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Research Article

**A CROSS-SECTIONAL RESEARCH TO DETERMINE  
COMMON CAUSES OF EMPLOYING COMPLEMENTARY  
AND TRADITIONAL DRUGS TO TREAT DIABETES  
MELLITUS: AWARENESS, ATTITUDE AND STRATEGIES**<sup>1</sup>Dr Muhammad Sibtain Raza, <sup>2</sup>Dr Mohsin Akhtar, <sup>3</sup>Dr. Muhammad Hashim<sup>1</sup>Medical Officer, THQ Jhang, <sup>2</sup>Mo Anaesthesia, Govt Said Mitha Teaching Hospital Lahore,<sup>3</sup>Medical officer, Bolan Medical College University of Balochistan.**Article Received:** March 2019**Accepted:** April 2019**Published:** May 2019**Abstract:**

**Objective:** The objective of the research was to determine the commonness and causes for the usage of conventional and complementary drugs in patients of diabetes mellitus along with consultant's attitude regarding complication coping strategies as positive as well as negative.

**Method:** This cross-sectional research was carried out at Services Hospital, Lahore from July 2017 to May 2018 on diabetic mellitus patients having age more than eighteen years. Researcher utilized semi-structured questionnaire with the objective of data collection.

**Result:** Total numbers of the respondent was three-hundred and eighty-six (ninety-nine percent). Among them the number of patients used traditional and complementary medicine concerning to their diabetes was one-hundred and seventy-nine (46.6%). An important association was identified between such usage and diabetes kind, level of education, age, monthly earning, span as well as the complexity of disease, glycated hemoglobin level and treatment methodology. One-hundred and thirty-five (75.41%) patients who utilized traditional and complementary medicine did not talk about the issue with their doctor.

**Conclusion:** While examining the diabetic mellitus patients, the consultant should investigate from their patients regarding the usage of conventional and complementary medicine and also thoroughly guide them on the subject.

**Keywords:** Traditional and Complementary Medicine (TCM), Complementary and Alternative Medicine (CAM), Diabetes Mellitus (DM), Glycated Hemoglobin (HBA1c), Impaired Glucose Tolerance (IGT) Low-and Middle-Income Countries (LMICs).

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**INTRODUCTION:**

With respect to international diabetic federation, DM is the most common universal health problem of the 21<sup>st</sup> century. Approximately four hundred and fifteen million peoples internationally or (8.8%) of universal adult public having age twenty to seventy-nine thought to have DM. The approximated uncertainty duration throughout the world concerning to adult public with DM ranges (7.2 to 11.4%). Every year lot of people affected with the condition. Apart from approximated four-hundred and fifteen million diabetic mellitus peoples, additionally three-hundred and eight million have IGT putting them at the huge hazard of developing the disease in the near future. Almost seventy-five percent of patients reside in LMICs and it is supposing that the most expansion will be viewed in those localities where economies are leaning from low to middle earning levels [1]. With reference to TURDEP-II, in 2010 the periodicity of diabetic mellitus in Turkey was established as (13.07%) [2]. There is a developing tendency at international level for DM patients to take TCM or CAM with the objective of improving their illness along with general improvement in health and traditional and complementary medicines have generated expressive industrial, academic, as well as economic benefits because of the huge expansion of use [3]. Traditional and complementary medicines are defined as a category of various medical therapy and health practices which are not currently assumed as a component of formal treatment [4]. Since diabetes mellitus and its entanglements are main factors of demise bitterness, diabetes mellitus makes a big public health problem [5]. Most of the peoples move towards complementary treatment to overcome and eliminate the disease because of the potential risk to the standard of life [6]. Nutritional supplement and advice, spiritual healing, herbal drugs and easy approach are internationally applied treatments for DM patients [7]. In extreme critical illness cases such as DM which are marked by various prolong term entanglements, however not restrained to hepatic and renal failure. It is a wiser step to pursue scientifically researched and verified treatments with recognized medicine interaction, along with facts on their reliability and strengths in various age categories.

Complementary and alternative medicine required to be carrying under a regulatory framework and determined to get insight into their reliability and strength, so consequently produce belief in the endemic system of medicines [8]. The objective of the research was to determine the commonness and causes for the usage of conventional and complementary drugs in patients of diabetes mellitus

along with consultant's attitude regarding complication coping strategies as positive as well as negative.

**SUBJECT & METHOD:**

This cross-sectional research was carried out at Services Hospital, Lahore from July 2017 to May 2018 on diabetic mellitus patients having age more than eighteen years. The researcher utilized semi-structured questionnaire with the objective of data collection. The questionnaire was developed by analysis of concerning international literature as well as concluded by succeeding a pilot application earlier to facts compilation [3, 4, 7]. The recommendation was acquired from an organizational review panel along with written approval from entire participants. The literature analysis highlighted that the rate of utilization of traditional and complementary medicine in diabetic mellitus patients of the Turkish public is in between forty-one to forty-nine percent [9, 10]. The researcher measured the volume of the specimen applying ninety-five percent of confidence level, five percent margin for any lapse, established on analysis of literature, the estimated universality was acknowledged as forty-five percent. The approximate minimum specimen volume was three-hundred eighty-one, rounded up to three-hundred ninety to adjust any rejection. Alternative sampling technique was used for selection of diabetic mellitus patients. The patients diagnosed with diabetic mellitus and having age eighteen years or more than eighteen years, capable to communicate and understand is required inclusion criteria for research. The researcher analyzed the collected data by utilizing SPSS software and stated peremptory calculations in frequencies as well as the percentage and numerical facts were represented as mean and SD and used chi-square along with student t-test for data analysis of independent specimens.  $P < 0.05$  was supposed statically expressive.

**RESULTS:**

In a total of three-hundred and ninety, the numbers of respondents were three-hundred and eighty-six (ninety-nine percent) among them the number of male and female was one-hundred & sixty-seven (43.3%) and two-hundred & nineteen (56.7%) respectively. In general, three-hundred and ten (80.31%) having age less then sixty-five years and one-hundred and nineteen (31.2%) were uneducated. The number of patients used traditional and complementary medicine concerning to their diabetes was one-hundred and seventy-nine (46.6%). An important association was identified between such usage and diabetes kind, level of education, age, monthly earning, span as well as the complexity of

the disease, glycated haemoglobin level and methodology of treatment. Herbaceous products and herbal tea, the contents or nomenclature, which are not verified were largely utilized traditional and complementary medicine among research participants and one hundred and fifty-four (86.03%) were also not familiar with the contents or name of herbaceous product and tea that they utilized. The average age of the patients was (52.12±13.36) years (eighteen to ninety-five year) along with (29.33±6.65) BMI. The average fasting blood glucose was (180.95±76.56) and glycated haemoglobin value was (9.20±3.01%). The researcher noted an

association between traditional and complementary medicine usage and these variants.

Diabetes mellitus patients largely utilized traditional and complementary medicine with approval of their family members, moreover additional DM patients are herbaceous, and they gain them mostly from a herbalist. Those patients who utilized traditional and complementary medicine largely for not more than one month in ninety-two (51.39%) cases had the craving effects and one-hundred and thirty-five (75.41%) patients who utilized traditional and complementary medicine did not talk about the issue with their doctor.

**Table – I: TCM Versus Non-TCM**

Variables		Total	TCMs	Non TCMs	P-Value
Age	< 65	310	118	192	<0.001*
	> 65	76	61	15	
Gender	Female	219	95	124	0.202
	Male	167	82	85	
Education	Illiterate	119	46	73	0.032*
	Literate	33	11	22	
	Elementary school	117	56	61	
	Secondary school	29	17	12	
	High school	45	27	18	
	University	39	17	22	
Monthly Income	Unemployed	199	82	117	0.002*
	< 1000	57	19	38	
	< 10001 - 20000	82	52	30	
	< 20001 - 30000	31	17	14	
	> 30001	17	9	8	
Diabetes Type	Type - I	43	27	16	.015*
	Type - II	341	150	191	
Diabetes Duration	< 1 Years	55	17	38	<0.001*
	1 - 5 Years	120	51	69	
	6 - 10 Years	106	50	56	
	11 - 20 Years	84	43	41	
	20 Years or more	21	18	3	
HbA1c	Under 10	242	105	137	0.002*
	Above 10	144	74	70	
Treatment	Insulin	108	49	59	0.005*
	Oral med.	187	87	100	
	Insulin + Oral Med	77	42	35	
	Diet/ Exercise only	14	1	13	
Diabetic Complications	Yes	208	103	105	0.006*

Neurological	144	69	75
Ophthalmic	69	40	20
Renal	41	22	19
Diabetic foot	18	9	9
No	178	76	102

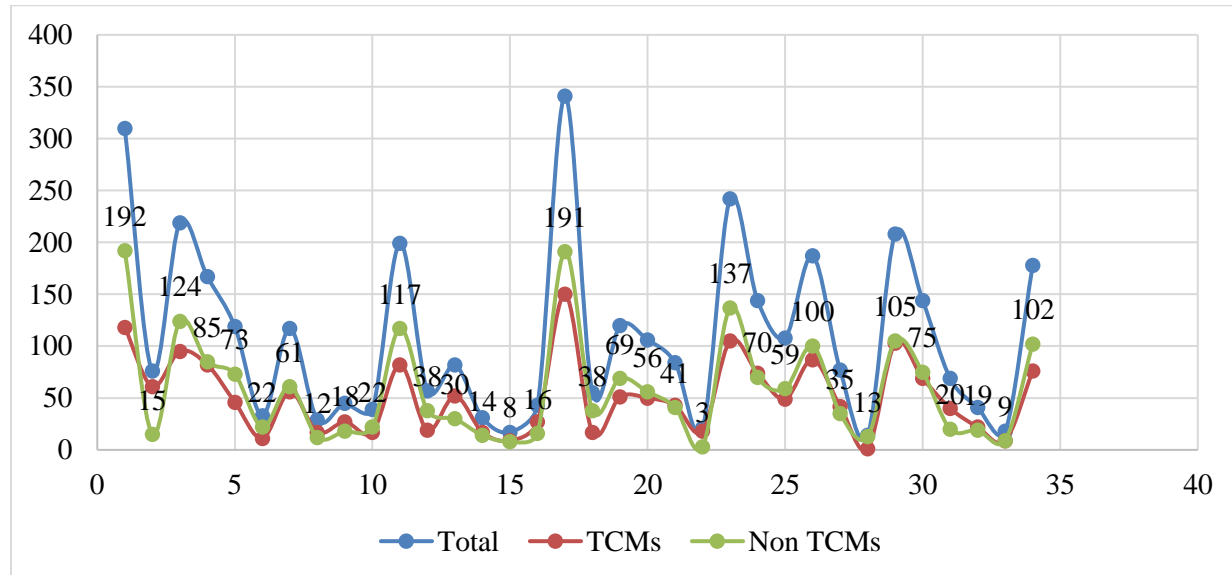


Table – II: Types of TCM

Types of TCM		Number	Percentage
Herbal teas and other herbal products	Ingredients or names unknown	154	86.03
	Mountain banana	18	10.05
	Pomegranate flower	13	7.2
	Okra seeds and flowers	12	6.7
	Stinging nettle	9	5.02
	Cinnamon	7	3.91
	The leaves of the olive tree	6	3.35
	Cumin	6	3.35
	Sage and cinnamon mixture	5	2.79
	Almond seeds and flowers	5	2.79
	Rosehip seeds and flowers	2	1.11
	The leaves of the plane trees	2	1.11
	Crab Apple fruit	2	1.11
	Artichoke juice	2	1.11
	Avocado leaves water	2	1.11
	Quince leaves	2	1.11
	Pills	10	5.58
Yoghurt and lemon juice mixture	5	2.79	

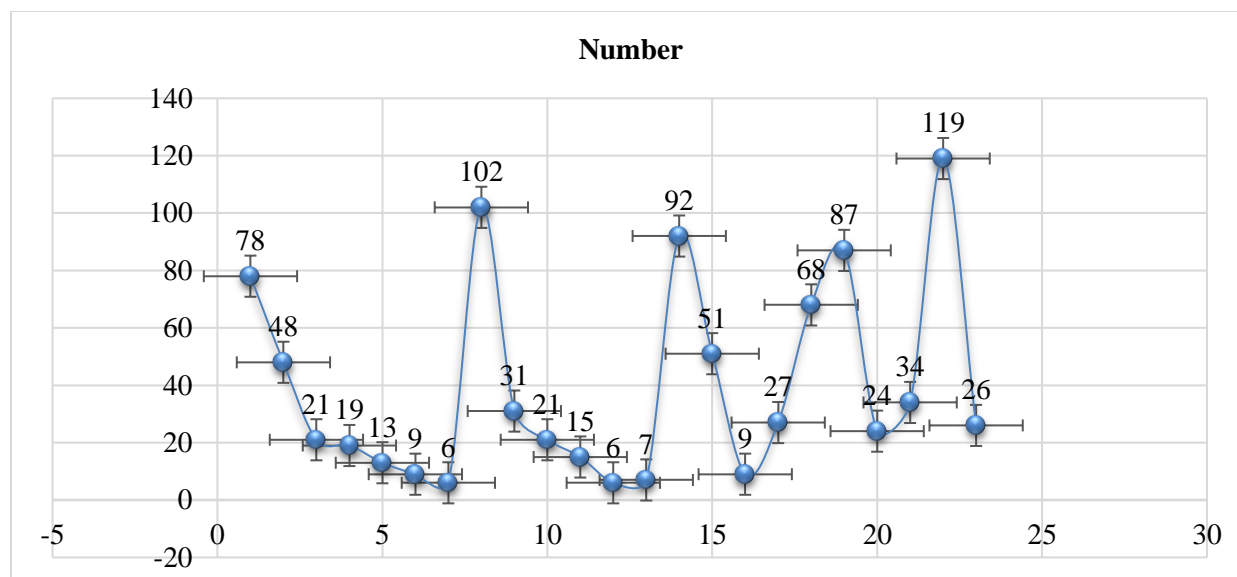
	Honey	3	1.67
	Spiritual practices	11	6.14
	Tai chi, yoga, etc.	0	0

**Table – III:** TCM Versus Non-TCM (Mean and SD Values)

Variables	Using TCMs		Not Using TCMs		t	P-Value
	Mean	±SD	Mean	±SD		
Age	54.89	49.72	49.72	12.09	3.855	<0.001
HbA1c	10.74	3.3	7.79	1.85	4.484	<0.001
Fasting Blood Sugar	183.97	74.45	178.31	78.45	0.703	0.483
BMI	29.63	6.99	28.4	6.06	0.351	0.729

**Table – IV:** Questions and Variables (Number and Percentage)

Variable	Number	Percentage	
The sources of recommendations for TCM	Family	78	43.57
	DM patients	48	26.81
	Herbalists	21	11.73
	TV	19	10.61
	Physician	13	7.26
	Internet	9	5.02
	Book	6	3.35
Where did you get it/them?	Herbalist	102	56.98
	Market	31	17.31
	Friend	21	11.73
	Salesman	15	8.37
	Internet	6	3.35
	Pharmacy	7	3.91
How long have you used it/them?	< 1 Month	92	51.39
	1 - 6 Month	51	28.49
	6 - 12 Month	9	5.02
	More than 1 Year	27	15.08
Did they have the desired effect?	Yes	68	37.98
	No	87	48.6
	Don't know	24	13.4
Did you suffer because of the method that you used?	Yes	34	18.99
	No	119	66.48
	Don't know	26	14.52



### DISCUSSION:

Traditional and complementary medicines and complementary and alternative medicines are largely used by diabetic mellitus patients in the entire world [6], and with respect to Turkish reference, in Anatolia public move towards such treatment for centuries [10 – 14].

There have been multiple types of research finding out the utilization of traditional and complementary medicines in diabetic mellitus patients from various countries, in research of 9<sup>th</sup> century, the rate of traditional and complementary medicines use in diabetic mellitus cases was in between (17 to 17.8%) [6]. Whereas additional researches stated rate of seventy-three percent in the USA, sixty-two percent in Mexico, forty-eight to fifty-three percent in southern Australia, thirty percent in KSA, forty-one to forty-eight percent in Turkey, forty-six percent in British and sixty-eight percent in India [4, 8, 9, 15, 20]. In the current research (46.6%) of diabetic mellitus patients professed to used traditional and complementary medicine. Comparability of traditional and complementary medicines used among the respondent with variant education level discover statically important deviation, with minor frequent use discover among the uneducated respondent. These results are coherent with former research [9 – 21]. In current research, an important relationship was also discovered between traditional and complementary medicine usage and earning, being most usual among the patient with huge monthly earning.

Contrary to the outcomes of additional research, the current research identified that traditional and

complementary medicine usage among men was most frequent as compared to women. Moreover, it was also most frequent in diabetic mellitus patients having age more than sixty-five years with diabetic entanglements [9, 21 – 23]. Which can be associated with the fact that those people having age more than sixty-five years having huge chances of developing complications along with other diseases and they also preferred to used traditional and complementary medicine despite taking multiple prescribed drugs. Coherent to the former research, our research identified that the rate of traditional and complementary medicine usage is directly proportional to the time period of diabetic mellitus [4, 9, 21].

Assuming the various kind of diabetic, former research has presented that traditional and complementary medicine usage is much frequent in those with type I DM, however, another research described much frequent usage in type II diabetic mellitus [4, 5, 21]. our research also presented type I diabetic mellitus patients as the most frequent traditional and complementary medicine user because type I DM patients preferred to used traditional medicine in spite of using insulin injection.

Consistent to the outcomes of the research conducted in Australia, a statistically important association was found between glycated haemoglobin level and usage of traditional and complementary medicines, being superior among those having glycated haemoglobin level greater than ten. This result is significant as it presents that individual may be much lean towards traditional and complementary medicines, and learn faster as their diabetic mellitus concerning



complication increases.

In our research, inconsistent to a multiple of former research, an important relationship was identified between usage of traditional and complementary medicines and therapy type [3, 4], with traditional and complementary medicines used most frequently by those patients who are taking orally as well as insulin medications. Our research presented no relationship between body mass index or fasting blood sugar and usage of traditional and complementary medicine.

Uniform to the former research, herbaceous products and tea is the most common traditional and complementary medicine used by DM patients [9, 21]. Almost (86.03%) of the patients were not familiar with the name and ingredients of the herbal products they used. It is obvious that such an attitude is inappropriate and may entangle the treatment if developing toward poisoning or any other issue. Our research also proving the outcomes of the former research conducted, a number of people described that they achieved traditional and complementary medicines from herbalists, where such products are much lenient to discover. Our research presented that (18.99%) of research participant accepted that traditional and complementary medicines had experienced negative effects, proving that unprescribed traditional and complementary medicine usage has negative consequences on course and could be dangerous for life. The (75.41%) participants did not talk about the usage of traditional and complementary medicine with their physician. This verifies that consultant does not inquire their patients on the complication or patients are unwilling to talk about their complication history with a consultant. And those patients who communicated the usage of traditional and complementary medicine with their consultant, sixteen (36.36%) said that their consultant had cautioned them to leave the practice. However, it is a perceptible procedure for a consultant to caution patients of probable entanglements with the usage of traditional and complementary medicine as a matter-of-course, regardless of products their patients used as well as not using at all. Traditional and complementary medicines are not a part of medical education, therefore, consultants did not suggest any traditional and complementary medicine as treatment. It was identified that twenty-five (6.47%) participant was misguided on traditional and complementary medicine subject and suppose that consultant must be educated in this respect and capable to recommend such a product.

In the current analysis, in which it was recorded that the utilization of complementary and alternative medicine as a treatment among DM patients was common, physicians were supported to deliberate the probable hazards and advantages. Knowledge-based programs on the usage of complementary and alternative medicine might be beneficial for individuals and encourage them to share without hesitation with their physician regarding cons and pros of their use, with appropriate consideration given to their complication background and health condition [24].

### CONCLUSION:

The probability of utilizing traditional and complementary medicine marked up in patients having age more than or equal to sixty years along with higher education level, marked up earning, with DM complications, taking insulin or oral antidiabetic, with type I diabetic detected, with glycated haemoglobin level is more than or equal to ten and specifically as the time period of DM complication extended. A multiple of those patients who selected traditional and complementary medicine refrained from sharing the complication with their consultant.

### REFERENCES:

- 1 Kumar D, Bajaj S, Mehrotra R. Knowledge, Attitude and Practice of Complementary and Alternative Medicines for Diabetes. *Public Health*. 2006; 120: 705-11.
- 2 Argaex-Lopez NWNH, Kumate-Rodriguez J, Cruz M, Talavera J, Rivera-Arce E. The Use of Complementary and Alternative Medicine Therapies in Type 2 Diabetic Patients in Mexico. *Diabetes Care*. 2003; 26: 2470.
- 3 Al-Saeedi M, Elzubier AG, Bahnassi AA, Al-Dawood KM. Patterns of Belief and Use of Traditional Remedies by Diabetic Patients in Mecca, Saudi Arabia. *East Mediterr Health J*. 2003; 9: 99-107.
- 4 Ceylan S, Azal Ö, Taslipinar A, Turker T, Açikel CH, Guleç M. Complementary and alternative medicine use among Turkish diabetes patients. *Complement Ther Med*. 2009; 17: 78-83.
- 5 Kaynak I, Polat Ü. Diabetes mellitus'lu hastaların tamamlayıcı ve alternatif tedavileri kullanma durumları ve diyabet tutumları ile ilişkisi. *Genel Tıp Derg*. 2017; 27: 56-64
- 6 MS Ali-Shtayeh, Jamous RM, Jamous RM. Complementary and alternative medicine use amongst Palestinian diabetic patients. *Complement Ther Clin Pract*. 2012; 18:16-21.
- 7 Dunning P, Martin M. Using a focus group to explore perceptions of diabetic severity. *Pract Diabetes Int*. 1997; 14: 185-8.

- 8 Dunning T. Complementary therapies and diabetes. *Complement Ther Nurs Midwifery*. 2003; 9: 74-80.
- 7 Chang HY, Wallis M, Tiralongo E. Use of complementary and alternative medicine among people living with diabetes: literature review. *J Adv Nurs*. 2007; 58: 307-19.
- 8 Kusakabe J, Saboo B, Sadikot S, Das AK, Joshi S, Chawla R, et al. Unproven Therapies for Diabetes and Their Implications. *Adv Ther*. 2017; 34:60-77.
- 9 Acipayamli O. *Turkiye Folklorunda Halk Hekimligi (Folk Medicine in Turkish Folklore)*. Dil Tarih Coğrafya Fakultesi Dergisi. 1969; XXVI: 1-2 (in Turkish).
- 10 Turkdogan O. *Kultur ve Saglik Hastalik Sistemi (culture and health system)*, Istanbul, MEB Yayinlari 1991; 145-147 (in Turkish).
- 11 Ben-Arye E, Schiff E, Karkabi K, Keshet Y, Lev E. Exploring association of spiritual perspectives with complementary medicine use among patients with Type 2 diabetes in Israel. *Ethn Health*. 2011; 16: 1-10.
- 12 Chang HA, Wallis M, Tiralongo E, Wang HL. Decision-making related to complementary and alternative medicine use by people with Type 2 diabetes: a qualitative study. *J Clin Nurs*. 2012; 21: 3205-15.
- 13 Fabian E, Töschler S, Elmadfa I, Pieber TR. Use of complementary and alternative medicine supplements in patients with diabetes mellitus. *Annals Nutri Metabol*. 2011; 58: 101-8.
- 14 Thomas KJ, Nicholl JP, Coleman P. Use and expenditure on complementary medicine in England: a population-based survey. *Complement Ther Med*. 2001; 9: 2-11.
- 15 Bell RA, Suerken CK, Grzywacz JG, Quandt SA, Arcury TA. Complementary and alternative medicine use among adults with diabetes in the United States. *Altern Ther Health Med*. 2006; 12:16-22.
- 16 Clifford RM, Batty KT, Davis W, Davis TM. Prevalence and predictors of complementary medicine usage in diabetes: Fremantle diabetes study. *J Pharm Pract Res*. 2003; 33: 260-4.
- 17 Kesavadev J. Efficacy and safety concerns regarding Complementary and Alternative Medicine use among diabetes patients. *J Pak Med Assoc*. 2017; 67: 316-9.
- 18 International Diabetes Federation. *IDF Diabetes Atlas Seventh Edition 2015*. Available from: URL: <http://www.idf.org>.
- 19 Satman TURDEP-II Sonuçlari. Available from URL: [http://www.turkendokrin.org/files/file/TURDEP\\_II\\_2011](http://www.turkendokrin.org/files/file/TURDEP_II_2011)
- 20 Medagama AB, Bandara R, Abeysekera RA, Imbulpitiya B, Pushpakumari T. Use of Complementary and Alternative Medicines (TCMs) among type 2 diabetes patients in Sri Lanka: a cross-sectional survey. *BMC Complement Altern Med*. 2014; 14: 374.
- 21 Manya K, Champion B, Dunning T. The use of complementary and alternative medicine among people living with diabetes in Sydney. *BMC Complement Altern Med*. 2012; 12: 2.
- 22 Wazaify M, Afifi FU, El-Khateeb M, Ajlouni K. Complementary and alternative medicine use among Jordanian patients with diabetes. *Complement Ther Clin Pract*. 2011; 17: 71-5.