



Original Article

Awareness Regarding Diabetes Risk Factors, Prevention and Management among Community Members in Diyala/ Baqubah

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ABSTRACT

Article history:

Received 7 July 2021

Accepted 17 January 2022

Available online 30 April 2022

<https://doi.org/10.47723/kcmj.v18i1.272>

Keywords: awareness, community, risk factors, diabetes mellitus.



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Background: Background: Diabetes mellitus is a life-threatening disease. Global prevalence of diabetes mellitus is increasing rapidly providing a worrying indication and major threat to global health unless interventions are created through community awareness and knowledge regarding different aspect of DM.

Aims: To assess the level of awareness regarding diabetes risk factors, prevention and management among community members in Baqubah city and to identify any association between awareness level and some variables.

Subject and Methods: Across sectional study was carried out from the 1st of January - 30th of November 2019 in all primary health care centers (six centers) in center of Baqubah city. A convenient sample of 400 participants who attended the health centers during the study period and eligible to inclusion criteria were included. Data were collected via direct interview with a structural questionnaire that include personal data, questions regarding knowledge, regard diabetes definition, prevention, risk factor, management and control.

Results: Good diabetes awareness were reported among 50% of studied. A significant statistical association were found between good awareness and age of 20-30years, more than secondary school education, high family income and positive family history of diabetes with the following (52, 34, 35 & 68) % respectively.

Conclusion: Good diabetes awareness was dominant and was significantly associated with middle age group, higher education and positive family history of diabetes. an educational health programs that tackles area of weakness about awareness of diabetes mellitus need to be implemented on the governmental level.

Introduction

Diabetes mellitus (D.M) is one of the most common non-communicable diseases worldwide. In the Eastern Mediterranean Region there has been a fast increase in the incidence of diabetes

mellitus and it is now the fourth principal cause of death. The emergence of diabetes complications considered as important cause of early morbidity and mortality. (1)

The World Health Organization (WHO) in 2007 report shows that at least 171 million people of the world are suffering from diabetes. (2,3) International Diabetes Federation in a recent station in 2017 reported that 415 million people aged 20-79 years have had diabetes in 2015, this number is predictable to reach 552 million by 2030 and 642 million by 2040. (4) According to Ministry of Health (MOH) in Iraq the prevalence of diabetes in Iraq increased from 5% in 1978 to 13,9% in 2015. (5)

Diabetes is a major contributor to illness and death and generates large direct as well as indirect cost. (6-8) . high blood glucose levels can lead to serious diseases affecting the heart and blood vessels, eyes, kidneys, nerves and teeth. In addition, people with diabetes also have a higher risk of developing anaemia and infections.(9,10)

The risk factors for type I diabetes are still being investigated however having family member with type I diabetes slightly increase the risk of developing the disease. ((11) Environmental influences and exposed to some viral infections may linked to increase risk of developing type I diabetes. (12)

Type 2 diabetes may be associated with numerous risk factors like family history of diabetes, physical inactivity, increase age, overweight, unhealthy diet, , high blood pressure, impair glucose tolerance, history of gestational diabetes and poor nutrition during pregnancy. (11,12)

Following life-style changes, global prevalence of diabetes mellitus is increasing quickly providing a worrying indication and major threat to global health. This consumes the nation's health care inexpensive. Unless interventions are made through community awareness; Diabetes mellitus is predicted to be the world's main disablers and killers of the working age groups in the next 20 years. (11,13)

The focus on diabetes mellitus was growing; studies showed that a number of adults having diabetes will be more than double between 2000 and 2030. (14)

The general community remains unaware that raised levels of blood glucose are consorted with long-term damage to the organic structure and the failure of different organs and tissues. (15)

Diabetes mellitus is a preventable and controllable disease by raising the awareness of the public by its progression, for example Knowledge of the prevention and risk factors of ocular complications is essential to prevent vision loss among DM patients. (16)

Diabetes like other no communicable disease gets lower attention than it deserves, despite its social, human and economic costs. Fewer countries including Iraq have national programmers and basic facilities that are appropriate for the prevention and control of the disease in all areas of interventions at the primary, secondary and tertiary health care levels. (17)

Patient education is an important component of diabetes treatment, projected not merely to transfer information but also to attain behavioral alteration as well. (18) Diabetes education should be considered not only for diabetics, but also for the social surroundings of diabetics and indeed the population as a whole. This enables the patient and their social surroundings to learn as much as possible about the disease so that the patient can share the obligation for

glucose regulation and complication prevention with the health-care team. (18-20).

health literacy of people strongly influences the prevention and management of chronic illnesses (21). Performed studies indicate that the level of health literacy affects people's decisions and actions as well as their ability to embrace a healthy lifestyle and access the most appropriate form of health care (22,23). Studies indicate that poor health literacy is among the important factors influencing health outcomes in diabetic patients (24, 25)

Thus, Greater literacy amongst the population about understanding diabetes symptoms may improve the use of health care and, ultimately, positively affect community health outcomes. ((26)

Aims of the study

Primary outcome: To assess awareness regarding diabetes risk factors, prevention and management among community members in Baqubah city at 2019.

Secondary outcome: To determine any association between patient awareness and some socio-demographic and other studied factors.

Subjects and Methods

Study design: -

Across sectional study.

Study setting:

the study was carried out in all six primary health care centers of Baqubah city from where the study sample were collected.

These six primary health care centers include the following:

- 1.Al.Saray primary health care center.
- 2.Al.Mustafa Primary health care center.
- 3.Al.Takia primary health care center.
- 4.Buhriz primary health care center.
- 5.Al.Tahrer primary health care center.
- 6.Al.Yarmuk primary health care center.

Study duration:

The study was conducted from 1st of January till the 30th of November 2019,working 4 hours per day in two days per week.

Target population: A convenient sample of 400 participants who visited the mentioned primery health care center and willing to participate were included in this study.

Inclusion criteria:

- Any subject visited the primary health care center whether are patient or relative or companion of the patients.
- Any subjects age 20 years and above.
- Both genders.
- Whether diabetic or non-diabetic.

Study tools and data collection: A convenient sample was collected from the target population during the expected period of data collection (11 months), as one and a half to two month for each primary health care center included in the study with average of 65-66 participants from each center, the total number of sample were 400 subjects.

Data was obtained by a questionnaire prepared by the researcher with supervisor after extensive literature review to collect relevant data, it includes the following information:

Part 1 the participants sociodemographic factors and other related factors:

Part 2: This part includes 24 knowledge questions that covering key area in awareness about diabetes mellitus including "definition, risk factors, prevention, control, management, complication, hypoglycemic symptoms identifications, plasma glucose level awareness.

A scoring system was developed for each question, each correct answer was given score of (1), and each incorrect or don't know answer was given a score (0) the total score ranged from (0-24) transfer to 100% questionnaire.

Three categories were defined on basis of the score obtained by each participant:

- Poor awareness (if awareness score < 40% of the total score).
- Acceptable awareness (if awareness score 42- 60 % of the total score).
- Good awareness (if awareness score > 60% of the total score).

Ethical approval:

The study protocol is reviewed and approval is obtained from scientific council of family medicine to conduct the study. Also, approval and official letter is obtained from Diyala health directorate (including approval by ethics review committees) which is handed to the manager of each selected primary health care centers accordingly.

Verbal consent of each interviewed person was approved after full explanation of the aim of the study and ensuring the confidentiality of collected data which was not be used but for the research purpose.

Statistical analysis:

Data collected were entered into Microsoft excel and loaded into the statistical package for social science (SPSS) software "version 23". Data were analyzed via descriptive statistics, the results showed in tables and figures. Frequencies and percentage were used to summarize dichotomous data and categorical data. Chi square test" were used to compute the association between studied variables. Significant association is considered at level of ≤ 0.05 (p-value).

Results

Table (1) shows the socio-demographic characteristics of the study population, 52% of the participants where 30-50 years of age, 54% were female, 34% o completed more than secondary level of education.

Distribution of the study sample according to their level of diabetes awareness:

Figure (1) shows that the majority of the study population 200 (50%) had a good diabetes awareness, 40% of them showed acceptable awareness and only 10% had poor awareness.

The association between the level of diabetes awareness and studied factors:

Table (2) shows significant association between the level of diabetes awareness and age, 52% of good awareness were among (30-40) years old. Significance association also found with the highest educational level and high monthly income with 34%, 35% respectively

Table 1: Distribution of the study sample according to some sociodemographic characteristics

Category	No. (400)	%
Age (years) :		
20-29	104	26
30-39	208	52
≥40	88	22
Gender :		
Male	176	46
Female	224	54
Marital status :		
Married	328	82
single	48	12
Other	24	6
Educational level:		
Less than primary	72	18
Primary	96	24
Secondary	128	32
More than secondary	104	26
Monthly income of family:		
Low < 500,000ID	104	26
Intermediate 500- 1000,000ID	224	56
High > 1000,000 ID	72	18
Diabetes status:		
Diabetic	200	50
Non-diabetic	200	50
Family history of diabetes		
Positive	264	66
Negative	136	34
Total	400	100

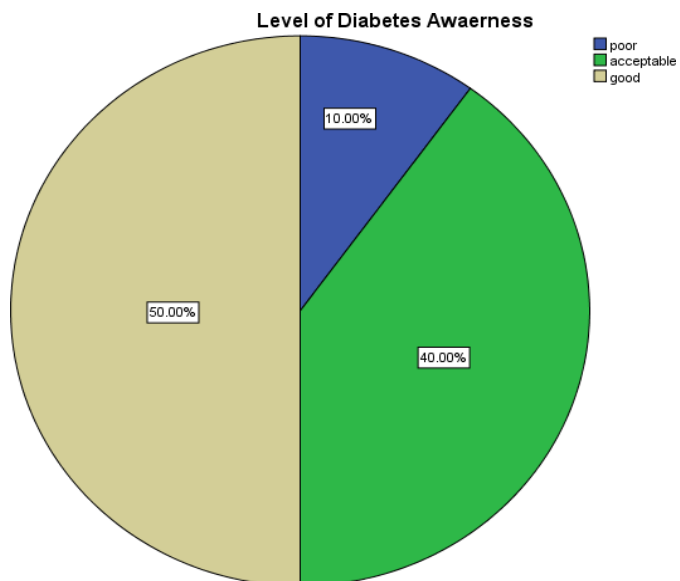


Figure. 1: Distribution of the study sample according to the level of diabetes awareness

Table 2: The association between the level of diabetes awareness and some socio-demographic factors among study group

variables	Diabetes level of awareness								P-value
	Poor (40)		Acceptable (160)		Good (200)		Total (400)		
	No.	%	No.	%	No.	%	No.	%	
Age (years)									
20-29	18	45	38	24	48	24	104	26	0.01
30 -39	12	25	92	59	104	52	208	52	
>40	10	30	30	17	48	24	88	22	
Gender									
Male	16	40	72	45	96	48	184	46	0.617
Female	24	60	88	55	104	52	216	54	
Educational Level									
Less than primary	16	40	42	26	14	7	72	18	0.004**
Primary	8	20	30	19	58	29	96	24	
Secondary	10	25	58	36	60	30	128	32	
More than secondary	6	15	30	19	68	34	104	26	
Monthly income									
Low	23	57.5	18	11	63	31.5	104	26	0.05**
Intermediate	16	40	141	88	67	33.5	224	56	
High	1	2.5	1	1	70	35	72	18	

Table (3) shows the association between the level of diabetic awareness and family history and diabetic status, these two factors are significantly associated with the highest percentage of good awareness are among those with positive family history and those who are diabetic with (68,60)% respectively.

Table 3: The association between the level of diabetes awareness and family history and diabetes state:

variables	Diabetes level of awareness								P-value
	Poor (40)		Acceptable (160)		Good (200)		Total (400)		
	No.	%	No.	%	No.	%	No.	%	
Family history of diabetes									
Positive	16	40	112	70	136	68	264	66	0.001**
Negative	24	60	48	30	64	32	136	34	
Diabetic status									
Diabetic	16	40	64	40	120	60	200	50	0.001**
Not Diabetic	24	60	96	60	80	40	200	50	

Discussion

Global prevalence of diabetes mellitus is increasing rapidly providing a worrying indication and major threat to global health unless interventions are created through community awareness and knowledge regarding different aspect of DM. This study was undertaken to evaluate the awareness regarding diabetes mellitus risk factors and preventive measures among general population in Baqubah city.

In this study sample of 400 attendants to all primary health care centers in Baqubah city were surveyed, regarding the level of diabetes awareness, about half participants had a good level of awareness, and less than one quarter had a poor awareness, The relatively large proportion of respondents with high university level of education may be contributed factor to the high average score.

Similar finding was reported in a study by Kassahun C.W. et al (2017) in Ethiopia among community members showed that 52.5% participants had good general knowledge about diabetes mellitus of people were with good level of awareness. (27) Approximately 56.02% good knowledge reported by Shiferaw et al in Debra Bethan town, northeast Ethiopia (2020). (28)

The current study results are disagree with a survey reported by Brown RL (2017) which showed that about most of participants (23.3 %) had good awareness. (29)

Based upon results of a survey by Maina W.K. et al (2010) it was reported that about 27.2 % had good diabetes awareness and 72, 8% had poor awareness. (30)

This disagreement with the current study may be due to difference in the study design, scoring system and difference in the socio cultural characteristic between the study populations.

Concerning the association between diabetes mellitus awareness and age, the current study showed positive association between diabetes awareness and age, the percentage of good awareness improve with increasing age.

This finding is in consist with a study done by Maina A. et al (2016) (30) which showed that good awareness is highest in age group 30-40 years (16.05%). While disagree with study done by Islam M. et al (2014) (31) which showed that good awareness was highest (43.3%) at age group below 30 years. They found that age was important predictor for diabetes awareness and that level of awareness increased with deceased age.

The present study revealed that the educational status was significantly associated with diabetes, more than third of respondents with good awareness had more than secondary school level of education, this could be explained by the fact that low education level can limit information access, due to possible limiting abilities of reading and learning , on the other hand person with higher education would have more chance to get different information, such as leaflets and manuals, helping them more be aware about diabetes. Furthermore, this more highly educated group tend to have better communication skills that allow them to communicate more easily with health care workers concerning questions or worries.(32)

This finding is consistent with a study of Maina W.K. et al (2010) which reported that 52%of good awareness in those completed more than secondary education compared to 25% in those completed secondary education. (30)

The current study observed that attendants belonging to poor socioeconomic state were of less diabetes awareness than those belonging of the higher class, while highest level of good awareness reported among participants with high income.

Limited family income which usually associated with limited education may be the predictor of awareness deficits.

This finding was consistent with Kassahun C.W. (2017) et al survey which showed that 68.6% of subjects with high income level was significantly associated with high level of good awareness regarding diabetes mellitus. (27)

The results of the present showed that two third of participants with positive family history of diabetes associated with good diabetes awareness.

Individual with positive family history of diabetes may develop a personal experience with diabetic relative and increase their learning interest regarding diabetes, this finding was in agreement with the surveys of Maina A. et al in (2016) who reported that awareness in population with positive family history was 60% compared with those with negative family history 14.31%.(30) which is similar to findings in a semi-urban Omani population.(32)

Another study agree with this result done by Alanzi. et al (2017) which showed that awareness level is higher among those with positive family history of diabetic than those with negative family history and the percentage was 60%, 40%.(32)

Another study held by Salem et al (2017) in al-Riyadh showed that good awareness was higher (69.2%) among participants with positive family history compared to 31.8% with negative family history. (33) Which is similar to findings in a semi-urban Omani population (32)

On the other hand, in the present study, those who had diabetes were almost two times more aware about diabetes than those who did not have diabetes. this result suggest that the awareness of diabetic individual may be accumulate over the span of their illness, and those patients have probably learnt from their own experiences, and as they in contact with their own physician or health care professionals who may play a role in disseminating health information about diabetes to their own patients. This finding is consistent with a study conducted by Mohan D. et al (2005) in India which showed that the awareness score by diabetic subjects are 53.5 % compared to those who non-diabetic subjects 47.5 %. (34) And the finding also supported by the study done in Bangladesh (31) and Bale zone (27).

Conclusion

This community-based cross-sectional study showed that the overall awareness about DM was good. Middle age group, educational status, family history of DM and exposure to diabetes had significant associations with the diabetes awareness of the study participants. Therefore, an educational health programs that tackles area of weakness about awareness of diabetes mellitus and its complications and management need to be implemented on the governmental level. Health care professionals, different kind media, health policy makers, teachers of different level may play a significant role in increasing risk perception of people about diabetes mellitus for effective prevention, control and management of this globally affected issue.

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To cite this article: Abdul-kareem R, Habib H. Awareness Regarding Diabetes Risk Factors, Prevention and Management among Community Members in Diyala/ Baqubah in 2019. *Al-Kindy College Medical Journal*. 2022;18(1):24-29.