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## A study to identify the nursing diagnosis among diabetic patients with a view to formulate nursing care plan.

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### 2. Abstract with key words:

**Background of study:** Diabetes Mellitus (DM) is currently considered as an important health problem in terms of its prevalence, incidence and relationship to premature mortality, as well as due to costs involved to control and treat its complications. Nurses are involved in different types of health care. Nursing care is enhanced by nursing care plans which outline the nursing activities to be provided for a patient. Through this study we identify as much as possible nursing diagnosis of patient with diabetes and the common nursing diagnosis of diabetic patients. Also this study helps the nurses who have lack of knowledge regarding diagnosis of patient with diabetes.

**Methodology:** Non experimental descriptive research study conducted. The non-probability convenient sampling technique was used for the study. The physical examination & Demographic variable tool was used for 66 patients. An information booklet was prepared on identified nursing diagnosis and at the end of data collection it was distributed among staff nurses of different wards. A study was conducted between 23<sup>rd</sup> January 2020 to 4<sup>th</sup> February 2020. The data was analysed by descriptive & inferential statistical method and based on study objectives.

### Result:

Researcher found that nursing diagnosis like impaired skin integrity, impaired physical mobility, activity intolerance/ fatigue, disturbed sensory perception most among the sample of the study with percentage of 40.9%, 78.8%, 43.9%, and 37.9% respectively. For association between demographic data and nursing diagnosis, Association between Impaired visual activities and whether complications related to diabetes present. Hence, it shows that higher the diabetic complications presence incites the impaired visual activity. Association between Ineffective breathing pattern / respiratory function and Weight of the respondent, it shows that higher weight induces higher chance of ineffective breathing pattern / respiratory function and whether respondent has family history of diabetes, it shows that family history of diabetes induces the high chance of ineffective breathing pattern / respiratory function. Association between Dysfunctional gastrointestinal mobility and Gender of the respondent, it shows females are at a higher risk of gastrointestinal complications than males. Association between Impaired physical mobility and age of the respondent, it shows that older individuals seem to have higher risk of developing impaired physical

mobility problems as per the observed samples. Association between Impaired physical mobility and dietary pattern of the respondent, meat consuming seem to be at high risk of impaired physical mobility. Association between Impaired physical mobility and whether insulin administration necessary, it shows that insulin administration increases the chance of impaired physical mobility respondent. Association between Disturbed sensory perceptions and whether complications related to diabetes present, it shows that complications of diabetes increase the chance of disturbed sensory perception.

### **Conclusion:**

In the identification of nursing diagnosis of diabetic patient, out of 66 samples, researcher found that 27 samples have nursing diagnosis impaired skin integrity with percentage of 40.9%. 50 samples have nursing diagnosis of impaired physical mobility. 29 samples have nursing diagnosis of activity intolerance/ fatigue with percentage of 43.9% of sample. 25 samples have nursing diagnosis of disturbed sensory perception with percentage of 37.9%. In the association of demographic data and nursing diagnosis, researcher found association between Ineffective breathing pattern / respiratory function and weight of the respondent, Association between Ineffective breathing pattern / respiratory function and whether the respondent has family history of diabetes, Association between Dysfunctional gastrointestinal mobility and Gender of the respondent, Association between Impaired physical mobility and age of the respondent, Association between Impaired physical mobility and dietary pattern of the respondent. Association between Disturbed sensory perception and whether complications related to diabetes present.

**Key words:** Nursing diagnosis, Diabetic patients, , Nursing care plan.

### **5. Introduction:**

Diabetes mellitus (DM) is currently considered an important health problem in terms of its prevalence, incidence and relationship to premature mortality, as well as due to the costs involved to control and treat its complications. It is now ranked among one of the most common non-communicable diseases in the world. It falls within 4th –5th leading cause of death in most developed countries and there are facts and figures that it is epidemic in many developing and newly industrialized countries. It will be emerging as a pandemic by the year 2025. Nurses are involved in care of elderly patient, care of critical patient, care of Paediatric patient. Nursing care plans are a set of actions the nurse will implement to solve the nursing problems identified for a particular patient, acts as a bridge to the nursing process. The nursing process was developed as a way of providing holistic patient care, and has globally been considered as a framework for nursing practice and nursing education. <sup>(12)</sup> According to Kozier, Erbs, Berman and Synder (2008:160), “the nursing process is a systematic patient centered method of structuring the delivery of nursing care”. <sup>(12)</sup> The nursing process entails gathering and analysing data in order to identify patient’s health care problems as well as their strengths and potential for recuperation. <sup>(13)</sup> In Anand, some authors identified various nursing diagnoses in people with diabetes mellitus; however, in this study, researcher opted for the following: Impaired skin integrity, Knowledge deficit, and Ineffective management of therapeutic regimen, in line with the majority of studies on diabetes mellitus. With the expansion of nursing diagnosis and classification systems, the need to recover and also classify nursing interventions emerges in order to establish a channel of communication between the nurse and the other members of the health team or within the nursing team itself.

### **Need of the study:**

In some area of health sector, nurses have not competence knowledge of nursing diagnosis of patient with diabetes, so that they are not giving proper health care to patient. After that patients are suffering with complication like neuropathy, retinopathy. In this context, the Nursing Interventions Classification (NIC) is a taxonomy that includes actions recommended in nursing care. It is designed to improve clinical documentation, communication of care, integration of data in computer systems, use of data by nurses from various outpatient clinics and health facilities, data sources for research, indicators of productivity, evaluation of competence, payment for services, and curricular structure. Complication of diabetes is neuropathy, retinopathy, microvascular complication so that patient face problem like blindness or vision problem, amputation of extremity, coronary artery diseases. Generally, nurses are emphasis on general

nursing diagnosis of diabetic patients like 'imbalance nutrition less than body requirement' 'ineffective health maintenance' 'sedentary lifestyle' but there are some of the other nursing diagnosis also like 'risk for peripheral neurovascular dysfunction' 'risk for unstable blood glucose level with the help of this nursing diagnosis nurses can effectively prevent the complication of diabetes and maintain the good health of diabetic patients. <sup>(15)</sup> Worldwide, the number of people with diabetes has substantially increased between 1980 and 2014, rising from 108 million to current numbers that are around four times higher. WHO estimates that, globally, 422 million were living with diabetes in 2014. The number of people with diabetes in India increase from 26 million in 1990 to 65 million in 2016. Through this study researcher identify the as much as possible nursing diagnosis of patient with diabetes and the common nursing diagnosis of diabetes patients. Also this study helps the nurses who has lack of knowledge regarding nursing diagnosis of patient with diabetes so that nurses are implemented their intervention with the help of nursing diagnosis.<sup>(14)</sup>

### Review of literature:

1. **Tiruneh GG, Abebe N, Dessie G (2017)** conducted study to assess the magnitude of hypoglycaemia and factors associated with hypoglycaemia among adult diabetic patients follow up clinic at Debre Markos referral hospital, East Gojjam Zone, Northwest Ethiopia, 2017. An institution-based cross-sectional study was conducted among 394 sampled diabetic patients who were selected through systematic random sampling technique at Debre Markos referral hospital. Data were collected using structured interviewer-administered questionnaire. The collected data were entered and cleared using epi-data version 3.1 and analysed by SPSS version 20. We used bivariate and multivariate logistic regression models to identify variables for multivariate analysis and to identify associated factors for hypoglycaemia, respectively. The study revealed that 279(70.8%) of diabetic patients had experienced hypoglycaemic event since the diagnosis of diabetes. Patients with type 1 diabetes were more likely to have hypoglycaemia as compared with type 2 diabetic patients. The factors found to be significantly associated with hypoglycaemia included type 2 diabetes duration of diabetes from 10 to 14 years and insulin therapy. Diabetic patients who are government employees were less likely to have hypoglycaemia when compared to farmers. The magnitude of hypoglycaemia was found to be high and significantly associated with occupation, type of diabetes mellitus, type of medication and duration of diabetes mellitus since diagnosis. Therefore, attention is needed from health-related governmental organizations and health care providers to decrease the burden of hypoglycaemia and to address the major contributing factor.<sup>(1)</sup>
2. **Lazo-Porras, Bernabe-Ortiz, et,al (2016)** conducted study to Implementation of foot thermometry plus mHealth to prevent diabetic foot ulcers: study protocol for a randomized controlled trial. This trial was designed to compare the incidence of diabetic foot ulcers (DFUs) between participants who receive thermometry alone and those who receive thermometry as well as mHealth (SMS and voice messaging) over a year-long study period. This is an evaluator-blinded, randomized, 12-month trial. Individuals with a diagnosis of type 2 diabetes mellitus, aged between 18-80 years, having a present dorsalis pedis pulse in both feet, are in risk group 2 or 3 using the diabetic foot risk classification system (as specified by the International Working Group on the Diabetic Foot), have an operating cell phone or a caregiver with an operating cell phone, and have the ability to provide informed consent will be eligible to participate in the study. Recruitment will be performed in diabetes outpatient clinics at two Ministry of Health tertiary hospitals in Lima, Peru. participants in both groups will receive education about foot care at the beginning of the study and they will be provided with a thermometry device (TempStatTM). TempStatTM is a tool that captures a thermal image of the feet, which, depending on the temperature of the feet, shows different colours. In this study, if a participant notes a single yellow image or variance between one foot and the contralateral foot, they will be prompted to notify a nurse to evaluate their activity within the previous 2 weeks and make appropriate

recommendations. In addition to thermometry, participants in the intervention arm will receive an mHealth component in the form of SMS and voice messages as reminders to use the thermometry device, and instructions to promote foot care. The primary outcome is foot ulceration, evaluated by a trained nurse, occurring at any point.<sup>(2)</sup>

3. **Mariam, Alemayehu, Tesfaye ,et,al(2016)** conducted study to Prevalence of Diabetic Foot Ulcer and Associated Factors among Adult Diabetic Patients Who Attend the Diabetic Follow-Up Clinic at the University of Gondar Referral Hospital, North West Ethiopia, Institutional-Based Cross-Sectional Study. Diabetes mellitus is a metabolic disorder which is characterized by multiple long-term complications that affect almost every system in the body. Foot ulcers are one of the main complications of diabetes mellitus. However, there is limited evidence on the occurrence of foot ulcer and influencing factors in Ethiopia. An institutional-based cross-sectional study was conducted in Gondar University Hospital, Ethiopia, to investigate foot ulcer occurrence in diabetic patients Systematic random sampling was used to select 279 study participants. Bivariate and multivariable logistic regression model was fitted to identify factors associated with diabetic foot ulcer. Odds ratio with 95% confidence interval was computed to determine the level of significance. Diabetic foot ulcer was found to be 13.6%. Rural residence [AOR = 2.57; 95% CI: 1.42, 5.93], type II diabetes mellitus [AOR = 2.58; 95% CI: 1.22, 6.45], overweight [AOR = 2.12; 95% CI: 1.15, 3.10], obesity [AOR = 2.65; 95% CI: 1.25, 5.83], poor foot self-care practice [AOR = 2.52; 95% CI: 1.21, 6.53], and neuropathy [AOR = 21.76; 95% CI: 8.43, 57.47] were factors associated with diabetic foot ulcer. Diabetic foot ulcer was found to be high. Provision of special emphasis for rural residence, decreasing excessive weight gain, managing neuropathy, and promoting foot self-care practice would decrease diabetic foot ulcer.<sup>(3)</sup>

#### 6. Problem statement:

A study to identify nursing diagnosis among diabetic patients with a view to formulate nursing care plan.

#### 7. Objectives of the study:

1. To identify nursing diagnosis among diabetic patients.
2. To find out the association between demographic variables and nursing diagnosis.
3. To formulate a booklet regarding nursing care plan of diabetes.

#### 8. Research methodology:

A qualitative research approach, Non experimental descriptive research design was adopted for this research to identify nursing diagnosis among diabetic patients of Shree Krishna Hospital, Karamsad. Ethical consideration was taken from institutional ethical committee to conduct this study. Pilot study was conducted among 6 samples and founded data and values about 0.274 which indicates that the tool is reliable. Data collection was conducted between 23<sup>rd</sup> January 2020 to 4<sup>th</sup> February 2020. Surgical ward was selected for pilot study by convenient sample technique and remaining areas such as wards were selected for final study. Total 66 samples of diabetic patients were selected based on convenient sampling technique and based on inclusion and exclusion criteria. To select samples from different wards, initially the permission was taken from concerned authority to conduct the study. And also an informed consent was taken priorly from samples by explaining the purpose of the study. Tools were validated from 8 experts. Tool consisted two parts: the first part consisted socio-demographic variables including age, gender, weight, education, occupation, dietary pattern, family history of diabetes, type of diabetes present, since how long the patient is suffering from diabetes, does the patient take insulin or not, presence of any complication related to diabetes.

The second part consisted physical examination which consist 15 different criterias. Investigator collected history(present, past, & family) and assessed the patient by doing physical examination and then made score accordingly. After data collection, information

booklet was distributed among staff nurses of different wards. And then the collected data were tabulated in master sheet for the final analysis and interpretation. Analysis was done by using descriptive and inferential statistics. It was presented as tables and graphs.

#### Inclusion criteria:

- a) It include the patient have type 2 diabetes mellitus.
- b) Patient may have dependent or independent diabetes.

#### Exclusion criteria:

- a) Clients who are critically ill.
- b) Clients who are paediatric.
- c) Clients who are having gestational & juvenile diabetes.
- d) Clients who are having communicable and non-communicable diseases.

### 9. Results and Interpretations:

Collected data were entered into the master sheet for tabulation, analysis and interpretation using descriptive and inferential statistics. Below data shows the study result as per objective.

**Table 1: Findings related to socio-demographic variable**

SR. NO	DEMOGRAPHIC DTA	FREQUENCY	PRECENTAGE (%) (N=66)
1.	<b>Age</b>		
	21 to 30	00	00
	31 to 40	05	7.6
	41 to 50	05	7.6
	Above 50	56	84.8
2.	<b>Gender</b>		
	Male	39	59.1
	Female	27	40.9
3.	<b>Weight</b>		
	30 to 50 kg	06	9.1
	51 to 70 kg	44	66.7
	71 to 90 kg	13	19.7
	Above 90 kg	03	4.5
4.	<b>Education</b>		
	Uneducated	19	28.8
	SSC	19	28.8
	HSC	7	10.6
	Undergraduate	21	31.8
5.	<b>Occupation</b>		
	Farmer	7	10.6
	Labour work	10	15.2
	Sedentary work	36	54.5
	Other	13	19.37
6.	<b>Dietary pattern</b>		
	Vegetarian	52	78.8
	Non vegetarian	6	9.1
	Mix type	8	12.1
7.	<b>family members suffering from diabetes</b>		
	Yes	33	50
	No	33	50
8.	<b>Type of diabetes</b>		
	Type-1	17	25.8

	Type-2	49	74.2
<b>9.</b>	<b>Since how long you are suffering from diabetes</b>		
	0-5 years	26	39.4
	5-15 Year	25	37.9
	15-20 Year	8	12.1
	>20Year	7	10.6
<b>10.</b>	<b>Do you take insulin</b>		
	Yes	22	33.3
	No	44	66.7
<b>11.</b>	<b>any complication related to diabetes</b>		
	Yes	38	57.6
	No	28	42.4

Above table reveals that out of 66 respondents under the study, 56 (84.8%) belonged to age group of above 50 years, 5(7.6%) belonged to age group of 31to 40 years and 5 (7.6%) belonged to age group of 41 to 50 years.

In regards of gender, 39 (59.1%) belonged to male and 27(40.9%) belonged to female group. In regards of weight, 6(9.1%) had weight around 30-50 Kg, 44(66.7%) had weight around 51-70 Kg, 13(19.7%) had weight around 71-90 Kg and 03 (4.5%) had weight above 90 Kg. In regards of education, 19(28.8%) were had uneducated, 19(28.8%) had received SSC education, 7(10.6%) had received HSC education, 21(31.8%) were had undergraduate or more. In regards of occupation, 7(10.6%) were farmer, 10(15.2%) were do labour work, 36(54.5%) were under the sedentary work and 13(19.37) were do other work. In regards of dietary pattern, 52(78.8%) belongs to vegetarian, 6(9.1%) belongs to non-vegetarian and 8(12.1%) belongs to mixed type. In regards of family history of diabetes, 33(50%) had family history of diabetes and 33(50%) had no any family history of diabetes. In regards of since how long sample suffering from diabetes, 26(39.4%) had suffering form 0-5 years, 25(37.9%) had suffering from 5-15 years, 8(12.1%) had suffering from 15-20 years and 7(10.6%) had suffering from more than 20 years. In regards of insulin taking, 22(33.3%) had taken insulin and 44(66.7%) had not taken the insulin. In regards of presence of complication of diabetes, 38(57.6%) had history of complication and 28(42.4%) had no any history of complication.

Table 2. This table shows the identified nursing diagnosis in diabetic patient.

(N=66)

SR. NO	NURSING DIAGNOSIS	FREQUENCY	PERCENTAGE
1	Imbalance body temperature/ vital sign	31	47%
2	Imbalance nutrition	03	4.5%
3	Impaired visual activity	21	31.8%
4	Impaired hearing acuity	13	19.7%
5	Ineffective breathing pattern / respiratory function	13	19.7%
6	Impaired cardiovascular function	10	15.2%
7	Dysfunctional gastrointestinal mobility	07	10.6%
8	Impaired skin integrity	27	40.9%
9	Impaired physical mobility	50	75.8%
10	Activity intolerance/ fatigue	29	43.9%
11	Disturbed sensory perception	25	37.9%

Table show the identified nursing diagnosis among diabetic patient base on our physical examination on the sample of study. The investigator found that nursing diagnosis imbalance body temperature/ vital sign among 31 sample out of the 66 sample that 47% among sample. Nursing diagnosis imbalance nutrition has been found among in 3 sample which proportion of 4.5% of sample. Nursing diagnosis impaired visual activity and impaired hearing acuity has been found in 21 and 13 among sample of study and with percentage 31.8% and 19.7% among the sample. Nursing diagnosis ineffective breathing pattern/ respiratory function and impaired cardiovascular function has been found among 13 and 10 sample of study and which proportion of 19.7 and 15.2 among sample. Nursing diagnosis dysfunctional gastrointestinal mobility and impaired skin integrity has been found among 7 and 27 sample of study. Nursing diagnosis impaired physical mobility and activity intolerance has been found among 50 and 29 sample of study which proportion of 78.8% and 43.9% percentage among the sample. Nursing diagnosis disturbed sensory perception has been found among 25 sample of study so disturbed sensory perception found among 37.9% of sample.

The investigator found that nursing diagnosis impaired skin integrity, impaired physical mobility, activity intolerance/ fatigue, disturbed sensory perception found most among the sample of the study with percentage of 40.9%, 78.8%, 43.9%, 37.9%.

#### 10. Conclusion:

In the identification of nursing diagnosis of diabetic patient, out of 66 samples, investigator found that 27 sample has nursing diagnosis impaired skin integrity with percentage of 40.9%. 50 sample has nursing diagnosis of impaired physical mobility. 29 sample has nursing diagnosis of activity intolerance/ fatigue with percentage of 43.9% of sample. 25 sample has nursing diagnosis of disturbed sensory perception with percentage of 37.9%. in the association of demographic data and nursing diagnosis, investigator found association between Ineffective breathing pattern / respiratory function and Weight of the respondent, Association between

Ineffective breathing pattern / respiratory function and Whether respondent has family history diabetes, Association between Dysfunctional gastrointestinal mobility and Gender of the respondent, Association between Impaired physical mobility and Age of the respondent, Association between Impaired physical mobility and Pattern of the respondent, Association between Disturbed sensory perception and Whether complications related to diabetes present

## 11. Recommendations:

The following recommendation are made on the basis of the finding of present study.

1. Similar study can be replicated in large sample and in all cities of Gujarat state or other state so that finding can be generalized for a large population.
2. A study can conduct to determine the intervention of nursing diagnosis of diabetic patients.
3. To find the effectiveness of the application of nursing diagnosis and its outcome in nursing care.

**12. Conflict of interest:** None

**13. Source of Funding:** No separate funding was received for this study.

**14. Ethical consideration:** The ethical clearance obtained from our university -ethical committee of Bhaikaka University.

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