



A RESEARCH ARTICLE

Use of herbal products among adult patients with diabetes attending a major diabetes centre in Benghazi, Libya

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Abstract

Diabetes mellitus is one of the most prevalent chronic disorders worldwide with considerable morbidity and mortality. Herbal products with potential hypoglycaemic activity have been in use for centuries, but only a limited number have been subjected to rigorous scientific investigations to establish their safety and efficacy. Aim: To investigate herbal product use among adult patients with diabetes attending a major diabetes centre in Benghazi, Libya. Methods: A cross-sectional study was conducted among adult patients with diabetes attending a major diabetes centre in Benghazi, Libya. Data were collected through face-to-face interviews using a structured questionnaire covering sociodemographic characteristics, clinical characteristics, and herbal product use. Data were analysed using SPSS, and associations between herbal use and sociodemographic and clinical variables were examined. Results: A total of 176 patients participated (response rate: 96.2%). Most participants were female, aged 46–75 years, and unemployed; nearly half (47.2%) were aged ≥ 61 years. Use of herbal products was reported by 19.9% of participants. No statistically significant associations were observed between herbal product use and sociodemographic or clinical variables ($p > 0.05$). Cinnamon and olive leaves were the most commonly used herbal products. Among herbal users, 85.7% reported satisfaction with their use, while personal choice (31.4%) and media influence (25.7%) were the most common reasons for use. Notably, 74.3% did not disclose herbal use to their physicians. Conclusion: Herbal product use was reported by a minority of participants (19.9%), with no sociodemographic or clinical predictors. However, most herbal users did not report their use to physicians, potentially compromising care since concurrent herbal-product use may be unknown to medical providers and thereby interactions or adverse effects cannot be identified. The present study did not evaluate herb-drug interactions, toxicity, or adverse clinical outcomes.

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1. INTRODUCTION

Diabetes mellitus is a common chronic disease causing a high rate of morbidity and mortality around the world. The number of people living with diabetes has increased steadily, and this pattern of increase is expected to continue in the coming years [1, 2]. In Libya, diabetes represents a major public health concern and accounts for considerable numbers of hospital admissions in Benghazi city annually [3]. This burden was supported by recent estimates from the International Diabetes Federation (IDF) Diabetes Atlas 11th edition, which reported that approximately 634,800 Libyan adults aged 20-79 years were living with diabetes, representing a diabetic prevalence of 14.6% in this age group in 2024 [4]. Recent studies from Libya have also highlighted the importance of glycaemic monitoring and the challenges associated with diabetes management [5].

Although treatments for diabetes are available, conventional treatments have several disadvantages such as resistance, adverse side effects, and inadequate response in some patients. Additionally, the chronic and progressive nature of diabetes, plus the growing demand for healthcare services, has prompted many patients to seek alternative treatments, including herbal products, due to their perceived affordability and accessibility [2, 6, 7].

While patients with diabetes in developed countries generally seek medical care in healthcare centres, they complement conventional treatment with herbal products. In developing countries, natural products and herbal formulations are also commonly used as alternatives to conventional

treatments and their use is common among people with chronic illnesses such as diabetes [2,8]. According to the World Health Organization (WHO), medicinal plants are recognized as an essential part of healthcare practices. Research has identified many plant species with potential to reduce blood sugar levels, and some have been investigated for their potential hypoglycaemic effects [9]. Several commonly used medicinal plants such as cinnamon, fenugreek, olive leaves and ginger have demonstrated potential benefits in the management of diabetes mellitus [10-12]. Proposed mechanisms include effects on insulin sensitivity, glucose metabolism, and pancreatic β -cell function [2].

However, the lack of detailed and reliable information about the active constituents of such plants means that herbal products can sometimes be considered harmful or ineffective [13]. Recent studies on Libyan medicinal plants have also indicated the need to evaluate their therapeutic efficacy and safety profiles before clinical applications [14].

While only a limited number of herbal products have been scientifically and medically evaluated to determine their safety and efficacy, patients continue to use such products and perceive them as efficacious [15]. This practice may pose potential risks; therefore, physicians should be aware of herbal product use among their patients and discuss it with them as it may interfere with the course and efficacy of conventional treatments [16]. More recent evidence reinforces the need for a cautious, evidence-based approach: a 2025 umbrella review found potential glycaemic benefits for some herbal medicines but emphasised heterogeneity, limitations to the quality of the evidence, incomplete safety data, and the need to consider herbal medicines as adjuncts rather than replacements for conventional treatment [17]. Despite the wide use of herbal products among patients with diabetes worldwide [2,8], information on their use among Libyan patients, particularly in Benghazi, remains limited. Therefore, this study was done to assess the use of herbal products among diabetic patients in Benghazi, Libya, focusing on their prevalence, patterns of use, and associated sociodemographic and clinical characteristics. The study was not designed to evaluate the clinical efficacy or effectiveness of these products in terms of glycaemic control.

2. METHODS

2.1. Study design and questionnaire

A cross-sectional study among adult patients with diabetes mellitus aged ≥ 18 who attended the Benghazi Centre for Diagnosis and Treatment of Diabetes—one of the largest diabetes centres in Benghazi, Libya. A comprehensive search of the literature and prior research was performed to formulate the questionnaire. The questionnaire was developed in English and then translated into Arabic, the official language in the targeted study population, for simplicity and precision. A pilot study was conducted with 10 participants to determine the questionnaire's face validity and understandability before data collection commenced. Since no changes were required, the 10 participants were included in the final sample size, resulting in a total sample size of 176. The questionnaire had three sections. In the first section, the participants were asked to provide their sociodemographic data, including their gender, age, level of education, employment status, and monthly income.

The second section focused on obtaining the participants' clinical data, including the duration of illness, the type of medication regularly taken, and additional health conditions if present. Finally, the third section aimed at eliciting the participants' information about their herbal use for the treatment and management of diabetes. Participants provided details on their duration of herbal product use, whether this use was disclosed to a healthcare professional, the sources of influence, and the level of satisfaction with the products used. For the purposes of this study, "herbal products" were defined as plant-derived products or preparations used by participants for the treatment or management of diabetes, either alone or alongside prescribed antidiabetic treatment. The term "herbal products" is used consistently throughout the manuscript to describe the study exposure.

2.2. Ethical considerations

Verbal informed consent was obtained from each participant before data collection. The purpose of the study was explained to all respondents before their participation. All questionnaires were

completed anonymously, and no personal identifiers were collected to ensure participants' confidentiality.

2.3. Questionnaire distribution and data collection

The study was carried out between March and May 2026. Questionnaires were completed through face-to-face interviews during the centre's working hours. All adult patients who met the inclusion criteria and attended the centre during the study period were invited to participate. A consecutive sampling technique was used until the end of the data collection period. A total of 176 patients were included in the study.

2.4. Data analysis

The data were entered and analysed using Statistical Package for the Social Sciences (SPSS) version 21. Descriptive data analysis procedures were used to summarize the participants' characteristics. The categorical variables were described using frequencies and percentages. Pearson's chi-square test was used to assess associations when expected cell-count assumptions were adequate; for sparse contingency tables, an exact Monte Carlo approach was used. Unadjusted odds ratios (ORs) with 95% confidence intervals (CIs) were calculated for category-specific comparisons of herbal product use using prespecified reference categories. Cramér's V was reported as an effect-size measure for the overall association between each categorical characteristic and herbal product use. Two-sided p-values <0.05 were considered statistically significant.

3. RESULTS

3.1. Data collection and sociodemographic characteristics

Of the eligible patients approached, 176 participated and were included in the final analysis (response rate: 96.2%). The final analytic sample therefore comprised 176 participants, including the 10 participants involved in the pilot phase.

Most participants were female (77.3%), aged 46–75 years (87.5%), and unemployed (64.8%). Additionally, 30.1% were uneducated, 46.0% had a low income, and 34.7% had no income (**Table 1**).

Table 1. Sociodemographic characteristics of participants (N = 176)

Variable	Category	n	%
Gender	Male	40	22.7
	Female	136	77.3
Age	18–35 years	5	2.8
	36–45 years	10	5.7
	46–60 years	78	44.3
	61–75 years	76	43.2
	>75 years	7	4.0
Education	Uneducated	53	30.1
	Primary	23	13.1
	Intermediate	46	26.1
	Secondary	21	11.9
	Diploma	17	9.7
	University	13	7.4
	Postgraduate	3	1.7
Employment	Employed	43	24.4
	Unemployed	114	64.8
	Retired	19	10.8
Income	Low	81	46.0
	Moderate	30	17.0
	High	4	2.3
	None	61	34.7

Note. Values are presented as number and percentage.

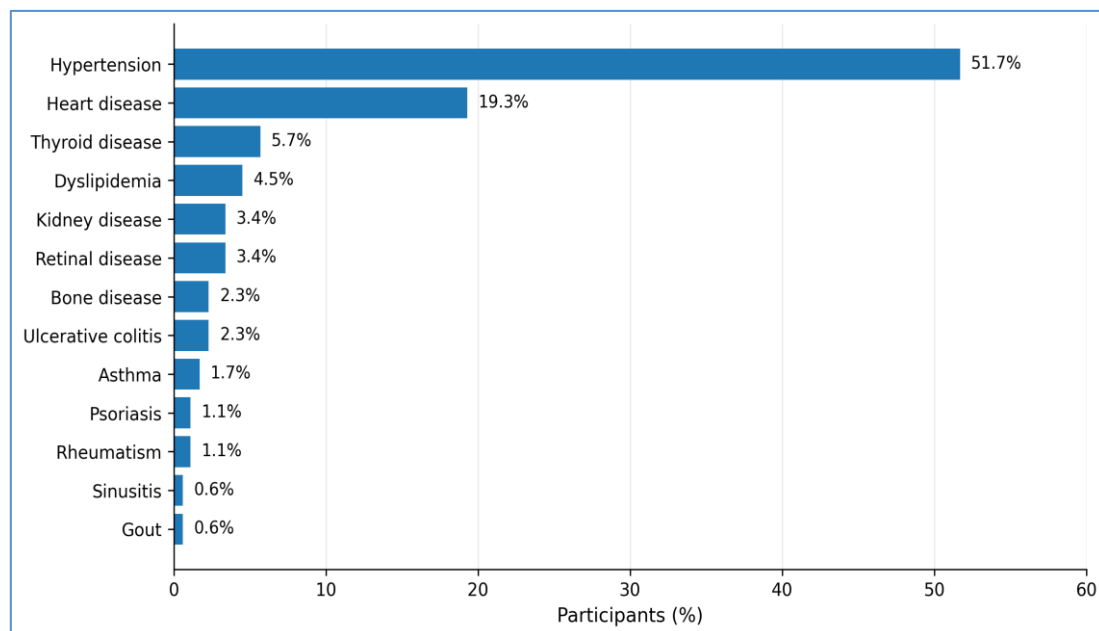
3.2. Clinical characteristics of participants

Most participants (67.6%) had diabetes for more than 10 years, while only 2.8% had it for less than one year. Combination therapy with oral antidiabetic drugs and insulin was the most commonly used treatment (43.2%), followed by insulin alone (39.8%) and oral antidiabetic drugs alone (17.0%). More than half of the participants (56.8%) had at least one comorbidity in addition to diabetes (**Table 2**). Hypertension (51.7%) was the most frequently reported comorbidity, followed by heart disease (19.3%) (**Figure 1**).

Table 2. Clinical characteristics of participants (N = 176)

Clinical characteristic	Category	n	%
Duration of diabetes	<1 year	5	2.8
	1–5 years	34	19.3
	6–10 years	18	10.3
	>10 years	119	67.6
Antidiabetic medication	OAD only	30	17.0
	Insulin only	70	39.8
	OAD and insulin	76	43.2
Presence of comorbidities	Yes	100	56.8
	No	76	43.2

Note. Values are presented as number and percentage. OAD = oral antidiabetic drugs.



Note. Participants could report more than one comorbidity; therefore, percentages may exceed 100% when summed.

Figure 1. Types of comorbidities among participants

3.3. Herbal product use among participants

Herbal products were used by 19.9% of participants (**Table 3**). Herbal use was most prevalent among females, participants aged 36–45 years, those with a medium level of education, retired participants, those with moderate income, participants with a diabetes duration of 6–10 years, those using a combination therapy of insulin and OAD, and those without comorbidities (**Table 4**). Among herbal product users, 40.0% used herbal products for less than one year, 37.1% for 1–5 years, and 20.0% for more than 10 years. Nearly three-quarters (74.3%) of the participants using herbal products for diabetes reported that they did not inform their physicians about this practice. Most herbal product users (85.7%) reported satisfaction with their use (**Table 3**). Effect estimates were generally

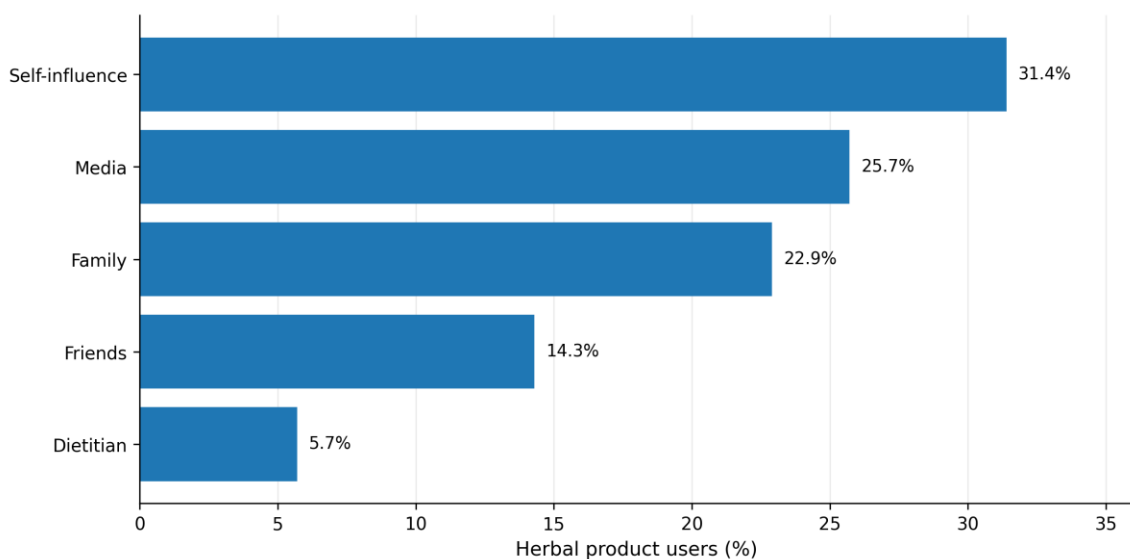
imprecise; all 95% CIs for the category-specific ORs included 1.0, and the overall effect sizes were small (Cramér's $V = 0.020\text{--}0.160$), providing no evidence of a statistically significant association between the examined sociodemographic or clinical characteristics and herbal product use.

Table 3. Characteristics of herbal product use among participants

Variable	Category	n	%
Herbal product use (n = 176)	Yes	35	19.9
	No	141	80.1
Duration of use (n = 35)	<1 year	14	40.0
	1–5 years	13	37.1
	6–10 years	1	2.9
	>10 years	7	20.0
Disclosure to healthcare professionals (n = 35)	Informed healthcare professionals	9	25.7
	Did not inform healthcare professionals	26	74.3
Satisfaction with use (n = 35)	Satisfied	30	85.7
	Unsatisfied	5	14.3

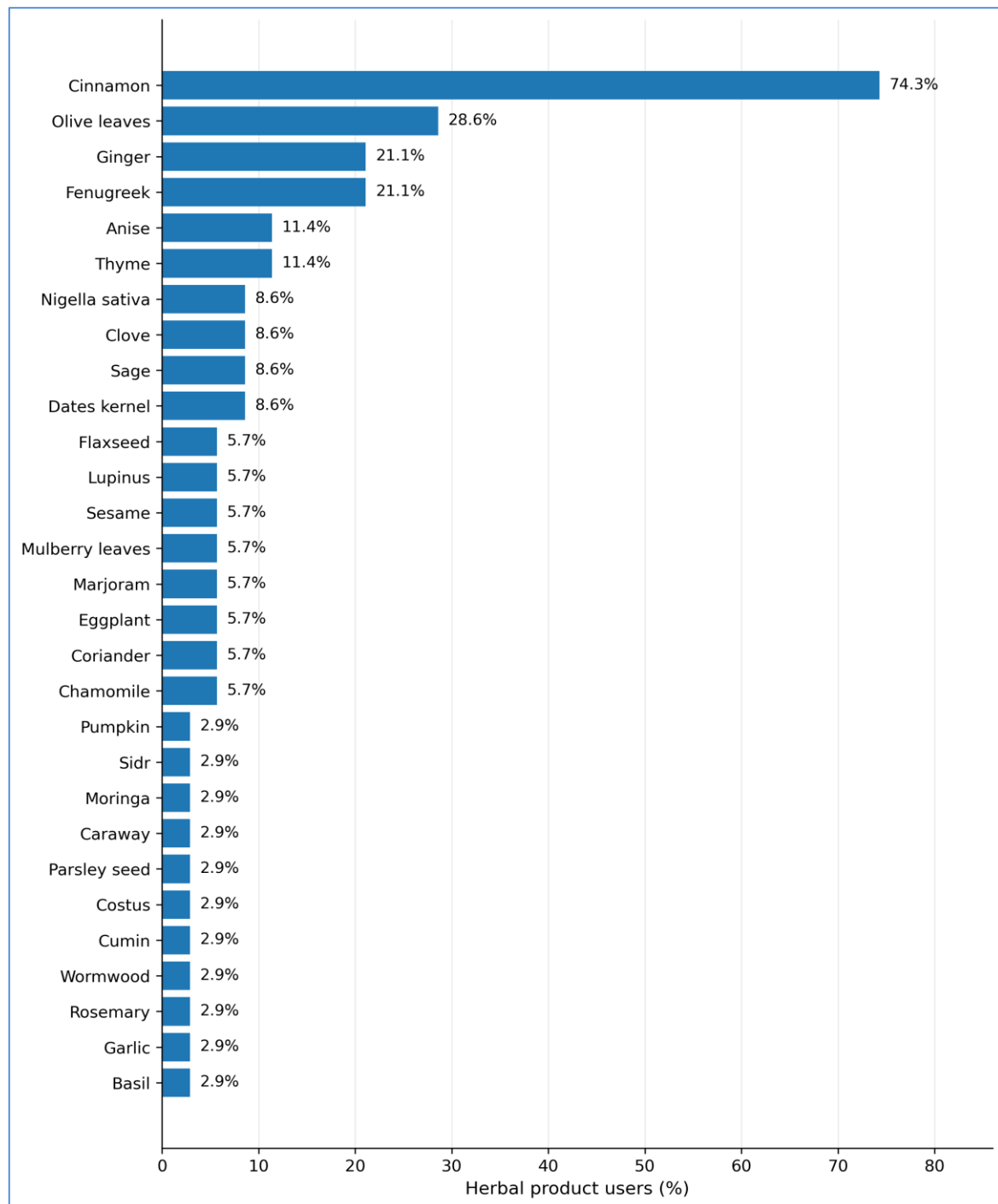
Note. Values are presented as number and percentage. Denominators are shown within the variable labels.

The sources of influence for herbal product use are presented in **Figure 2**. The most commonly reported sources were personal choice (31.4%), followed by media (25.7%), family (22.9%) and friends (14.3%), while only 5.7% reported using herbal products under the supervision of healthcare professionals. Participants reported using 29 different types of herbal products. Cinnamon was the most frequently used herb (74.3%), followed by olive leaves (28.6%), then fenugreek and ginger (21.1%) (**Figure 3**).



Note. Percentages are based on the 35 participants who reported herbal product use

Figure 2. Participants' sources of influence for using herbal products



Note. Multiple responses were permitted; percentages are based on the 35 herbal product users and therefore do not sum to 100%.

Figure 3. Types of herbal products used by participants

Table 4. Prevalence of herbal product use according to sociodemographic and clinical characteristics among study participants

Characteristic	Category	Herbal users n/N (%)	Unadjusted OR (95% CI)	Overall p-value	Cramér's V
Gender	Male	6/40 (15.0)	Reference	0.378	0.066
	Female	29/136 (21.3)	1.54 (0.59–4.01)		
Age	18–35 years	1/5 (20.0)	1.14 (0.12–11.02)	0.326†	0.160
	36–45 years	4/10 (40.0)	3.05 (0.76–12.25)		
	46–60 years	14/78 (17.9)	Reference		
	61–75 years	16/76 (21.1)	1.22 (0.55–2.71)		
	>75 years	0/7 (0.0)	NE		
Employment	Employed	9/43 (20.9)	Reference	0.965	0.020
	Unemployed	22/114 (19.3)	0.90 (0.38–2.16)		
	Retired	4/19 (21.1)	1.01 (0.27–3.79)		
Income	High	1/4 (25.0)	1.52 (0.14–15.97)	0.810†	0.081
	Moderate	8/30 (26.7)	1.65 (0.58–4.67)		
	Low	15/81 (18.5)	1.03 (0.44–2.44)		
	None	11/61 (18.0)	Reference		
Education	Uneducated	7/53 (13.2)	Reference	0.289	0.146
	Low education	13/69 (18.8)	1.53 (0.56–4.14)		
	Medium education	11/38 (28.9)	2.68 (0.93–7.73)		
	High education	4/16 (25.0)	2.19 (0.55–8.73)		
Duration of diabetes (years)	<1	1/5 (20.0)	1.04 (0.11–9.78)	1.000†	0.023
	1–5	7/34 (20.6)	1.08 (0.42–2.79)		
	6–10	4/18 (22.2)	1.19 (0.36–3.96)		
	>10	23/119 (19.3)	Reference		
Type of treatment	OAD	6/30 (20.0)	Reference	0.126	0.153
	Insulin	9/70 (12.9)	0.59 (0.19–1.84)		
	OAD + insulin	20/76 (26.3)	1.43 (0.51–4.00)		
Presence of comorbidities	No	19/76 (25.0)	Reference	0.138	0.112
	Yes	16/100 (16.0)	0.57 (0.27–1.20)		

Note. Values are herbal-product users/total participants, n/N (%). OR = odds ratio; CI = confidence interval; OAD = oral antidiabetic drugs; NE = not estimable. ORs are unadjusted and use the category marked "Reference" as the reference. Overall p-values and Cramér's V indicate associations with herbal-product use. † Exact Monte Carlo test; otherwise, Pearson's chi-square test. $p < 0.05$ was considered statistically significant.

3.4. Association between sociodemographic and clinical characteristics and herbal product use

No statistically significant associations were observed between herbal product use and the sociodemographic or clinical characteristics examined, including gender, age, employment status, income, educational level, duration of diabetes, type of treatment and comorbidity status (p-values > 0.05) (Table 4).

4. DISCUSSION

This study contributes to the limited evidence on herbal product use among patients with diabetes in Libya and provides insight into patterns of use in this population. The higher number of female respondents compared to male respondents in this study is consistent with the findings of a similar previous study conducted in Tripoli, Libya. This can be explained by the fact that women are generally less reluctant than males to participate in studies and disclose information regarding their use of traditional medicine [18]. Moreover, a previous study on the epidemiological profile of patients with diabetes conducted at the same diabetic centre where the present study was carried out reported a significantly higher diabetes prevalence among females than males [3].

More than half of the participants in this study had comorbidities in addition to diabetes. This is consistent with the findings of the study conducted in Tripoli, in which 58.9% of participants reported having comorbidities [18]. Hypertension and cardiovascular disease were the most common

comorbidities among the study participants, which agrees with the findings of a study conducted in Saudi Arabia, where patients also commonly suffered from these two health conditions [1]. This may partly reflect the fact that nearly half (47.2%) of the study participants were aged 61 years or older, an age at which health complications are common.

The prevalence of herbal product use among patients with diabetes in this study (19.9%) was slightly higher than that reported in Iraq (17.3%) [2], but lower than that reported in Tripoli (28.9%), Morocco (54.8%), and Tabriz (48.1%) [18, 19, 20]. These differences may be explained by variations in the socio-cultural characteristics of the populations, levels of dependence on herbal products, methodological differences, such as the inclusion of other alternative medicines and different study time frames, as well as differences in healthcare systems, accessibility to conventional medical services, and patients' perceptions of the safety and effectiveness of herbal products [1,19]. A recent 2026 systematic review and meta-analysis of 22 cross-sectional studies from 19 countries estimated a pooled prevalence of herbal medicine use of 53% among patients with type 2 diabetes, while also reporting substantial regional variation [21]. This further illustrates the significant variation in the reported prevalence and supports careful comparisons of estimates in different settings. The use of herbal products to manage diabetes has attracted much attention because patients with chronic disease often seek other forms of therapy, and many individuals believe that herbal treatments are more natural, and therefore safer, than prescription drugs. It is not always the case that herbal products are safer, however, some herbal products can be very potent and potentially dangerous when combined with other medications [2,16]. In the current study, cinnamon was the most used herb (74.3%), followed by olive leaves (28.6%) and fenugreek and ginger (21.1%). This pattern is consistent with the findings in Turkey, where cinnamon (58.0%) and olive leaves (23.0%) are among the three most used herbal products [7], and in Saudi Arabia, where cinnamon (23.1%), ginger (19.2%) and fenugreek (9.3%) are among the most used herbal products [1]. The common use of these herbal products may be attributed to the availability, cultural familiarity and potential antidiabetic effects (hypoglycaemic and insulin sensitivity) cited in previous studies [10, 11, 12]. Recently, olive leaves, cinnamon, black seed, ginger and other herbal products were found to be used by patients with type 2 diabetes in Turkey, which is consistent with the growing prevalence of many of the culturally familiar herbs in diabetes self-management [22].

The high level of self-reported satisfaction among participants using herbal products in this study (85.7%) is consistent with findings from Iraq, where 77.8% of herb users were satisfied [2]. In contrast, only half of the herbal users in Nepal reported satisfaction with the effectiveness of the herbal products they used [11]. In the present study, satisfaction was self-reported and should not be interpreted as evidence of clinical effectiveness or improved glycaemic control.

The main sources influencing the use of herbal products for diabetes management in this study were patients' personal choice (31.4%) followed by the media (25.7%), family (22.9%), and friends (14.3%). Only a minor percentage (5.7%) reported using herbal treatments under healthcare professional supervision. Except for personal choice being the primary source, these findings are consistent with studies conducted in Turkey, KwaZulu-Natal (South Africa), and Morocco, where family, friends, and media were the main influences, while healthcare professionals had the least influence [7, 10, 19].

The present study found that 74.3% of herbal product users did not inform their physicians about their use, which is consistent with findings from Tripoli, where 71.4% of respondents did not inform their doctors regarding herbal use [18]. However, this proportion was lower than that reported in Iraq, where 94.1% did not disclose their use to doctors [2]. A possible explanation for patients not discussing their herbal product use with their physicians is the fear of receiving a negative response because of the generally negative attitude of some physicians toward herbal products [10]. In addition, healthcare providers may neglect to ask their patients about their use of herbal products [2]. The high level of nondisclosure is clinically relevant because concomitant herbal-product use may remain unknown to treating clinicians, limiting opportunities to identify potential herb–drug interactions or adverse effects. The present study did not assess herb–drug interactions, toxicity, or adverse clinical outcomes; therefore, no conclusions regarding the occurrence or clinical impact of these outcomes can be drawn from the present data. This concern is consistent with recent evidence indicating that several herbal medicines used by patients with type 2 diabetes may require caution or

have potential pharmacological interactions, reinforcing the importance of healthcare-professional awareness and supervision [21].

The present study found no significant association between participants' sociodemographic and clinical information and their use of herbal products, despite minor variations across different subgroups. This is consistent with the study from Kuwait, which reported no association between respondents' sociodemographic or clinical data and their herbal use [1]. Moreover, the national study conducted in Tripoli found no significant influence of these factors, with the exception of gender [18]. Conversely, significant associations between herbal use and some factors such as employment, education, duration of diabetes, types of treatment, and comorbidities were reported by similar studies conducted in Iraq, Morocco, and Thailand [2, 19, 23]. These differences imply that other factors, including cultural beliefs and patients' perception of conventional antidiabetic treatments, may play an important role in influencing herbal use and should be further investigated [18]. Recent studies continue to show variable findings: a 2025 Turkish study reported associations with education level and nephropathy but not with several other sociodemographic or diabetes-related factors [22], whereas the 2025 Tabriz study identified female sex and longer diabetes duration as factors associated with herbal medicine use [20].

Although this study contributes to the knowledge about herbal products use among Libyan patients with diabetes, several limitations should be considered. The study was conducted in one diabetes centre in Benghazi, which may limit the external validity of the study results to a larger diabetic population in Libya. Moreover, small sample size, short study period, and consecutive sampling may have led to sampling bias. The main limitation of the current study was the use of vernacular names for the reported medicinal plants, which may lead to misidentification of the plant species due to variations in local nomenclature. Since this study lacked a control group of non-diabetic individuals, no conclusions can be drawn about the clinical efficacy of the reported herbal preparations. Similarly, no conclusions can be drawn regarding the effect of herbal medicines on glycaemic control since longitudinal biochemical measurements such as changes in HbA1c were not assessed. Furthermore, the study did not assess herb–drug interactions, toxicity, and adverse clinical effects; thus, it cannot conclude that the reported herbal products did not cause clinically significant interactions or other harmful effects.

5. CONCLUSION

About one-fifth of the respondents used herbal products for the management of diabetes. No significant association was found between the use of herbal products and the various sociodemographic and clinical factors examined. The most commonly used herbal products were those with reported antidiabetic properties, and the participants reported a high level of satisfaction with their use. Participants reported that their use of herbal products was influenced mainly by personal choice, the media, and family members, whereas healthcare workers had the least influence. Most respondents did not report their use of herbal products to healthcare providers. This finding is clinically relevant because undisclosed concomitant use may limit clinicians' awareness of potential herb–drug interactions or adverse effects. However, the present study did not assess herb–drug interactions, toxicity, adverse clinical outcomes, or clinical effectiveness of herbal products. Healthcare professionals should routinely ask about herbal products in the history of medication and provide appropriate counselling. Future research that is specifically for clinical effectiveness and safety must have appropriate comparison groups and longitudinal biochemical measures like HbA1c.

Ethical Approval

Ethical approval was obtained to conduct the study in accordance with AT 2026-33 (Data 02-20-2026).

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استخدام المنتجات العشبية بين المرضى البالغين المصابين بالسكري والمترددين على مركز رئيسي لعلاج السكري في بنغازي، ليبيا

الملخص

يُعد داء السكري أحد أكثر الأمراض المزمنة انتشاراً على مستوى العالم، حيث يرتبط بمعدلات كبيرة من المراضة والوفيات. استُخدمت المنتجات العشبية ذات التأثير المحتمل في خفض مستوى السكر في الدم لعدة قرون، إلا أن عدداً محدوداً منها فقط خضع لدراسات علمية دقيقة لإثبات سلامتها وفعاليتها. الهدف: دراسة استخدام المنتجات العشبية بين المرضى البالغين المصابين بالسكري والمترددين على مركز رئيسي لعلاج السكري في بنغازي، ليبيا. الطرق: أُجريت دراسة مقطعية شملت مرضى بالغين مصابين بالسكري يترددون على مركز رئيسي لعلاج السكري في بنغازي، ليبيا. تم جمع البيانات عبر مقابلات شخصية باستخدام استبيان مُنظَّم يغطي الخصائص الاجتماعية والديموغرافية، والخصائص السريرية، واستخدام المنتجات العشبية. جرى تحليل البيانات باستخدام برنامج (SPSS)، وفُحصت العلاقات بين استخدام الأعشاب والمتغيرات الاجتماعية والديموغرافية والسريرية. النتائج: شارك في الدراسة 176 مريضاً (بلغت نسبة الاستجابة 96.2%). كانت غالبية المشاركين من النساء، وتراوح أعمارهم بين 46 و75 عاماً، وكانوا غير عاملين؛ حيث بلغت نسبة من تبلغ أعمارهم 61 عاماً فما فوق قرابة النصف (47.2%). وأفاد 19.9% من المشاركين باستخدام المنتجات العشبية. ولم تُلاحظ أي علاقات ذات دلالة إحصائية بين استخدام المنتجات العشبية والمتغيرات الاجتماعية والديموغرافية أو السريرية. ($p > 0.05$) وكانت القرفة وأوراق الزيتون أكثر المنتجات العشبية استخداماً. ومن بين مستخدمي الأعشاب، أبدى 85.7% رضاهم عن استخدامها، في حين كان الاختيار الشخصي (31.4%) وتأثير وسائل الإعلام (25.7%) هما السببان الأكثر شيوعاً للاستخدام. والجدير بالذكر أن 74.3% من المستخدمين لم يفصحوا لأطبائهم عن استخدامهم لهذه الأعشاب. الخلاصة: أفادت أقلية من المشاركين (19.9%) باستخدام المنتجات العشبية، دون وجود مؤشرات تنبؤية اجتماعية ديموغرافية أو سريرية مرتبطة بذلك. ومع ذلك، فإن معظم مستخدمي الأعشاب لم يبلغوا أطباءهم عن هذا الاستخدام، مما قد يؤثر سلباً على جودة الرعاية؛ إذ قد يغيب عن مقدمي الخدمات الطبية علمهم بالاستخدام المتزامن للمنتجات العشبية، وبالتالي يتعذر رصد التفاعلات الدوائية أو الآثار الجانبية المحتملة. لم تتناول الدراسة الحالية تقييم التفاعلات بين الأعشاب والأدوية، أو السمية، أو النتائج السريرية الضارة.

الكلمات المفتاحية: داء السكري، المنتجات العشبية، التفاعلات بين الأعشاب والأدوية، إفصاح المريض، دراسة مقطعية، ليبيا.