Prevailing Myths and Misconceptions about Diabetes Mellitus in Qassim Region of Saudi Arabia.

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Abstract:

Objectives: To identify the prevailing myths and misconception about Diabetes Mellitus among diabetics and non- diabetics attending primary health care centers in Qassim region of Saudi Arabia.

Methods: We conducted a cross sectional study in 8 randomly selected Primary Health Care (PHC) Centers of Qassim Region from April to July 2010. The study included diabetic and nondiabetic patients attending PHC Centers. Data was collected by 880 pre-tested, self administered questionnaires of which 110 questionnaires were distributed in each PHC Center of Qassim Region. Questionnaire included a sections on socio-demographic information (age, sex, education, marital status and occupation), as well as questions about prevailing myths and misconceptions on diabetes mellitus. Data was analyzed by using SPSS (version 12 for Windows).

Results: The common prevailing myths in the population of Qassim region were, consuming sugar causes diabetes (71.6%), diabetics should avoid sweets. (65.8%), some type of dates do not increase sugar level (53.3%), honey intake doesn't increase sugar level (45.3%), and diabetes mellitus can affect sexual performance in its early stages (40.6%). There is significant difference in response according to educational status (P= 0.044), but there was no significant difference in gender, history of diabetes mellitus and family history of diabetes.

Conclusion: There are many myths and misconceptions surrounding diabetes mellitus in Qassim region, which complicate the disease and health-seeking behavior. Launching of a health education program is required with participation of staff and medical students of College of Medicine, Qassim University.

Key words: Myths; Misconceptions; Diabetes Mellitus.

الاعتقـــادات الخاطئـــة الســـائدة حـــول مـــرض الســـكر فـــي منطقـــة القصـــيم فـــي المملكـــة العربيـــة الســـعودية

الخلاصة:

الأهداف: تحديد الاعتقادات الخاطئة السائدة حول مرض السكر في منطقة القصيم في المملكة العربية السعودية.

الأساليب: أجرينا دراسة مقطعية في ثمانية من مراكز الرعاية الصحية في منطقة القصيم خلال ابريل - يوليو 2010 م, تم اختيار المراكز عشوائيا بين مرضى السكري والمرضى المراجعين للمراكز الصحية سواء مصابين أو غير مصابين بمرض السكر. تم جمع العينات من خلال 880 استبيان بمعدل 110 استبيان لكل مركز صحي ويشمل الاستبيان بيانات معلومات اجتماعية وديموغرافية (العمر ، الجنس ، والتعليم ، والحالة الزواجية والمهنة) ، وشملت أيضا أسئلة عن الاعتقادات الخاطئة بمرض السكر. وتم تحليل البيانات باستخدام برنامج الإحصاء للعلوم الاجتماعية (الإصدار 12 ويندوز).

النتائج: كان نسبة الاعتقاد الخاطئ الأكثر شيوعا هو أن استهلاك السكريات يسبب مرض السكر (71.6 ٪), ثم الاعتقاد الخاطئ بأنه ينبغي على مرضى السكر أن يتجنبوا تناول الحلويات. (65.8 ٪) ، يليه الاعتقاد الخاطئ بأن بعض أنواع التمور لا يسبب ارتفاع السكر (53.3 ٪) ، ثم تناول العسل لا يزيد مستوى السكر (45.3 ٪) ، وأنه يمكن لمرض السكر أن يؤثر على الجنس في المراحل الأولى من المرض (40.6 ٪). هناك اختلاف كبير في الاستجابات حسب الحالة التعليمية (P= 0.044)، ولكن لم يكن هناك اختلاف كبير في الاعتقادات بين الذكور والإناث ، وبين المصابين بمرض السكر وكذلك بين الذين لديهم تاريخ عائلي لمرض السكر.

الخلاصة: هناك العديد من الاعتقادات الخاطئة وسوء الفهم محيطة لمرض السكرا في منطقة القصيم ، والتي قد تزيد مضاعفات هذا المرض. نحن بحاجة إلى برامج توعية صحية بشأن هذه الاعتقادات. يجب اشراك طلبة الطب في مثل هذه البرامج التوعوية.

الكلمات الدالة: الاعتقادات الخاطئة ؛ مرض السكر ، المملكة العربية السعودية .

Introduction:

Diabetes mellitus is the most common metabolic disorder, its prevalence varying widely worldwide and ranging from as low as <1% to >50% . The World Health Organization (WHO) estimates that more than 180 million people worldwide have diabetes. This number is likely to more than double by 2030 [1].

Diabetes Mellitus (DM) is major public health problem in Saudi Arabia. The overall prevalence of DM in adults is 23.7% in KSA during the recent years [2].

Even then, only few people have the right information about the disease. No study has been conducted in recent years in Saudi Arabia to assess the prevailing myths about diabetes mellitus and its impact on the health-seeking behavior.

Myths are popular beliefs or stories that have become associated with a person, community, or occurrence, especially when considered to illustrate a cultural ideal [3].

This false collective beliefs become part of cultural identity and used to justify a social behavior. They have a strong influence in the life of individuals and their way of living including seeking treatment during illness. Therefore, understanding the myths and misconceptions about diabetes mellitus is important in providing better care and health education to both patients and healthy individuals.

The population of the Qassim Region consists of people nearly of the same cultural identity as other parts of Saudi Arabia. Particularly, dietary habits, strong conviction of the various myths concerning diets, herbal treatment and sequelae of the disease, and this leads to a high risk of complications. Therefore, we aimed to identify the prevailing myths and misconception about diabetes mellitus in Qassim Region of Saudi Arabia.

Methodology:

We conducted a cross sectional study to identify the prevailing myths and misconceptions about diabetes mellitus among diabetic and non diabetic patients of both sexes who routinely visit PHC Centers in Qassim Region of Saudi Arabia. The study was carried out from April to July 2010. The total number of primary health care centers in Qassim Region is 144 and by random selection eight PHCs were selected for this study. By systematic random sampling, diabetic and non diabetic individuals were selected (every second diabetic and every fifth non diabetic individual reporting to a primary health care centre) as per inclusion criteria.

The questionnaire was developed based on international standards concerning the prevailing myths and misconceptions about diabetes mellitus [3] [4]. The opinion of PHC doctors was also taken in consideration through piloting 100 questionnaires to assess the administrative and procedural logistics. We also added a question to each myth asking the respondents why they chose a particular answer. The questionnaire was self administered and translated into Arabic. Questionnaires included a section on socio-demographic information (age, sex, education, marital status and occupation) besides prevailing myths on DM.

Calculation of the sample size was based upon the assumption that respondents who are convinced about the prevailing myths will constitute 50% ± 10% (40 – 60%) of the target population. Assuming 95% confidence interval ($\alpha = 0.05$), we calculated sample size of 100 per PHC Center,

which was increased to 880 to account for the design effect [5].

Data entry and analysis was carried out using SPSS (version 12 for Windows). We used Cronbach's Alpha test for reliability of the questions, the frequency to identify the prevailing myths in percent and cross-tabulation with Chi-squared test to detect statistically significant differences.

Inclusion criteria: Saudi personnel who are resident of Qassim region attending PHC Center, twenty years or over and who agreed verbally to participate in the study.

Exclusion criteria: Non-Saudis, those below twenty years and those who did not agree to participate in the study.

Ethical approval was obtained by ethical review committee, College of Medicine, Qassim University.

Results:

The reliability test of the questionnaire is 0.80 (Cronbach's Alpha test for reliability of the questions); above average.

Table 1 shows that the actual number of completed interviews in the surveys was 805, with respondent rate 91.5%, males 49.1%, and females 50.9%, diabetic 67.8% and non diabetic 32.2%.

Table 2 presents the most common myth in the community, namely that consuming sugar causes diabetes (71.6%), the 2nd being diabetics should avoid sweets (65.8%), 3rd being some types of dates don't increase sugar (53.3%), 4th being honey intake doesn't increase sugar level (45.3%) and 5th being that diabetes mellitus can affect sexual performance in early stages (40.6%).

We have some *labile groups* who gave answers other than yes or no e.g. Insulin causes addiction (29.9%), sour or bitter herbals can treat DM (28.0%).

Table 3 describes the percentage (%) of frequencies of responses, explaining the reason respondents choose a prevailing myth: **Why** consuming sugar causes diabetes? *Because:* -sugar raises the level of blood sugar (11.2%), - affects the pancreas (0.7%) and - no comments (65.8%). **Why** diabetics should not eat sweats? *because:* - sweets raise blood sugar (21.5%) - cause more complication (11.2%) and -no comment (65.8%). **Why** some dates don't raise blood sugar level? *Because*: - dates contain less sugar (27.7%), - no comment (58.8%). **Why** honey does not increase sugar level? *Because*: - it is pure (15.2%), - mentioned in Qur'an (6.2%) and - no comment (62.5%)…

Table 4. In this table comparison is made between commonly prevailing myths and less frequent myths of our study subjects.

Table 5 Mean knowledge scores by respondents' characteristics concerning prevailing myths, after assessing the accuracy of respondents, the prevailing myths was with significant difference in the **education level** (P= 0.044), but no significant difference in: **gender** (P= 0.604), **age** (P= 0.13) and **history of diabetes** (P= 0.362).

Discussion:

The reason for prevailing myths and misconception about diabetes mellitus are multi-factorial. These include lack of knowledge about diabetes, poor education, cultural beliefs and social misconception. It is very important to identify the prevailing myths in our community to be able to launch proper health education programs for control and prevention of diabetes mellitus.

In a hospital based study carried out in India similar results were found. Twenty two percent of respondents believe that consuming sugar causes DM and myths were more common among females [4].

A study carried out in Karachi, Pakistan in 2005 examined myths pertaining to diabetes mellitus among non diabetics. Respondents reported that they believed that DM is predominantly contagious (p= <0.03), diabetics becoming more ill (what does this mean?) (p=<0.009) and believed in spiritual treatment for permanent cure of diabetes (p=<0.006) [6].

In our own study, the most prevalent myth was that *Diabetic should not take sweets*, which is not true, as diabetics may consume small amounts of sweets and carbohydrate. Dates are consumed a lot in Saudi Arabia and there is a prevailing myth *about some types of dates* like (Shakra, Khalas, Wanana, Ajwa ...etc), containing little sugar, which is incorrect. The same is true for *honey* as some believe that if it is pure or because it is mentioned in Qur'an and Hadeeth that it does not raise the blood sugar among diabetics. The myth that *diabetes can affect sex* in early stages was also common, which is also not true.

There were *labile groups* holding beliefs about herbals curing diabetes, though some due to bad experience no longer believe in this. Similar studies in Pakistan reported that patients avoid herbals when they are soured [8], but still many in our study were not sure about the role of herbals. This group may be easily misinformed, but in the meantime represent a good target for health education.

There was a significant difference in prevailing myths in our study amongst respondents with different standards of education. This was also found by Nisar *et al* and Rai and Kishore [6] [7].

The prevalence of myths was similar among males and females, in contrast to what was found in India [7].Also, the prevalence myths were similar among diabetics and those with family history of diabetes mellitus.

To our knowledge, our study is the first study conducted in Saudi Arabia about the myths of diabetes mellitus. The reliability test of the questionnaire was above average and was also subjected to the significant test of accuracy of patients' response, which was very significant. We could also identify in our study the prevailing myths in Qassim region of Saudi Arabia, which should enable us to plan for effective health education programs for the control of diabetes mellitus.

There are some limitations in our study: **Firstly**, the possibility of 'smart' answer in the information given by those who needed help in filling the questionnaire; **secondly**, we used the word sweets in the questionnaire instead of carbohydrates to decrease the assumptions among patients of low standard education; **thirdly**, our question for 'why you choose this answer concerning the myth' was an open question, difficult to analyze, even if it gave us a lot of information.

Conclusion:

There are many prevailing myths and misconceptions surrounding diabetes mellitus, this delays the people from seeking doctor's advice, affects the control of the disease and even complicate it. We need to launch health education programs especially in PHC Centers about these myths and regular treatment of diabetes mellitus. We recommend also further research on a larger scale. Moreover, medical students should be involved in such activities to ingrain in them the importance of health education in the community related health problems.

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Table 1: Percentage distribution of respondents by selected demographic characteristics, history of or family history of diabetes.

Respondent characteristics	*N=805*
	Percentage (%)
Response rate= 805/880 x 100 = **%**	91.5
Selected health sectors (8 PHC Centers) **: %**	
Buridah	50.1
Unizah	25.1
AlRass	24.8
Age-group: %	
20 – 29 years	16.0
30 – 39 years	25.0
40 – 49 years	27.0
50 – 59 years	19.5
60>	12.5
Gender: %	
Male	49.1
Female	50.9
Marital status: %	
Married	77.9
Divorced	03.4
Widowed	05.0
Single	13.8
Education (highest level achieved) : %	31.6
Primary/Preparatory school	14.3
Secondary school	22.1
University degree	26.7
Other (professional diploma, etc.)	05.3
Respondent has: %	54.3
Diabetes mellitus	
Family history of: %	67.8
Diabetes mellitus	

Table 2: Percentage distribution of frequencies of the response for each myth.

Respondent characteristic	Percentage (%)
DM is contagious	
yes	08.0
No	85.2
Others	06.3
No comment	00.5
* **Some dates don't increase sugar**	
yes	53.3
No	33.4
Others	12.4
No comment	00.9
*** Consuming sugar causes diabetes**	
yes	71.6
No	20.5
Others	07.3
No comment	00.6
DM is dangerous	
yes	65.5
No	27.7
Others	06.1
No comment	00.5
* **Honey intake doesn't Increase sugar level**	
yes	45.3
No	39.5
Others	14.7
No comment	00.5
** **Herbals can treat DM**	
yes	30.4
No	43.1
Others	25.2
No comment	01.2
****Sour or bitter herbals can treat DM.**	
yes	25.3
No	44.8
Others	28.0
No comment	01.9
* **DM can affect sex in early stages.**	
yes	40.6
No	34.3
Others	23.0
No comment	02.1
Increase dose of medication can suffice your unbalanced food intake.	
yes	27.0
No	55.9
Others	16.6
No comment	00.5
* **Diabetic should not take sweets.**	
yes	65.8
No	29.4
Others	04.3
No comment	00.4
****Insulin causes addiction.**	
yes	17.0
No	52.5
Others	29.9
No comment	00.5
****Less water intake can decrease urination among diabetics.**	
yes	06.6
No	18.0
Others	75.0
No comment	00.4

*** Prevailing myth**
**** Labile group (no specific answer), good target for health education.**

Table 3: Percentage distribution of frequencies of response and the reason of their choice of the myth.

Respondent characteristic	Percentage (%)
* **Why some dates don't increase sugar**	
Some dates contain little sugar	27.7
Others	01.0
No comment	58.8
All dates rich in sugar	12.5
* **Why consuming sugar causes diabetes**	
Affect pancreas	07.0
Rise of sugar level	11.2
If there is family history of DM	01.5
Others	14.5
No comment	65.8
* **Why diabetics should not take sweets**	
Rise of sugar level	21.5
More complications	11.2
No comment	65.8
Can take little	01.5
* **Why DM is dangerous**	
Affect heart, vision, kidneys and vessels	6.2
death	01.3
Others	34.5
No comment	58.0
* **Why honey intake doesn't Increase sugar level**	
If pure	15.2
Cure (Qur'an)	06.2
Others	14.7
No comment	62.5
No, it contains sugar	01.5
** **Why herbals can treat DM**	
Some herbals are good	08.7
No complications	00.6
Bad experience	21.7
No comment	68.9
****Why sour or bitter herbals can treat DM.**	
Contains no sugar	01.9
Neutralize sugar	08.1
Bad experience	19.6
No comment	70.4
* **DM can affect sex in early stages.**	
General weakness	01.0
Affect nerves	00.9
Affect blood supply	01.6
Others	27.3
No comment	69.2

*** Prevailing myth**
**** Labile group.**

Table 4: Assessing the accuracy of the respondents in reading and filling the questionnaire.

Myth 1	Vs.	Myth 2	Significance (P-value)
* Some dates don't increase sugar		* Too much sweets intake causes diabetes	P < 0.001
* Diabetic should not eat sweets		* Too much sweets intake causes diabetes	P < 0.001
* Some dates don't increase sugar		* Too much sweets intake causes diabetes	P < 0.001
* Honey intake Increases sugar level		* DM can affect sex in early stages	P < 0.001
* Sweets cause DM		** DM Contagious	P = 0.57
* Herbals can treat DM		* Sour or bitter herbals can treat DM.	P < 0.001

P values indicate the statistical significance of differences between 2 different myths.
***. Prevailing myth**
**** Less prevailing myth**
Not significant (P > 0.05)

Table 5: Mean knowledge scores by respondents' characteristics concerning prevailing myths, after assessing the accuracy of respondents.

Respondent characteristic	Some dates don't increase sugar	Significance (P-value)
Gender: %		
Male	49.1	P = 0.60
Female	50.9	
Age-group: %		
20 – 29 years	16.0	P = 0.13
30 – 39 years	25.0	
40 – 49 years	27.0	
50 – 59 years	19.5	
60 >	12.5	
Education (highest level achieved) : %		P = 0.04
Primary school	31.6	
Preparatory school	14.3	
Secondary school	22.1	
University degree	26.7	
Other (professional, Diploma, etc.)	5.3	
History of Diabetes Mellitus: %		P = 0.33
Yes	54.3	
No	45.7	

- **P values indicate the statistical significance of differences between a selected one prevailing myth and characteristic**
- **Not significant (P > 0.05)**.

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