

**TO ASSESS THE KNOWLEDGE REGARDING PREVENTION OF SIGN AND SYMPTOMS OF DIABETIC KETOACIDOSIS AMONG DIABETES PATIENTS IN SELECTED HOSPITALS OF WARDHA DISTRICT.**

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**Abstract:**

Background – Diabetic ketoacidosis or also called as diabetic acidosis, ‘Is an acute condition, greater critical problem of diabetes mellitus’. Mostly Diabetic acidosis affects insulin dependent diabetes patients, but it affects Non –insulin dependent diabetes patients also.

Diabetic acidosis, Is defined according to clinical point of view ‘Diabetic acidosis is an acute condition of critical uncontrollable diabetes mellitus which is linked with Diabetic acidosis, it requires emergent medical care with insulin and infusion of liquid substances or drip ’.

Study Objective - To assess the level of knowledge of diabetes patients regarding prevention of sign and symptoms of diabetes ketoacidosis

Methods - In this, study participants is a diabetic patient, Descriptive study design. Diabetes mellitus clients having age group 20 to 60 years will be assessed for knowledge of prevention of sign and symptoms of diabetic ketoacidosis, as per inclusion/exclusion criteria. The group knowledge will be assessed by structured knowledge questionnaire on diabetic ketoacidosis .The test having 18 items and duration of test will be 18 min. Primary outcomes include evaluation of knowledge on prevention of sign and symptoms of diabetic ketoacidosis among diabetes patients. And Secondary outcomes involve evaluation of association of knowledge on prevention of sign and symptoms of diabetic ketoacidosis among diabetes patients with their demographic variables.

Ethical approval was obtained from IEC, DMIMS (DMIMS (DU)/IEC/Dec-2019/8642). Conclusion of the study will be drawn from the results and after that article will be published in peer review journal.

**Expected results:** This Study, Evaluate knowledge of prevention of sign and symptoms of diabetic ketoacidosis among diabetes patients, this study will show the some diabetes patient having poor knowledge, some having average knowledge and some diabetes patient having good knowledge regarding diabetic ketoacidosis.

**Keywords** – Knowledge, Prevention, Sign and Symptoms, Diabetic ketoacidosis, Diabetes patients.

### Introduction:

Diabetic acidosis or DKA, 'Is an acute condition, serious health state, critical problem of diabetes mellitus, included increase blood glucose level combination ketosis and acidosis, and large amount of ketone body in urine abnormally. Diabetic acidosis having, when absolutely deficiency of insulin that stop the ability of glucose to participate in cells for use as metabolic fuel, the outcome, liver is our most voluminous organ which, breaks down fatty acid into molecules (ketone bodies) which can be used our body as a fuel. Diabetic ketoacidosis involving, examples the excess level of formation of ketones bodies that ensure affect, them to collection in the blood and urine and it can make low pH, so blood can acidic in nature and can harm to our body organ. Diabetic ketoacidosis found mostly in insulin-dependent patients. Lab test, diabetic ketoacidosis include, 'blood glucose assessment, plasma for determinations the concentration of electrolyte and amount of urea nitrogen found in blood (BUN) assessment, and amount of arterial gases that is oxygen and carbon dioxide (ABG) value measurement'. Management for diabetic ketoacidosis includes correct the water and electrolytes loss by administering of liquid in drip; correct the high blood sugar level by providing proper treatment of insulin therapy; management the sodium, potassium, magnesium imbalances, specifically potassium loss from body; Management of acid-base balance; and prevent the infection associated with diabetic ketoacidosis (if infection present).<sup>1</sup>

Diabetes mellitus is considered as metabolic disease and which is included a number of diseases, it characterized that hyperglycemia due to that secretion defects of insulin, act of insulin. In Diabetes disease the cells may stop responding to insulin entirely. Long durational hyperglycemic effects that contributing to such diseases (coronary arterial disease, stroke, peripheral vascular diseases and pulmonary obstructive disease) and other problem like chronic micro vascular diseases (kidney and eye disease) and neuropathic diseases (related to nerve diseases).<sup>2</sup>

Diabetes is consider as endocrine disorder, so due to that hormonal imbalances occur in body and reduces life expectancy of life 5 to 10 years. Cardiovascular diseases such as premature state is the most commonest causative factors behind morbidity and mortality among people, but the micro vascular diseases like kidney and eye problem, specific to diabetes mellitus are also contributing factors. Behind renal replacement therapy worldwide, Diabetes mellitus is the most commonest factor, common cause of blindness in the under 65years age people, and the commonest etiological factor of non-traumatic amputation. With our current knowledge, most of health problem prevented, or their impact can be minimized.<sup>3</sup>

Medical treatment on diabetic ketoacidosis and experts of health care workers team are giving effective health care services when acute state of diabetic ketoacidosis such as hypoglycemic state, hyperglycemic state, or severe diabetic ketoacidosis condition. The most of these episodes of diabetic ketoacidosis could be prevented or managed by providing proper health education and training on prevention of diabetic ketoacidosis to diabetes patients. In the daily schedule of diabetes, active participation of the patients, Is the only efficient solution for keeping diabetic ketoacidosis disease in under control.<sup>4</sup>

### Background:

Diabetes is a increasing in day by day and it is mostly increase in community area people worldwide, and its bad effect on mostly on developing countries that is specifically in Middle East region and North African regions in that area, for prevention aspect of diabetes should be taken to minimize the diabetes patients ratio worldwide. In the world sub-Saharan Africa this region is having fastest growing rates of diabetes mellitus patients region in the world. Diabetic ketoacidosis term was originally described by Dreschfeld in 1886 and insulin was developed in 1922, due to this disease the death rate is increasing almost hundred percentage also. since past twenty years, the death rate due to this disease, there is no decrease the death rate. approximately few cases of diabetic ketoacidosis patient, from recently having diabetes mellitus. Number of patients having death due to occurrence from complications of cerebral edema, For prevention aspect the Knowledge acquiring from a basis for the adoption of good health-related daily practices. Young generation and adults are the support

system of our future healthcare system so it is very important to upgrade their knowledge and awareness regarding health related disease such as diabetes and diabetic ketoacidosis.<sup>5</sup>

#### **Need for study:**

According to review articles a study found that for adults with type 1 or type 2 diabetes, due to that there was an increasing rate of patients in hospitals for long stay for DKA between year 1998 and 2013. specifically, the researcher found that the incidence rate for patients with type 1 diabetes between year 1998 and 2007 and then this level till remain upto the 2013, the incidence rate of diabetic ketoacidosis related with type 2 diabetes increasing yearly by 4.20% nearly between year 1998 and 2013.<sup>6</sup>

The occurrence of diabetic acidosis higher among white racial group because of type 1 diabetes, and the incident rate of the diabetic ketoacidosis higher in female as compare to males but behind that the reason which not known. The mostly recurrence of diabetic ketoacidosis is commonly seen with young women having a type 1 diabetes and it is due to mostly the irregularity or completely stop of insulin treatment only. The among persons with type 1 diabetes, it is commonest among young and adolescent than adults and occur among below 19 years of age specifically in adolescent but it occur in diabetes patients at any stage.<sup>7</sup> At global level the diabetes is fourth leading cause of death, and it is burden particularly in poor or average income countries, found that many children with type -I diabetes having death, due to only that not afford or lack of life saving insulin and many do not have that much education related to delay or prevention of complication.<sup>8</sup> In 2009, according to World health department information in the world wide 171 million diabetes total patients found in 2000 and is rise up 366 million in 2030. According the 2005 study, on the diabetic foot the international group work so found that, near about 3.8 millions adults people death due to diabetes related etiology, i.e. the 6 patient each minute.<sup>9</sup>

According to 2009 World health department from topmost 10 countries were suffer from diabetes. and several European countries have shown that lifestyle modification can prevent the occurrence of diabetes in people at high risk level group.<sup>10</sup> According to National diabetes 2007 study survey on of diagnosis and undiagnosed diabetes in United States, between all age group in year 2007, showed that total diagnosed patients are 23.6 million people, i.e. 7.1% of total population has diabetes.<sup>11</sup>

According to Dr Michael Gravin (2007) he stated that has the increasing rate of diabetes in the world, near around with 28.% of the people having alteration in glucose level or Increase sugar level in blood and near about 8.0% of the people as diabetes, this showing that mostly women affected with that.<sup>12</sup> During the study, researcher personal and working with clinical years research found the diabetes mellitus patients having complicated problems, because lack of knowledge, awareness, attitude are the contribution of the quality of life in Diabetes mellitus patient. Hence the researcher identified as an education to the care givers is very necessary so due to that select the study topic.<sup>13</sup>

The objective is, 'To assess the level of knowledge of diabetes patient regarding prevention of sign and symptoms of diabetes ketoacidosis'

**Methods:** It is an academic study. This study will be conducted in Acharya Vinoba Bhave Rural Hospital of Sawangi (Meghe) respectively.

#### **Inclusion Criteria:**

1. Patients in selected hospital in Wardha and are willingly participate at time of data collection.
2. Patients are present at the data collection time.
3. Patients who are diagnosed Diabetes Mellitus since 1 year.

**Exclusion Criteria:** Diabetes patients, having below ailments they will exclude by this assessment.

1. People who have already attended similar type of study.
2. People who is having Diabetes Mellitus since more than 1 year.

**Departure pattern** - Patients fulfil the below pattern they will withdrawn taken away study:

1. Want to withdraw, taken away the project

2. Event of a critical illness
3. Not fulfilling study schedule

**Sample size:** The previous study researcher taken 50 -80 sample or population For this type of study, the sample size of study will be 60 diabetes patients.

#### **Outcome efforts –**

Initial results involve interpretation of knowledge on prevention regarding sign and symptoms of diabetic ketoacidosis among diabetes patients.

Secondary outcomes involve evaluation of association of knowledge on prevention of sign and symptoms of diabetic ketoacidosis among diabetes patients with their demographic variables.

**Data management and knowledge assessment** - The demographic data (age, sex, education, duration of disease ) before conducting the knowledge assessment the consent taken from patient and introduce our self to patient and after that structured knowledge questionnaire on diabetic ketoacidosis given to patient . Structured knowledge questionnaire on diabetic ketoacidosis contain 18 items and for 18min duration.

**Analysis** - Analysis of study we will be done by Statistical Package for the Social Sciences software version-24 and Graph Pad Prism 7.0 version. Descriptive statistics and inferential statistics are used for analysis in this study.

**Reliability Analysis:** By using Guttman Split Half method of reliability, hence knowledge tool is valid and reliable.

**Ethic and dissemination** -Ethical approval was obtained for study topic from IEC, DMIMS (DMIMS (DU)/IEC/Dec-2019/8642). Those are involved in study, will ask to read and willingly sign on informed consent form. The study outcome will be disseminated to study participants and published in peer-reviewed publications.

**Expected results:** This Study, Evaluate knowledge of prevention of sign and symptoms of diabetic ketoacidosis among diabetes patients, this study will show the some diabetes patient having poor knowledge, some having average knowledge and some diabetes patient having good knowledge regarding diabetic ketoacidosis. From previous study results shows that maximum diabetes patients having poor knowledge score regarding diabetic ketoacidosis and very few that is 20 % diabetes patients having average knowledge .Educational status is associated with knowledge score.

#### **Discussion**

In our best knowledge , not exactly but similar study done for evaluating the knowledge regarding diabetic ketoacidosis among diabetes patients and importance, The participants in this study is diabetes patients. The overall knowledge about diabetes ketoacidosis among the Diabetes patients were found to be poor knowledge (80%).There were only educational variables significant to the knowledge score.

There is Lack of awareness was seen among the diabetes patients regarding DKA (80%) The many study, that found the diabetic ketoacidosis can occur in both types of diabetes patients .Comparison between current results and previous studies regarding knowledge and awareness of Diabetic ketoacidosis .The study recommendation have been discussed in related of objectives, theoretical base. Present study showed that the overall mean knowledge score  $4.38 \pm 2.48$  (80%).This study revealed that, the number of people that having poor knowledge regarding the diabetic ketoacidosis .To be able to contribute in patient education and disease prevention, the diabetes patient need to conscious about their health, however the current inadequate levels of knowledge and awareness regarding DKA in some aspects may compromise this role. The findings could help in refining and improving the awareness programs. Few articles related to diabetes<sup>16-17</sup> and effects of electronic media<sup>18-19</sup> and Yoga<sup>20</sup> in this region have been reported. Perceptions of primary care doctors towards type 2 diabetes mellitus and challenges for care at primary care level in India were assessed by Gaidhane et al<sup>21</sup>. Gondivkar et al conducted evaluation of gustatory function in patients with diabetes mellitus<sup>22</sup>. M-HEALTH intervention was

suggested for type-II diabetes mellitus patients in Indian rural areas by Khatib et al <sup>23</sup>. Also studies related to management of cases with high lipid profile were reported<sup>24,25</sup>.

**Conclusion:** Study finding will be drawn by using the statistical analysis.

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### Figures and Table:

Fig. 1: Schematic diagram of Study methodology

These concepts are linked together to express the relationship. It includes Demographic variable, knowledge regarding prevention of sign and symptoms of diabetic ketoacidosis among diabetes patients, Levels of knowledge. There are Level of Knowledge that is poor, Average and Good level of Knowledge. ▲

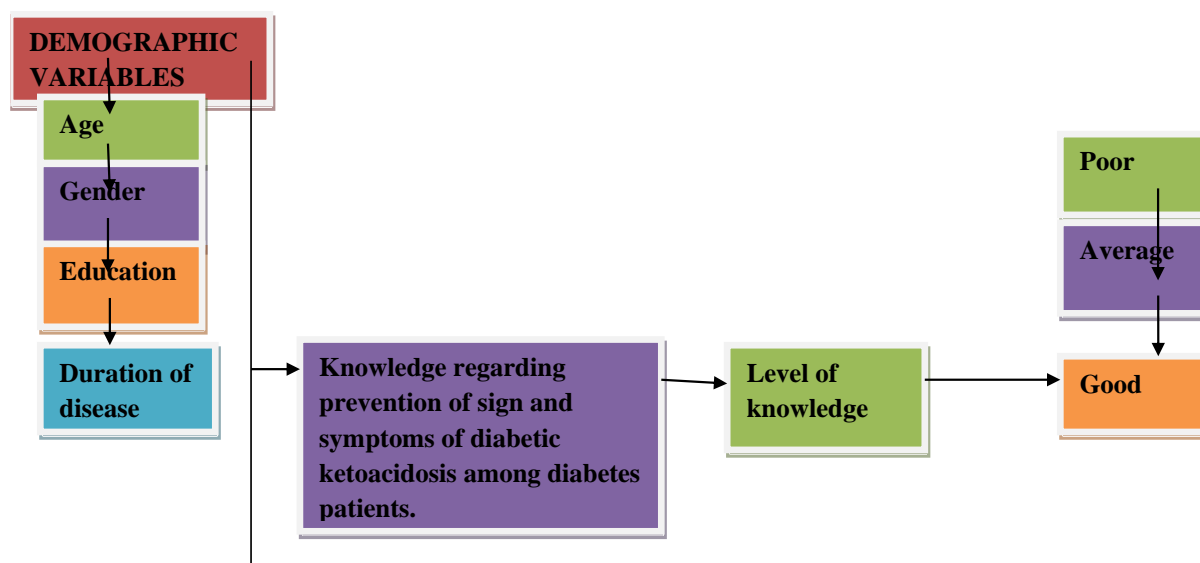


Table 1: The knowledge score were categorized into

Grade	Level of Knowledge Score	Percentage of Score Range
Poor	0-6	0-20
Average	7-12	21-40
Good	13-18	41-60