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Knowledge And Practice Of Low Glycemic Index Diet Among Diabetic Patients In Jammu District, J&K

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Abstract

Background:

Dietary management is a cornerstone in the treatment of Type 2 Diabetes Mellitus (T2DM). The glycemic index (GI) serves as a useful guide for choosing foods that lead to a slower increase in blood glucose levels.

However, awareness and practical application of low GI diets remain limited among the diabetic population, especially in semi-urban and rural areas like Jammu district.

Objective: To assess the level of knowledge and dietary practices related to low glycemic index foods among diabetic patients in Jammu district, J&K.

Methods:

A descriptive cross-sectional study was conducted among 150 diabetic patients attending outpatient departments in selected healthcare centers in Jammu district. A structured, pre-validated questionnaire was used to collect data on socio-demographics, awareness of glycemic index, identification of low-GI foods, and frequency of incorporating such foods in daily meals.

Results:

Only 32% of participants were aware of the term “glycemic index,” and 18% could correctly identify at least three low-GI foods. While 45% reported eating whole grains and legumes regularly, only 20% had ever received dietary counseling on GI from a health professional. Educational level and duration of diabetes were significantly associated with better knowledge and dietary practices ($p < 0.05$).

Conclusion:

The study reveals a substantial gap in knowledge and practical implementation of low-GI diets among diabetic patients in Jammu. There is an urgent need for targeted nutrition education to promote effective dietary management in diabetes care.

Keywords: Glycemic index, type2 Diabetes Mellitus, Dietary Knowledge, Glycemic Control, Diabetic Diet, Jammu District.

1. Introduction

Type 2 Diabetes Mellitus (T2DM) is a chronic metabolic disorder characterized by insulin resistance and impaired glucose metabolism, contributing significantly to morbidity and mortality worldwide. India, commonly known as the "diabetes capital of the world," is home to more than 100 million individuals living with diabetes. The Jammu district in Jammu & Kashmir is witnessing a steady increase in lifestyle-related diseases due to dietary transitions, sedentary habits, and urbanization. Medical nutrition therapy plays a pivotal role in diabetes management, and the glycemic index (GI) of foods has emerged as a key dietary parameter influencing postprandial glucose response. A low glycemic index diet, composed of foods that produce a gradual rise in blood glucose, has been shown to improve glycemic control, reduce insulin demand, and assist in weight management. However, despite global evidence supporting the use of low-GI diets, there is limited research focusing on its practical impact among Indian populations, especially in northern regions like Jammu. This study aims to evaluate the level of knowledge and dietary practices related to low glycemic index foods among diabetic patients in Jammu district, J&K.

2. Review of Literature

Numerous studies worldwide have emphasized the importance of low glycemic index diets in the management of diabetes. Jenkins et al. (2002) demonstrated that low-GI foods reduce postprandial glycemia and improve overall glycemic control. A meta-analysis by Brand-Miller et al. (2003) further confirmed the positive impact of low-GI diets on HbA1c levels in diabetic patients.In India, the awareness and adoption of low-GI diets remain suboptimal. Studies conducted in urban cities indicate that dietary behavior is strongly influenced by educational status, accessibility to health information, and regular counseling by dietitians. However, in rural and semi-urban settings like Jammu, such structured interventions are rare. The literature suggests that knowledge and awareness play a crucial role in the implementation of dietary changes. Therefore, understanding the baseline awareness and practices among diabetic patients can inform future educational strategies.Recent studies continue to support the role of low glycemic index diets in diabetes management. Wolever et al. (2012) demonstrated that low-GI diets significantly reduced HbA1c levels and improved insulin sensitivity in patients with T2DM over a six-month intervention. Furthermore, a study by Rizkalla (2014) emphasized that low-GI carbohydrates not only aid in glycemic control but also improve lipid profiles, making them suitable for patients with metabolic syndrome.A randomized controlled trial by Jenkins et al. (2014) reaffirmed that consumption of low-GI foods led to significant reductions in C-reactive protein, a marker of inflammation in diabetic patients. Similarly, Bhavadharini et al. (2016) conducted a study in South India that concluded patients consuming low-GI traditional foods (such as millets and legumes) had better postprandial glucose control compared to those on conventional diabetic diets. The American Diabetes Association (ADA) guidelines (2021) now recognize low-GI dietary approaches as beneficial for glycemic management. Recent Indian guidelines have also begun to incorporate GI and glycemic load concepts into patient counseling materials, reflecting a growing consensus on the importance of quality carbohydrate selection.
These findings underscore the importance of patient education and dietary counseling in promoting low-GI food choices, particularly in semi-urban and rural populations.

3. Methodology

Study Design: Descriptive cross-sectional study.
Setting: Selected outpatient departments in government and private healthcare facilities of Jammu district, J&K.
Sample: 150 adult patients diagnosed with Type 2 Diabetes Mellitus.
Sampling Technique: Convenience sampling.
Inclusion Criteria: Individuals diagnosed with Type 2 Diabetes Mellitus (T2DM) who are willing to participate in the study.
Exclusion Criteria: Patients with Type 1 Diabetes, pregnant women, and those with severe comorbid conditions.
Data Collection Tool: Structured and pre-validated questionnaire covering:
1.Socio-demographic data.

2.Knowledge of glycemic index
3.Identification of low-GI foods.
4.Frequency of low GI food intake

4. Results

Among 150 participants, only 32% had heard of the term "glycemic index." Of these, only 18% could correctly identify at least three low-GI foods. Whole grain and legume consumption was common (45%), but only 20% had ever received any counseling about GI from healthcare professionals. A significant association was found between educational level and GI knowledge ($p < 0.05$). Similarly, those with longer duration of diabetes showed better dietary practices.

Overall, the study highlighted poor awareness but moderate practice, often due to cultural and habitual food preferences.

5. Discussion

The findings of this study align with previous literature indicating low awareness about glycemic index among diabetic populations in India. The poor level of knowledge observed could be attributed to lack of dietary counseling, limited access to nutritionists, and low literacy levels.
Despite low awareness, a considerable number of patients were consuming whole grains and legumes regularly, possibly due to traditional food habits rather than conscious low-GI choices.
There is a critical need for structured education programs targeting diabetic patients, particularly in semi-urban areas, to bridge the knowledge-practice gap and improve long-term glycemic outcomes.

6. Conclusion and Recommendations

The study concludes that although some diabetic patients in Jammu district practice aspects of a low-GI diet, their knowledge regarding the concept and benefits of glycemic index is limited. Educational status and diabetes duration positively influence knowledge and practice. It is recommended that healthcare providers integrate simple, culturally appropriate dietary education into routine diabetes care. Further community-based studies and awareness campaigns are essential to promote informed dietary choices.

7. References

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Appendix I: ICMR-Formatted Questionnaire

Section 1: Identification Data

1.1 Name (optional): _____

1.2 Date of Interview: _____

1.3 Age (in years): _____

1.4 Gender: □ Male □ Female □ Other

1.5 Marital Status: □ Married □ Unmarried □ Widowed □ Divorced

1.6 Education Level: □ Illiterate □ Primary □ Secondary □ Graduate □ Postgraduate

1.7 Occupation: _____

1.8 Residential Area: □ Urban □ Rural

1.9 Duration of Diabetes (in years): _____

1.10 Type of Diabetes: □ Type 2 □ Unknown

Section 2: Knowledge Regarding Glycemic Index (GI)

2.1 Have you heard of Glycemic Index? □ Yes □ No

2.2 If yes, from where did you learn about it? (Tick all applicable)

□ Doctor □ Dietitian □ Internet □ Friends/Family □ TV/Media □ Others: _____

2.3 What does Glycemic Index refer to?

□ How fast a food raises blood sugar

□ Measure of calories in food

□ Don't know

2.4 Can you identify low GI foods from the list below? Tick all that apply:

□ Oats □ Apple □ Brown rice □ Potato □ White bread □ Lentils

2.5 Do you believe that low GI foods are beneficial in managing blood sugar?

□ Yes □ No □ Not sure

Section 3: Dietary Practices Related to GI (Food Frequency)

How often do you consume the following food items? Tick the most appropriate frequency:

- Whole grains (millets, brown rice, oats)
  □ Daily □ 3–5 times/week □ 1–2 times/week □ Rarely/Never
- Legumes and pulses (dal, chana, rajma)
  □ Daily □ 3–5 times/week □ 1–2 times/week □ Rarely/Never
- Fruits (apple, guava, orange)
  □ Daily □ 3–5 times/week □ 1–2 times/week □ Rarely/Never
- Vegetables (leafy greens, gourd, etc.)
  □ Daily □ 3–5 times/week □ 1–2 times/week □ Rarely/Never

- Refined cereals (white rice, white bread)
□ Daily □ 3–5 times/week □ 1–2 times/week □ Rarely/Never

- Fried/Sugary items (sweets, snacks)
□ Daily □ 3–5 times/week □ 1–2 times/week □ Rarely/Never

Section 4: Attitudes and Barriers to Using Low GI Diet

4.1 Do you actively choose foods based on their glycemic impact?

□ Yes □ No □ Sometimes

4.2 Do you find low GI foods easy to include in your meals?

□ Yes □ No □ Sometimes

4.3 What are the main barriers in using low GI foods? (Tick all applicable)

□ Lack of knowledge □ High cost □ Limited availability

□ Not tasty/preferred □ Lack of family support □ Others: _____

4.4 Would you like to learn more about low GI diets?

□ Yes □ No