerning factors that can lead to potential complications and adverse effects in diabetes management.

Given the growing burden of diabetes in Africa, it is crucial to understand the management strategies of persons living with the condition, including their utilization of TM. However, to date, there has been a lack of a comprehensive review synthesizing the scope of TM use among persons with diabetes in Africa. The extent of TM use is unclear and there is limited knowledge regarding the factors that predict its use. Therefore, this review aimed to synthesize the available literature to identify the prevalence and predictors of TM use among persons with diabetes in Africa. The findings of this study will offer crucial insights into the complex interplay between cultural beliefs and modern medical interventions. This knowledge not only enables healthcare systems to integrate culturally relevant approaches into diabetes management strategies, but also facilitates effective communication between healthcare providers and patients, fostering a holistic and patient-centred approach that acknowledges both traditional and conventional methods, ultimately enhancing the overall efficacy of diabetes care in Africa.

Methods

Inclusion and exclusion criteria

The inclusion criteria for this review were centred on quantitative studies that measured the prevalence of TM use among persons with diabetes in any African country. Studies that specifically explored the utilization of complementary and alternative medicine (CAM) were also considered, as long as the therapies identified fell within the realm of TM. Conversely, studies examining CAM modalities that incorporated contemporary therapies like food supplements were excluded from this review. While TM is part of CAM, the former is distinct in its focus on traditional practices that have been passed down through generations and are often rooted in cultural beliefs.[8,9] By implementing these specific inclusion criteria, we aimed to maintain a focused approach and generate insightful findings that shed light on the utilization of TM within the context of Africa.

Other exclusion criteria included studies conducted outside Africa, qualitative studies, access-restricted articles, review articles, abstracts, case reports and letters to the editor and articles published in languages other than English. By excluding these types of studies, we intend to ensure the precision and quality of the review. Qualitative studies were deliberately excluded due to our focus on quantitative evidence for the prevalence and predictors of TM use. Likewise, case reports and editorials were omitted, given their tendency to provide individualized accounts or opinions rather than comprehensive data. Furthermore, abstracts were not considered due to their limited presentation of methodology, results and analysis, which could impede our ability to assess the research's quality and relevance. The decision to exclude review articles was rooted in their nature as summaries of existing literature, which could introduce redundant information in this study. Additionally, we exclusively included articles published in English to reduce language-related barriers, ensuring that the research team can accurately assess and extract pertinent information from the selected studies.

Search strategy

On 9 April 2023, a comprehensive search was conducted in MEDLINE, Embase, Cumulative Index to Nursing and Allied Health Literature (CINAHL) and Allied and Complementary Medicine (AMED) to identify studies pertaining to the use of TM in Africa. To ensure exhaustiveness, we further searched Africa Journal Online (AJOL) and reviewed the reference list of retrieved articles to identify other relevant studies. The search was limited to studies published from the year 2000 onwards in order to ensure that the most up-to-date and relevant studies were included. Our search strategy was built around the concept of 'traditional medicine' and 'diabetes' in conjunction with terms for the context of the study, 'Africa'. Index terms used on the various databases were 'exploded' to include all subcategories of the term being searched. The Boolean operators OR and AND were applied appropriately. The full details of the search strategy are provided in Appendix 1 (Supplementary data).

Screening and study selection

The articles identified through the electronic search were imported into EndNote 20 software (Clarivate, London, UK) for the purpose of removing duplicates. The remaining articles were then uploaded onto Covidence (Covidence, Melbourne, VIC, Australia), where they underwent title and abstract screening. Subsequently the full text of selected studies was retrieved and carefully assessed to determine whether they fully met the inclusion criteria for the review. Two authors (EE and EO) independently conducted the screening and selection of the articles. In the event of any discrepancies, the third author (SA) was consulted and consensus was reached through discussion.

Data extraction and analysis

Data extraction was conducted using a standardized form in Excel (Microsoft, Redmond, WA, USA). The data extracted included the study characteristics (first author's name, year of publication, country, study design, sample size), participant characteristics (age, gender) and the relevant information pertaining to TM use. The extracted data were critically analysed and findings described narratively.

Quality assessment of the included studies

The quality of the included studies was assessed utilizing a quality scoring system used in a previous systematic review on

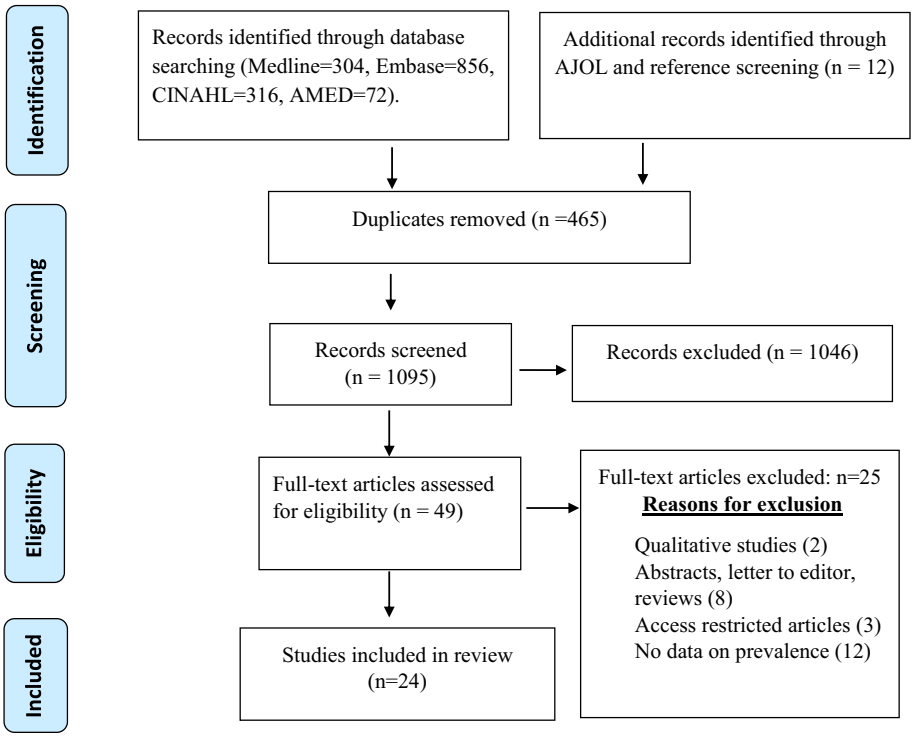

Figure 1. PRISMA flowchart of the study selection.

CAM use in Africa.[12] The tool evaluates 12 items encompassing various crucial aspects, including the methodology employed in the studies, the characteristics of the participants involved and the utilization of CAM practices. Each item is assigned a score of 0 or 1, resulting in a maximum potential score of 12 if all criteria are met. The quality of the articles was categorized based on the summed scores as follows: 9–12 (good), 6–8 (fair) and 0–5 (poor).[12] Full details of the quality appraisal tool are presented in Appendix 2 (Supplementary data).

Results

Study selection

Our systematic search yielded a total of 1560 records, which comprised of 1548 articles from four databases (MEDLINE, Embase, CINAHL and AMED) and 12 articles identified through AJOL and manual searches of reference lists. Following the removal of duplicate records, a total of 1095 articles were screened based on their titles and abstracts. From this pool, the full texts of 49 articles were assessed, with 24 ultimately meeting the inclusion criteria for this review. A summary of the steps involved in the screening process and reasons for exclusion of articles after full-text review are provided in Figure 1.

Characteristics of included studies

The current review synthesizes the findings of 24 cross-sectional studies published from 2006 to 2022.[10,11,13–34] The sample sizes of the studies varied, ranging from 45 to 1100 participants. In total, this review incorporates data from 9919 participants with diabetes. The majority (61.4%) of participants were females. The mean age and diabetes duration of the participants were 47–62.9 y and 5.7–10.5 y, respectively. The participants were recruited from 13 distinct Africa countries: Tanzania, Nigeria, Ghana, Morocco, Libya, Egypt, Ethiopia, Kenya, South Africa, North Sudan, Tunisia, Algeria and Guinea. Morocco dominated, with six articles, followed by Ethiopia (n=3) and Nigeria (n=3). Among the included articles, 10 focused explicitly on patients with type 2 diabetes, while 17 explored specific aspects of TM, particularly herbal medicine. Detailed characteristics of the included studies are presented in Table 1.

Quality of the included studies

The quality of the included studies varied, with scores ranging from 4 to 9 out of 12. Based on the quality rating, two-thirds (66.7% [n=16]) of the articles demonstrated fair and good quality, having recorded a score of ≥6. However, a significant proportion (33.3%) of the studies were deemed to have poor quality. The most prominent area of methodological flaws was the lack of a nationally representative sampling strategy in all the included studies. Furthermore, an important aspect of minimizing recall bias, namely the time frame of TM use within the past ≤12 months, was only addressed in a limited number of studies (20.8% [n=5]). Additionally, only a small subset of studies (n=6) included an adequate sample size of >500 participants. Detailed results of the quality assessment of the studies is presented in Appendix 2 (Supplementary data).

Table 1. Characteristics of the included studies

First author (year)	Country	Study design	Sample size/female, n	Age (years), mean	DM duration (years), n	Focus on specific DM type	Focus on specific TM type	Time frame for TM prevalence	Prevalence of TM (%)	TM and CM use (%)	Non-disclosure of TM use
Baldé (2006)[13]	Guinea	Cross-sectional	397/210	47	NR	No	Yes (herbal)	NR	33	64	NR
Khalil (2013)[10]	Egypt	Cross-sectional	1100/611	NR	6.46	Yes (T2D)	No	At least once	41.7	NR	79
Othman (2013)[14]	Tunisia	Cross-sectional (ethnomedical)	200/NR	51	10.51	No	Yes (herbal)	NR	23	85	NR
Ali (2014)[15]	North Sudan	Cross-sectional	600/373	NR	NR	Yes (T2D)	Yes (herbal)	Consistent use in the last 6 months	58	NR	63.8
Mwangi (2014)[16]	Kenya	Cross-sectional	258/165	59	NR	No	Yes (herbal)	NR	12.4	NR	NR
Alami (2015)[17]	Morocco	Cross-sectional	279/200	50	NR	No	Yes (herbal)	NR	54.8	NR	NR
Ezuruike (2016)[11]	Nigeria	Cross-sectional	112/69	NR	NR	Yes (T2D)	Yes (herbal)	NR	50	NR	NR
Lunyera (2016)[18]	Tanzania	Cross-sectional (ethnomedical)	45/30	59	NR	No	No	NR	77.1	37.6	NR
Telli (2016)[19]	Algeria	Cross-sectional (ethnomedical)	289/154	NR	NR	No	Yes (herbal)	NR	60.9	NR	NR
Ashur (2017)[20]	Libya	Cross-sectional	523/308	54.4	NR	Yes (T2D)	No	TM use in the previous year	28.9	NR	NR
Laadim (2017)[21]	Morocco	Cross-sectional (ethnomedical)	700/506	NR	NR	No	Yes (herbal)	NR	61.4	NR	NR
Amaeze (2018)[22]	Nigeria	Cross-sectional	453/310	57.9	5.7	Yes (T2D)	Yes (herbal)	HM use any time since DM diagnosis	67.3	35.4	67.5
Mekuria (2018)[23]	Ethiopia	Cross-sectional	387/222	52.5	NR	Yes (T2D)	Yes (herbal)	Ever taken HM since DM diagnosis	62	NR	86.6
Mwanri (2018)[24]	Tanzania	Cross-sectional	119/91	57.7	NR	Yes (T2D)	No	NR	21	NR	NR

Table 1. (Continued)

First author (year)	Country	Study design	Sample size/female, n	Age (years), mean	DM duration (years), n	Focus on specific DM type	Focus on specific TM type	Time frame for TM prevalence	Prevalence of TM (%)	TM and CM use (%)	Non-disclosure of TM use
Skalli (2019)[25]	Morocco	Cross-sectional (ethnomedical)	334/NR	NR	NR	No	Yes (herbal)	NR	53.6	NR	90
Ala (2020)[26]	Nigeria	Cross-sectional	388/224	62.6	7.95	No	No	At least one type of TM use within the last 6 months	62.1	88.4	91.3
Meshesha (2020)[27]	Ethiopia	Cross-sectional	791/389	49.1	NR	No	Yes (herbal)	Lifetime use of TM; TM use within the last 6 months	51.7; 45.1	NR	NR
Chelghoum (2021)[28]	Algeria	Cross-sectional (ethnomedical)	322/164	52.7	NR	No	Yes (herbal)	NR	23.8	NR	NR
Chetoui (2021)[29]	Morocco	Cross-sectional	1021/761	56.2	8.8	Yes (T2D)	Yes (herbal)	HM use for DM in the previous year	34.8	NR	NR
Kifle (2021)[30]	Ethiopia	Cross-sectional	395/210	48.7	NR	No	Yes (herbal)	HM use since diagnosis	58.5	61	85.7
Botchway (2022)[31]	Ghana	Cross-sectional	254/151	62.9	NR	Yes (T2D)	No	Consultation of at least one TM practitioner	18.9	NR	NR
Boullani (2022)[32]	Morocco	Cross-sectional (ethnomedical)	362/218	52.5	NR	No	Yes (herbal)	NR	24.6	83	NR
Chetty (2022)[33]	South Africa	Cross-sectional	340/244	61	NR	Yes (T2D)	No	TM use since diagnosis	27	83.7	NR
Hinad (2022)[34]	Morocco	Cross-sectional (ethnomedical)	250/15)	NR	NR	No	Yes (herbal)	NR	60	NR	NR

HM: herbal medicine; DM: diabetes mellitus; NR: not reported; T2D: type 2 diabetes.

Prevalence of TM use

The included studies provided the prevalence estimates of TM use by computing the number of TM users per the population of persons with DM, with results expressed as a percentage. Only one study provided a sample-balanced prevalence estimate using age and gender weights, with the 95% confidence intervals (CIs) reported.[18] The prevalence of TM use was assessed across various time frames in the included studies. Specifically, four studies measured TM use since the diagnosis of diabetes,[22,23,30,33] while two studies focused on the previous year.[20,29] Another two studies examined TM use within the last 6 months.[15,26] One study provided prevalence data for two distinct time frames, namely TM use over a lifetime and TM use in the 6 months preceding data collection.[27] Furthermore, one study presented prevalence data based on the utilization of services from at least one TM practitioner.[31] However, the remaining studies (n=14) did not explicitly indicate the specific measure used to estimate TM prevalence.[10,11,13,14,16–19,21,24,25,31,32,34]

The prevalence of TM use varied considerably, ranging from 12.4% to 77.1% (median 50%), across the studies. Studies that measured TM prevalence based on its use since the diagnosis of diabetes reported prevalence rates ranging from 27% to 67.3%. Also, studies that assessed TM prevalence within the last 6 months reported high prevalence rates ranging from 58% to 62.1%. In studies utilizing a 1-y time frame, the prevalence estimates were relatively lower, ranging from 28.9% to 34.8%.

Additionally, it is essential to highlight the coexistence of TM and CM utilization, as observed in eight of the included articles.[13,14,18,22,26,30,32,33] The results from these studies revealed a prevalence of concomitant use of TM and CM ranging from 35.4% to 88.4%. The majority of the studies (n=5) reported a high prevalence rate of >60%. Furthermore, seven studies explored whether individuals with diabetes disclosed the use of TM to healthcare providers.[10,15,22,23,25,26,30] Across these studies it was consistently observed that a majority of patients chose not to disclose their TM utilization, with non-disclosure rates ranging from 63.8% to 91.3%.

Types of TM utilized

Seventeen of the included studies focused only on herbal medicine, indicating that this is the dominant form of TM explored in the review. Even so, herbal medicine emerged as the most common type of TM used across the other studies that did not focus solely on the use of herbal medicine among persons with diabetes.[10,18,20,24,26,31,33] This was followed by the use of faith-based healing methods, including prayer, recitation of the Quran, holy water, *ruqyah* water, anointing oil and *ruqyah* oil.[20,26] Other types of TM use reported include homeopathy,[26] acupuncture and home remedies such as lemon, honey, wheat and others.[20]

Predictors of TM use

Six studies assessed the predictors of TM use.[15,22,23,29,30,33] A total of seven factors were identified to predict the use of TM by diabetes patients. Emerging under two broad categories, they include sociodemographic (gender, age, place of residence and education) and health-related factors (diabetes duration, diabetes management and family history of diabetes). A summary of the predictors of TM use is presented in Table 2.

Sociodemographic factors

Four studies identified gender as a predictor of TM use, with all consistently revealing that being female is associated with a higher likelihood of using TM.[15,29,30,33] The odds of TM use among females ranged from 1.31[33] to 2.12.[15] An inconsistent pattern was observed from the available literature with respect to residency as a predictor of TM use. Of three studies that identified the area of residency as a significant predictor, the results of two studies found that residing in rural areas is associated with an increased likelihood of using TM,[15,30] while the other study also reported a significant association with urban residency.[23] Similarly, an inconsistent pattern was seen with studies that identified education as predictor of TM use. While two studies[23,30] reported that the use of TM is associated with higher education, one study[15] suggests the opposite. Only one study identified age as a predictor, with the result indicating that the use of TM is associated with older age.[33]

Health-related factors

The health-related factors demonstrated good evidence of an association with TM use, as the results were consistent across studies. Pertaining to diabetes duration, the results of five studies consistently showed that longer diabetes duration is associated with an increased likelihood of using TM.[15,22,23,29,30] Further, two studies[22,29] identified diabetes management as a predictor of TM use. In both studies, it was indicated that individuals using oral hypoglycaemic medications are more likely to use TM. An additional two studies[23,30] reported that having a family history of diabetes is associated with a higher likelihood of using TM.

Discussion

To the best of our knowledge, this review is the first of its kind to present evidence on the prevalence and predictors of the use of TM among people with diabetes in Africa. The body of literature incorporated in this review exhibited variation in the measurement approach for the prevalence of TM use. This presented a challenge in pooling the various prevalence data through a meta-analysis to reveal the magnitude of TM in Africa. Similarly, other systematic reviews have cited such variations as a challenge that precluded the conduct of any formal meta-analysis.[12,35] This review found the prevalence of TM use ranged from 12.4% to 77.1%. Our finding is congruent with that of a previous study conducted among diabetes patients in the eastern Mediterranean region with a prevalence rate ranging from 9% to 88.4%.[36] Despite our inability to provide a precise estimate, the median prevalence of 50% suggests that TM use is widespread among individuals with diabetes in Africa.

This review revealed that the majority (35.4–88.4%) of diabetes patients use TM in conjunction with CM, indicating that TM is mostly used as a complementary therapy rather than an alternative to conventional care. This aligns with the finding of studies conducted in other parts of the world.[37,38] One underlying factor

Table 2. Predictors of TM use

First author (year)	Factors	Predictors, mean OR (95% CI)
Sociodemographic		
Ali (2014)[15]	Gender	Female: 2.12 (1.86–4.33)
Chetoui (2021)[29]		Female: 2.064 (1.417—3.008)
Kifle (2021)[30]		Female: 1.98 (1.72–3.25)
Chetty (2022)[33]		Female: 1.31 (0.75–2.78)
Ali (2014)[15]	Residency	Rural: 1.48 (0.74–2.81)
Kifle (2021)[30]		Rural: 2.34 (1.82–3.29)
Chetoui (2021)[29]		Urban: 1.684 (1.123—2.525)
Ali (2014)[15]	Education	Tertiary: 0.38 (0.22–1.28)
Kifle (2021)[30]		Tertiary: 1.54 (1.32–2.08)
Mekuria (2018)[23]		Tertiary: 1.72 (1.18–5.12)
		Secondary: 1.90 (0.79–4.92)
Chetty (2022)[33]	Age	60–75 y: 1.32 (0.78–2.24)
		>75 y: 1.42 (0.67–3.01)
Health related		
Chetoui (2021)[29]	Diabetes duration	>5 y: 1.429 (1.031—1.980)
Kifle (2021)[30]		>5 y: 2.53 (1.45–4.67)
Mekuria (2018)[23]		>6 y: 1.51 (1.31–4.79)
Ali (2014)[15]		>8 y: 4.06 (2.79–5.6)
Amaeze (2018)[22]		>20 y: 3.015 (1.361–6.679)
Amaeze (2018)[22]	Diabetes management	Oral: 1.784 (1.141–2.789)
Chetoui (2021)[29]		Oral: 1.805 (1.227—2.657)
		Oral+insulin: 1.881 (1.188—2.977)
Kifle (2021)[30]	Family history of diabetes	2.89 (1.42–3.19)
Mekuria (2018)[23]		3.12 (1.62–8.05)

contributing to the widespread use of both TM and CM together may be the lack of knowledge among patients regarding the potential consequences of combining these therapies.[11] This knowledge gap emphasizes the importance of patient education and healthcare provider involvement in guiding individuals with diabetes to make informed decisions about their treatment choices. While studies have indicated the potential of herb–drug interactions from concomitant use of TM and CM may result in serious adverse side effects, there is a lack of such evidence in the African context.[39] It is pertinent that clinical studies in Africa explore these interactions to provide evidence for healthcare providers to guide patients in making informed therapeutic choices that maximize their health outcomes.

This review revealed that a vast majority (63.8–91.3%) of the diabetes patients did not disclose the use of TM to their healthcare providers. This worrying finding resonates with those identified in studies conducted outside of Africa.[36] A previous study reported that such non-disclosure is driven by individual and contextual factors.[40] As indicated, studies incorporated in this review reported that diabetes patients did not disclose their use of TM partly in anticipation of a negative response from healthcare providers,[15,23,30] feeling no need for disclosure[15,26] and the fact that healthcare providers did not inquire about their use of TM.[15,26] These findings underscore the need for improved communication and understanding between healthcare providers and diabetes patients regarding TM use. Healthcare providers should create a non-judgmental and supportive environment that encourages patients to openly discuss their use of TM. Additionally, it is crucial for healthcare providers to actively inquire about TM use during consultations to ensure comprehensive care and avoid potential interactions or adverse effects.

Our investigation has revealed insights into the influential dynamics between sociodemographic and health-related variables and the utilization of TM. In alignment with a previous study conducted by James et al.,[12] we observed a discrepancy in the outcomes concerning area of residency and educational attainment. However, we observed that factors such as female gender, long diabetes duration, the use of oral antiglycaemic medication and a family history of diabetes were robust predictors of TM use. Similarly, another systematic review[36] indicated that female diabetes patients and those enduring a protracted period of the condition are more likely to use TM. Considering this evidence, it is important for healthcare providers to be aware of these factors and consider them when discussing treatment options with patients. Understanding these factors can help healthcare providers tailor their approach and provide personalized care to individuals with diabetes who are using TM.

Implications of findings for clinical practice

The prevalence of TM use among persons with diabetes in Africa presents significant implications for healthcare practice. Healthcare practitioners must embrace a patient-centred approach that encourages candid and non-judgmental dialogues about TM use. This proactive communication is essential to optimize treatment safety by mitigating potential herb–drug interactions and adverse effects that might arise from the concurrent use of traditional remedies and conventional diabetes medications. Moreover, fostering cultural competence is paramount; healthcare providers must demonstrate respect for patients' cultural beliefs and traditions surrounding TM. By incorporating these principles into their practice, healthcare professionals can achieve a more comprehensive and effective diabetes management strategy. This approach not only enhances patient outcomes, but also strengthens the vital patient–provider relationship, promoting trust, collaboration and a shared commitment to holistic well-being.

Review limitations and recommendations for future research

This review provides crucial insights into the use of TM among persons with diabetes in Africa. However, there are several limitations that should be acknowledged. First, the variation in measurement approaches for the prevalence of TM use across the studies included in this review made it challenging to conduct a meta-analysis and provide a precise estimate of the prevalence. Future studies should strive for standardized measurement approaches to enable better comparisons and pooling of data. There was a scarcity of studies from some regions in Africa (central and southern), limiting this review's ability to explore potential regional disparities in TM use. To gain a more holistic perspective, researchers should seek to address this geographic variation in future investigations. Additionally, this review only included quantitative studies, which may have limited the exploration of qualitative aspects and in-depth understanding of the experiences and perspectives of individuals using TM. Future research should incorporate qualitative methodologies to gain a deeper understanding of the reasons, beliefs and experiences surrounding TM use in this population. While this review identified some predictors of TM use, there were certain discrepancies across studies. There is the need for large-scale longitudinal studies to provide a more nuanced understanding of the complex relationships between these factors and TM use among individuals with diabetes. Lastly, it should be noted that the exclusion of non-English articles in this review limits the generalizability of the findings across diverse linguistic and cultural groups. Future research should strive for inclusivity by incorporating studies in multiple languages.

Conclusions

This review identified widespread use of TM among individuals with diabetes in Africa ranging from 12.4 to 77.1%. TM is predominantly used concurrently with CM and is often undisclosed to healthcare providers. This emphasizes the need for active inquiry about TM use during consultations with diabetes patients to ensure comprehensive care and minimize potential herb–drug interactions and adverse effects. Female gender, long diabetes duration, use of oral antiglycaemic medication and a family history of diabetes significantly predict the use of TM.

Supplementary data

Supplementary data are available at *International Health* online (http://inthealth.oxfordjournals.org).

Authors' contributions: EE conceived the study, designed the methods and conducted the search with input from SA. EE and SA carried out the analysis and interpretation of data. EE and EO drafted the manuscript. SA critically revised the manuscript. All authors were involved in the study selection and data extraction and read and approved the final manuscript.

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