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# A STUDY ON NON-INSULIN DEPENDENT DIABETES MELLITUS (NIDDM) AND ITS NUTRITIONAL MANAGEMENT AMONG ADULTS

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**Abstract**

Non-Insulin Dependent Diabetes Mellitus (NIDDM), now commonly referred to as Type 2 Diabetes Mellitus, is a major chronic metabolic disorder characterized by elevated blood glucose levels resulting from insulin resistance and inadequate insulin secretion. The condition is increasingly prevalent among adults due to sedentary lifestyles, unhealthy dietary habits, obesity, and other associated risk factors. This study focuses on understanding NIDDM among adults and examining the role of nutritional management in controlling the disease and preventing complications. It emphasizes the importance of a balanced diet, appropriate portion sizes, adequate dietary fiber, controlled intake of refined carbohydrates and saturated fats, and regular meal patterns. Nutritional management, along with physical activity and appropriate medical care, can help maintain blood glucose levels, improve overall health, and reduce the risk of diabetes-related complications. The study highlights the need for nutrition education and individualized dietary planning to promote better diabetes management and improve the quality of life of adults living with NIDDM. Overall, effective management of NIDDM requires an **individualized and comprehensive approach** based on a person's health needs, lifestyle, food preferences, and medical treatment. Proper nutrition, physical activity, medical care, and nutrition education can improve blood glucose control, reduce the risk of complications, and enhance the overall quality of life of adults with Type 2 diabetes.

**Keywords-**

NIDDM,Blood Glucose Control, Balanced Diet, Physical Activity, Lifestyle Modification, Nutrition Education, Obesity, and Diabetes Complications.

## Introduction

In developing nations like India, diabetes is more prevalent due to increased intake of junk food, fatty foods alcohol, etc. which predisposes people to a number of Cardiovascular disease, hypertension, obesity, diabetes, and other degenerative diseases are examples of vascular system problems. Environmental factors that are important in eliciting 12 insulin resistance are obesity, cigarette smoking and possibly dietary composition (ULF Smith 1994).

Diabetes mellitus is a group of metabolic disorder of multiple aetiology characterized by chronic hyperglycaemia with disturbances of carbohydrate, fat and protein metabolism, resulting from deficiency of insulin secretion, insulin resistance or both.( WHO, 2008).

Communicable and non- communicable diseases are the most considered cause of morbidity and mortality worldwide. The increase of communicable and non- communicable diseases in Nepal and the world today have been attributed to changes in human behaviour and lifestyles in generally susceptible individuals. There is an increasing prevalence of diabetes in both the developing as well as the developed countries and it has now become a global endemic.(Samatha, 2012). In Nepal, apart from the regular intake of fruits and vegetables, rice is one of the most common staple diet. One

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of the greatest contributors to the increasing prevalence of diabetes is weight gain, illustrated by a parallel rise in the number of people who are overweight with the rise in incidence of Type 2 diabetes mellitus. Several studies have shown that the precise prevalence of obesity related diabetes varies with age, race and gender and the degree of diabetes is proportional to the rate of increasing obesity. Currently more than one billion adults are overweight and at least 300 million of them are clinically obese. (Palermo, 2013)

**Nutritional Factors Affecting NIDDM**

Diet has an important role in the **development and management of NIDDM (Type 2 Diabetes Mellitus)**. Unhealthy eating habits can increase obesity, insulin resistance, and poor blood glucose control.

1. **Excess calorie intake:** Consuming more calories than the body needs can cause weight gain and abdominal obesity, increasing insulin resistance.
2. **Refined carbohydrates and sugar:** Sugary drinks, sweets, refined grains, and processed foods can cause rapid increases in blood glucose and insulin levels.
3. **Low dietary fiber:** A lack of fruits, vegetables, legumes, and whole grains may worsen blood glucose control. Fiber helps slow glucose absorption and supports better glycemic control.
4. **Saturated and trans fats:** Fried foods, processed foods, and excessive fatty meats can increase insulin resistance and cardiovascular risk.
5. **Micronutrient deficiencies:** Inadequate levels of nutrients such as magnesium and vitamin D may be associated with impaired glucose metabolism.
6. **Irregular meal patterns:** Skipping meals or overeating can make blood glucose levels more difficult to control. Regular, balanced meals are generally preferable.
7. **Excessive alcohol:** High alcohol intake can interfere with glucose control and contribute to liver and lipid problems.
8. **Glycemic index:** Choosing more **low-GI, minimally processed carbohydrate foods** can help reduce rapid blood glucose spikes.

**Methodology**

**Study Design -**

The present study is a community-based observational study with a survey approach. It was conducted to assess the present knowledge, dietary practices, and lifestyle habits of adult patients diagnosed with Non-Insulin Dependent Diabetes Mellitus (NIDDM), with a special focus on nutritional awareness and clinical health outcomes.

**Study Area –**

**Raipur, Chhattisgarh**



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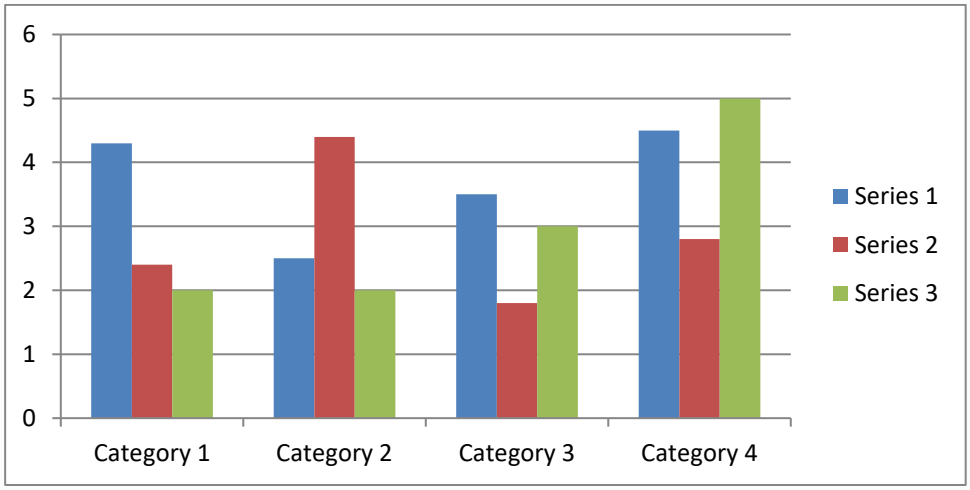
The study was conducted in selected urban clinics and residential communities within Raipur, the capital city of Chhattisgarh. Raipur is a fast-developing urban center located in the plains of central India, known for its growing healthcare infrastructure and increasing lifestyle-related health issues. The city provided a suitable demographic for studying adult diabetic patients across varied socioeconomic backgrounds. Clinical data were obtained in collaboration with local diabetes clinics, nutrition counseling centers, and hospitals in Raipur.

## 5. RESULTS AND DISCUSSION

The study was conducted among **60 adults with NIDDM** to assess selected demographic characteristics related to diabetes management. The participants were mainly middle-aged and older adults.

- **Age:** The largest group was **51–60 years (33.3%)**, followed by 41–50 years (30.0%), 61 years and above (23.4%), and 30–40 years (13.3%).
- **Education: 33.3%** had secondary education, 25% had primary education, 25% had higher secondary education or above, and 16.7% were illiterate.
- **Family type: 53.3%** belonged to nuclear families, while 46.7% belonged to joint families.
- **Marital status:** The majority (**86.7%**) were married, while 8.3% were widowed and 5% were unmarried.

Overall, the findings indicate that **age, educational status, family structure, and social support may influence diabetes awareness and self-management**. The study highlights the importance of simple nutrition education, healthy dietary practices, regular physical activity, family support, and medical follow-up for better diabetes control and prevention of complications.




The 45–55-year age group had the largest representation (41.7%), followed by the 35–45-year group (36.7%). The 55–65-year group accounted for 21.6% of the sample.

The study found that most participants were **middle-aged or older adults**, with the highest representation in the **51–60 years** group. Secondary education was the most common educational level. Most participants belonged to **nuclear families** and were **married**. These demographic factors may influence nutritional awareness, lifestyle practices, family support, and overall diabetes management. The findings emphasize the importance of **nutrition education, healthy eating, physical activity, regular monitoring, and family support** in managing NIDDM.

**BIBLIOGRAPHY**

1. Sarla, G. S., Pandey, et al. (2025). To Assess and Compare the Required Nutritional Need and Actual Intake of Nutrients in Non-Insulin Dependent Diabetic Patients (NIDDM). *International Journal of Research in Medical Surgical Nursing*, 1-9.
2. American Diabetes Association. (2024). Standards of Medical Care in Diabetes—2024. Diabetes Care, 47(Supplement_1), S1–S315.
3. Hu, F. B. (2011). Globalization of diabetes: The role of diet, lifestyle, and genes. Diabetes Care, 34(6), 1249–1257.
4. Misra, A., & Khurana, L. (2008). Obesity and the metabolic syndrome in developing countries. The Journal of Clinical Endocrinology & Metabolism, 93(11_Supplement_1), S9–S30.
5. National Institute of Nutrition. (2020). Dietary Guidelines for Indians – A Manual. Hyderabad: Indian Council of Medical Research.
6. Mohan, V., Radhika, G., Sathya, R. M., & Ganesan, A. (2009). Dietary carbohydrates, glycemic load, food groups and newly detected type 2 diabetes among urban Asian Indian population in Chennai, India. British Journal of Nutrition, 102(10), 1498–1506.
7. Shobha, A., & Dutta, A. (2017). Diabetes nutrition therapy using traditional Indian foods. Journal of Clinical and Diagnostic Research, 11(5), OE01–OE03.
8. Chhattisgarh State Health Resource Centre (SHRC). (2022). Health Profile of Chhattisgarh – Non-Communicable Diseases Focus. Raipur: SHRC.
9. International Diabetes Federation. (2023). IDF Diabetes Atlas (10th ed.). Brussels, Belgium: International Diabetes Federation.
10. Shrestha, S., Yadav, S., Mandal, F., Amatya, M., & Islam, M. N. (2013). Prevalence of diabetes mellitus on male and female patient of different age group on hospital based data of chitwan medical college teaching hospital. *J Biomed Pharm Res*, *2*(4), 66-70.
11. Aguiar Carlos (2014) Efficacy of interventions that include diet, aerobic and resistance training components for type 2 diabetes prevention: a systematic review with meta-analysis. International Journal of Behavioral Nutrition and Physical Activity ,11:2
12. Assaad Khalili (2013) Barriers to the delivery of diabetes care in the Middle East and South Africa: a survey of 1,082 practising physicians in five countries. Int J Clin Pract., 67(11), pp.1144-50.
13. Bermudez Odilia (2002). Dietary and plasma lipid, lipoprotein, and apolipoprotein profiles among elderly Hispanics and non-Hispanics and their association with diabetes. Am J Clin Nutr, 76(6), pp.1214–21.
14. Chin, Sathyasurya, Saad (2013) Effect of Ethnicity, Dietary Intake and Physical Activity on Plasma Adiponectin Concentrations Among Malaysian Patients with Type 2 Diabetes Mellitus. Int J Endocrinol Metab, 11(3), pp.167–174.
15. Deiahanty Halford (1993) The Role of Diet Behaviors in Achieving Improved Glycemic Control in Intensively Treated Patients in the Diabetes Control and Complications Trial. Diabetes Care, 16(11), pp.1453-1458.