WORLD JOURNAL OF PHARMACEUTICAL RESEARCH
SJIF Impact Factor 8.074
Volume 7, Issue 5, 40-47. Research Article ISSN 2277– 7105

KNOWLEDGE AND ATTITUDES OF ALMAJMMAH POPULATION, SAUDI ARABIA TOWARDS DIABETES MELLITUS

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Article Received on
03 Jan. 2018,
Revised on 24 Jan. 2018,
Accepted on 14 Feb. 2018,
DOI: 10.20959/wjpr20185-11033

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ABSTRACT

Background: Diabetes mellitus encompasses a group of metabolic disorders that result in acute and chronic complications due to the absolute or relative lack of insulin. Diabetes has reached epidemic proportions worldwide, and its prevalence is increasing rapidly. In 2000, an estimated 2.8% of all age groups worldwide were suffering from diabetes. This number is estimated to be 4.4% in 2030. **Objectives** to evaluate the knowledge and attitudes towards diabetes mellitus among Saudi population in AlMajmmah City. **Study design** it is cross-sectional to study the knowledge and attitude of Saudis in AlMajmmah about diabetes mellitus. **Study population** is both gender aged 18 years and more and who reside in AlMajmmah. Multistage sampling was considered. The data was collected by a pre-tested questionnaire and analyzed by SPSS VERSION 23 **Results:** families and the friends are superior than other information resources for the participants in their way to learn about diabetes, with 34%, followed by traditional and social media (18%, 16%, respectively). The health care providers were the least information resource for the participant to learn from. **Conclusion:** Fair awareness level but Poor behavior among diabetic and non-diabetic populations have been found in our participants.

KEYWORDS: Diabetes, mellitus, awareness, AlMajmmah, knowledge, attitude.

INTRODUCTION

Diabetes mellitus encompasses a group of metabolic disorders that result in acute and chronic complications due to the absolute or relative lack of insulin. Diabetes has reached epidemic proportions worldwide, and its prevalence is increasing rapidly. In 2000, an estimated 2.8% of all age groups worldwide were suffering from diabetes. This number is estimated to be 4.4% in 2030.[1] In Saudi Arabia, Diabetes mellitus has become more evident in the last two decades because of dramatic changes in the life style.[2] The prevalence of Diabetes mellitus in Saudi Arabia is now considered one of the highest in the world reaching as high as 23.7%.[3] Diabetes mellitus is one of the five leading causes of death worldwide.[4] In Saudi Arabia, the prevalence of diabetes among Saudi adults was 34.1% in males and 27.6% in females.[5] Up to our knowledge, data regarding the prevalence of Diabetes mellitus in AlMajmmah is needed. Knowledge and awareness about Diabetes mellitus, its risk factors, complications and management are important aspects for better control and better quality of life. Still in AlMajmmah city, it is not known how much the public knows about Diabetes mellitus and its associated secondary complications. This study investigates the knowledge & attitude of Diabetes mellitus among of Saudi population AlMajmmah City. The information analyzed by this study was a building block for public health awareness, which targets an important group of society. Also, this study may contribute to early intervention of Diabetes mellitus.

MATERIAL AND METHODS

It was cross-sectional study by design. The data was collected from 339 participants using a well-structured pre-tested questionnaire. The study was conducted in AlMajmmah city which Founded in 1417 CE by an immigrant from the Shammar tribe. AlMajmmah was historically considered the capital of the region of Sudair. It is a governorate in Riyadh Region, Saudi Arabia. AlMajmmah has an area of 30,000 square kilometers. The population of the city is around 90,000, while the population of the governorate as a whole is approximately 133285.

AlMajmmah Governorate borders, is the Eastern Province and Qassim to the north, Thadig and Shaqra to the south and Rumah to the east. Zulfi and Al-Ghat borders AlMajmmah on the west. The study was conducted at public places in AlMajmmah, which includes malls and public parks. The Study population was Men and women aged 18 years and more and who reside in AlMajmmah. Only Saudi population was enrolled in the study. Sample Size was calculated by statistical formula which revealed 339. The data was collected by a pre-tested questionnaire. The questionnaire was included socio demographic data and data regarding the

knowledge and attitude of population towards the disease. The data was entered and analyzed using SPSS 23 Mean + S.D. was given for quantitative variables. Frequencies and percentages was given for qualitative variables. Pearson chi-square and / or Fisher exact test was applied to observe associations between qualitative variables. A p-value of <0.05 was considered as statistically significant. The demographic variables of participants were expressed as number (%). For identification of knowledge and attitude level of participant regarding diabetes, we use score in which the participants were asked about general information, risk factors, complications and attitude in dealing with diabetic patients. The correct answer was given one point while incorrect and unsure answers were given zero. The score for each section (general knowledge involving risk factors and complications and attitude and way of dealing with such disease and its patients) was calculated based on the total possible score in each (19,13 respectively); then it was expressed as percentage of total score in each and classified into three sub groups (Good, fair and poor level). The study was approved by the ethical committee of AlMajmmah University.

RESULTS

Overall, 339 questionnaires were distributed; with a response rate of 100%. fulfilling the inclusion criteria were enrolled in the study. Males represented 57.23% (194) of the participants. The age of more than half of the participants was below 29 years. 52.2% of the participants was unmarried. And three-quarter of the total was university qualification. Other demographic data is represented in Table 1.

We found that the overall prevalence of DM in this study to be 10.91%. The prevalence of DM according to some demographic and socio-economic characteristics is shown in Table 2. The prevalence of DM according to gender showed that men are of higher prevalence 5.6% compared with 5.3% for women (p=.151). The age sub groups specific prevalence rate showed a general increase of DM with age with significant difference between the different age groups. The lowest prevalence was found among age group (30 - 49) years 3.2%, while the highest prevalence reported for the age group 50+ 4.1% (p<.001). According to the occupational status, the highest prevalence was in retired and governmental employee (3.5%, 3.2%, respectively) (p<.001).

Majority of participants in our study either diabetic or non-diabetic patients have poor level of attitude (48.65%, 54.3%, respectively), in contrast to the knowledge wise, they were at fair level with (70.27%, 70.20%, respectively), figure 1 illustrates attitude-knowledge level.

In aspect of participants' attitude regarding selected risk factors of diabetes, 24.32% of diabetic patients was Practicing a sort of sport for 2.5 hrs/week, while the majority was not practicing at all (45.95%), which it was almost the same also for the non-diabetic patients (23.84%, 44.7%, respectively). on the other hand, our study reveals that 83.78% of diabetic patients was not following diet regimen. As well as the non-diabetic with 90.07%. in addition, most of diabetic and non-diabetic populations have rich carbohydrates meals 4 days/week (94.59%, 91.72%, respectively). also, there was more than half number of both populations who has fast food <4 days/week (54.05%, 65.56%, respectively) table 3 shows it.

The study reveals that the families and the friends are superior than other information resources for the participants in their way to learn about diabetes, with 34%, followed by traditional and social media (18%, 16%, respectively). The health care providers were the least information resource for the participant to learn from, (7%). figure2.

Table 1. Some selected characteristics of Study participants.

Characteristic	Male	Female	Total
Age			
18-29	111 (57.2)	73 (50.3)	184(54.3)
30-49	56 (28.9)	59 (40.7)	115(33.9)
>50	27 (13.9)	13 (9.0)	40(11.8)
marital status			
married	89 (45.9)	64 (44.1)	153 (45.1)
unmarried	105 (54.1)	72 (49.7)	177 (52.2)
divorce/widow	0 (0%)	9 (6.2)	9 (2.7)
education level			
primary school	1 (.5)	1 (.7)	2 (.6)
intermediate school	8 (4.1)	1 (.7)	9 (2.7)
high school	38 (19.6)	24 (16.6)	62 (18.3)
University	146 (75.3)	114 (78.6)	260 (76.7)
uneducated	1 (.5)	5 (3.4)	6 (1.8)
Job			
governmental employee	79 (40.7)	58 (40.0)	137 (40.4)
private sector employee	21 (10.8)	9 (6.2)	30 (8.8)
business	6 (3.1)	4 (2.8)	10 (2.9)
student	57 (29.4)	50 (34.5)	107 (31.6)
retired	23 (11.9)	10 (6.9)	33 (9.7)
housewife	0 (0)	9 (6.2)	9 (2.7)
unemployed	8 (4.1)	5 (3.4)	13 (3.8)
Income			
<5000 SR	31 (16.0)	35 (24.1)	66 (19.5)
5000-10000 SR	57 (29.4)	46 (31.7)	103 (30.4)
>10000 SR	106 (54.6)	64 (44.1)	170 (50.1)

Table 2. Prevalence of diabetic mellitus according to some selected characteristics.

Characteristic	N%	P value
Age		
18-29	12 (3.5)	.000
30-49	11 (3.2)	
>50	14 (4.1)	
Gender		
Male	19 (5.6)	.151
Female	18 (5.3)	
marital status		
married	23 (6.8)	.001
unmarried	10 (2.9)	
divorce/widow	4 (1.2)	
education level		
primary school	1 (0.3)	.000
intermediate school	2 (0.6)	
high school	5 (1.5)	
university	23 (6.8)	
uneducated	6 (1.8)	
Job		
governmental employee	11 (3.2)	.000
private sector employee	2 (0.6)	
business	0 (0.0)	
student	7 (2.1)	
retired	12 (3.5)	
housewife	4 (1.2)	
unemployed	1 (0.3)	
Income		
<5000 SR	10 (2.9)	0.79
5000-10000 SR	9 (2.7)	
>10000 SR	18 (5.3)	

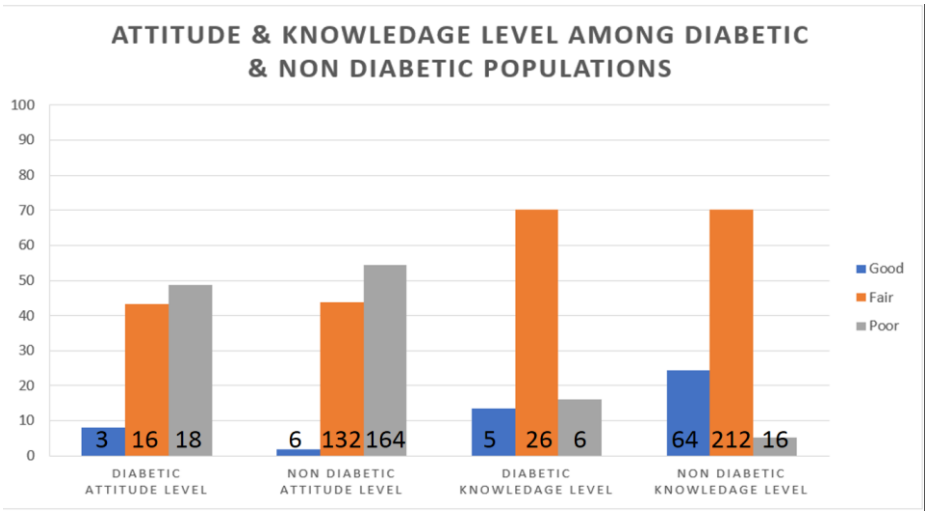

Figure 1: Attitude and Knowledge Level Among Diabetic and Non-Diabetic Populations.

Table 3. Prevalence of Some Attitude Variables.

Population	Practicing a sport		Having Rich carbohydrates meals		Having Fast food		Following a diet	
Diabetic								
	Yes ≥2.5hrs/week	9 (24.32)	Yes ≥4 days/week	35 (94.59)	Yes ≥4 days/week	4 (10.81)		
	Yes <2.5hrs/week	11 (29.73)	Yes <4 days/week	2 (5.41)	Yes <4 days/week	20 (54.05)	Yes	6 (16.22)
	No	17 (45.95)	No	0 (0)	No	13 (35.14)	No	31 (83.78)
Non-diabetic								
	Yes ≥2.5hrs/week	72 (23.84)	Yes ≥4 days/week	277 (91.72)	Yes ≥4 days/week	79 (26.16)		
	Yes <2.5hrs/week	95 (31.46)	Yes <4 days/week	25 (8.28)	Yes <4 days/week	198 (65.56)	Yes	30 (9.93)
	No	135 (44.7)	No	0 (0)	No	25 (8.28)	No	272 (90.07)

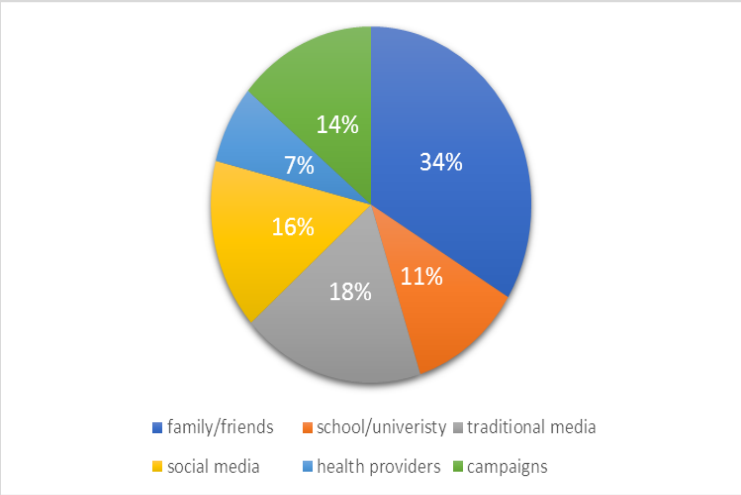

Figure 2: Distribution of Information Sources Among Study Participants.

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DISCUSSION

The data assembled from our study showed an overall prevalence of DM of 10.91% in AlMajmmah city. This estimate is less than what has been raised by other studies in Saudi Arabia which revealed prevalence of 12.3%.[6] In our study, the prevalence of diabetes in men is slightly higher than women, in contrast, the study which was held in Jazan showed than the females' prevalence more than males. As in many researches, advanced age has significantly associated with increase of DM prevalence, that what we have found in our research, age

group 50+ years old is associated with highest prevalence with 4.1% (p<.001).We also have found our participants to have fair knowledge level, which goes along with what one study in AlQassem, Suadi Arabia, find[7] while in some study they found poor knowledge score[8] which in turn may help in near future hopefully to encourage attitude level improvement.

Agreeing with our results in the aspect of practicing a sort of sport and sticking on diet regimen, which revealed that our participants are not exercising as well as following a diet, study of[6] showed the almost same result with 62.1% no exercising and 72.3% not on healthy diet.

Regarding the source of information, our study result is similar to other study in which friends and families are the main resource, followed by media in its types[7] as well as the least resources is the health care providers, which in turn increase the burden on health care providers' shoulders to look for the available ways to spread their mission[7]

Limitations of the study

- We faced an understanding issues with some elderly and illiterate participants in understating the questionnaire.
- There were not a lot of similar studies to compare with.

Recommendations

- All patients with diabetes should be educated about the importance of applying the correct knowledge into real life.
- Health care providers are the reliable information source since they are understanding and updated, so they should enhance their role in educating the society.
- We advise all patients to be on regular follow up with their family physicians and diabetic educators staff to assess, and to educate to reach high level of dealing with diabetes.
- Awareness projects through campaigns, leaflets and social media should be established for the community in purpose to optimizing knowledge and attitude to deal with diabetes.
- As this research is the first in its field in Almajmmah city, we recommend other researchers to cover other issues which were not in this study scope to provide a full picture to the health care providers and for the society at all.

ACKNOWLEDGMENT

We gratefully acknowledge all participants and the project supervisor Dr. Elsadig Yousif Mohamed for their appreciable contribution to the whole matter. Not to forget to mention the vital role of the team which led to this tremendous success of the research study.

CONCLUSION

Fair awareness level but Poor behavior among diabetic and non-diabetic populations have been found in our participants in AlMajmmah city. Families and friends were the most common recourse of information about diabetes disease. 10.91% is the prevalence of diabetes disease in AlMajmmah city.

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