

LIFESTYLE AND METABOLIC CONTROL IN ADOLESCENTS WITH TYPE 1 DIABETES (T1D)

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BACKGROUND

In T1D adolescents it is necessary to design effective interventions to take care of their health and psychological problems. This leads to effective transition to an adult unit.

- **Adolescence:** State of physical and psychological change with possibility of developing harmful or risky behaviour.
- Transition period to adolescent autonomy, with responsibility passed from parents to teens.
- Risk of impaired attention and disease control.

METHODS

Retrospective cohort study of 42 T1D adolescents.

Filled a questionnaire about lifestyle and autocontrol of illness between 1st November 2014-31st January 2015.

Inclusion criteria

- Age: 13-19 years.
- Duration of disease > 1 year.
- Analysis and clinical follow-up every 3-4 months during the last year.
- Voluntary questionnaire.

Exclusion criteria

- Age < 13 o > 19 years.
- Duration of disease < 1 year.
- No clinical control or analysis in the last year.
- No feed-back from the questionnaire.
- Follow-up in other centre.

OBJECTIVES

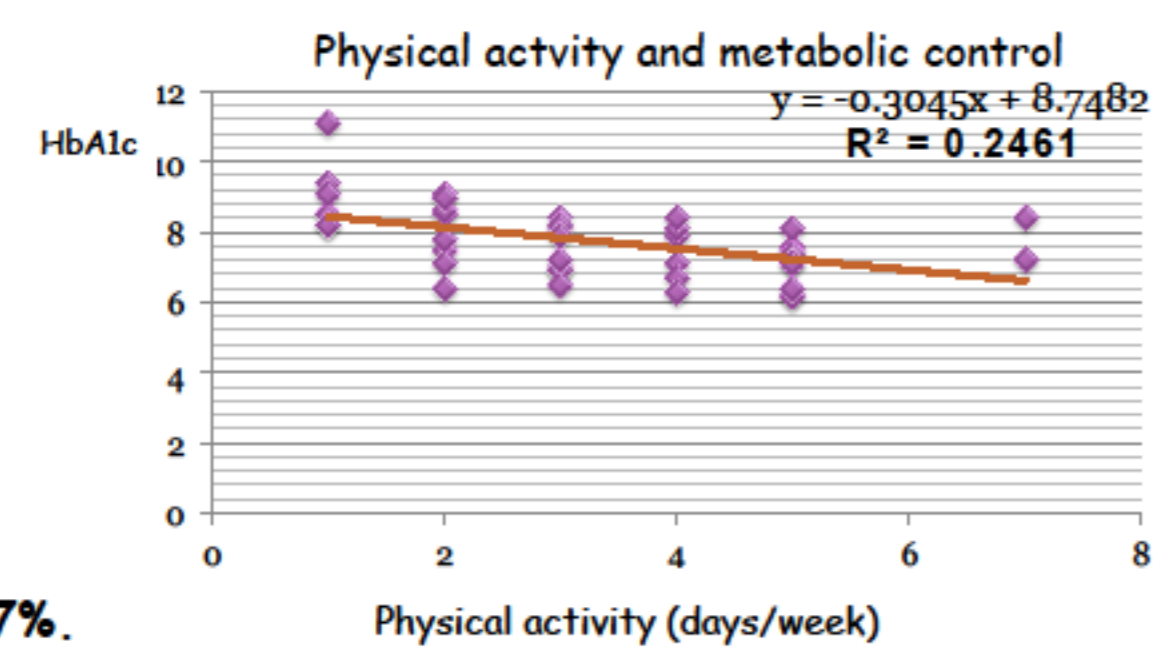
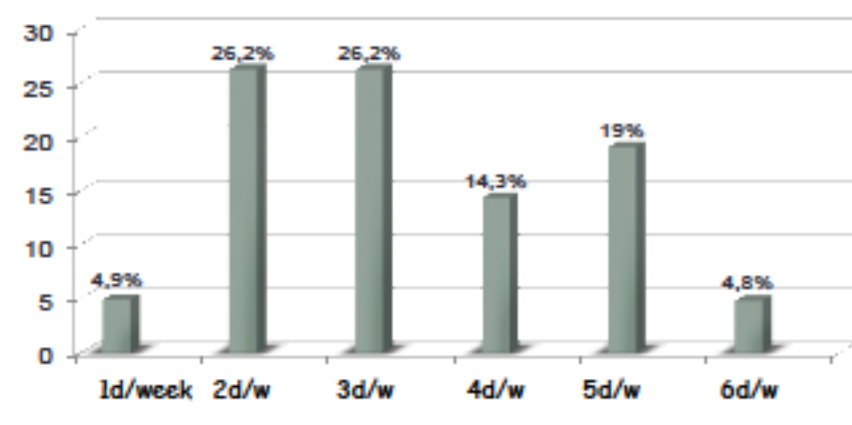
1. Determine the influency about physical activity in glycemic control of diabetic adolescents.
2. Value the smoking and alcohol impact in metabolic control of T1D adolescents.
3. Evaluate the adolescent autonomy in their treatment.
4. Analyse psychosocial factors in the adolescence which affect their control.
5. Know the opinion of adolescents regarding the need to create specific units.

RESULTS:

	Men (N=20) (47,6%)	Women (N=22) (52,4%)
Age	15,77 ± 1,60	15,94 ± 1,62
Age at the onset	8,87 ± 3,78* (1,1 - 16,1)	8,43 ± 3,25 *
Duration of disease	7,13 ± 2,96	7,21 ± 2,75
HbA1c (%)	7,74 ± 1,00	7,5 ± 0,62
Insulin dose (U/Kg/d)	0,93 ± 0,26	0,84 ± 0,28
Number of measurements/d	4,6 ± 0,99	4,55 ± 1,22
Injections/d	4,02 ± 1,07	4,41 ± 1,40
Acute complications (severe hypoglycemia, Ketoacidosis)	14/3	4/7

	Good control (HbA1c ≤ 7,5%) (N=23) (54,8%)	Bad control (HbA1c > 7,5%) (N=19) (45,2%)	
Age	15,77 ± 1,60	15,97 ± 1,66	0,487
Age at the onset	8,87 ± 3,78* (1,1 - 16,1)	8,95 ± 3,86*	0,065
Duration of disease	7,13 ± 2,96	6,15 ± 3,85*	0,047
Sex (%) Women	52,4	39,4	0,184
Treatment (%) MDI	47,6	60,9	0,184
CSII	90,5	5,3	0,000
HbA1c (%)	7,7 ± 1,00	6,87 ± 0,43	0,377
Number of measurements/d	4,6 ± 0,99	4,4 ± 1,06	0,377
Injections/d	4,02 ± 1,07	4,1 ± 0,80	0,000
Insulin dose (U/Kg/d)	0,93 ± 0,26	0,85 ± 0,25	0,830
Basal insulin (%)	50 ± 12,73*	49,36 ± 11,30*	0,830

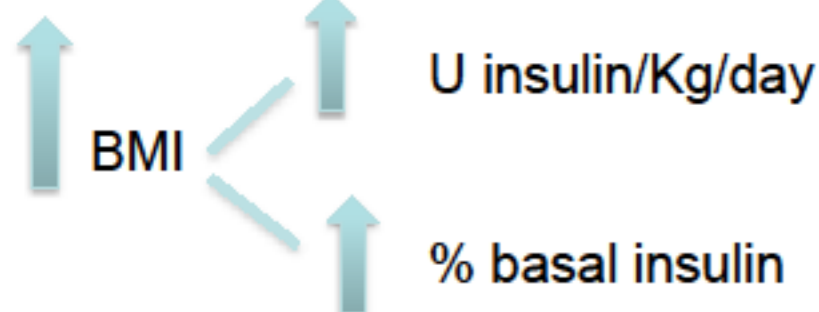
PHYSICAL ACTIVITY



Physical activity < 3 times/week: 35,7%.
> 3 times/week: 64,3%.

	Yes	No
HbA1c	7,4 ± 0,79	8,3 ± 1,08
p		0,016

	Yes	No
Physical activity and BMI	0,112 ± 0,73	0,16 ± 0,65
p		NS



Smoking consumption: Yes 9,5%.

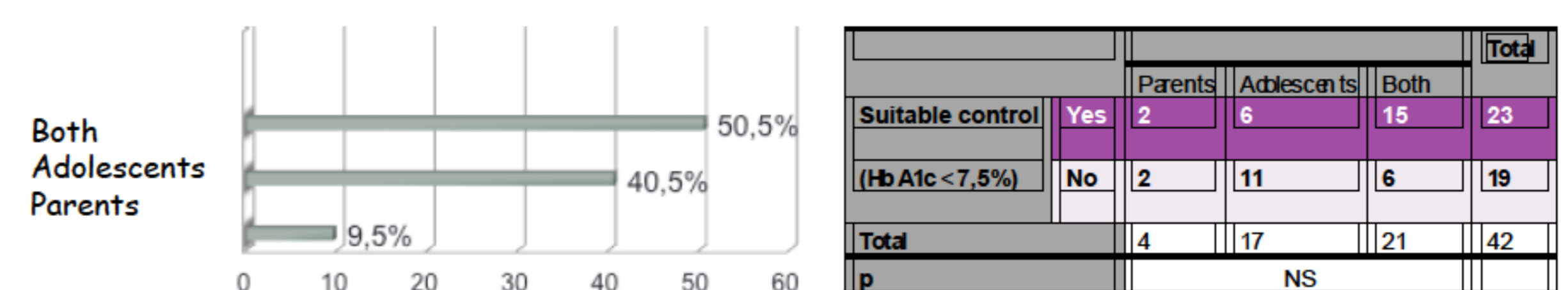
	Yes	No
HbA1c	8,8 ± 0,54	7,58 ± 0,58
p		0,026

Alcohol consumption: Yes 38,1%.

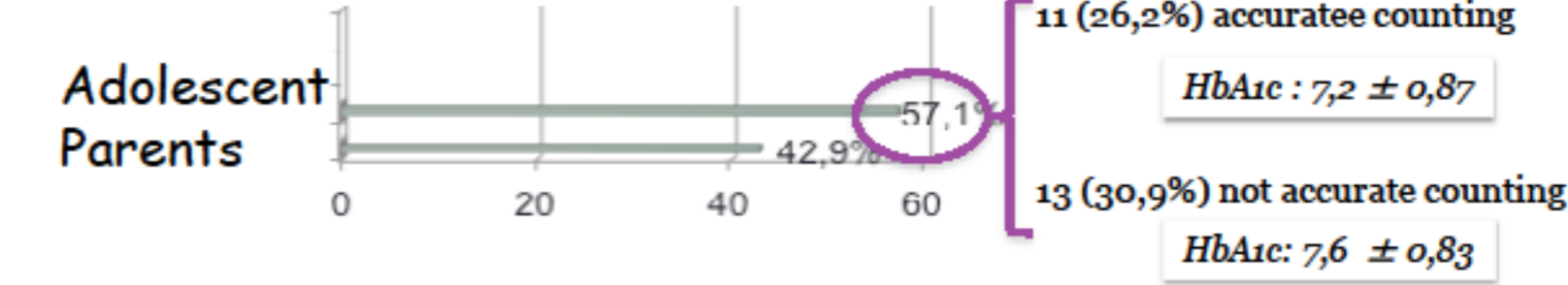
	Yes	No
HbA1c	7,82 ± 0,91	7,78 ± 1,077
p		NS

ADOLESCENT AUTONOMY

Decision to inject insulin



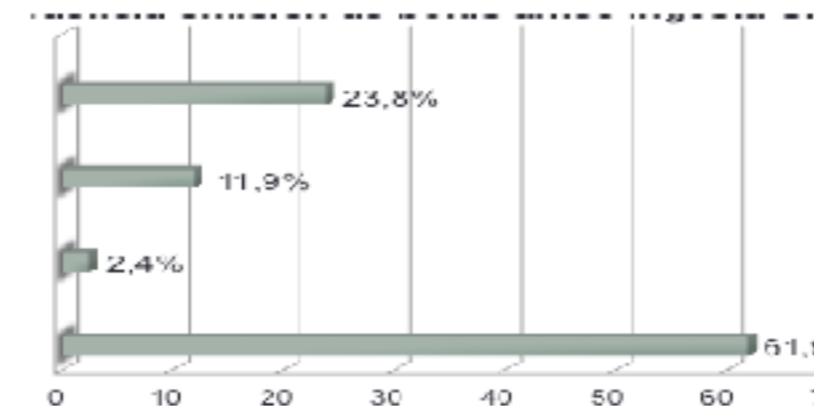
Carbs Counting



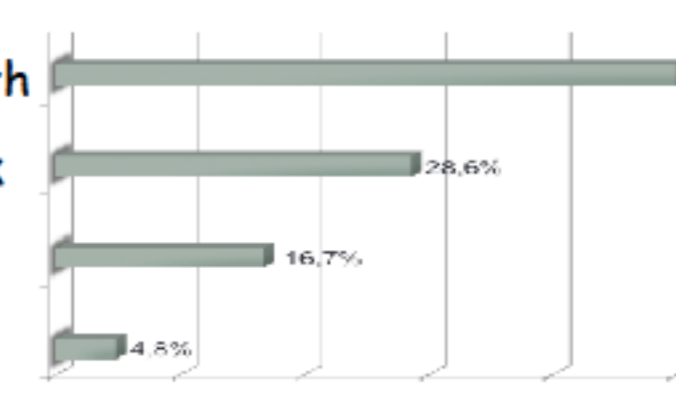
Omission measurements before bolus meal

Omission bolus before meals

1-3 times/month
1-2 times/week
>1 time/day
Never

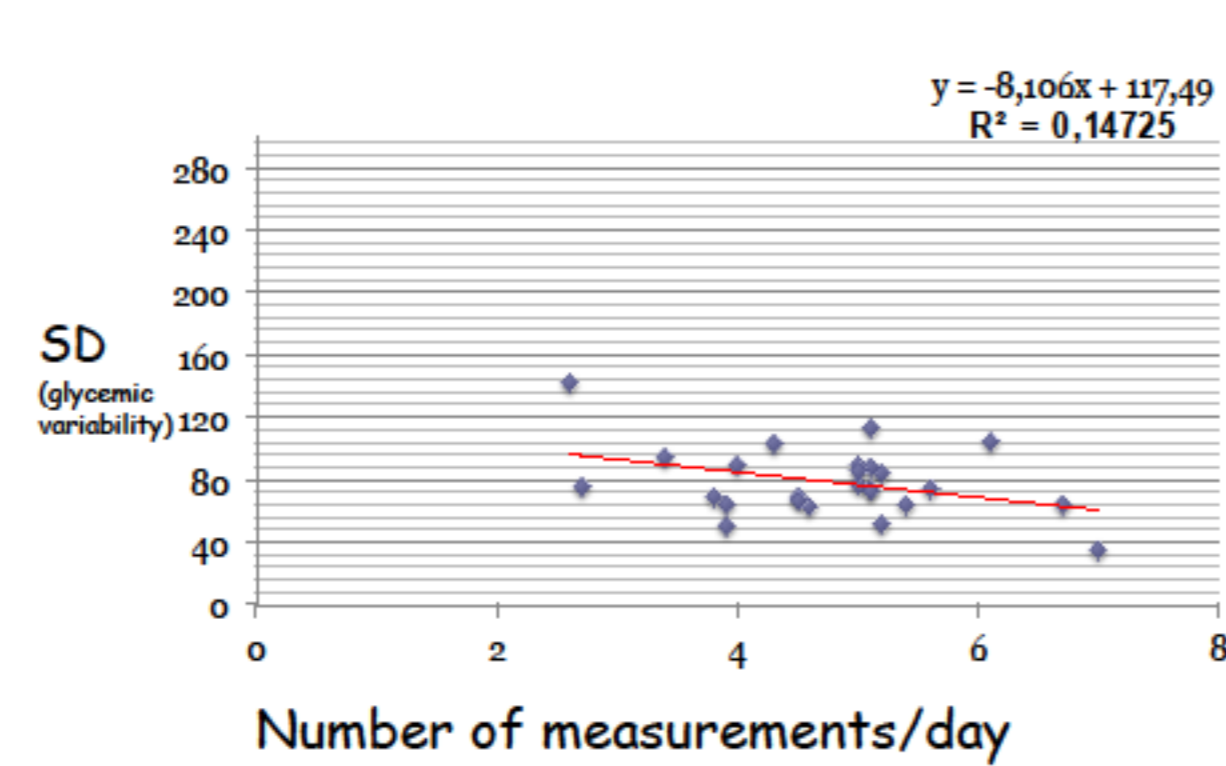
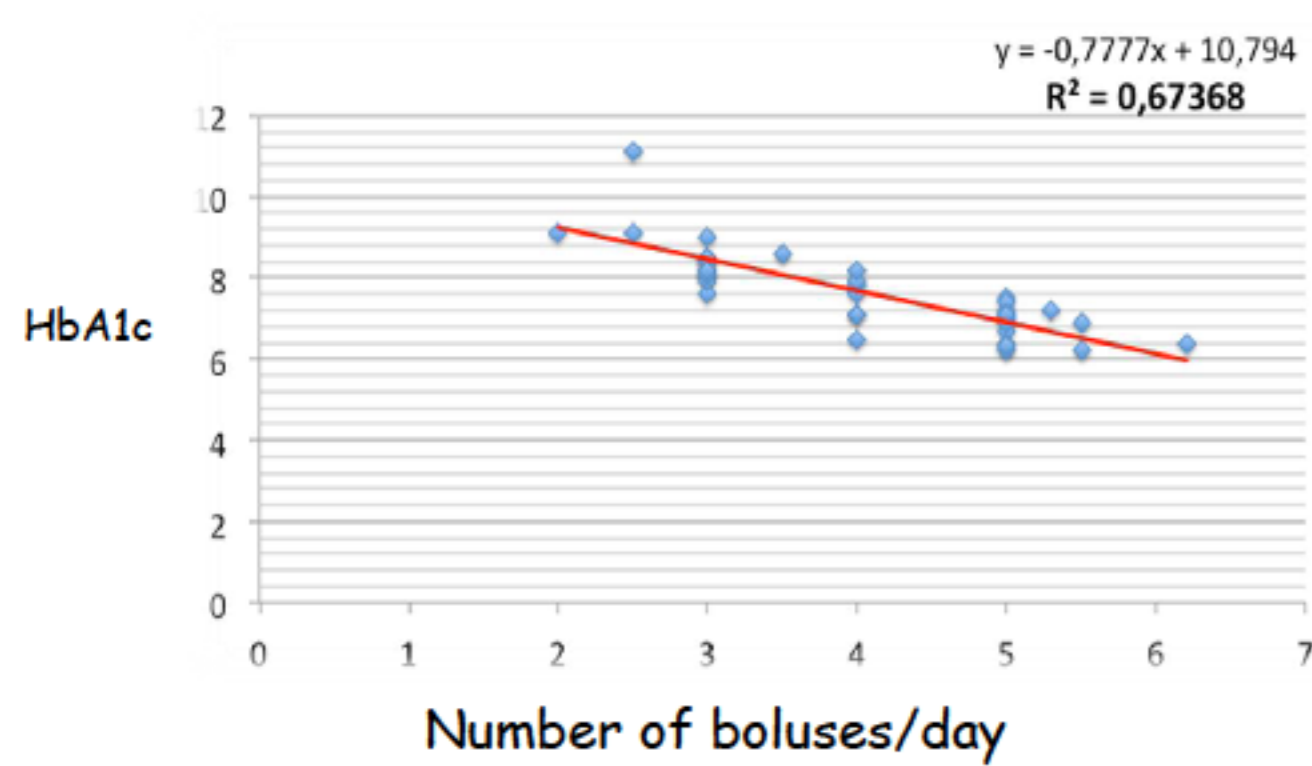


1-2 times/month
1-2 times/week
>1 time/day
Never



	Yes	No
HbA1c	8,35 ± 0,07	7,80 ± 1,016
p		0,098

Control of disease



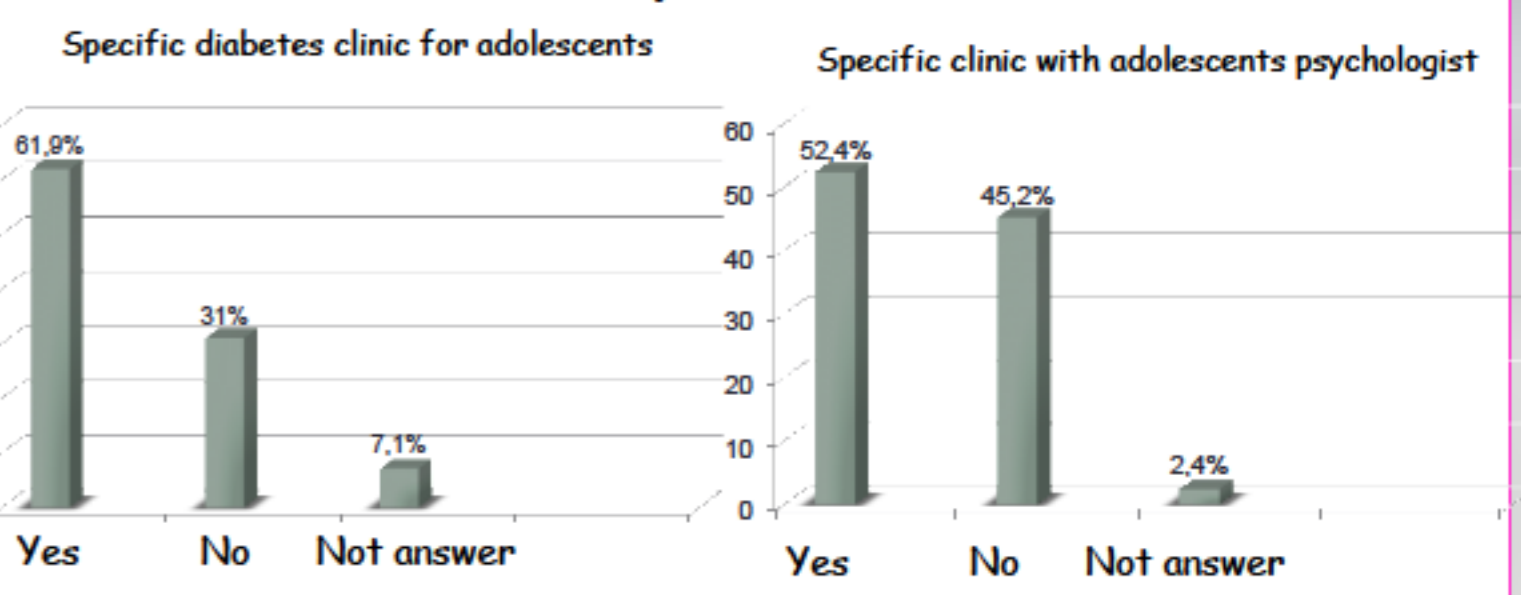
Psychosocial environment

Relatives situation

Split parents: Yes 9,5%. Not: 81%. Not answer: 9,5%.
Someone of parents works outhome: Yes 81%.

Not correlation with worse metabolic control.

Adolescents request



	Yes	No
HbA1c	7,88 ± 0,88	7,88 ± 0,88
p		NS

Those adolescents who request psychologist specific clinic are worse controlled.
23,8% had psychological help

CONCLUSIONS:

1. Exercise done regularly (at least 3 times/week) is associated with better metabolic control.
2. Alcohol and smoking are linked to worse metabolic control.
3. More number of bolus/day is associated to smaller Hb A1c and the number of measurements/day to less glycemic variability.
4. The management under family supervision means better metabolic control (HbA1c).
5. A greater request exists from adolescents to create specific units to guide them on the disease care and psychologic help, specially the worst controlled.
6. Diabetes education review is required for adolescents, mainly if they have longer duration of the disease. Then, it is ensured a suitable transfer to adult units.

