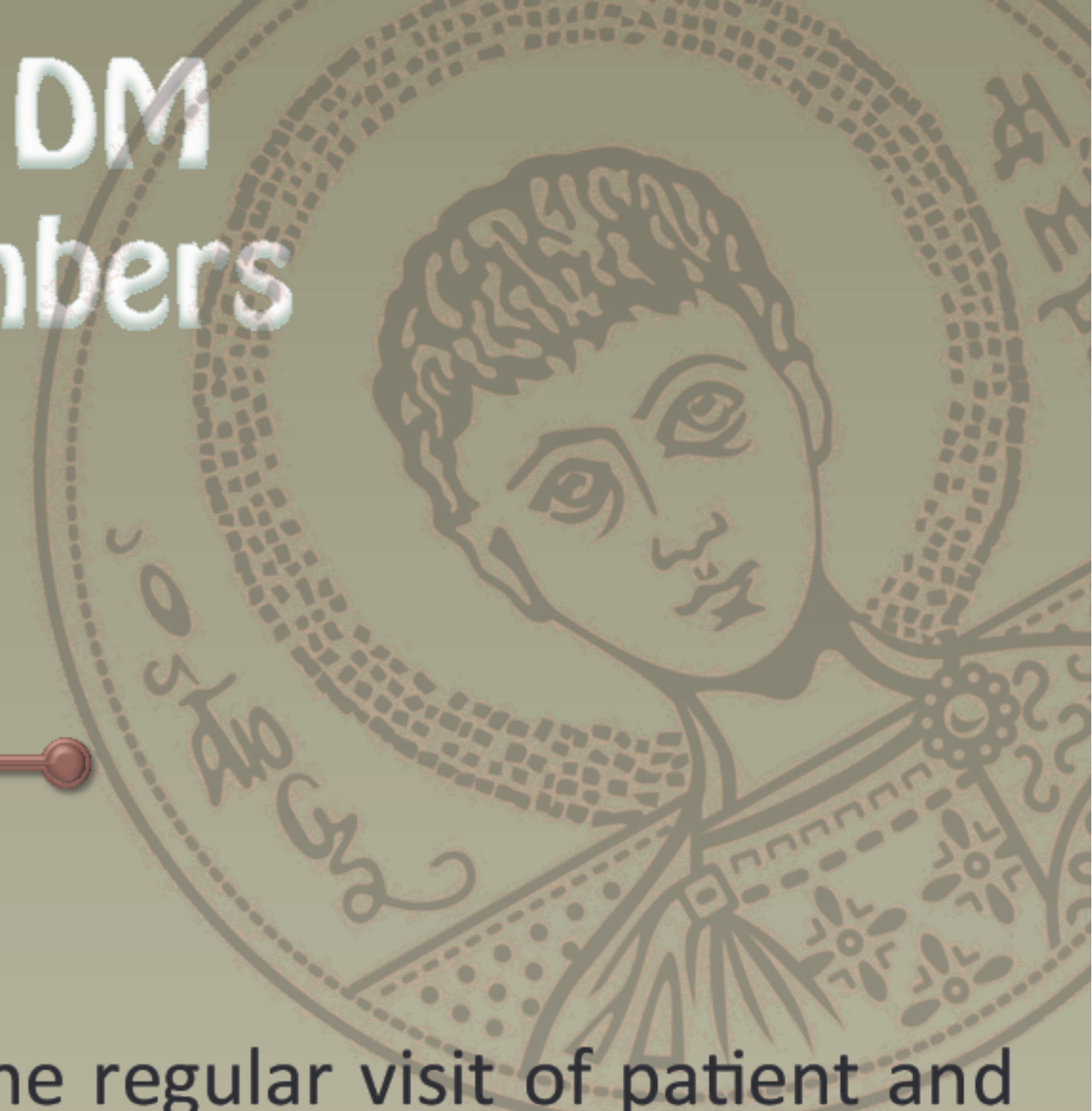


Assessment of the effect of the diagnosis of T1DM in the nutritional habits of unaffected family members

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BACKGROUND

Type 1 Diabetes Mellitus (T1DM), a complex and demanding disease to manage, has been referred as a 'family disease', affecting not only the patient's life but also the whole family's perspective.

Despite the abundance of studies exploring the effect of T1DM on the emotional and social life of the family, only a small amount of evidence for the dietary habits of the unaffected members of the family currently exists.

Aim To explore the effect of the diagnosis of T1DM in dietary habits of the unaffected family members, to highlight if a correlated variation in auxological parameters arises, and finally to assess the impact of certain educational and social-economic factors on dietary profile of these members.

METHODS

The survey was performed during the regular visit of patient and family at the outpatient paediatric diabetic clinic of our department. Unaffected family members (parents and non-diabetic children), with no other chronic disease were asked to participate in the study. Changes in dietary habits were assessed using:

- a standardized questionnaire (Family Eating and Activity Habits questionnaire, FEAH) which was divided in 4 scales: (A) activity level, (B) stimulus exposure, (C) eating related to hunger and (D) eating style
- a questionnaire of demographic, anthropometric and nutritional data of family that was specifically designed for this study

Height and weight were measured and BMI was calculated for each unaffected member of the family during the visit, whereas previous measurements were retrieved either by health records or by memory.

RESULTS

50 families participated

	Mean ± S.D. (range)
Age	11.06 ± 4.15 (2-17)
Age at diagnosis	6.43 ± 3.48 (0-13)
Duration of disease	4.69 ± 3.73 (0-16)

Table 1. Demographic characteristics of patients

Range of age	Frequency		Relative frequencies [%]	
	Mother	Father	Mother	Father
≤30	3	0	6.12	0.00
31-35	6	2	12.25	4.17
36-40	15	11	30.61	22.92
41-45	13	14	26.53	29.17
46-50	6	12	12.25	25.00
51-55	5	4	10.20	8.33
51-60	1	5	2.04	10.41
Total	49	48	100	100

Table 2. Parents age range and relative frequencies

	Mother			Father		
	At diagnosis	Now	P	At diagnosis	Now	P
Sample	46	48		40	40	
Weight	66.09 ± 14.89	68.58 ± 15.69	0.293	88.78 ± 14.48	90.43 ± 14.36	0.371

Table 3. Mean and SD of parent's weight at diagnosis and at the time of the study

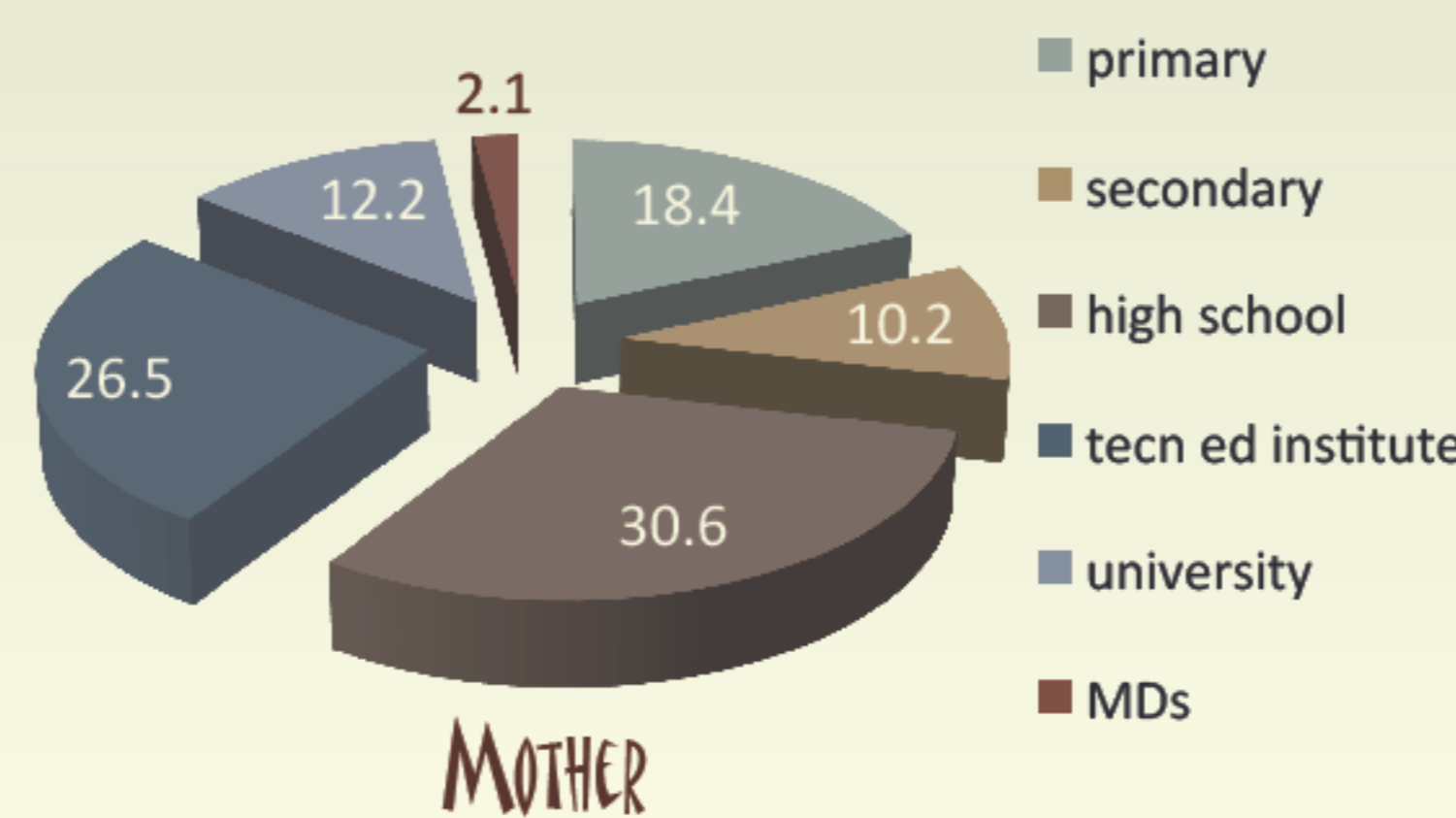


Figure 1. Parental educational status

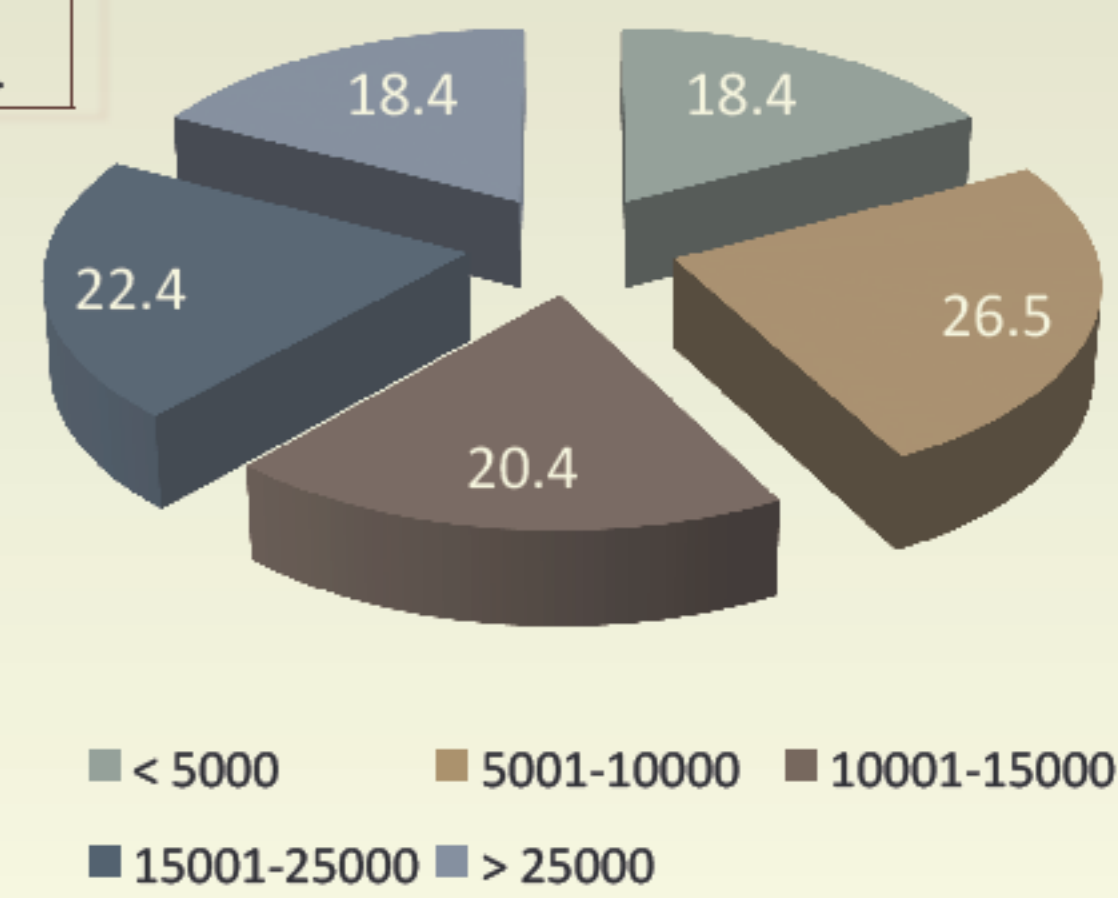


Figure 2. Annual family income

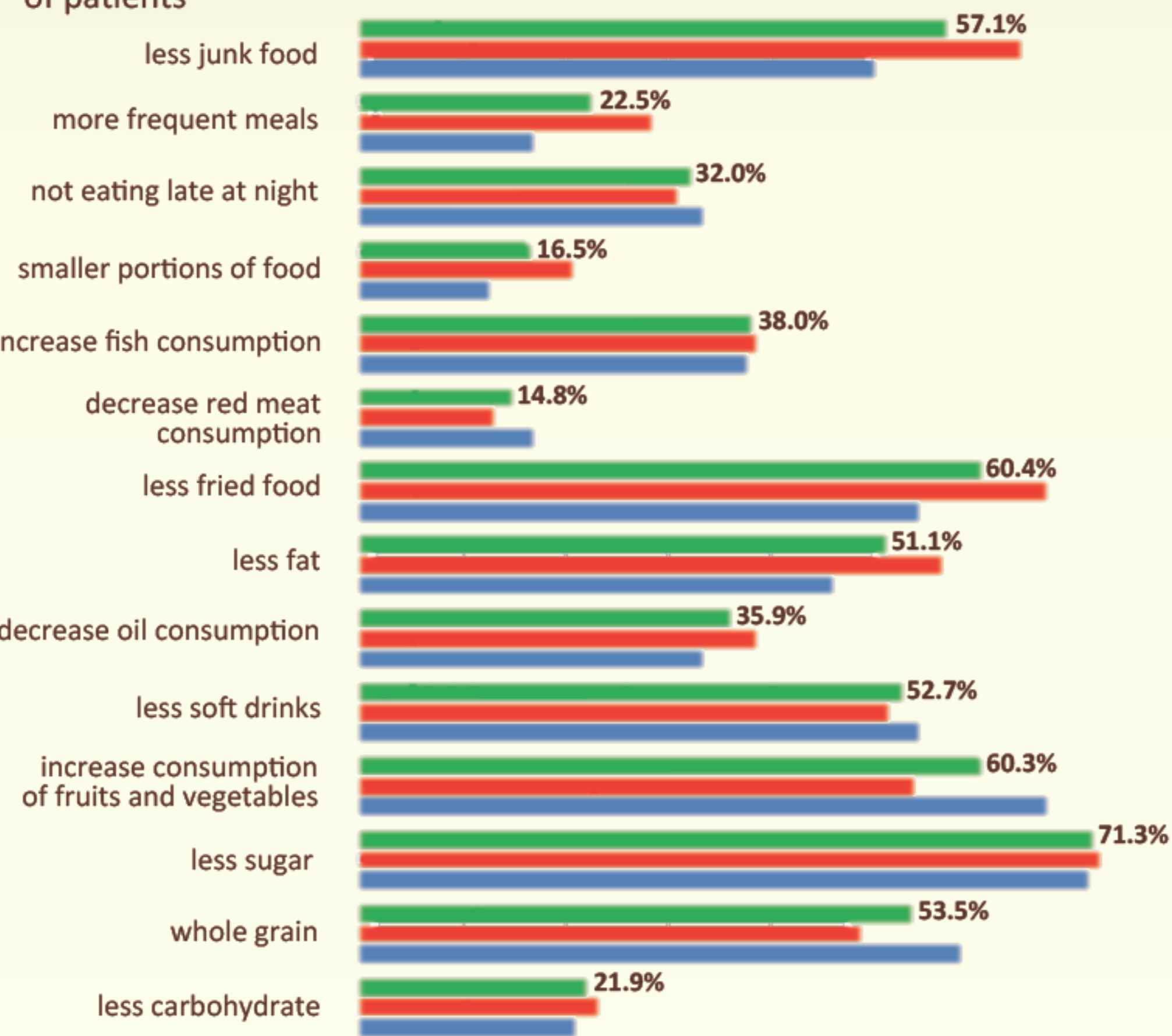


Figure 3. Changes in dietary habits

Scales	n	Mother Mean ± S.D.	Father Mean ± S.D.	Child Mean ± S.D.	Family Mean ± S.D.
A	50	4.6 ± 11.3	6.0 ± 15.8	3.8 ± 12.0	14.4 ± 28.7
B	50	6.7 ± 2.3	6.7 ± 2.3	9.2 ± 3.4	22.6 ± 7.7
C	50	0.9 ± 0.9	1.1 ± 1.0	2.7 ± 1.5	4.7 ± 3.0
D	50	11.8 ± 5.2	12.0 ± 6.3	15.7 ± 8.0	39.5 ± 15.2
Total score	50	24.0 ± 14.0	25.8 ± 19.2	31.5 ± 14.6	81.3 ± 37.2

Table 7. Average score in scales of FEAH questionnaire

Score in FEAH scale	Changes in dietary habits			
	Mothers		Fathers	
	Yes	No	Yes	No
Sample	39	11	23	20
Mean ± S.D.	80.67 ± 39.45	83.36 ± 29.17	86.59 ± 43.35	81.18 ± 28.98
p	0.834		0.638	

Table 8. Associations between mean score of FEAH questionnaire and changes in dietary habits according to mothers and fathers

	Mother		Father		P
	Yes	No	Yes	No	
Sample	50		43		
Frequency	39	11	23	20	
Percentage [%]	78.0	22.0	53.5	46.5	0.016

Table 3. Changes in eating habits according to the parents of children with diabetes (statistical significant difference between mothers and fathers)

Mother	Father		Total	P
	Yes	No		
Yes	23	11	34	
No	0	9	9	
Total	23	20	43	0.001

Table 4. Level of agreement between parents on whether there was change in eating habits

Child's age at diagnosis	Mother		Father	
	Yes	No	Yes	No
Sample	38	11	23	20
average ± SD	5.71 ± 3.33	8.91 ± 2.88	5.74 ± 3.22	6.45 ± 3.87
p	0.004		0.546	

Table 5. Correlation between age of diagnosis of T1DM and changes in dietary habits according to mothers and fathers

Variation in BMI	Mothers		Fathers	
	Yes	No	Yes	No
Average ± S.D.	0.99 ± 2.26	0.77 ± 1.46	-0.66 ± 2.56	0.78 ± 1.99
p	0.699		0.581	

Table 6. The impact of dietary changes on BMI

CONCLUSIONS

Mothers and especially those with children diagnosed with T1DM at the age of 5.5 years or earlier changed their dietary habits at a higher proportion

Changes in dietary habits are not related to the educational level of parents, the annual family income and do not entail any significant reduction in BMI of parents

A significant number of families retained their unhealthy nutritional habits after the diagnosis of T1DM and in conjunction with the reported low level of physical activity indicate areas for intervention

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