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Lifestyle Factors Influencing Glycemic Control Among Patients with Type 2 Diabetes Mellitus – A Survey Among Medical Students and Allied Health Sciences Professionals

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ABSTRACT

Background: Lifestyle factors such as diet, physical activity, stress, and sleep play a crucial role in glycemic control among patients with Type 2 Diabetes Mellitus. Healthcare professionals and students are key stakeholders in educating patients, making their knowledge and attitude vital.

Objective: To assess the knowledge and attitude regarding lifestyle factors influencing glycemic control among medical students and allied health sciences professionals.

Methods: A cross-sectional, questionnaire-based survey was conducted among 250 participants, including 100 MBBS students and interns, 50 dental students, 50 nursing students, and 50 healthcare professionals. The study was carried out across 2 medical colleges, 2 dental colleges, 2 nursing colleges, and one private hospital in India. A structured 15-item questionnaire was used.

Results: MBBS students demonstrated the highest mean knowledge score (78%), followed by nursing students (72%), healthcare professionals (70%), and dental students (65%). Most participants (85%) recognized diet and exercise as key factors, while only 58% identified stress and sleep as significant contributors. Positive attitudes toward lifestyle modification were observed in 82% of participants.

Conclusion: While awareness of basic lifestyle factors is satisfactory, gaps remain in understanding holistic aspects like stress and sleep. Targeted educational interventions are recommended.

Keywords: Type 2 Diabetes Mellitus, Glycemic Control, Lifestyle Factors, Medical Students, Knowledge, Attitude

1. INTRODUCTION

Type 2 Diabetes Mellitus (T2DM) is a growing global health concern, particularly in India, which is often referred to as the “diabetes capital of the world.” Effective glycemic control is essential to prevent complications such as neuropathy, nephropathy, and cardiovascular diseases.

Lifestyle factors—including diet, physical activity, sleep, and stress—play a pivotal role in managing blood glucose levels. Healthcare providers are instrumental in guiding patients; therefore, their knowledge and attitudes significantly influence patient outcomes.

This study evaluates the awareness and perceptions of medical students and allied health professionals regarding lifestyle factors affecting glycemic control.

2. SPECIFIC OBJECTIVES:

1. To assess knowledge of medical students and allied health sciences professionals regarding lifestyle factors (diet, physical activity, stress management, sleep, and adherence to treatment) that influence glycemic control in Type 2 Diabetes Mellitus.

2. To evaluate attitudes of these professionals toward the importance of lifestyle modification in managing Type 2 Diabetes Mellitus.

3. To identify practices adopted by medical students and allied health sciences professionals in their personal lives that may reflect their understanding of diabetes management.

4. To analyze the correlation between knowledge, attitudes, and practices (KAP) of respondents and their perception of lifestyle interventions in glycemic control.

5. To compare awareness levels across different groups (e.g., medical students vs. allied health sciences professionals) regarding lifestyle factors influencing glycemic control.

6. To explore barriers perceived by respondents in implementing lifestyle modifications among patients with Type 2 Diabetes Mellitus.

7. To provide recommendations for strengthening diabetes education and training programs among future healthcare professionals, focusing on lifestyle interventions.

3. METHODOLOGY

Study Design

A cross-sectional, questionnaire-based survey.

Study Population

- 100 MBBS medical students and interns
- 50 dental (BDS) students
- 50 nursing students
- 50 healthcare professionals (nurses and technicians)

Study Setting

- 2 medical colleges
- 2 dental colleges
- 2 nursing colleges
- 1 private hospital in India

Sample Size

Total participants: **250**

Inclusion Criteria

- Students and professionals willing to participate
- Individuals involved in healthcare education or services

Exclusion Criteria

- Incomplete questionnaires
- Non-consenting individuals

Data Collection Tool

A structured 15-item Likert scale questionnaire assessing:

- Knowledge of lifestyle factors
- Attitude toward lifestyle modification
- Awareness of glycemic control strategies

Ethical Considerations: not deemed necessary.

15-Item Likert Scale Questionnaire

(Responses: Strongly Agree / Agree / Neutral / Disagree / Strongly Disagree)

Section A: Knowledge

1. Lifestyle factors significantly influence glycemic control in Type 2 Diabetes Mellitus.
2. Diet plays a major role in maintaining blood glucose levels.
3. Regular physical activity improves insulin sensitivity.
4. Obesity is a major risk factor for poor glycemic control.
5. Sleep disturbances can affect blood sugar levels.
6. Stress can worsen glycemic control in diabetic patients.
7. Smoking negatively affects diabetes management.
8. Alcohol consumption can alter blood glucose levels.

Section B: Attitude

9. Lifestyle modification is as important as medication in diabetes management.
10. Patients should be counseled regularly about diet and exercise.
11. Healthcare professionals should actively promote lifestyle changes.
12. Stress management should be part of diabetes care.
13. Sleep hygiene should be emphasized in diabetic patients.
14. Patient education can significantly improve glycemic outcomes.
15. Interdisciplinary approach is necessary for diabetes management.

Statistical Analysis

Data were analyzed using descriptive statistics. Mean scores and percentages were calculated.

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4. RESULTS

Table 1: Demographic Distribution

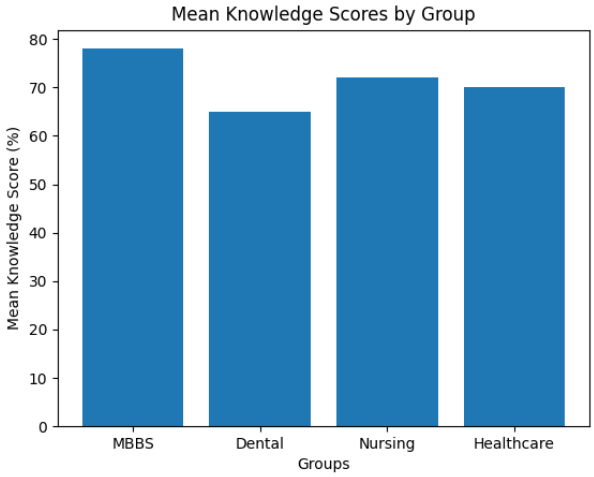
Group	Number	Percentage
MBBS Students/Interns	100	40%
Dental Students	50	20%
Nursing Students	50	20%
Healthcare Professionals	50	20%
Total	**250**	**100%**

Table 2: Mean Knowledge Scores

Group	Mean Score (%)
MBBS Students/Interns	78
Nursing Students	72
Healthcare Professionals	70
Dental Students	65

Key Findings

- **Diet and Exercise Awareness:** 85% recognized their importance
- **Stress Awareness:** 58% acknowledged its role
- **Sleep Awareness:** 54% identified sleep as a factor
- **Positive Attitude Toward Lifestyle Modification:** 82%
- **Knowledge Gap:** Significant in dental and paramedical groups



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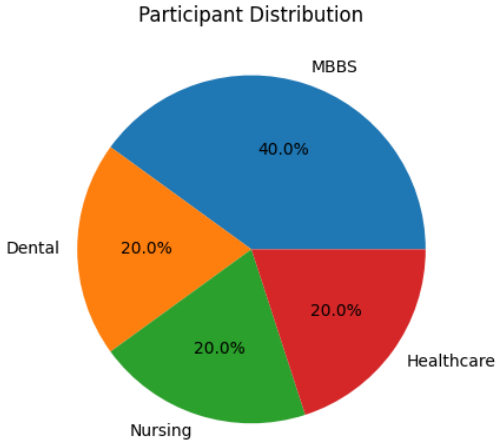

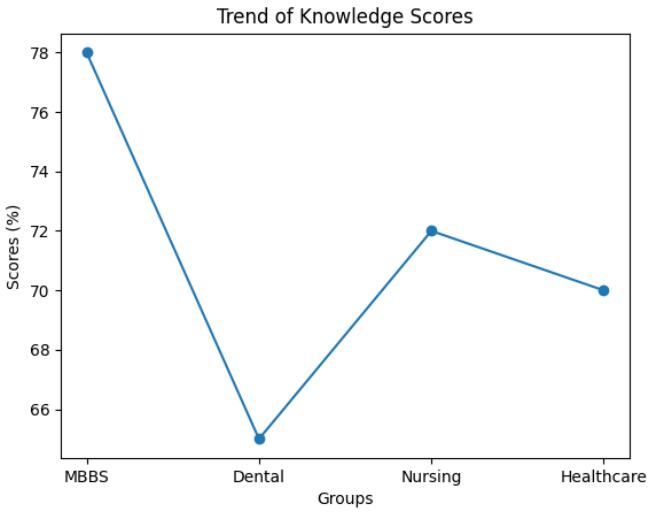

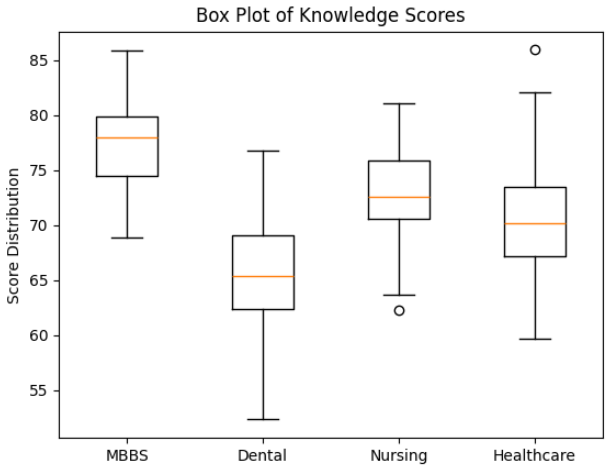

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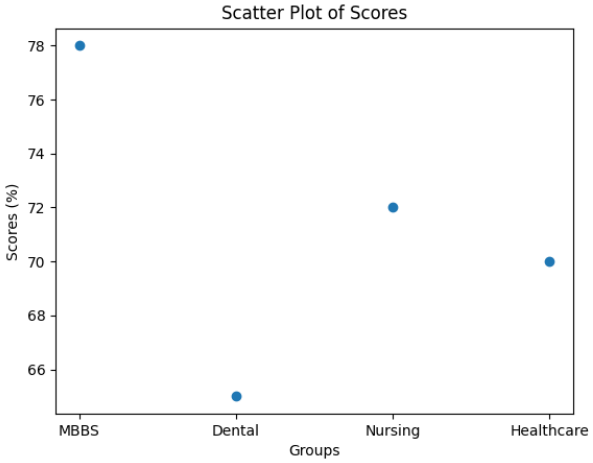

5. DISCUSSION

This study highlights that while the majority of participants are aware of traditional lifestyle factors like diet and physical activity, there is limited awareness regarding the impact of stress and sleep on glycemic control. MBBS students showed the highest knowledge levels, likely due to more extensive clinical exposure. Nursing students and healthcare professionals demonstrated moderate awareness, reflecting practical experience but possible gaps in theoretical understanding. Dental students exhibited comparatively lower scores, indicating the need for interdisciplinary education on systemic diseases like diabetes. The findings align with previous studies emphasizing the importance of comprehensive lifestyle education in diabetes management.

6. STRENGTHS

- Diverse participant groups across multiple institutions
- Inclusion of both students and working professionals
- Focus on both knowledge and attitude

7. LIMITATIONS

- Self-reported data may introduce bias
- Cross-sectional design limits causal inference
- Study confined to selected institutions in India
- Lack of direct patient outcome correlation

8. RECOMMENDATIONS

1. Incorporate lifestyle medicine modules in all healthcare curricula
2. Conduct regular workshops on diabetes management
3. Emphasize stress management and sleep hygiene education
4. Promote interdisciplinary learning
5. Encourage practical training in patient counseling

9. CONCLUSION

The study concludes that although awareness regarding lifestyle factors affecting glycemic control in Type 2 Diabetes Mellitus is generally adequate, important gaps remain. Addressing these gaps through structured educational programs can enhance patient care and outcomes.

10. **CONFLICT OF INTEREST:** None declared.

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