



Think India (Quarterly Journal)

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A Study to Assess the Knowledge and Practice Regarding Diabetes Mellitus among Working Women with a View to Develop Health Education Module in a Selected Area, Lucknow.”

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Abstract

Diabetes is a unique condition for women. When compared with men, women have a 50 percent greater risk of diabetes coma. India is the “diabetic capital” of the world with 41million people affected with the disease. On the basis of the large number of diabetic people in India this study was undertaken. This study focuses on the knowledge and practice level of working women regarding diabetes mellitus and assesses its relationship with demographic, socioeconomic and lifestyle factors in urban area, Lucknow. Knowledge of diabetes can thus prevent the impending chronic co-morbidities of diabetes mellitus, which impact significantly on the quality of life of the diabetic patient. 100 samples of working women for this study were taken. An educational intervention improves the knowledge of diabetes mellitus among working women their professionalism, surroundings, nature, habit does not cause any effect on the study. It can be seen in the study that their knowledge regarding diabetes mellitus is increased.

Keywords: Risk, Lifestyle, Impending, Professionalism, Habit.

Introduction

Diabetes mellitus is a chronic metabolic disorder characterized by too much glucose in the blood and urine due to defective insulin action or deficiency in its secretion. Insulin, a hormone produced by the beta cells of the Islets of Langerhans of the pancreas helps to utilize glucose for the production of energy by the body.

Many diabetics can produce sufficient insulin but some stimulus to the islets tissue is needed. Insulin helps in glucose uptake by the cells, prevents rise in blood sugar and maintains its level within normal limits. During the early stages of the diseases the insulin like activity (ILA) of the blood is often increased, but most of the insulin appears to be bound to protein and is not available for transport across the cell membrane and action of the cell. In diabetes, glucose does not enter body cells, but accumulates in the blood. After it reaches a certain limit, it starts appearing in urine. It draws out more water with it and hence there is excessive urination.

Diabetes is on increase in India. The multicenter ICMR study showed a prevalence of 2.5% in the urban and 1.8% in the rural population above the age of 15 years. The prevalence is 2.8% among those who are still engaged in strenuous physical activity compared to 48.3% living a near sedentary life. Infection, atmospheric pollution, psychological stress and sedentary life style are the four major accompaniments of urbanization. These could have an important role to play in this epidemic, through release of pro-inflammatory cytokines (TNF and IL-6) from the



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adipose tissue. One in every eight individuals in India is a diabetic. The revised WHO figures for the year 2025 is 57.2 million diabetics in India. The average age for the onset of diabetes is around 40 years while it is around 55 years in others countries.

Diabetes is a unique condition for women. When compared with man, women have a 50 percent greater risk of diabetes coma. Compared with women who don't have diabetes, women with diabetes are up to five times more likely to develop toxemia, a disorder marked by hypertension, protein in urine, swelling, head ache, and visual disturbances.

All types of diabetes mellitus have something in common. Normally your body breaks down the sugars and carbohydrates you eat into a special sugar called glucose. Glucose fuses the cells in your body. But the cells need insulin, a hormone, in your bloodstream in order to take in the glucose and use it for energy. With diabetes mellitus, either your body doesn't make enough insulin; it can't use the insulin it does produce, or a combination of both. Since the cells can't take in the glucose, it builds up in your blood. High levels of blood glucose can damage the tiny blood vessels in your kidney, heart, eyes or nervous system. That's why diabetes especially if left untreated can eventually cause heart disease, stroke, kidney disease, blindness and nerve damage to nerves in the feet.

Types of diabetes mellitus:

Type 1- Referred to as insulin dependent diabetes mellitus.

Type 2- Referred to as non- insulin dependent diabetes mellitus.

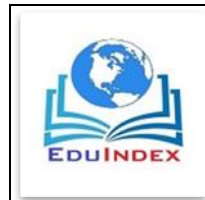
Type 3- Diabetes associated with other conditions or syndrome.

Type 4- Gestational diabetes mellitus (diabetes in pregnancy).

Type 1 disease is also called insulin dependent diabetes. It used to be called juvenile-onset diabetes, because it often begins with childhood. It is an autoimmune condition. It's caused by the body attacking its own pancreas with antibodies. In people with type 1 diabetes, the damaged pancreas doesn't make insulin. This type of disease may be caused by a genetic predisposition. It could also be the result of faulty beta cells in the pancreas that normally produce insulin. Treatment for type 1 diabetes involves taking insulin, which needs to be injected through the skin into the fatty tissue below.

Type 2 diabetes is an increasingly common metabolic disorder in which the body does not use insulin, a hormone produced by the pancreas that enables glucose to enter cells and provide the body with its main source of energy. Eventually, the body can't make use of glucose. Type 2 diabetes, also called adult-onset diabetes, is associated with older age, obesity, previous history of gestational diabetes and physical inactivity. Treatment may include insulin injections and other medication to control blood glucose levels.

Gestational diabetes is a condition in which women without previously diagnosed diabetes exhibit high blood glucose (blood sugar) levels during pregnancy (especially during their third trimester). Gestational diabetes is caused when insulin receptors do not function properly. This is likely due to pregnancy-related factors such as the presence of human placental lactogen that interferes with susceptible insulin receptors. This in turn causes inappropriately elevated blood sugar levels.



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Diabetes is Global public Health Problem and is now growing as an epidemic in both developed and Developing countries. India is the “diabetic capital” of the world with 41million people affected with the disease. Around 150 Million people suffer from Diabetes in the World, out of which, above 35 million are Indians. India leads the World today with the larger number of Diabetes in any given country followed by China and U.S.A.

Review of Literature

The Review of literature is an extensive, systematic selection of potential sources of previous work, acquired fact- findings after securitizations and location of reference to the problem under study. It is helpful in understanding and developing insight into the selected problem under study and also to develop a conceptual frame work for the study.

A prospective cohort study was conducted to assess the knowledge of women regarding risk of developing diabetes mellitus. The analysis included 50277 women who had a body mass index less than 30 and was free from diagnosed diabetes mellitus. During 6 years of follow up, 3757(7.5%) of 5077 and1515 new cases of type 2 diabetes mellitus detected. In the multivariate analysis adjusting for age, exercise levels, dietary factors were associated with increase in risk of diabetes mellitus. The result shows there is general lack of awareness about the risk factors of diabetes mellitus among women.(Frank BHU, tricia Y. Li, Graham A.colditz, et al, Television watching and other sedentary behavior in relation to risk of type 2 diabetes mellitus in women. J diabetes pre. 2003 April9; vol-289.)

A community based prospective study was conducted on awareness and prevention of diabetes mellitus among women with gestational diabetes(GDM), showed that prevalence of GDM was 13.9%, it was observed that the frequency of GDM varied across urban, semi urban and rural areas. Based on multiple logistic regression analysis and taking the three areas into consideration family history of diabetes, age greater than or equal to 25 years and body mass index greater than or equal to 25 were found to have a significant independent association with GDM($p < 0.001$).so, the study concluded that women with GDM are at increased risk of developing Diabetes in future. (Seshiahv, Balajiv, Balaji Ms, et al, Pregnancy and diabetes scenario around the world: India.IntGynaecol Obstet. 2009 Mar;104.)

ResearchMethodology

Objectives

- To assess the knowledge and practices of working women regarding diabetes mellitus.
- To analyze the existing awareness about diabetes mellitus among working women.
- Development of health education module for working women regarding diabetes mellitus.

The present research is of Experimental design.In this the Random Sampling is used. The data



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will be collected from working women residing in selected urban area in Lucknow. The data is the primary data. The sample size of the study is 30 working women. From which 18 are diabetic and rest 12 are non-diabetic

Statistical Tools Employed

The statistical analysis was done by the percentile method. The values were represented in number (%).

The following statistical formulas are used:

- 1. Mean:** To obtain the mean, the individual observation were first added together and then divided by the number of observation. The operation of adding together or summation is denoted by the sign Σ .

The individual observation is denoted by the sign X , number of observation denoted by n , and the mean by \bar{X} .

$$\bar{X} = \frac{\Sigma X}{\text{No. of observation}(n)}$$

- 2. Standard Deviation:** It is denoted by a Greek letter σ .

$$\sigma = \frac{\sqrt{\Sigma(X - \bar{X})^2}}{n}$$

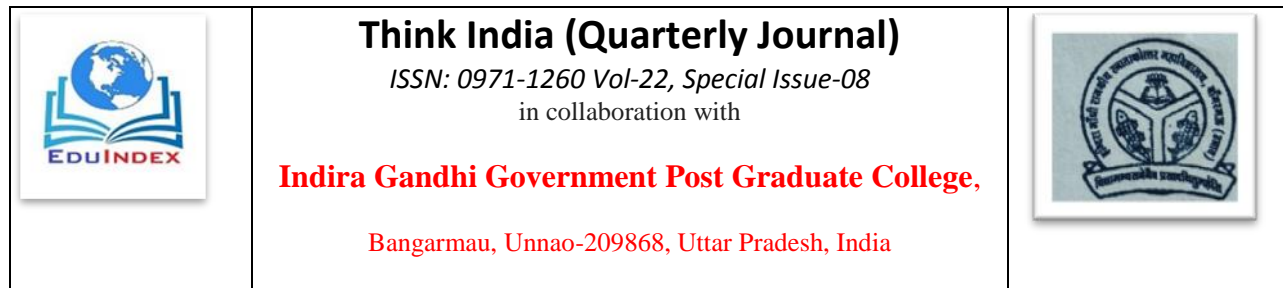
- 3. 't' Test:** To compare the change in a parameter at two different time intervals 't' test was used.

$$t = \frac{d\sqrt{N}}{sd}$$

Analysis of Study

The present study was carried out to determine the knowledge level and practice level of diabetes mellitus among working women. For this purpose, a total of 30 working were enrolled in the survey. Assessment of knowledge and practice of diabetes mellitus among working women was done under the following headings:

- a) Pre intervention assessment**
 - i. Knowledge level of different parameters.
 - ii. Practice level of different parameters.
- b) Post intervention assessment**
 - i. Knowledge level of different parameters.
 - ii. Practice level of different parameters.



- c) **Comparison of change in knowledge and practice level.**
i. Item wise

Pre-Intervention Assessment Knowledge Level for Different Parameters

Majority of working women did not have correct knowledge about sugar level, insulin hormone, types of diabetes, nutrition, herbal remedies available in market for diabetes mellitus. Maximum number of correct responses were obtained for the item “too much sugar cause diabetes mellitus” (n=22; 73.3%) followed by hereditary characteristics of diabetes mellitus (n=19; 63.3%), types of diabetes mellitus (n= 18; 60%). Delay healing of wounds in diabetes (n= 13; 43.3%), role of hormone insulin in a body and blood sugar level for diabetes mellitus (n= 6; 20%). Impact of physical activity (n= 12; 40%), herbal remedies for diabetes (n= 10; 30%), association between nutrition and diabetes (n= 9; 30%) and last stress is a risk factor of diabetes (n= 6; 20%) respectively.

Post-Intervention Assessment Knowledge Level for Different Parameters

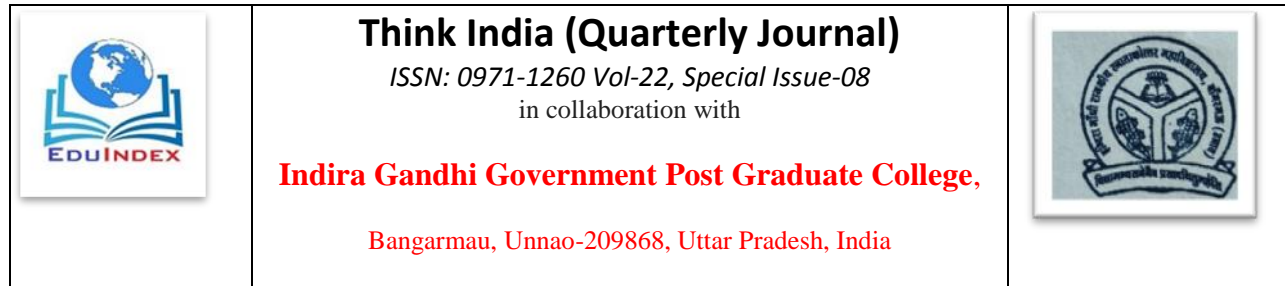
Following intervention majority of working women had correct knowledge about sugar level, insulin hormone, types of diabetes, nutrition, herbal remedies available in market for diabetes mellitus. Maximum number of correct responses were obtained for the item herbal remedies for diabetes (n = 29; 96.6%), followed by blood sugar level for diabetes mellitus (n = 29; 96.6%), too much sugar cause diabetes mellitus (n = 27; 90%), hereditary characteristics of diabetes mellitus and stress is a risk factor of diabetes (n = 26; 86.6%), delay healing of wounds in diabetes (n = 19; 63.3%). Role of hormone insulin in a body, Impact of physical activity and association between nutrition and diabetes (n = 28; 93.3%), and last types of diabetes mellitus (n = 22; 73.3%) respectively.

Comparison of Pre and Post Intervention Correct Response of Knowledge Level From Different Parameters

For all the items, a significant increase in proportion of correct responses was observed following intervention. The ‘t’ test was used as statistical tools. As the sample is small sample and the ‘t’ test is very reliable for the small sample. 9^o of freedom (10 – 1) at 5% of level of significance the tabular value of ‘t’ distribution is **2.262**. The calculated value is **2.75**. The calculated value is greater than the tabular value. Hence, the null hypothesis is rejected and alternate hypothesis is accepted.

An educational intervention improves the knowledge of diabetes mellitus among working women. Their professionalism, surroundings, nature, habits etc does not cause any effect on the survey. The education or knowledge level is increased as they want to boost up their knowledge level.

Hypothesis Formulation, Testing and Result



Null Hypothesis: An educational intervention has no impact on knowledge and practice level of diabetes mellitus among working women.

Alternate Hypothesis: An educational intervention improves the knowledge and practice level of diabetes mellitus among working women.

Testing: Pre and Post intervention knowledge level among working women was assessed on 10 items related to sugar intake, insulin hormone, blood sugar level etc. Similarly, the practicing level was assessed on 5 items. For each item, correct responses was awarded one percent. Item wise change in number of correct responses of working women pre and post intervention were compared using 't' - test.

Result: A significant increase in knowledge percent was observed.

Outcome: Null hypothesis was rejected and alternate hypothesis was accepted.

Conclusion:

Diabetes mellitus is a chronic metabolic disorder characterized by too much glucose in the blood and urine due to defective insulin action or deficiency in its secretion. Diabetes is a unique condition for women. Women have 50% greater risk of diabetes coma. India is the “diabetic capital” of the world. This study focuses on the knowledge level and practice level of diabetes mellitus among working women in a selected urban area, Lucknow. Samples of 100 working women were taken for study. The questionnaire was given them to analyze their knowledge level then the education session was done and then again questionnaire was given them to know their knowledge level. There was a great change seen in their knowledge level. The result can be analyzed through statistical tools.

Hence, a significant increase in knowledge present was observed.

Suggestions

- The study was carried on a significant topic i.e. knowledge and practice of diabetes mellitus among working women.
- Further researcher can be done to study to see what causes difficulties of practicing for diabetes mellitus after the health education session.
- New researches can be done on coronary heart disease interrelationship with diabetes mellitus.
- Obesity can be further researched by new researcher to assess the knowledge level and also their dietary pattern.
- Several other diseases linked with diabetes mellitus and their dietary pattern can be studied.

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