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Research Article

DIABETES MELLITUS KNOWLEDGE AND AWARENESS AMONG ALBAHA UNIVERSITY STUDENTS: AN OBSERVATIONAL STUDY

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ABSTRACT

Background: It is essential to evaluate and update the knowledge, education and awareness of the diabetes among university students, especially among medical students because in future they are going to tackle this major public health problem.

Materials and Methods: This was a descriptive, cross-sectional Questionnaire based observational study conducted among Albaha university students in Al-Aqiq, Saudi Arabia. assessing their knowledge of diabetes, its risk factors and complications. The participants consist of both medical students studying at preclinical and clinical years of MBBS at Faculty of Medicine and non-medical students studying at other different faculties at Albaha University

Results: A total of three hundred eight (308) questionnaires were completed by the participants, with a response rate of 83.7%, of these 49.4% and 50.6% were medical and nonmedical students respectively. Most of the respondents were below 24 years of age (70.1%). The overall knowledge about diabetes among the participant was found to be about 69.2% and their awareness regarding diabetes risk factors was found to be 61.2%. Almost all (100%) of the medical students were agreed on diabetic complications; while only 50% of nonmedical students were aware of these complications

Conclusion: From this study we can concluded that Albaha University students knowledge about diabetes was fair, the knowledge is more among medical students as compared to the nonmedical students. Health education efforts should be directed towards enhancing knowledge and awareness of Albaha University students about diabetes mellitus, its risk factors and complications.

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INTRODUCTION

Diabetes Mellitus (DM) continues to be one of the major health emergencies of the 21st century¹. At Middle East and North Africa the prevalence of diabetes for all age-groups was estimated to be 10.7% (7.4-14.2%) in 2000 and 11.1% (7.7-14.9%) in 2040.¹ Saudi Arabia has one of the highest percentages of Diabetes in the world, with an estimated prevalence of 17.6% [13.5 - 19.6%]¹. Diabetes complications can result in damage to eyes (retinopathy) leading to blindness, to kidneys (nephropathy) leading to renal failure and to nerves (neuropathy) leading to impotence and diabetic foot disorders (which include severe infections leading to amputation).²

A survey aimed to assess the level of awareness and knowledge among the general population with regard to causes, risks and complications of diabetes conducted by (Novo Nordisk 2010), a global healthcare company, in 10 countries of the Middle East and Northern Africa (MENA) region, showed that 40% of

respondents were at risk of developing diabetes in the MENA region based on this survey, 54% in Egypt, 52% in KSA, 45% in Lebanon, 44% in Iraq and 42% in UAE.⁴ A recent study showed that the prevalence of DM2 in Saudi Arabia was 17.7% and 16.4% in men and women, respectively.⁵ Hence, diabetes is a serious public health problem in Saudi Arabia, as approximately one out of five Saudis is diabetic.^{6,7} The knowledge, education and awareness of the diabetes among medical students are essential because in future they are going to tackle this major public health problem.⁸ Knowledge forms a basis for the adoption of good health-related practices. Schools and colleges are some of the best places to implement programmes which will increase knowledge and awareness about lifestyle-related diseases, healthy nutrition, and the importance of physical activity. Several studies have been conducted among medical students to assess their clinical knowledge of DM.⁹ Assessment of existing knowledge about diabetes mellitus through a simple questionnaire among

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undergraduate medical students is a step towards improving medical education on non - communicable diseases like diabetes mellitus.¹⁰ Hence this study was conducted to:

- Study the knowledge and awareness of diabetes mellitus among students studying at faculty of medicine, Al- Baha University.
- Compare the knowledge and awareness about diabetes mellitus between medical and non-medical students

MATERIALS AND METHODS

Source of Data and Sampling Method

This was a descriptive, cross-sectional study conducted among Albaha university students in Al-Aqiq, Saudi Arabia, from January to April 2016. Medical and medical students were recruited and involved in this study. Convenience sampling was used to draw the sample for this study. The data were collected by a structured questionnaire with closed-ended questions which was developed after an extensive literature search and experts consultation. The objective of the study was introduced to the participants with the techniques to fill in the questionnaires. The participants consist of both medical students studying in preclinical and clinical years of MBBS at Faculty of Medicine Al-Baha University and non-medical students studying at other different faculties such as Engineering, Art and Science. The participants were assured that the outcome would not be revealed or used for any form of performance evaluation of the students. The enquiries consist of general facts on diabetes, symptoms, lab diagnosis, risk factors and its complications. The response options were agree, disagree or I do not know.

Sample Size Determination & Sampling Technique

The study sample size was determined by using the formula for single proportion:

$$n = \frac{Z^2 (P) (1 - P)}{E^2}$$

Based on the estimated awareness level of 60%, 95% confidence level (Z-score value: 1.96) and 5% precision level, the estimated minimum sample size was approximately 325 (Z = 1.96; P = 0.6; E = 0.05). Simple random sampling method was used to select participants.

Statistical analysis

Data were analyzed using Statistical software package (SPSS), version 16.0. Z-test was used to compare the results among the two groups. P-value less than 0.05 will be considered as statistical significance to compare the effect of categorical data between the two groups.

RESULTS

A total of (368) questionnaires were administered and three hundred eight (308) questionnaires were completed by the participant, with a respondent rate of 83.7%. As shown in table (1), 49.7% of the respondents were from non-clinical faculties that have very little informational background regarding diabetes which had have it only at their secondary schools while 22.4 % and 27.9% were from clinical and preclinical

years at faculty of medicine respectively, with more knowledge and information about diabetes.

Table 1 Background characteristic of the participant

Background	Frequency	Percent
Medical	152	49.4%
Nonmedical	156	50.6%
total	308	100%

Age of the Participant

As shown in Fig (1) below, most (70.1%) of the respondents were below 24 years of age While only 29.9% were aged 24 years and above

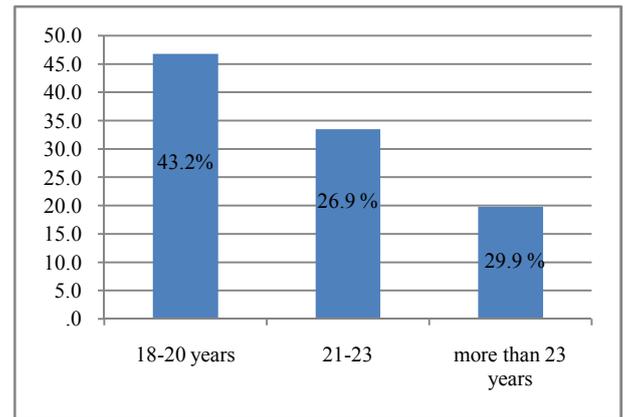


Fig 1 Age of the participant

General knowledge about diabetes

As shown in table (2) in general most of the participants (69.2%) knew what is diabetes, contribution of this percentage of knowledge were 85.5% knowledge were among medical students while 53.2% knowledge were among nonmedical student (p < 0.001). On questioning about that more and more people are getting affected with diabetes nowadays, only 42.0 % of the participants claimed that more people are getting affected with diabetes nowadays (p < 0.001), most of these were medical students (71.4%) specially from clinical years. Regarding the awareness that diabetes is a condition of high blood sugar, 94.2% of the respondents knew that and knowledge was the same from medical (95.4%) and nonmedical students (92.9%) (P=0.178). On the other hand, only 13.0 % of the students agreed that diabetes is a contagious disease (p<0.001) while 93.2% of medical students were not agree with this. The same response (11.0%) was claimed by the students when asked about whether diabetes is curable or not (<0.001), but just 69.1% among medical student who were not agreed. Regarding student's knowledge about whether insulin is required for some diabetic patients only 30.8 % agreed to this(p<0.001), and most of the respondents for this were medical students (95.8%), again only 12.3% of the respondents claimed that diabetes can be prevented /delayed (p<0.001) no medical student agreed with this information. On the other hand, 72.4 % of the students knew that diabetes is a long term disease (p<0.001).

Table 2 variables related to response of the respondents to knowledge of diabetes

Variable	Background of the respondents			P-value
	Total N (308)	Medical (50.3%)	Non-medical (49.7%)	
know what is DM	69.2 %	85.5 %	53.2%	<0.001
more people get affected by diabetes nowadays?	42.0 %	71.4%	28.6%	<0.001
Diabetes is a condition of high blood sugar	94.2%	50.0%	50.0%	=0.516
diabetes is a contagious disease	13.0%	0.0%	100%	<0.001
diabetes is curable	11.0%	0.0%	100%	<0.001
Insulin is required for some diabetic patients	30.8%	95.8%	4.2%	<0.001
Can diabetes be prevented /delayed?	12.3%	0.0%	100%	<0.001
Diabetes is a long-term disease	72.4%	52.9%	47.1%	<0.001

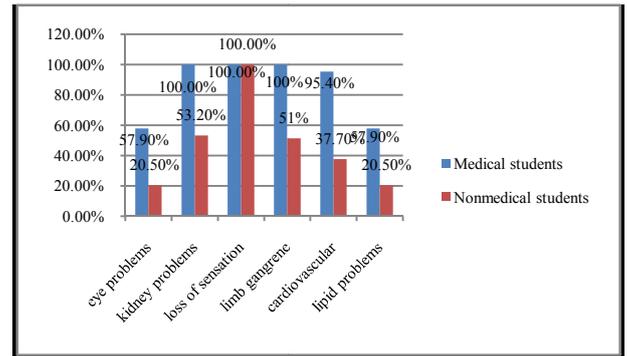


Fig 3 Complication Variables

Knowledge of risk factors for diabetes

Questioning about the risk factors leading to diabetes among Albaha university students, fig (2) below shows that, the overall awareness regarding diabetes risk factors was found to be 61.2 % among the participants. Among medical students, 94.4%, 96.7%, 99.3%, 100% and 92.6% of the students recognized that family history, obesity, physical activity, age over 40 years and pregnancy were regarded as risk factors for developing diabetes respectively (p=0.001), while among nonmedical students 51.9% , 78.2% , 70.5 %,0.0% and 7.4% of the students hardly recognized them as risk factors for developing diabetes respectively (p=0.001).

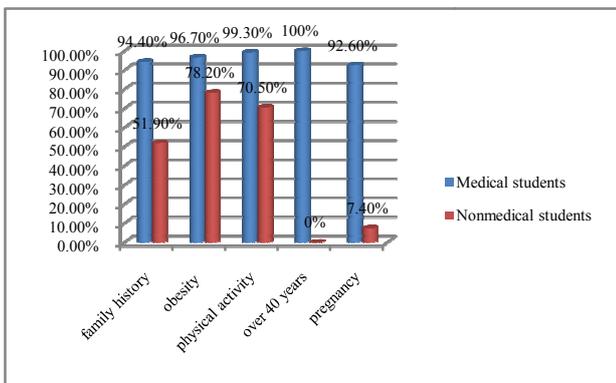


Fig 2 Risk Factor Variables

Knowledge of Complications of Diabetes

Fig (3) below displays the proportion of participants’ response on the awareness on diabetic complications; among medical students, all (100%) were agreed that kidney problems, limb gangrene and loss of sensation were the most common diabetic complication known to them (p<0.001), however just 57.9% of the medical students were aware that diabetic complication include eye and lipid problems (p<0.001). On the other hand among nonmedical students, all (100%) agreed that loss of sensation was the most common diabetic complication known to them (p<0.308). While just, 53.2%, and 51.0% of them were aware that kidney problems and limb gangrene were common diabetic complication known to them respectively (p<0.001), and only 37.7% and 20.5% were aware that cardiovascular, eye and lipid problems were diabetic complications respectively (p<0.001).

DISCUSSION

Our study aimed to study the knowledge and awareness of diabetes mellitus among students studying at faculty of medicine, Al- Baha University, and to compare between medical and non-medical students awareness. Students' knowledge regarding nature, risk factors and complications of diabetes showed some deficiencies among medical students, more so among nonmedical students.

According to our findings in this study, most of participants (69.2%, P<0.001) have a satisfactory level knowledge about diabetes mellitus, especially among medical students with 85.5 % contribution of this percentage of knowledge whereas nonmedical students contribution was 53.2% table (2). This finding was similar to that reported by FA Al Wadaani who conducted a cross sectional survey among the final year medical students of King Faisal University Medical College of Al Hasa region of Saudi Arabia to assess the knowledge attitude and practice regarding diabetes and diabetic retinopathy¹¹ which reveal that the mean of the overall KAP score for all the respondents was 64.75 ± 11.17. Our results were the same as the results of a study done by Khan N *et al*, who conducted a study on Diabetes Mellitus-Related Knowledge among University Students in Ajman, United Arab Emirates¹², they revealed that 70% of the participants knew that it is characterized by high blood sugar levels.

In our study, the overall awareness regarding diabetes risk factors was found to be 61.2 % among the participants, the level of awareness regarding diabetes risk factors can be considered sufficient specially among medical students, were 94.4%, 96.7%, 99.3%, 100% and 92.6% of the students recognized that family history, obesity, physical activity, age over 40 years and pregnancy were regarded as risk factors for developing diabetes respectively, while among nonmedical students the level of awareness regarding diabetes risk factors can be considered insufficient as regards to family history (51.9%) and age over 40 years (0.0%), these finding were the same as study done by Nawaf H Hamdi *et al*, who assessed Diabetes Mellitus Awareness among Tabuk University Students, Saudi Arabia¹³, their study revealed that only 45% of participants identified family history as major risk factor.

In conclusion, Albaha University students knowledge about diabetes was fair, the knowledge is more among medical students as compared to the nonmedical students. Health education efforts should be directed towards enhancing

knowledge and awareness of Albaha University students about diabetes mellitus and its risk factors and complications.

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