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Prevalence of utilizing complementary medicine among Diabetic patients in Saudi Arabia

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Abstract
Objectives: This study aimed to explore the prevalence of utilization of complementary medicines by Diabetic patients among population in Saudi Arabia.
Methods: A cross-sectional study directed to Saudi Arabia resident populations, through an online questionnaire format in Arabic language that was uploaded on Google forms website, and will be distributed on social media applications through collaboration with many friends for over 4 weeks**.** Data were revised and coded and tabulated using the frequency and percentage using software SPSS 24**.**
Results: 358 diabetic patients of both genders aged ≥ 18 y/o cleared the survey. Saudi citizens were nearly equal to non-Saudi citizens. Female represent 67.04% of the sample. 57.54% of participants have no special lifestyle except smocking 10.1% and exercises 24.58%**.**
30.2% of participants suffering for at least 5 years and 30.73% visiting the physician for consultation once or twice yearly. While 39.66% of participants did know their glycated Hemoglobin level. About half of the participants using the oral drugs while 37.99% were using injectable drugs (Insulin). Source of consultation for using complementary medicine by specialist doctor was 27.9% while 26.26% were advised by friends and relatives**.** Obesity with diabetes represent 40.8%, then hypertension represent 36.87%, the thirdly Hyperlipidemia represent 20.11%. The most used T&CM therapies were nutritional supplements 31.8%, multivitamin and minerals 34.64%, Oral herbals 12.29%, acupuncture 3.35%, cupping therapy 10.06%, cautery 2.23%, spiritual healing (ruqia) 11.73%, massage 6.15%. while, 28.49% participant do not use complementary medicine and 6.15% use other types of complementary medicine. Ginger, black seeds, fenugreek and turmeric were used with a frequency of 37.43%, 36.9%, 26.26%and 21.23% respectively in the form of powder, while 31.84% used them after boiling or swallowed with water. 51.96% using vitamin D, 48.04% using vitamin C., 30.17% calcium, 28.49% and zinc 28.49%. Only 6.1% of the respondents had complained of side effects resulting of using complementary therapies.
Conclusion: Diabetes is a chronic metabolic disease frequently complementary medicine is used by patients beside the conventional treatment. Physicians have to be aware of this fact and should encourage their patients to talk regarding the use of complementary medicine as it may affect the outcome and fate of their condition.

Keywords: diabetes, complementary medicine, KSA.

Introduction

Diabetes Mellitus (DM) is a metabolic disease of multiple etiologies, be a sign of hyperglycemia resulting from a deficiency in insulin secretion, insulin action or both, and coupled with disorder of carbohydrate, fat and protein metabolism (American Diabetes Association, 2010) [10]. There are three popular types of diabetes: Type 1 Diabetes Mellitus (T1DM), Type 2 Diabetes Mellitus (T2DM) and Gestational Diabetes Mellitus (GDM) (International Diabetes Federation, 2014) [14]. DM is a chronic disease so that the objective of its management is usually to prevent the progression and complexity of the disease.
The world prevalence of DM was approximated to be 285 million in 2010 which is predicted to increase to 485 million, representing 7.7% of the world adult population between 20–79 years by 2030 (Chen *et al*, 2012) [11]. Diabetes Mellitus (DM) establishes a major public health dilemma in Saudi Arabia. It is unique that prevalence in males is much higher than females, with a prevalence of 34.1% and 27.6 for males and females (Alqurashi *et al*, 2011) [6].
In Saudi Arabia, the prevalence of diabetes is at a disturbing level. Seven million (about 20% of the population) in Saudi Arabia are living with diabetes as estimated and reported by the World Health Organization (WHO) (Alwin Robert *et al*, 2017). Saudi Arabia was the seventh in the world for the disturbing rate of diabetes (Abdulaziz Al Dawish *et al*, 2016).
Many diabetic patients use herbs besides conventional treatment in Saudi Arabia (Al-Rowais, 2002) [7, 8]. Traditional and Complementary Medicines (T&CM) involve a variety of different medical therapies that are chiefly used outside conventional healthcare. However, T&CM and present-day medicine are now offered

together in an integrative health care approach in many present-day medical centres (Allen *et al*, 2009 & Templeman and Robinson, 2011) [5, 18]. Traditional medicine concern practices based on the indigenous culture. The terms "complementary medicine therapies" concern practices that are not part of the country's own tradition (WHO Traditional Medicine Strategy, 2014–2023) [19].

The growing interest in Traditional and Complementary Medicines (T&CM) reflects the need to resort to alternative and complementary remedy modalities which cannot be found in present-day medicine (Ernst, 2010) [12] (Harris *et al*, 2012) [13] (Posadzki *et al*, 2013) [16] (Linde *et al*, 2014) [15] (AlBedah and Khalil, 2015) [3].

The use of complementary and alternative medicine is practiced for chronic diseases, either trying to cure them or to abate its progression and to prevent their complexity. DM is a chronic disease so that the goal of its management is usually to prevent the progression and complexity of the disease. Many diabetic patients use herbs besides conventional treatment in Saudi Arabia (Al-Rowais, 2002) [7, 8]. This research project aimed to study the prevalence and frequency of utilization of complementary medicines among Diabetic patients in Saudi community.

Methods

A cross-sectional study was conducted to achieve our objective. This study directed to Saudi Arabia resident populations of both aged ≥18 y/o with a diagnostic code for diabetes.

The participates in this study through an online questionnaire format in Arabic language that was uploaded to Google forms website, and was distributed on social media applications through collaboration effort with numerous companions and friends and the duration of responses collection over 4 weeks period started in March 2021.

All types of adult diabetics were included irrespective nationality, age or sex of patients.

Demographic data include nationality, gender, age, educational level marital status and lifestyle. History of disease status include inquires on frequency of specialist visits for clinical advice and guidance for treatment, disease duration& associated chronic diseases.

T & CAM items contain commonly used for diabetes as reported in the literatures or the participants said were locally used for diabetes participants were also asked to describe other therapies and remedies they were using at the time of study conduction. Recommended and non recommended T & CAM such as herbs, vitamins minerals acupuncture, venepuncture & …. other were revised.

The software SPSS 24 used to analyze the collected data. Data were revised and coded and tabulated using the frequency and percentage to analyze and interpret the outcomes.

Results

The study sample consisted of 358 diabetic patients. The Saudi citizens represent 49.7% and non-Saudi citizens represent 50.28%. Female more than male by 67.04% of the sample. The percentage of diabetes in single 50.28% more than married 42.5%. The age from 18 to 44 years was 59.2% which is more prominent among university graduated patients 56.42%.The diabetic patient has no lifestyle 57.54%, except smocking 10.1% and exercises 24.58% reviewed in table1.

Table 1: Demographic data of participants

	Frequency	**Rate %**
Nationality		
Saudi	178	49.7%
non-Saudi	180	50.28%
Gender		
Male	118	32.4%
Female	240	67.04%
Social status		
Married	152	42.5%
Single	180	50.28%
Divorced	26	7.26%
Age		
18/44	212	59.2%
45/54	60	16.76%
55/64	56	15.64%
65/74	08	2.23%
75&above	22	6.15%
Education		
Uneducated	54	15.1%
high school	102	28.49%
University	202	56.42%
Lifestyle		

Smoking	36	10.1%
Drink alcohol	06	1.68%
Exercises	88	24.58%
Nothing	206	57.54%
Others	22	6.15%

30.2% of participants suffering for at least 5 years and 30.73% visiting the doctors for consultation once or twice per year. While 39.66% of patients did know their glycated Hemoglobin level. About half of the patients used the oral drugs 50.3% and more than a third of the patients were using injectable drugs (Insulin) 37.99%. Source of consultation for using complementary medicine specialist doctor was 27.9% while 26.26% had reported that they were advised by friends and relatives, reviewed in table 2.

Table 2: Informations about disease of diabetic patients

	Frequency	**Rate %**
Frequency of visit (year)		
Never	96	26.8%
1 to 2	110	30.73%
3 to 4	38	10.61%
4 to 5	30	8.38%
5 & above	84	23.46%
Duration of the disease (year)		
1 to 5	108	30.2%
6 to 10	44	12.29%
11 to 15	80	22.35%
I don’t know	126	35.20%
Glycated Hemoglobin level (A1C)		
6	64	17.9%
7	26	7.26%
8	40	11.17%
9	34	9.50%
10	16	4.47%
more than 10	46	10.06%
I don’t know	142	39.66%
Medicine used		
Oral drugs	180	50.3%
Injectable drugs (Insulin)	136	37.99%
Never used medicine	28	7.82%
Don’t use medicine in the meantime	58	16.20%
Others	02	0.56%
Source of consultation for using complementary medicine		
Specialists	100	27.9%
Pharmacists	34	9.50%
Health practitioner	10	2.79%
Friends and relatives	94	26.26%
Didn’t take any consultation from anyone	120	33.52%

The chronic diseases associated with diabetes were obese which represented 40.8%, then hypertension represent 36.87%, the thirdly was Hyperlipidemia 20.11% and other chronic diseases reported by the participants showed in figure [1].

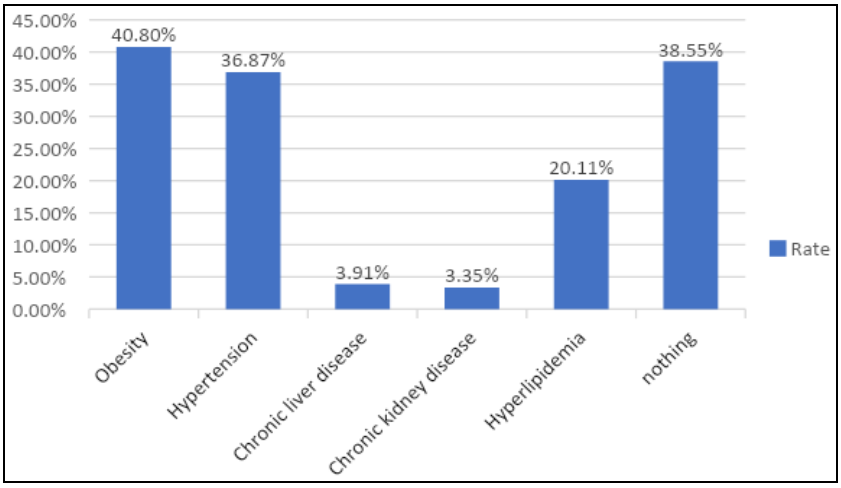

Fig 1: Associated chronic disease

From the 358 interviewed diabetics, the most used T&CM therapies were nutritional supplements 31.8%, multivitamin and minerals 34.64%, Oral herbals 12.29%, acupuncture 3.35%, cupping therapy 10.06%, cautery 2.23%, spiritual healing (ruqia) 11.73%, massage 6.15%, about 28.49% patients do not use complementary medicine and 6.15% use other types of complementary medicine in figure [2].

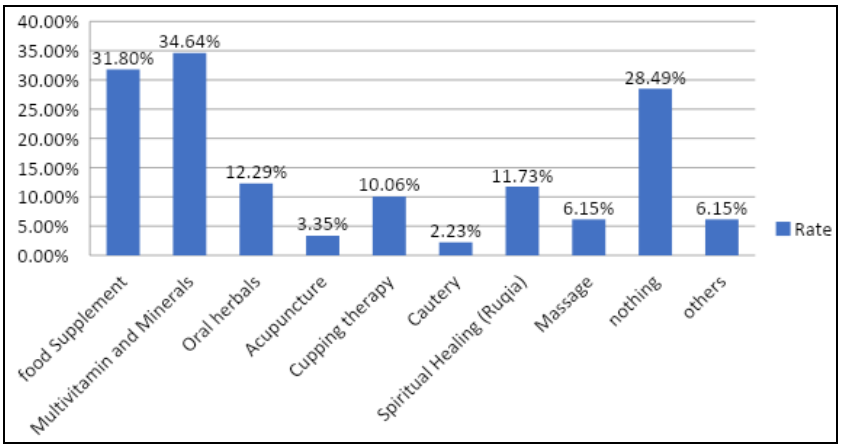

Fig 2: Types of complementary medicine

Interestingly, the top four used herbs were Ginger, black seeds, fenugreek and turmeric with a frequency of 37.43%, 36.9%, 26.26%and 21.23% respectively. Other herbs reported by the participants showed in figure [3].

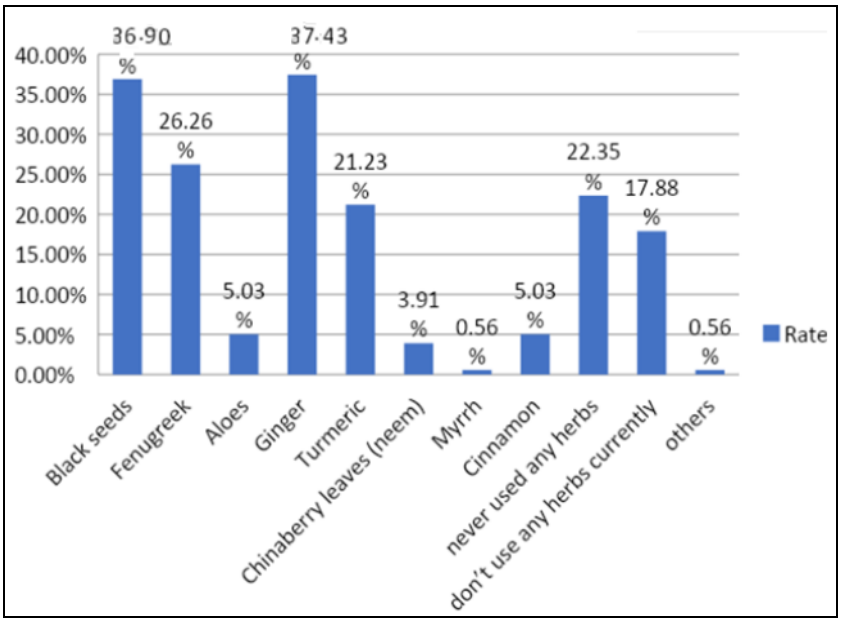

Fig 3: Types of plant / herbs

Regarding the experience of the participants during their use of herbs, most of them 34.6% used the herb as in powder form, while 31.84% used them after boiling or swallowed with water as shown in figure [4].

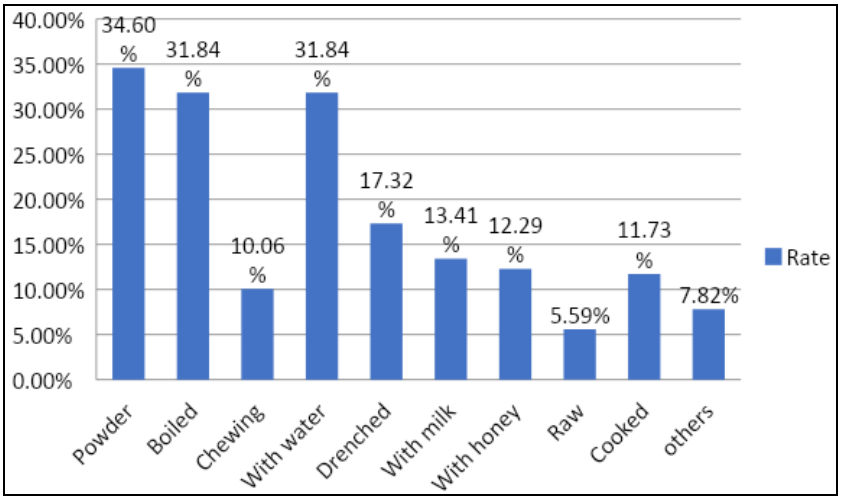

Fig 4: Methods used for taking herbals

Diabetic patients in our study are more using vitamin D 51.96% and vitamin C 48.04% as showed in figure [5].

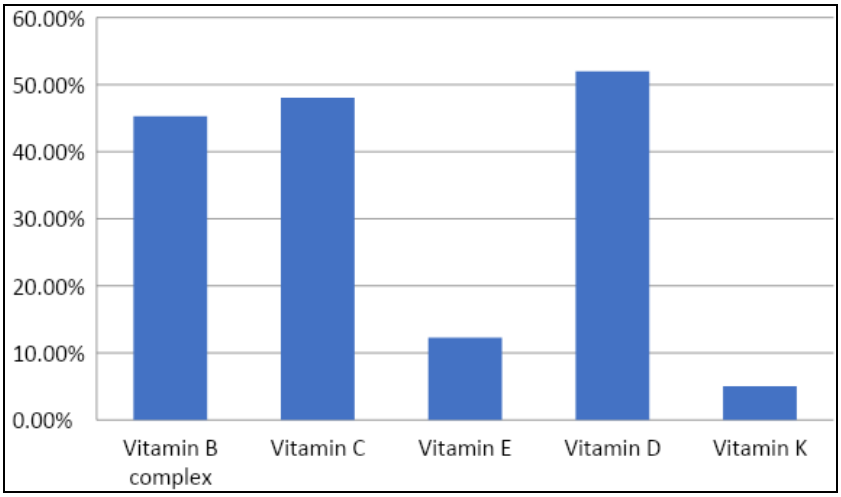

Fig 5: types of vitamins

Regarding the use of minerals, the most used are calcium 30.17% and zinc 28.49% as showed in figure [6].

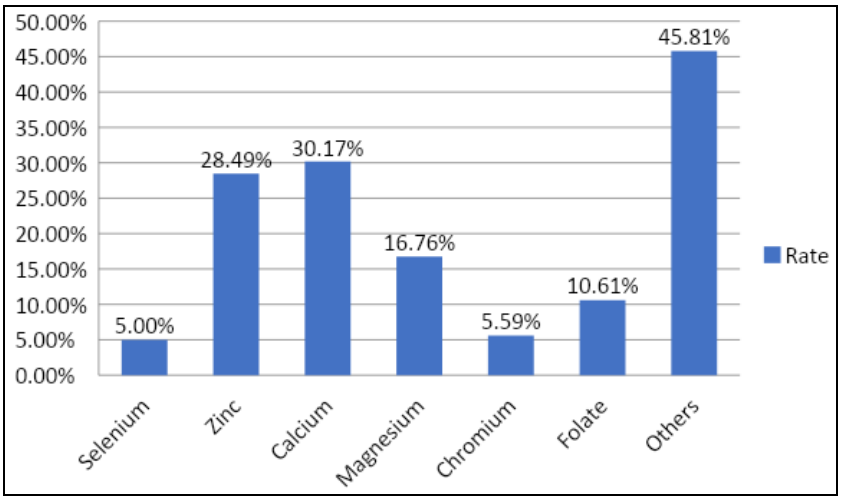

Fig 6: Types of minerals

The results showed that, only 6.1% of the respondents had complained of side effects in figure [7].

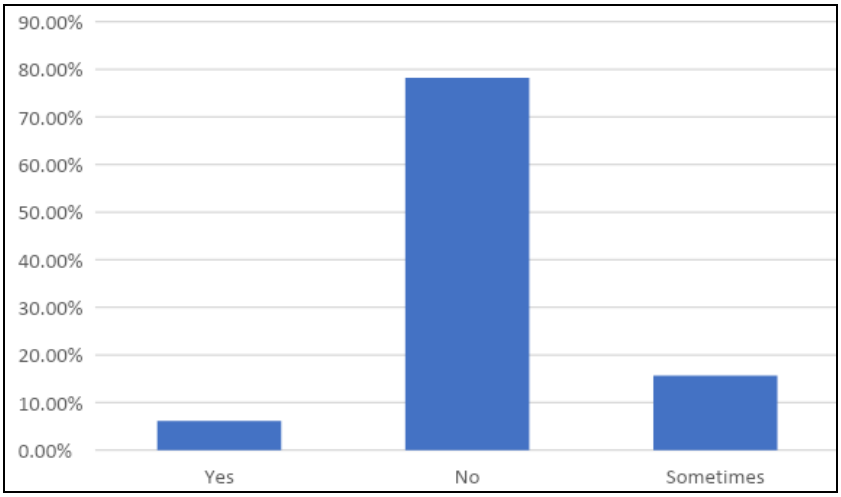

Fig 7: Side effects by using complementary medicine

Discussion

The complementary medicine usage is well known for long time among many people to treat variety of diseases. Physicians need this practice and they need to know more about the extent of outcome of this type of therapies on patients. Diabetes is a common condition in which complementary medicine is frequently used. Diabetic patients are expected that it have a major role in treatment of the disease. Our study is compatible with Abeed *et al*, the most used herbs were fenugreek 57.1%, Nigella 44.6%, myrrh 42.9% and garlic 32.1%. In accordance with our study Saud *et al* proved the use of herbs such as fenugreek, black seeds, neem, myrrh, helmet, harmel, and aloes. Al-Rowels studied specifically herbal use among diabetics, and she reported a prevalence of 17.4%. The most used herbs were myrrh (Commiphora molmol), black seeds (Nigella sativa), fenugreek (Trigonella foenum-graecum), helteet (Ferula assa-foetida), and aloes (Aloe vera) (Abeed *et al*, 2014) [2] (Saud Alsanad *et al*, 2018) (Al-Rowais, 2002) [7, 8].

Regarding the experience of the participants during their use of herbs, most of them 34.6% used the herb as powder form, while 31.84% used them after boiling or with water in the contrary of other study the most using forms for the herbs was boiling 71.4% (Abeed *et al*, 2014) [2].

From the 358 interviewed diabetics, the most used T&CM therapies were nutritional supplements 31.8%, Multivitamin and Minerals 34.64%,Oral herbals 12.29%, Acupuncture 3.35%, cupping therap10.06%, cautery 2.23%, spiritual healing (ruqia) 11.73%, massage 6.15%, about 28.49%patients do not use complementary medicine and 6.15% use other types of complementary medicine in contrary of other studies Al-Eidi *et al*. Said the most used T&CM therapies were herbs 30.4%, wet cupping 20.9%, nutritional supplements 17.6%, cautery 16.7%, spiritual healing (ruqia) 10.8%, Apitherapy 2%, and massage 1.5% (Al-Eidi *et al*, 2016).

The source of consultation for using complementary medicine specialist doctor 27.9% while 26.26% had reported that they were advised by friends and relatives while in other studies said that only 3.6% had consulted a physician for their use of herbs while none of them reported asked a pharmacist about using herbs. On the contrary, family members 42.2% and friends 42.2% (Abeed *et al*, 2014) [2].

Limitations of this study are cleared in the following points: firstly, the small number of surveyed patients. So, we need a large scale of well–designed trials. Secondly, insufficient evidence for most of the identified complementary medicine in curing diabetes. So, the specialists have to be improving their knowledge about CAM products and therapies.

In conclusion, diabetes is a chronic metabolic disease frequently complementary medicine is used by patients beside the conventional treatment as supportive therapy. Physicians have to be aware of this fact and should encourage their patients to talk regarding the use of complementary medicine as it may affect the outcome and prognosis of their condition.

Conflicts of Interest

The authors have no challenging interest

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Nil

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