



ISSN Print: 2394-7500  
ISSN Online: 2394-5869  
Impact Factor: 5.2  
IJAR 2018; 4(8): 225-228  
www.allresearchjournal.com  
Received: 18-06-2018  
Accepted: 20-07-2018

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## Assessment of diabetes knowledge amongst nursing students

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### Abstract

**Background and Objectives:** Diabetes mellitus is a chronic multifactorial disorder characterized by carbohydrate, protein and fat metabolism abnormalities. Nurses play a crucial role as the facilitator to improve the self-care and quality of life among the diabetic patient. Thus to provide good quality care of diabetics nurses should have a continuing education in diabetes educational strategies and behavioural intervention beyond their basic preparation. Hence we took up the study to assess the level of knowledge about diabetes among the nursing students.

**Materials and Methods:** A cross sectional questionnaire based study was conducted. Pretested questionnaire was used to assess the gap in knowledge of diabetes. The questionnaire was administered to all the nursing students who consented at our Institute. Data was tabulated and analysed using excel sheet.

**Results:** A total of 62 nursing students participated in the study. In this study we found to poor knowledge required to manage patients with diabetes, as student nurses were beginners during their period of graduation.

**Conclusion:** There is a need for regular appraisal of nursing student's knowledge by conduction educational training programme/workshop at initial stages. The deficits area identified in this study can be a corner stone for initiating educational programmes.

**Keywords:** Diabetes, knowledge, nursing students

### 1. Introduction

According to WHO report, in India as of today is having 32 million diabetic patients and this number is projected to be 79.4 million by the year 2030 <sup>[1]</sup>. Diabetes mellitus is a chronic multifactorial disorder characterized by carbohydrate, protein and fat metabolism abnormalities <sup>[1]</sup>. Self-management plays a pivotal role for the success of any treatment. To achieve the desired level of glycaemic status there is a need for multiple behavioural changes <sup>[2]</sup>. To implement and to sustain the desired life style changes in the patient there is a need of cooperation between the patient and the health care providers. For effective diabetes management a multidisciplinary approach is required <sup>[3]</sup>. Diabetic patients acquire their knowledge about diabetes self-management from various resources such as nurses and other educational programs <sup>[4]</sup>. Nurses play a crucial role as the facilitator to improve the self-care and quality of life among the diabetic patient. Hence they should be more knowledgeable and possess good communication skills to educate the patients <sup>[5]</sup>. Thus to provide good quality care of diabetics nurses should have a continuing education in diabetes educational strategies and behavioural intervention beyond their basic preparation. The number of literature available regarding the knowledge of health care professional about diabetes is very few. Hence we took up the study to assess the level of knowledge about diabetes among the nursing students.

### 2. Methodology

A cross-sectional survey was conducted among the nursing students at our institute. Institutional ethical committee approval was taken before commencing the study. Students who were willing to participate were instructed about the survey before answering the questions. Pre tested questionnaire was used to assess the knowledge about diabetes. The Question naire focused on various aspects of diabetes mellitus, namely general knowledge about diabetes, risk factors, symptoms, complications, treatment, lifestyle, and

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non-medical measures.

Only those students present on the day of survey and who were willing to participate in the study were included. Purpose of the study was explained and all difficult terms were explained in local language. The questionnaire was distributed to all the nursing students and revealing of identity was made optional. Thirty minutes time was given to complete the questionnaire.

Data were entered in excel sheet. Data are presented as number (%) for categorical variables and mean (standard deviation) for continuous variables.

**3. Results**

A convenient sample of nursing students (N = 62) participated in this study. The respondents were aged between 16 and 20years of age with a mean of 17.71±0.77years. Approximately 84% of the sample was females. Subject’s response regarding general things related to diabetes is shown in figure 1.

The results showed that students had relatively good general knowledge of the disease. Sixty three percent knew that there are different types of diabetes affecting different ages, the participant students had good knowledge about source of insulin (63.3%), lack of insulin causes diabetes (76.6%), if untreated can lead to rise in blood sugar (81.67%), diabetes is caused due to problem of excretion of sugar (50%) and is a hereditary condition (68.3%). However Eighty one percent (81.67%) of the study participants wrongly associated excessive intake of sugar with development of DM.

Figure 1: General Knowledge of Diabetes

Figure 2 shows the subjects response regarding life style and non-medical measures about diabetes. Sixty three percent of the students had good knowledge regarding the diabetic diet, whereas 80% wrongly believed that preparing food is more important than the nature of food. Regarding foot care about 53.3% students felt wound in diabetics heal slowly; 58.3% felt diabetics should be careful while clipping their nails. Overall the score obtained in this section by the students is fairly good except for this question, 30% students had thought stockings are not bad for diabetics.

Figure 2: Life style and non-medical measures

Figure 3 shows response regarding treatment of diabetes. The participants had showed average knowledge regarding the treatment of diabetes. About 50% marked correct answer on questions regarding diabetes can be cured (50%), fasting blood sugar range (65%). Whereas less than 50% marked correct options for questions such as mode of diagnosis (13.4%), diabetes can be controlled by drugs (21.67%), exercise will increase the need for medication (33.33%).

Figure 3: Response regarding monitoring and treatment of diabetes

As shown in table 1, most of the subjects could not mention symptoms of the disease correctly; only 17 of them stated correct answer regarding the symptoms of the disease. However approximately half the students had correct knowledge about complications like diabetes can cause loss of feeling in hands and feet (40%), diabetes can cause poor circulation (43%) and it can damage kidney (50%).

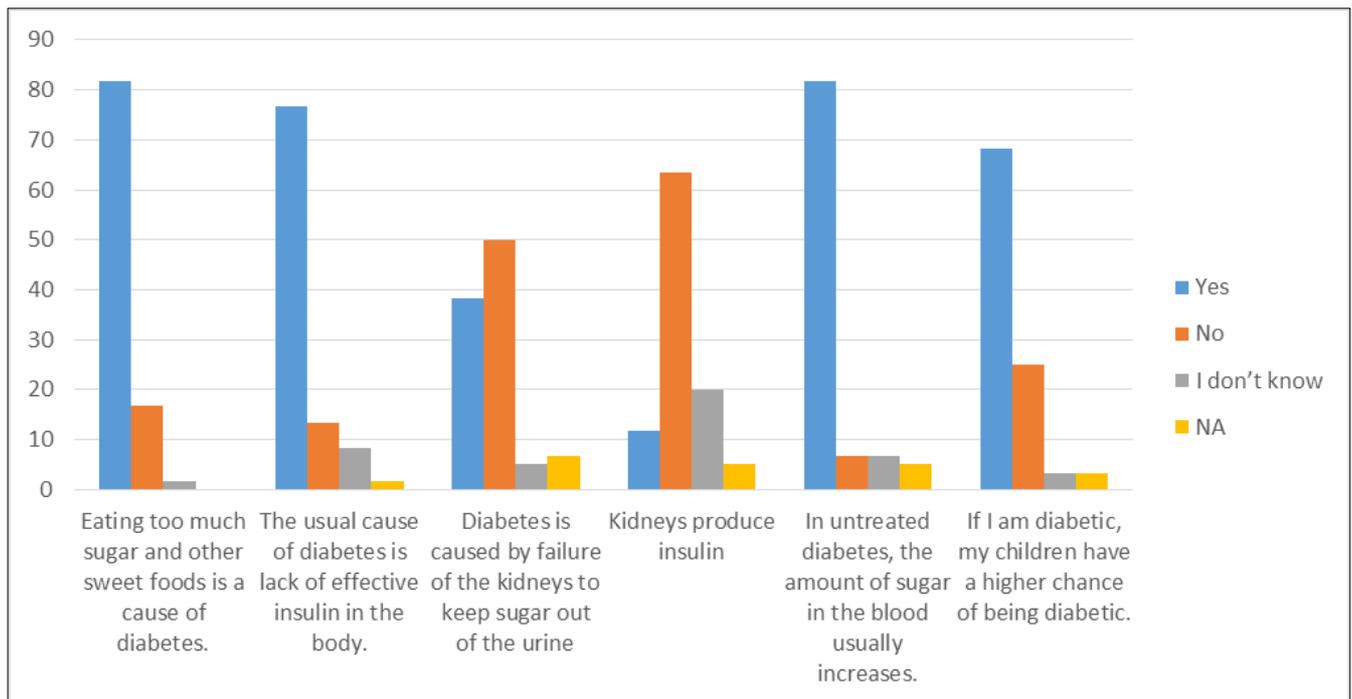
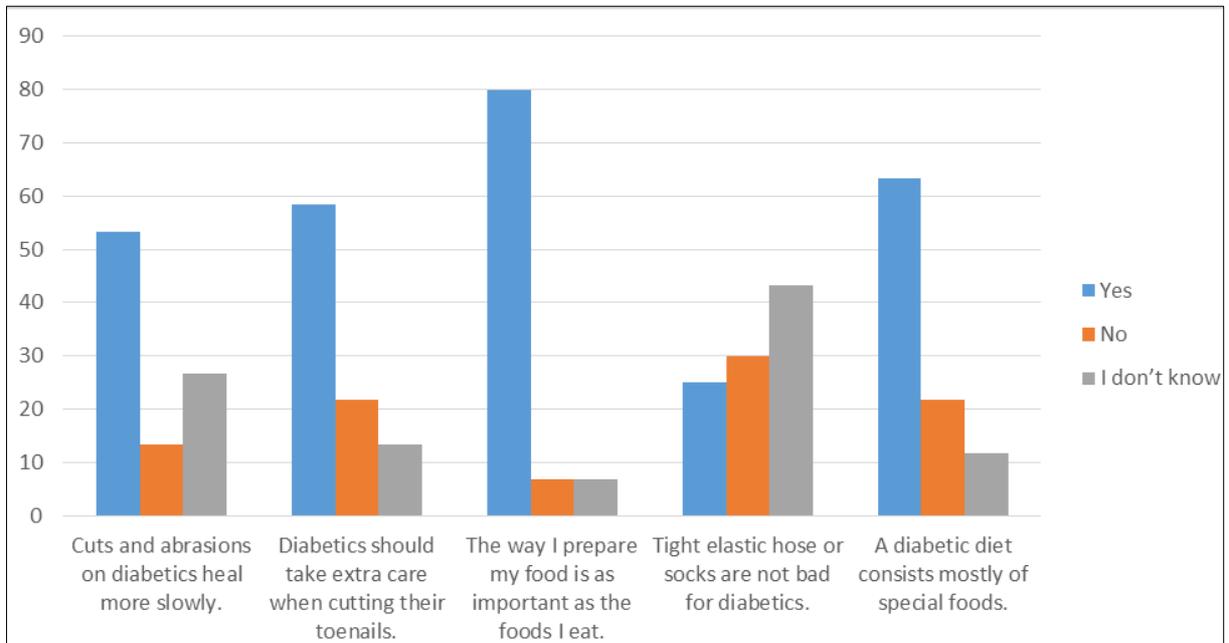


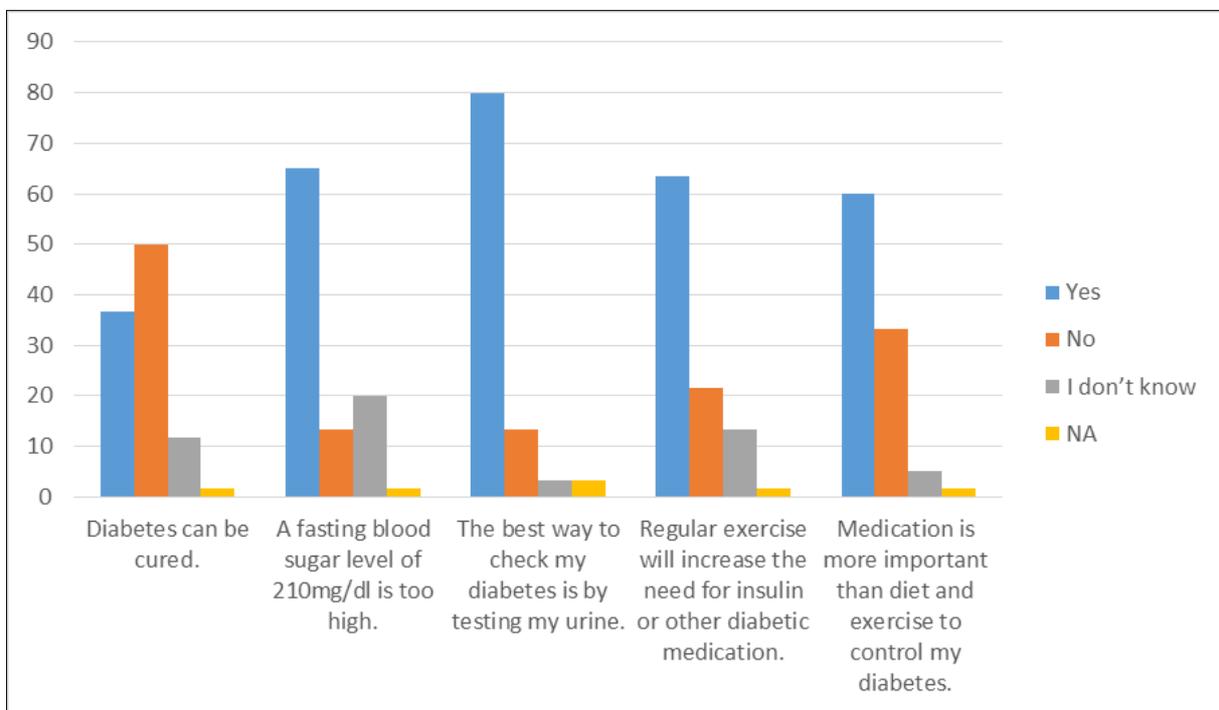
Fig 1: Awareness of participants about general things related to diabetes



**Fig 2:** Knowledge of participants regarding lifestyle and non-medical measures of management of diabetes

**Table 1:** Knowledge of participants regarding symptoms and complications of diabetes

S. No	Questions	Yes	No	I don't know	NA
1.	Diabetes often causes poor circulation.	43.33	20.00	31.67	5.00
2.	Diabetes can damage my kidneys.	50.00	30.00	18.33	1.67
3.	Diabetes can cause loss of feeling in my hands, fingers, and feet.	40.00	46.67	11.66	1.67
4.	Shaking and sweating are signs of high blood sugar.	50.00	28.33	18.33	3.34
5.	Frequent urination and thirst are signs of low blood sugar.	41.67	30.00	23.33	5.00



**Fig 3:** Knowledge of participants regarding management of diabetes

**4. Discussion**

Diabetes mellitus is a disease considered as an important global public health problem. Although there is no cure for this disease, prevention and control of the disease may be largely influenced by improved knowledge amongst individuals. Nurses are the key providers of diabetes care. They expected to promote the health and well-being of all

the diabetic patients through proper care and education. As education is the important part of nursing care, it is very crucial for all the nursing students to keep updating their knowledge in order to provide quality information to the diabetic patients [6, 7]. The purpose of this study was to assess the level of diabetes knowledge among nursing students. None of them was able to answer all questions

correctly. This is in accordance with studies done by Uding *et al* [8], Thomas *et al* [9] and Abduelkarem *et al* [10]. These studies also highlighted a lack of overall knowledge related to diabetes among nursing students during the initiation of graduation.

In this study the students had better general knowledge about the disease (figure 1). Although they have better general knowledge regarding diabetes, still there is a need for more knowledge at this age because they are often the first point of contact for diabetic patients who seek the information about their condition [11].

Student knowledge regarding the lifestyle of person with diabetes was fairly good (figure 2). However, there is lack of idea about the importance of “foot care” since this is one of the specific information that the nursing students will acquire during their period of graduation. This poor knowledge may be because they are still beginners in nursing field [6].

In the present study the student’s knowledge about symptoms when compared to complications of the disease was very low (Table 1). Most of them could not mention the symptoms of the disease correctly indicating that the knowledge about symptoms was not enough. Early identification of symptoms helps in early detection of the disease leading to prompt treatment. Though they are still beginners in the field, they should have acquired basic knowledge about signs and symptoms at earlier age. This is a matter of concern for the policy makers to implement basic diabetic education programme at pre university school level.

The participant’s understanding on management of diabetes was poor. Whereas in response to the questions examining their perception of DM, around fifty percent participants said it is curable as shown in the figure 3. Thus indicating that, the students might require additional educational efforts to guide diabetic relatives and patients to prevent diabetic complications. As been emphasized in many studies that education program and years of experience had positive impact in providing health education to the diabetic patients [12, 15].

Study Limitations, low sample size which can’t be generalized, diabetes knowledge was primarily assessed in first year nursing students. Thus in future authors have plan to replicate this study using randomly selected larger and more heterogeneous samples and also to assess the knowledge of nursing students at each level of graduation as there direct implications between nursing education and care of diabetes mellitus.

## 5. Conclusion

In the present study, knowledge of nursing students regarding diabetes mellitus was less satisfactory. Areas of knowledge gap include diet, symptoms of diabetes as well as management of diabetes. There is a need for regular appraisal of nursing student’s knowledge by conduction educational training programme/workshop at initial stages. The deficits area identified in this study can be a corner stone for initiating educational programmes.

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