P0737 – The epidemiologic profile of diabetes mellitus in Bahrain cross-sectional study

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Despite the worldwide epidemiology of Diabetes Mellitus and its global burden, scarce data is available from Bahrain. In 2013, according to IDF documented values, Bahrain ranked 4th most prevalent of the Arabic speaking countries with a prevalence of 21.8% (12th most prevalent worldwide). In 2014, again with reference to IDF documented values, Bahrain ranked 3rd most prevalent of the Arabic speaking countries with a with a diabetes prevalence of 21.9% (11th most prevalent worldwide)¹. This study is a descriptive analysis of data collected from 1613 patients attending an outpatient clinic at Bahrain Defence Force Royal Medical Service Hospital. Data was organized and analyzed using SPSS statistical package. The analysis was based on the American Diabetes Association’s guidelines. The Mean ($\pm$ SD) Fasting Blood Sugar (FBS) for all candidates was 7.41mmol/L ($\pm$ 3.437) with a median of 6.23mmol/L and a range of 27mmol/L (3mmol/L to 29mmol/L). The prevalence of abnormal fasting glucose in the sample is 38.3%. FBS readings showed a significant increase in trend between age categories, with the exception of patients 80 years old and above. However, FBS reading was insignificant among gender categories. This data gives specific insight towards program and management development for Bahrain. These include the use of telemedicine initiatives to increase awareness and education to promote self-monitoring by random blood glucose checks within households. Additional studies regarding the elder population of 60 years or more, including living conditions and dietary details, may provide useful information to be applied towards meal planning initiatives. Furthermore, additional studies assessing prevalence of obesity and its association with diabetes in the Middle East are worth exploration for initiative development and focus.

Background:

Global prevalence of Diabetes Mellitus in 2013 was 8.3% [3,4]
Of the top 35 countries, as per the International Diabetes Federation’s (IDF), 8 were Arabic speaking countries in 2013 and 9 were Arabic speaking countries in 2014 [6,7]. In comparing the years, Bahrain was 12th and 11th for 2013 and 2014 respectively, marking itself as the 4th and 3rd of the Arabic speaking countries for the respective years [6,7]. Saudi Arabia and Kuwait remain to be the top two Arabic speaking countries, ranking among the top 10 countries worldwide [6,7].
In Bahrain, the national prevalence of Diabetes Mellitus was 17.3% in 2013, which rose to 21.9% in 2014, according to IDF data [7].
Bahrain was ranked as the 4th most prevalent of the Arabic speaking countries in 2013 [7]. In 2014, Bahrain was ranked as 3rd most prevalent [7].

Results:

The mean ($\pm$ SD) FBS for the sample was 7.41mmol/L ($\pm$ 3.437) with a median of 6.23mmol/L and a range of 27mmol/L(3mmol/L to 29mmol/L).
The prevalence of abnormal fasting glucose in the sample is 38.3%.
Higher FBS was seen among women at 7.42mmol/L (3.55), while men showed a mean FBS reading of 7.39mmol/L (3.18).
With out regarding gender, the highest FBS was reported in the age group 60-80years and the lowest in the age category 0-20, (7.79mmol/L and 5.698mmol/L respectively)

Category	N	Mean FBS	Standard Deviation	P-value
Agecat 1	61	5.98	2.774	0.00
Agecat 2	280	6.61	3.726	0.00
Agecat 3	751	7.59	3.224	0.00
Agecat 4	487	7.79	3.584	0.00
Agecat 5	34	7.11	2.808	0.00
Male	501	7.39	3.177	0.30
Female	1112	7.42	3.549	0.30

Table 2. Comparing Significance of FBS Mean Values to Age Categories and Gender.

Variables N(%)	<5.56 mmol/L Overall (%) Male (%) Female (%)	5.56-7.0 mmol/L Overall (%) Male (%) Female (%)	>7.0 mmol/L Overall (%) Male (%) Female (%)
Total Data FBS	584 (38.2) 162 (32.3) 402 (38.2)	412 (25.5) 145 (28.9) 287 (25.8)	617 (38.3) 194 (38.7) 432 (38.0)
AgeCat 1	41 (67.2) 24 (68.6) 17 (65.4)	15 (24.6) 9 (25.7) 6 (23.1)	5 (8.2) 2 (5.7) 3 (11.5)
AgeCat 2	166 (59.3) 27 (48.1) 139 (61.8)	63 (22.5) 12 (21.8) 51 (22.7)	51 (18.2) 16 (29.1) 35 (15.6)
AgeCat 3	219 (29.2) 50 (22.0) 169 (32.3)	207 (27.6) 70 (30.8) 137 (26.1)	325 (43.3) 107 (47.1) 218 (41.6)
AgeCat 4	126 (25.9) 55 (32.4) 71 (22.4)	140 (28.7) 52 (30.6) 68 (27.8)	221 (45.4) 63 (37.1) 158 (49.8)
AgeCat 5	12 (35.3) 6 (42.9) 6 (30.0)	7 (20.6) 2 (14.3) 5 (25.0)	15 (44.1) 6 (42.9) 9 (45.0)

Table 3. Fasting Blood Glucose Cut Offs as per American Diabetes Association for Overall Data and Age Categories.

Conclusion:

The prevalence of diabetes of patients attending endocrine clinics at the BDF Hospital was 38.3%. Gender was not significant. Increase in prevalence was significant with increase in age. Further research is required to assess and specify preventative initiatives within the Bahraini community.

Table 1. Sociodemographic characteristics of participants and their FBS data (N=1613).

Sociodemographic Characteristic	Data
Age Mean (SD) Median Range	52.84 (15.993) 54 87
FBS Mean Median Range	7.41 (3.437) 6.23 27
Gender (No. and %) Male Female	501 (31%) 1112 (69%)
AgeCat 1 (No. and %) Overall Male Female	61 (3.78%) 35 (57%) 26 (43%)
AgeCat 2 (No. and %) Overall Male Female	280 (17.38%) 55 (20%) 225 (80%)
AgeCat 3 (No. and %) Overall Male Female	751 (46.56%) 227 (30%) 524 (70%)
AgeCat 4 (No and %) Overall Male Female	487 (30.19%) 170 (35%) 317 (65%)
AgeCat 5 (No and %) Overall Male Female	34 (2.11%) 14 (41%) 20 (59%)

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