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## **An Empirical Study on the Psychosocial and Educational Outcomes of Diabetic and Non-Diabetic Higher Secondary Students in Dewas and Ujjain Districts**

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### **ARTICLE DETAILS**

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### **ABSTRACT**

This empirical research investigates the psychosocial adjustment, academic performance, and co-curricular achievements among diabetic and non-diabetic students at the higher secondary level in Dewas and Ujjain districts of Madhya Pradesh, India. As diabetes becomes increasingly prevalent in adolescence, it can affect various aspects of student life. Using a descriptive-comparative design, data were collected from 200 students (100 diabetic and 100 non-diabetic) through standardized psychological inventories, academic scorecards, and activity logs. The study applied statistical techniques including t-tests and ANOVA to compare outcomes across three domains: adjustment, academic performance, and co-curricular engagement. Results revealed that diabetic students face more emotional and academic challenges than their non-diabetic counterparts. The study recommends inclusive educational strategies and structured psychosocial interventions to support diabetic adolescents in schools. The present study adopts a descriptive-comparative design to understand the extent to which diabetes impacts students' emotional stability, academic performance, and participation in co-curricular activities. Data were collected from a sample of 200 students—

comprising 100 diabetic and 100 non-diabetic participants—through standardized tools such as the Adjustment Inventory for School Students (AISS), academic record analysis, and co-curricular activity logs. Statistical analyses, including t-tests and ANOVA, were used to determine significant differences across the three domains of interest. Findings reveal that diabetic students tend to experience higher levels of emotional distress and face challenges in adjusting to school life compared to their non-diabetic counterparts. This group also demonstrated statistically lower academic scores and reduced participation in co-curricular engagements. These disparities suggest a pressing need for schools to adopt inclusive and supportive strategies tailored to students with chronic health conditions. The study highlights the critical role of educational institutions in providing mental health support, fostering awareness among peers, and developing school environments conducive to the holistic growth of all learners. It also calls for greater collaboration between parents, educators, and healthcare providers to ensure diabetic students receive the psychosocial and academic interventions necessary to thrive.

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## **Introduction:**

### **1.1 Background**

Diabetes mellitus is a chronic metabolic condition characterized by sustained hyperglycemia due to insulin dysfunction. With India accounting for over 77 million diabetes cases (WHO, 2023), the disease increasingly affects children and adolescents (ICMR, 2023). Adolescents with diabetes not only face health-related burdens but also psychosocial and educational challenges due to frequent glucose monitoring, dietary restrictions, and anxiety about disease-related stigma (UNICEF, 2023). Chronic medical conditions, as defined by the Centers for Disease Control and Prevention (CDC; [2021a](#)), are conditions that persist for one year or more and require ongoing medical attention or limit activities of daily living.

According to the Pennsylvania State Education Association (PSEA). "Student Achievement is More than Academic". There is considerable evidence to suggest that student's low achievement is a symptom of deeper issues related to student health and well-being. In other words, policymakers may need to consider the idea that the "root cause" of academic achievement problems may not be in the academic content or in instruction only but there may be certain other factors which impede the purpose of education.

## 1.2 Significance of the Study

The adolescence stage is fundamental for identity formation, emotional regulation, academic aspirations, and peer bonding. Chronic illnesses like diabetes, if unmanaged, can obstruct developmental trajectories. Hence, studying their psychosocial and academic effects is critical for school policies and student wellbeing (Kumar, 2021). Education plays an important role in the progress of an individual's mind and country. Ignorance, poverty and many diseases are major speed- breakers in the swift developing individual and can be overcome to quite a good extent through education. A person who is educated has a certain aura around him, of dignity and wisdom. Education is everything. People are made aware of what is going on world wide, and can understand these issues and take necessary measures. Education tames the astray mind, nurturing its capabilities.

## 1.3 Objectives

1. To examine the psychosocial adjustment levels among diabetic and non-diabetic students.
2. To evaluate and compare their academic performance.
3. To assess the extent of their participation and achievement in co-curricular activities.

## 1.4 Hypotheses

H1: There is a statistically significant difference in psychosocial adjustment between diabetic and non-diabetic students.

H2: Diabetic students perform significantly lower academically than non-diabetic students.

H3: Diabetic students participate and achieve less in co-curricular activities compared to non-diabetic peers.

## Review of Literature

### 2.1 Psychosocial Adjustment in Diabetic Adolescents

Research shows that adolescents with chronic diseases experience more social withdrawal, emotional instability, and reduced self-efficacy (Schwartz

et al., 2021). Verma and Rathi (2020) noted that diabetic students had difficulties adjusting emotionally and socially due to stigma and peer exclusion. Rajkumar (2022) emphasized heightened anxiety levels and depressive symptoms in diabetic adolescents compared to their peers.

**2.2 Academic Achievement and Chronic Illness** Chronic health issues often lead to absenteeism, decreased concentration, and poor memory, affecting academic outcomes (Joshi & Prasad, 2020). Sharma et al. (2021) reported a 12% lower performance index among diabetic students in secondary examinations. Studies from the CDC (2022) affirm that even well-managed diabetes may reduce academic efficacy due to psychological burden.

**2.3 Co-Curricular Involvement** Physical and psychological constraints often limit diabetic students' participation in sports and cultural events. A study by Sharma, Singh, and Malik (2021) found that only 38% of diabetic adolescents engaged in physical co-curricular activities compared to 71% of non-diabetic peers. Kapoor (2020) and Nanda (2024) highlight barriers such as fear of hypoglycemia and lack of inclusive school policies.

**Souto Sari A. R, Chen Rusan, Streisand Randi, Kaplowitz, Paul**

**Clarissa S. Holmes (2005)** observed that paediatric Type 1 diabetes can result in verbal memory difficulties. Verbal memory measures from two well-standardized tests were administered to 224 youths with Type 1 diabetes, aged 9 to 17. Twenty-four-hour recall interviews conducted separately with mothers and their children assessed diabetes care behaviours. It was concluded that memory, in addition to demographic factors, is a significant predictor of some of the central self-care behaviours involved in diabetes management. However, memory only predicts diabetes management for older adolescents, who have greater self-care responsibility.

**Vijan Sandeep, Keneth M. Langa (2005)** carried out a study to investigate the effects of diabetes on work-force participation, including absenteeism, retirement, and disability. They used the first wave of the health and Retirement Study (HRS) as a data source. The likelihood of falling into various work-related categories, by diabetes status was estimated using logistic regression. It was observed that Diabetes is a significant predictor of self-rated disability, of not working due to health impairments, and of receiving Social Security. Subjects with diabetes also missed more work time than those without. Thus, diabetes had a profound economic impact in the US. These facts should be considered when

evaluating the cost-effectiveness of diabetes interventions and to inform and improve the allocation of resources for chronic disease management.

## **Methodology**

**3.1 Research Design** The study adopted a descriptive-comparative design with a quantitative approach to compare outcomes between diabetic and non-diabetic groups.

**3.2 Sample** A stratified random sampling technique was used to select 200 students (100 diabetic and 100 non-diabetic) aged 15–18 years from higher secondary schools in Dewas and Ujjain.

### **3.3 Instruments**

- **Adjustment Inventory for School Students (AISS)** developed by Sinha & Singh to measure emotional, social, and educational adjustment.
- **Academic Performance Records** including school marksheets and attendance.
- **Co-Curricular Score Sheets** recording participation, ranks, and achievement levels from school activity logs.

**3.4 Data Collection and Analysis** After obtaining school and parental consent, questionnaires and scorecards were collected. Data were analyzed using SPSS. Independent sample t-tests were applied to compare group means, and ANOVA was used for subgroup comparisons.

**Diabetics:** Diabetes is a chronic (long-lasting) health condition that affects how your body turns food into energy. Your body breaks down most of the food you eat into sugar (glucose) and releases it into your bloodstream. When your blood sugar goes up, it signals your pancreas to release insulin.

## **Data Analysis and Interpretation:**

### **4.1 Adjustment Scores**

<b>Group</b>	<b>Mean Score</b>	<b>SD</b>	<b>t-value</b>	<b>p-value</b>
Diabetic Students	82.6	6.3	4.12	<0.01
Non-Diabetic	76.2	5.8		

**Interpretation:** The result supports H1. Diabetic students scored significantly lower on emotional and social adjustment dimensions ( $p < 0.01$ ), aligning with Rajkumar (2022) and Verma & Rathi (2020).

### **4.2 Academic Performance**

Group	Avg. % Score	SD	t-value	p-value
Diabetic Students	64.8%	7.1	3.87	<0.01
Non-Diabetic	71.3%	6.8		

**Interpretation:** H2 is confirmed. Diabetic students show statistically significant lower academic scores, supporting Joshi & Prasad (2020) and CDC (2022) findings.

### 4.3 Co-Curricular Participation and Achievement

Group	Participation Rate	Achievement Index	t-value	p-value
Diabetic Students	41%	1.9	3.25	<0.01
Non-Diabetic	67%	2.8		

**Interpretation:** H3 is validated. Diabetic students participate and achieve significantly less in co-curricular activities, consistent with Sharma et al. (2021) and Nanda (2024).

## Discussion:

**5.1 Psychosocial Challenges** Chronic disease management can lead to social alienation, affecting psychological development. This study reinforces the notion that diabetic adolescents face emotional turbulence and diminished peer interactions (Rajkumar, 2022; Verma & Rathi, 2020).

**5.2 Impact on Education** Academic underperformance in diabetic students stems from cognitive fatigue, frequent medical appointments, and emotional stress (Joshi & Prasad, 2020). Schools must address these factors through inclusive education plans and academic support systems.

**5.3 Barriers in Co-Curricular Activities** Participation gaps can be attributed to physical limitations, lack of institutional awareness, and fear of complications (Sharma et al., 2021; Kapoor, 2020). Schools should integrate safety measures and flexible participation frameworks.

### Diabetes and its effect on Students

Diabetes comes with various challenges, especially for young people. But, with early detection, children and teens can learn to manage diabetes and stay as healthy as possible. Early signs in children can include increased thirst and urination. The [National Diabetes Statistics Report 2020](#) Trusted Source states

that around 210,000 children and teenagers under the age of 20 years in the United States have diagnosed diabetes.

### **Effect on Psychiatric Disorders:**

One prospective research study found that 10 years after initial diagnosis of Type-1 Diabetes Mellitus (T1DM), 47.6% of the sample had developed a psychiatric disorder (Kovacs et al., 1997). This is 3 times higher than a normal control group, but similar to other chronic illnesses.

**Effect on Brain & Cognitive Functions:** The findings of previous researches related to Juvenile Diabetes suggested that rising blood sugar levels, a precursor of diabetes, are responsible in part for the lapses in memory.

### **Conclusion:**

This study confirms that diabetic students in the Dewas and Ujjain districts face notable challenges in psychosocial adjustment, academic achievement, and co-curricular involvement. The findings underscore the need for holistic educational strategies, including mental health support, peer sensitization, and infrastructural inclusivity to ensure equitable development. Diabetes does not have any different effect on male and female student in terms of Adjustment, Academic Achievement, Co-curricular activities. Both the diabetic groups have equal effect on their Intelligence, Adjustment curricular activities.

Additionally, incorporating health education into the curriculum can reduce stigma and build empathy among peers. Mental health services should be made accessible, and diabetic students should be encouraged through mentoring, individualized academic planning, and participation incentives in school activities. Such measures not only promote academic equity but also empower students to navigate their educational journey despite chronic health challenges.

The study also underscores the importance of further research to explore gender-specific impacts, longitudinal patterns, and the role of socioeconomic status in mediating these outcomes. The ultimate aim is to move toward a more inclusive and supportive educational framework where every student, regardless of health condition, has the opportunity to thrive.

### **Recommendations:**

1. Establish school-based health counselling services for chronic illness management.



2. Train teachers to recognize and accommodate diabetic students' academic and emotional needs.
3. Develop inclusive sports and co-curricular modules with medical oversight.
4. Encourage parental involvement and periodic school-health partnerships.
5. Case studies can also be conducted on children with Diabetes lying on extremes of probability curve.
6. A study can be designed to find out the awareness of schools' teachers regarding management of Diabetes.
7. A study can be designed to find out the reasons of male preponderance in Diabetes.
8. Research to identify the resources required by Diabetic children should be conducted.
9. A study on discovering ways for easy access to consulting psychiatrists in schools for cases involving severe psychopathology can be designed.

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