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Knowledge of Risk Factors and Screening for Diabetes Mellitus Among Youths in Southwestern Nigeria

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Abstract: With the adoption of western lifestyle, youths are at risk of Diabetes mellitus (DM), a disease traditionally known to be common among older people. This study assessed prevalence and knowledge of risk factors for DM among youths in Southwestern Nigeria. Descriptive cross sectional study among 1610 students of tertiary institutions selected by serial recruitments. Research instrument consist of self-administered semi structured and pre-tested questionnaires. Data was analyzed using the SPSS software version 17.0. Mean age of respondents was 22.9 (+2.6) years. Four hundred and sixty (28.6%) were aware of DM. About 321 (19.9%) had good while 1289 (80.1%) had poor knowledge scores of risk factors for DM. The blood sugar level of > 6.1mmol/L (hyperglycemia) showed that 48 (3.0%) were diabetic out of which 32 (66.7%) were females. A total of 21 (1.3%) had transient hypoglycemia out of which 3 (61.9%) were females. Conclusively, DM was not uncommon among Nigerian youths. The poor knowledge scores of risk factors underscores the need for sustained health education targeted at risk reduction and prevention of Non-Communicable Diseases (NCD) most especially DM.

Keywords: Youths, Diabetes Mellitus, Risk Factors

1. Introduction

Diabetes among other Non-Communicable Diseases (NCD) is fast assuming epidemic dimension in many parts of the world including Nigeria. [1, 2] The disease traditionally believed to only affect the older age group is now increasingly diagnosed among adolescents and younger adults. [3, 4] Hence, it is crucial that young people be well-informed about the risk factors for the development of DM, and creating and sustaining the culture of preventive measures. Recent figures released by the International Diabetes Federation (IDF) indicate that the number of people living with Diabetes is expected to rise from 366 million in 2011 to 552 million by 2030, if no urgent action is taken. [3]

Diabetes mellitus (DM) is a non-communicable disease of global public health importance with extreme effect on the quality of life and its prevention and control amongst populations may largely influenced by improved knowledge. In a population, it is good to know about the awareness and knowledge level of a disease condition, International Diabetes Federation (IDF) recent figures indicate that the number of people living with diabetes is expected to increase from 366 million in 2011 to 552 million by 2030, if no urgent action is taken. [12]

The known major risk factors for the development of Diabetes include obesity, a family history of the disease, and a sedentary lifestyle. [4] Youths in Nigeria increasingly adopts western lifestyle including the consumption of junk fatty food and food additives. The eroding culture of partaking in farm work and working long distances, poor

culture of daily exercises among community members all contributes to the new era of sedentary lifestyle

There is growing evidence that preventing and/or delaying the onset of diabetes is a viable option. [5] Since knowledge forms a basis for the adoption of good health-related practices, education institutions are probably 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 towards prevention and control of DM and other non-communicable diseases. The objectives of this study was to assess awareness about DM and its screening among undergraduates undergoing immersion programmes in Badagry.

2. Methods

Study area was Badagry in Lagos state with a population of about 250,000 people. [6] The prevalence of DM in the state was not known because prevalence data were not being routinely collected. However there is a general hospital and numerous private hospitals and PHCs with capacity to investigate and manage diabetes. Like other non-communicable diseases, DM may have been on the increase most especially among youths because of their western lifestyle. The annual immersion programme pools together students from various Universities all over Nigeria who were on language and social sciences practical training for three months. The students were made to undergo medical tests which include screening for fasting blood sugar and urine glucose between September, 2012 to November, 2013

This is a descriptive cross sectional study among University undergraduates attending immersion school programme in Badagry. These youths constitutes the target population. Only registered students were eligible for this study.

Using the modified Leslie Fischer's formular for calculation of sample size in population less than 10,000 a calculated sampling size of 1550 increased to 1600 to account for attrition from the study and non-response. Sampling method include serial recruitment of all eligible students who consented to participate in the screening which occurred over a period of about 2 weeks.

Research instrument were self-administered semi structured questionnaire coordinated by 4 research assistants. Pre testing of questionnaire was done among 10 eligible similar students in Lagos Island and the corrections was used to further modify the questionnaire. Study variables include socio demographic characteristics of respondents, knowledge of risk factors to DM and results of screening test for DM.

Screening for DM: The students were tested for fasting blood sugar using blood glucose strips (dry test) after overnight fasting for an average of 12 hours. Quantitative test (wet tests) was used for students with high blood sugar level to confirm the value. Normal value for fasting blood sugar (after not eating for at least 8 hours) is 4.4 mmol/L or 82 mg/dl to 6.1 mmol/L or 110 mg/dl and urine strips were used

for testing urine glucose. Elevated glucose level was considered for FBS values above 6.1mmol/L were 48 (3%) and those with positive urine glucose was taken as renal threshold glucose (RTG) is 160 – 180mg/dl. The normal range FBS is 4.4mmol/L or 82mg/dl to 6.1mmol/L or 115mg/dl

Permission to conduct this study was obtained from the school authority while written informed consent was obtain from every student before the commencement of data collection. Data was analyzed using the SPSS software version 17.0 after data cleaning and random checks for errors. Frequency tables and charts were generated to showcase prevalence of DM and socio-demographic data. Knowledge score of DM was computed by pooling together all the ten knowledge questions asked and scoring +1 for correct and -1 for wrong answers. Scores below the average (0-4) were scored as poor while scores 5 and above were graded as good knowledge of DM.

3. Results

Mean age of respondents was 22.9 (+2.6) years. About 1114 (69.2%) were female while 493 (30.8%) were male, 1563 (97.15) were never married while 47 (2.9%) were ever married. Four hundred and sixty (28.6%) were aware of DM, according to Table 1.

Table 1. Personal data of respondents.

Variable	N	%
Age in years		
16-20	377	23.4
21-25	913	56.7
26-30	283	17.6
31-35	37	2.3
Sex		
Female	1114	69.2
Male	493	30.8
Marital status		
Never married	1563	97.1
Ever married	47	2.9
Aware of diabetes as a disease		
Yes	460	28.6
No	1150	71.4

According to the pie chart in figure 1, about 321 (19.9%) had good while 1289 (80.1%) had poor knowledge of risk factors for DM.
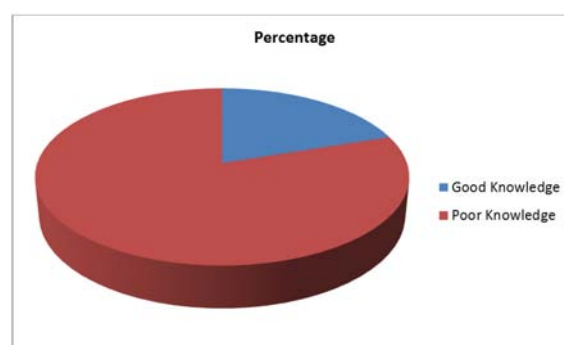
Figure 1. Awareness and knowledge of DM.

The blood sugar level of > 6.1mmol/L (hyperglycemia) showed that 48 (3.0%) were diabetic out of which 32 (66.7%) were females. A total of 21 (1.3%) had transient hypoglycemia out of which 3 (61.9%) were females according to Table 2.

Table 2. *DM screening test results by sex.*

FBS results	Male	Male%	Female	Female%	Total	Total%
Transient hypoglycemia < 70mg/dl	5	0.01	13	0.01	21	0.013
Normal blood sugar	472	0.95	1069	0.95	1541	0.957
Hyperglycemia > 115mg/dl	16	0.03	32	0.02	48	0.029
Total	493		1114		1610	1

4. Discussions

Risk factors for DM were the major predisposing factor to the disease. Awareness of DM on the other hand is an indication of adoption of behavioural changes and reduction of western lifestyles. All respondents were aware of DM, and this supports several other studies. [7, 8] The high awareness of DM among respondents was not unexpected due to their level of education and probably exposure.

A high knowledge score is an indication of desire to get more detailed information about the subject matter. In this study, majority had poor while a few had good knowledge score of DM, and this supports similar other studies [8, 9] carried among undergraduates. Poor knowledge may have been from a similarly poor attitude to prevention and control measures. This may also translate into poor self-risk perception to DM despite youths adopting more and more of western lifestyle on daily basis. Poor risk perception is a big issue because it may determine pattern of health seeking behaviour to the disease, the length of delay in management and eventual prognosis of the disease after it has been brought under control.

A few of the respondents were diagnosed as diabetic, in support of some studies [10] and in disagreement with some other similar studies with lower prevalent figures. [11] The important information is that DM is not uncommon among youths. DM has always been looked at as a disease of the elderly that may spare the young economically productive age group. This is a pointer to the fact that the disease could affect the young age group under study, as well as serve as advocacy tool for NGOs most of which have not invested funds in diabetes screening, diagnosis and management. Early diagnosis of DM could also bring about good health seeking behaviour, going for prompt management of the illness and eventual prevention of complication of diabetes.

A high prevalence of DM among youths is an indication into reportedly increasing prevalence of NCDs, and urgent and dire need for all stakeholders to organize serial awareness programe that would address lifestyle modification and eventual reduction in prevalence of DM. Nowadays, co-infection between DM and tuberculosis (TB) and by extension HIV had been reported, and this would eventually have significant effect on epidemiology and control of both communicable and non-communicable diseases if situation is not brought under control through preventive efforts. Our inability to do sophisticated tests for DM including oral glucose tolerant test (OGTT) serves as a limitation to this study.

5. Conclusion

Diabetes exists among the University students that came to Nigerian French Language Village Badagry. Going by poor knowledge score of risk factors for DM, youths can gain from preventive messages from health education about the various preventive measures including good dietary intake to achieve a normal.

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