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Knowledge and Practices of Parents with Diabetes Mellitus Regarding Primordial Prevention of Diabetes in Their Children in a Selected Community of Bagalkote District, Karnataka

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Abstract | **Original Research Article**

Background: Diabetes mellitus is a major public health concern with an increasing prevalence worldwide. Children of parents with diabetes are at higher risk of developing the condition due to both genetic and environmental influences. Primordial prevention through lifestyle modification at the family level is crucial in reducing future risk. ***Methods:*** A descriptive cross-sectional study was conducted among parents with diabetes mellitus in a selected community of Bagalkot district. A structured questionnaire was used to assess knowledge and practice. Sociodemographic details were collected. Data were analysed using descriptive and inferential statistics (frequency, percentage, mean, Chi-square test). ***Results:*** The majority of respondents (28.3%) were aged 41–50 years, 62.8% were Hindus, and 74% were married. Overall, 41% of parents had average knowledge, 33% had poor knowledge, and only 26% had good knowledge. In terms of practice, 49% demonstrated average preventive practices, 31% poor practices, and only 20% good practices. A significant association was observed between knowledge level and education ($p<0.05$), while no significant association was found between practice and demographic variables. ***Conclusion:*** Parents with diabetes mellitus had only moderate knowledge and limited preventive practices regarding primordial prevention in their children. Strengthening family-based education and lifestyle interventions is necessary to promote healthy practices and reduce future risk of diabetes among children.

Keywords: Diabetes mellitus, primordial prevention, parents, knowledge, practices.

INTRODUCTION

Diabetes mellitus (DM) is a chronic metabolic disorder characterized by hyperglycaemia resulting from defects in insulin secretion, insulin action, or both. It is one of the fastest-growing public health problems globally. According to the International Diabetes Federation (IDF), India accounts for over 77 million adults with diabetes, making it the "diabetes capital" of the world [1].

The risk of developing diabetes is substantially higher in children of parents with diabetes due to hereditary predisposition, as well as exposure to unhealthy lifestyle behaviors within the family. Hence, primordial prevention preventing the emergence of risk factors themselves becomes crucial [2]. Such preventive measures include promoting balanced diets, adequate physical activity, reduction of sedentary behaviors, and regular health check-ups from an early age.

Parents play a vital role in shaping their children's lifestyle and health behaviors. However, despite the awareness of diabetes complications, many parents with diabetes fail to adopt or in still appropriate preventive practices in their children. This gap highlights the need for assessing their knowledge and practices.

The present study was undertaken to evaluate the knowledge and practices of parents with diabetes mellitus regarding the primordial prevention of diabetes in their children in a selected community of Bagalkot district.

METHODOLOGY

This study adopted a descriptive cross-sectional design to assess the knowledge and self-reported practices related to the primordial prevention of diabetes mellitus among parents diagnosed with the condition. The research was conducted in a selected community of Bagalkot district, Karnataka, focusing on individuals who had been diagnosed with diabetes mellitus and were also parents.

A total of 100 participants were selected using a convenient sampling technique. Data collection was carried out using a structured questionnaire, which was divided into three sections: Section I included sociodemographic details, Section II assessed knowledge related to the primordial prevention of diabetes, and Section III consisted of a self-reported practice checklist.

Data were analysed using both descriptive and inferential statistics. Descriptive statistics such as frequency, percentage, mean, and standard deviation were used to summarize the data. To identify associations between selected sociodemographic variables and levels of knowledge and practices, the Chi-square test was employed.

Prior to data collection, ethical clearance was obtained from the institutional ethics committee. Participation in the study was voluntary, and written informed consent was obtained from all respondents. Participants were assured of the confidentiality and anonymity of their responses throughout the study.

RESULTS

Table 1: Distribution of subjects based on sociodemographic Variables (N=100)

Sociodemographic variables	Frequency	Percentage
Age in Years		
25–34	6	6
35–44	22	22
45–54	59	59
55–64	13	13
Gender		
Male	49	49
Female	51	51
Religion		
Hindu	61	61%
Muslim	26	26%
Christian	13	13%
Education level		
Illiterate	13	7%
Primary school	10	10%
Middle school	34	34%
High school	20	19%
UG/PG	10	10%
Professional	13	7%
Occupation		
Unemployed	41	41%
Unskilled worker	8	8%
Semi-skilled workers	4	4%
Skilled workers	11	11%
Clerical/shop owner/framer	23	23%
Semi- professional	4	4%
Professional	9	9%
Family type		
Nuclear	82	82
Joint	18	18
Diet		
Vegetarian	97	97
Non-vegetarian	3	3
Monthly income (₹)		
<5000	3	3%
5001–10,000	43	43%

Sociodemographic variables	Frequency	Percentage
10,001–15,000	36	36%
>15,000	18	18%
No. of Children		
1	14	14%
2	38	38%
>2	48	48%
Family History Diabetes		
Yes	77	77
No	23	23
Source of Information		
Health personnel	82	82%
Mass media	15	15%
Family/friends	3	3%

The study included a diverse group of parents diagnosed with diabetes mellitus, with a predominant concentration in the middle-aged population. The highest proportion of participants (59%) were between the ages of 45–54 years, indicating that diabetes prevalence is common in this age bracket. This was followed by 22% in the 35–44 age group, suggesting an emerging trend in slightly younger adults. Only a small proportion (6%) were in the 25–34 age group, reflecting that early onset diabetes is less prevalent in this community sample.

Gender distribution was nearly equal, with females constituting 51% and males 49% of the participants, ensuring gender balance in the study. The majority of participants were Hindu (61%), followed by Muslims (26%) and Christians (13%), which reflects the religious composition of the local population.

Educational status varied, with a significant number (34%) having completed middle school. Notably, 19% had studied up to high school, while 20% had either primary education or a college degree (10% each for primary school and UG/PG). A smaller segment was either illiterate (7%) or held professional qualifications (7%). These findings indicate moderate literacy levels, which could influence knowledge and health practices related to diabetes prevention.

Occupationally, 41% of participants were unemployed, which may suggest either a high dependency ratio or a large number of homemakers or retirees. About 23% were clerical workers, shop owners, or farmers, and 11% were skilled workers. Professionals and semi-professionals together made up 13%, while unskilled and semi-skilled workers accounted for 12% of the sample. This occupational distribution points to a predominantly low-to-middle-income working population.

The majority of participants (82%) lived in nuclear families, aligning with urbanization and modern living trends. A notable 97% followed a vegetarian diet, which is consistent with the dietary habits commonly observed in parts of Karnataka, while only 3% consumed a non-vegetarian diet.

In terms of economic status, 43% of participants reported a monthly income between ₹5,001–10,000, and 36% earned ₹10,001–15,000. Only 18% had an income above ₹15,000, and a very small proportion (3%) earned less than ₹5,000. This suggests that most of the population falls within the lower-middle-income bracket.

Regarding family structure, 48% of participants had more than two children, and 38% had two children, indicating relatively larger family sizes. A family history of diabetes was present in 77% of the participants, reinforcing the genetic and hereditary risk factors associated with the condition.

When it came to sources of information about diabetes and its prevention, 82% of participants cited health personnel as their primary source, demonstrating the critical role of healthcare professionals in community education. Mass media was the source for 15%, and only 3% relied on family or friends, highlighting a potential gap in informal health education.

Section II: Knowledge of Parents

Table 2: Knowledge scores of parents (N=100)

Level of knowledge	Frequency (f)	Percentage (%)
Excellent (13–17)	18	18
Good (10–12)	29	29
Average (7–9)	36	36
Poor (4–6)	12	12
Very poor (0–3)	5	5

The data on the level of knowledge of parents with diabetes mellitus regarding primordial prevention of diabetes in their children shows that the majority (36%) had an average level of knowledge (scores 7–9). About 29% demonstrated a good level of knowledge (10–12), while 18% had an excellent level (13–17). In contrast, 12% of parents had a poor level (4–6), and a small proportion (5%) showed a very poor level (0–3). These findings highlight that although a considerable proportion of parents possessed average to good knowledge, there remains a notable group with limited awareness, indicating the need for enhanced educational interventions.

Section III: Practice of Parents

Table 3: Practice scores of parents (N=100)

Level of practice	Frequency (f)	Percentage (%)
Excellent (73–90)	14	14
Good (55–72)	31	31
Average (37–54)	40	40
Poor (19–36)	12	12
Very poor (1–18)	3	3

The assessment of practice levels of parents with diabetes mellitus regarding primordial prevention of diabetes in their children revealed that the majority (40%) demonstrated an average level of practice (scores 37–54). About 31% reported a good level of practice (55–72), and 14% showed an excellent level of practice (73–90). On the other hand, 12% of parents had poor practice (19–36), and a smaller group (3%) exhibited a very poor level of practice (1–18). These findings indicate that while a significant proportion of parents engaged in average to good preventive practices, there is still a need to strengthen interventions to enhance their practices to the excellent level and minimize poor practices.

Table 4: Relationship between knowledge and practice of parents with diabetes mellitus regarding primordial prevention in their children (N = 100)

Variable	Mean	SD	r-value	p-value	Interpretation
Knowledge	11.47	2.73	0.37	0.0001*	Significant
Practice	65.47	8.66			

*Significant at $p < 0.05$

Table 12 illustrates the relationship between knowledge and practice among parents with diabetes mellitus regarding the primordial prevention of diabetes in their children. The mean knowledge score was 11.47 ± 2.73, while the mean practice score was 65.47 ± 8.66. The correlation coefficient (r = 0.37) was statistically significant at p = 0.0001, indicating a moderate positive correlation between knowledge and practice. This implies that parents with higher knowledge scores were more likely to adopt better preventive practices for diabetes in their children.

Table 5: Association between Knowledge and selected sociodemographic variables (N = 100)

Variable	Practice < 11	Practice > 11	χ^2 value	df	p-value	Inference
Age of parent						
25–44 years	10	18	0.001	1	0.97	NS
45–64 years	26	46				
Gender						
Male	14	37	3.3	1	0.06	NS
Female	22	27				
Religion						
Hindu	20	41	2.7	2	0.09	NS
Muslim	12	10				
Christian	4	13				
Education						
Above SSLC	4	25	8.74	1	0.003	S
Below SSLC	32	39				
Occupation						
Employed	9	44	4.92	1	0.02	S
Unemployed	20	21				
Type of family						

Variable	Practice < 11	Practice > 11	χ^2 value	df	p-value	Inference
Nuclear	26	56	3.6	1	0.05	NS
Joint	10	8				
Dietary pattern					0.92	
Vegetarian	1	2	0.01	1		NS
Non-vegetarian	35	62				
Monthly family income						
≤ ₹10,000	18	28	0.01	1	0.92	NS
> ₹10,000	18	36				
Number of children						
One	4	10	2.06	2	0.35	NS
Two	15	33				
More than two	17	21				
Family history of diabetes						
Yes	26	51	0.72	1	0.39	NS
No	10	13				
Relationship with diabetes						
Father	8	20	0.43	2	0.8	NS
Mother	12	21				
Others	5	11				
Source of health information						
Mass media	5	10	0.06	2	0.96	NS
Health personnel	30	52				
Relatives	1	2				

The association between knowledge levels of parents with diabetes mellitus and selected sociodemographic variables was analysed using the Chi-square test. The findings showed that most variables, including age (χ^2=0.001, p=0.97), gender (χ^2=3.3, p=0.06), religion (χ^2=2.7, p=0.09), type of family (χ^2=3.6, p=0.05), dietary pattern (χ^2=0.01, p=0.92), monthly family income (χ^2=0.01, p=0.92), number of children (χ^2=2.06, p=0.35), family history of diabetes (χ^2=0.72, p=0.39), relationship with diabetes (χ^2=0.43, p=0.80), and source of health information (χ^2=0.06, p=0.96), did not show any statistically significant association with knowledge. However, education (χ^2=8.74, p=0.003) and occupation (χ^2=4.92, p=0.02) demonstrated significant associations, indicating that parents with education above SSLC and those who were employed had higher knowledge levels regarding primordial prevention of diabetes in their children compared to those with lower education or unemployment. These results suggest that while knowledge levels were not influenced by most demographic factors, education and occupation emerged as critical determinants, highlighting the importance of literacy and employment status in enhancing awareness and understanding of diabetes prevention practices.

Table 6: Association between practice and selected sociodemographic variables (N = 100)

Variable	Practice < 67	Practice > 67	χ^2 value	df	p-value	Inference
Age of parent						
25–44 years	14	14	0.14	1	0.7	NS
45–64 years	33	39				
Gender						
Male	23	28	0.15	1	0.69	NS
Female	24	25				
Religion						
Hindu	25	36	2.41	2	0.29	NS
Muslim	13	9				
Christian	9	8				
Education						
Above SSLC	13	16	0.077	1	0.78	S
Below SSLC	34	37				
Occupation						
Employed	20	21	0.08	1	0.76	S
Unemployed	44	9				
Type of family						

Variable	Practice < 67	Practice > 67	χ^2 value	df	p-value	Inference
Nuclear	38	44	3.6	1	0.05	NS
Joint	9	9				
Dietary pattern						
Vegetarian	1	2	0.23	1	0.63	NS
Non-vegetarian	46	51				
Monthly family income						
≤ ₹10,000	22	24	0.02	1	0.87	NS
> ₹10,000	25	29				
Number of children						
One	8	6	0.68	2	0.71	NS
Two	22	26				
More than two	17	21				
Family history of diabetes						
Yes	36	41	0.008	1	0.092	NS
No	11	12				
Relationship with diabetes						
Father	13	15	0.85	2	0.65	NS
Mother	17	16				
Others	6	10				
Source of health information						
Mass media	6	9	3.69	2	0.15	NS
Health personnel	38	44				
Relatives	3	2				

S – Significant, NS – Not Significant, p < 0.05**

The analysis of the association between practice and socio-demographic variables of parents with diabetes mellitus regarding primordial prevention in their children was carried out using the Chi-square test. The findings revealed that practice levels did not show a significant association with most variables including age (χ^2=0.14, p=0.70), gender (χ^2=0.15, p=0.69), religion (χ^2=2.41, p=0.29), type of family (χ^2=3.6, p=0.05), dietary pattern (χ^2=0.23, p=0.63), monthly family income (χ^2=0.02, p=0.87), number of children (χ^2=0.68, p=0.71), family history of diabetes (χ^2=0.008, p=0.092), relationship with diabetes (χ^2=0.85, p=0.65), and source of health information (χ^2=3.69, p=0.15). However, education (χ^2=0.077, p=0.78) and occupation (χ^2=0.08, p=0.76) were found to be significantly associated with practice, suggesting that parents with higher levels of education and those who were employed demonstrated better preventive practices compared to those with lower education and unemployment. These findings emphasize that while socio-demographic factors such as age, gender, income, and family background did not substantially influence preventive practices, education and occupation played a pivotal role in shaping effective primordial prevention behaviors among parents with diabetes mellitus.

Discussion

The study findings revealed that parents with diabetes mellitus had moderate knowledge and practices regarding primordial prevention of diabetes in their children. While 41% had average knowledge, a substantial proportion (33%) demonstrated poor knowledge. Similarly, nearly half (49%) had only average practices.

These findings are consistent with Ahmad *et al.* [3], who reported moderate awareness but inadequate preventive practices among diabetic parents in Pakistan. Similarly, Shah *et al.* [4] observed that knowledge about diabetes complications was high, but practical lifestyle modification remained poor among Indian adults with diabetes.

A significant association between knowledge and education level was noted, aligning with the findings of Saleh *et al.* [5], who reported that higher education levels correlated with better awareness and self-care practices. However, practice scores in this study showed no significant association with demographic variables, suggesting that even educated parents may fail to translate knowledge into practice.

This gap between knowledge and behavior underscores the importance of tailored community-based health education and nurse-led interventions to bridge the gap.

Conclusion

The study concludes that parents with diabetes mellitus in the selected community had only moderate knowledge and suboptimal practices regarding primordial prevention of diabetes in their children. Education level was significantly associated with knowledge, but not with practice. Strengthening family-

centred awareness and health education programs is crucial to in still healthy practices in children of diabetic parents.

REFERENCES

1. International Diabetes Federation. *IDF Diabetes Atlas*. 10th ed. Brussels: IDF; 2021.
2. World Health Organization. *Global Report on Diabetes*. Geneva: WHO; 2016.
3. Ahmad J, Masoodi MA, Bhat IA. Knowledge, attitude, and practices regarding diabetes among parents with diabetes mellitus. *Int J Diabetes Dev Ctries*. 2013;33(1):30–36.
4. Shah VN, Kamdar PK, Shah N. Assessing the knowledge, attitudes and practice of type 2 diabetes among patients of Saurashtra region, Gujarat. *Int J Diabetes Dev Ctries*. 2009;29(3):118–122.
5. Saleh F, Mumu SJ, Ara F, Ali L. Knowledge, attitude, and self-care practices among patients with type 2 diabetes in Bangladesh. *BMC Public Health*. 2012; 12:1112.
6. Ramachandran A, Snehalatha C, Kapur A, *et al.* High prevalence of diabetes and impaired glucose tolerance in India: National Urban Diabetes Survey. *Diabetology*. 2001;44(9):1094–1101.