



IMPACT OF A SUMMER CAMP FOR ADOLESCENTS WITH TYPE 1 DIABETES: LONGITUDINAL STUDY

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ABSTRACT

Objective: to characterize adolescents with type 1 diabetes, frequenters of a summer camp, and their evolution in the dimensions of knowledge about the disease, self-efficacy, quality of life and glycated hemoglobin. **Method:** quantitative comparative study before and after the field, with follow-up of six months. Knowledge (test of knowledge about diabetes), self-efficacy (self-efficacy diabetes scale), quality of life (disabkids chronic generic measure) and glycated hemoglobin were evaluated in three moments, from 2018 to 2019, in 30 adolescents with diabetes aged 15 to 18, who participated in a summer camp. **Results:** the adolescents initially had high overall knowledge (>80%) in the area of physical exercise, hypoglycemia and complications of diabetes, and less than 60% on insulin conservation, lancet replacement, meals, glucose monitoring, vomiting, diarrhea and alcohol consumption. Levels of social self-efficacy increased after the colony, but did not continue after six months. There were no changes in the values of glycated hemoglobin and quality of life after the colony. **Conclusion:** the colony produced an effect on social self-efficacy, however, there is no impact on the level of knowledge and quality of life of the participants. The results suggest the implementation of structured programs focused on promoting diabetes self-management.

Keywords: Adolescent. Diabetes Mellitus Type 1. Camping. Knowledge. Self Efficacy. Quality of Life.

INTRODUCTION

Type 1 diabetes (DM1) is the most common endocrine disorder in childhood, with a higher incidence in adolescence⁽¹⁾. Currently, estimates reveal 1.1 million children and young people with DM1 worldwide⁽¹⁾.

The management of DM1 is an autoimmune disease characterized by the progressive destruction of pancreatic beta cells⁽²⁾, refers not only to the chronicity condition as well as the requirement of treatment and respective care, with regard to the feeding triad, physical exercise and insulin therapy^(3,4).

Adolescence is a stage of development that involves changes in cognitive, biological and psychosocial levels, being a transition period for autonomy and independence⁽⁵⁾. During adolescence, there is an increased risk of deterioration of metabolic control related to

eating habits and exercise practice, low adherence to treatment, risk behaviors, mental health problems, endocrine changes associated with puberty, which can increase resistance to insulin^(5,6).

Glycemic control is measured through glycated hemoglobin (HbA1c), being the result of a laboratory analysis that indicates the average blood glucose of the last three months; in adolescents values below 7% are recommended^(6,7).

A qualitative study with 16 adolescents with DM1 reported that the main care related to disease management is based on healthy eating, glycemic monitoring, insulin administration, signs of glycemic lack of control and physical activity⁽⁸⁾. Therapeutic education in DM1 management is crucial in disease control. In an integrative review of insulin therapy, the following educational

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strategies were considered: use of printed material, individual or group orientation, audiovisual resource and clinical simulation⁽⁹⁾.

The summer camps for adolescents with DM1 are informal contexts of intervention, where participants can share their experiences among peers, and learn about daily management of the disease, with supervision and support from a multidisciplinary team⁽¹⁰⁾. Camps are a complement to therapeutic education, allowing new learning, knowledge and better metabolic control⁽¹¹⁾ with adjustment of disease management strategies, under the supervision of a multidisciplinary team⁽¹⁰⁾.

Summer camps have been reported as contexts of interest for intervention in adolescents with DM1, with an impact on the level of self-efficacy, quality of life and glycemic control⁽¹⁰⁾. The organization of these camps is common practice in different organizations that accompany adolescents with chronic disease. However, in Portugal, little is known about their impact on adolescents with DM1.

Self-efficacy beliefs influence adherence to self-care, and greater perception of self-efficacy is associated with greater performance of self-care behaviors. The ability to achieve the goal increases the perceived effectiveness, motivation for change and the efforts it will undertake. Health beliefs are determinant in the way a person manages the disease⁽¹²⁾. For Bandura (1989), self-efficacy is the belief that the person is able to perform a behavior successfully, and control his motivation, thought processes and behavior patterns⁽¹²⁾. In turn, quality of life is a multidimensional construct based on four dimensions of individual perception: physical quality of life, psychological quality of life, social relationship and the environment where the person lives. It considers each person's perception of their life, inserted in a cultural and values context, with a view to personal goals, expectations, standards and preoccupations⁽¹³⁾.

Taking into account the relevance of the holiday colonies, this study intended to answer the following questions: What are the knowledge, self-efficacy, and quality of life of

adolescents who attend a vacation camp specific to DM1? What is the impact of a summer camp on the knowledge, self-efficacy, quality of life and HbA1C of adolescents with DM1?

The present study aimed to characterize adolescents with type 1 diabetes attending a summer camp, and its evolution in the dimensions of knowledge about the disease, self-efficacy related to disease management, quality of life and HbA1C.

METHOD

A quantitative study was carried out, comparing before and after the camp, and follow-up of six months. The study took place in Portugal, in a summer camp organized by the Portuguese Diabetic Protective Association (APDP - *Associação Protetora dos Diabéticos de Portugal*). Data were collected from August 2018 to February 2019.

The study was presented by the health team to the adolescents and their parents one month before the colony. The adolescents responded to self-report instruments in three moments: (T0) before the camp, (T1) on the last day of the camp and (T2) after 6 months. An APDP nurse sent an email to the parents with a link, so that the parents could access the instrument providing it to their children, so that they could individually fill in the instruments online, without including identification data. A code was sent to the participants associated with the questionnaire, for inclusion in the three moments of data collection, in order to allow associating the questionnaires to each participant anonymously.

Blood tests to obtain HbA1C were performed in the APDP, by the care team, in the consultation that preceded the summer camp and six months later.

The initial sample consisted of 30 adolescents with DM1 from 15 to 18 years old, who participated in the summer camp. A convenience sample was constituted with the adolescents who attended the colony. Sample loss was observed between the three moments of evaluation T0=30, T1=25 and T2=18. The selection criteria for participation in the colony were pre-established by the health

adolescents who were in need of greater intervention for the development of autonomy for the management of DM1. All participants in the field were invited and accepted to join the study.

The summer camp took place over six days. The team that accompanied these adolescents was composed of 2 doctors (endocrinologist and pediatrician), 2 nurses specialized in DM1, 1 nutritionist, 1 psychologist and 1 operational assistant. The team also included 4 adolescents with the role of monitors who participated as group leaders and liaison between the group and the health team, and 2 super-monitors (young adults who are experts in the management of DM1, members of the Youth Center of APDP) who participated in the planning and development of the activities of the colony, and assumed the role of moderators in the exclusive activities of the youth group. The activities developed were essentially recreational and sports (canoeing, nautical games, climbing, slide and rappel), complemented with meetings with health professionals. These meetings, defined as "informal conversations", took place throughout the colony, involving all adolescents, and were intended to address issues related to improving diabetes management, nutrition, self-control, physical exercise and insulin administration. The themes were developed in response to questions or needs shared by the group. Group sessions were also held with the psychologist who addressed issues related to the management of emotions towards DM1 and sought to clarify doubts about the experience of living with DM1.

Study variables and instruments

To assess the knowledge of adolescents about DM1, the Knowledge About Diabetes Test (TCAD - *Teste de Conhecimentos Acerca da Diabetes*)⁽¹⁴⁾ was applied, consisting of 25 questions, with three answer options of which only one is correct, organized into five domains: 1. Nature of the disease/pathophysiology (3 items) (for example, *What is DM1?* a) It is a disease in which the pancreas stops producing insulin; b)

It is a disease in which the pancreas produces less insulin, c) It is a disease in which the pancreas consumes glucose); 2. Acute and chronic complications of DM1 (6 items) (e.g., *One cause of hypoglycemia is:* a) Administer less insulin than necessary; b) Eat more than usual, c) Administer more insulin than necessary). 3. Administration of insulin (3 items) (for example, *Care to be taken when administering insulin with pen:* a) After administering insulin keep the needle inserted for at least ten seconds; b) After administering insulin immediately remove the needle from the skin; c) Always make skin fold to administer insulin). 4. Evaluation of capillary blood glucose (2 items) (for example, *For capillary blood glucose monitoring:* a) Evaluation of capillary blood glucose is not necessary before a meal provided that carbohydrates are quantified; b) Knowing hair glucose while fasting and at night allows you to adjust the insulin of meals c) Even if you use a flash glucose monitoring system (Freestyle Libre®), you should whenever necessary monitor hair glucose).

5. Maintaining health and disease control (6 items) (for example, *in relation to carbohydrate counting in a processed food with a nutrition label?* a) This should be the information to be used for hydrate counting; b) No milk hydrate and derivatives are accounted for; c) No fresh legume hydrates (e.g.: peas and broad beans).

The overall level of knowledge results from the formula: number of correct answers/total number of items x 100, ranging from 0 to 100%. In the original study, an internal consistency was obtained through the Kuder-Richardson (KR) of KR-20=0.664, considered reasonable⁽¹⁵⁾. In the present study, the value was KR-20=0.526, so we chose to analyze the results individually by item of the instrument, considering the total value of the scale for an overall assessment of knowledge. Five items were also added related to the current evolution in the management of DM1 and the flash system (sensor that allows the monitoring of interstitial glycaemia over 24h) and the Continuous Subcutaneous Infusion of Insulin (CSII).

The Self-Efficacy Diabetic Scale (SEDS) (Grossman et al., 1987; Portuguese version of Pereira & Almeida, 2004) is composed of 30 items organized in three dimensions. Self-efficacy in treatment (TA) (17 items) (e.g., *Taking insulin on my own*); Social self-efficacy (SA) (9 items) (e.g., *Speaking easily to a group of people I don't know at a party*); Trust (e.g., *Explaining to one my opinions, in a class*).

The answers are marked on a Likert scale, with five alternatives from 1- I can not for sure up to 5- With you for sure). The scale allows to obtain a score for each dimension and a global score (General Self-efficacy), considering the average value of the responses in each dimension and in the total scale, respectively. In the study of the Portuguese version, Chronbach's alpha values varied between 0.62 and 0.90⁽¹⁶⁾. In the present study, the internal consistency of the SEDS was, for the overall value of $\alpha = 0.947$, and for the dimensions for AT $\alpha = 0.945$; AS $\alpha = 0.783$; Confidence $\alpha = 0.555$. The latter is inadequate and so this dimension has not been considered.

DisabKids Chronic Generic Measure – short version⁽¹⁷⁾ Portuguese version⁽¹⁷⁾. This instrument evaluates the Quality of Life Related to Health (HRQoL) of children and adolescents between 8 and 18 years with chronic disease. The short version of the generic module consists of ten items that assess the impact of health status in the mental, social and physical domains and two items that assess the impact of treatments. Responses are in the last four weeks. Dimension quality of life (DQOL) (ex., *Feel the same as other people despite their health problem?*); Dimension treatment (DT) (ex., *Gets bored for taking their medicines?*). Answers are marked on a Likert scale with five alternatives from 1 (never) to 5 (always). In the Portuguese version, the Chronbach's alpha coefficient varied between 0.82 and 0.90¹⁸. In the present study this value was 0.92 and 0.86 in DQOL and DT, respectively.

Data treatment and analysis

Data analysis was performed using the SPSS program (Statistical Package for the

Social Sciences) version 25 for Windows. Kuder-Richardson (KR-20) was used to evaluate the internal consistency of the TCAD. Considering that the values of internal consistency were low, the individual analysis of the items was chosen in order to evaluate the specific knowledge evaluated with each item. Chronbach's alpha was used to evaluate the internal consistency of SEDS and DisabKids. Descriptive statistics (measures of central tendency and dispersion) were used and the respective tests were applied to verify the assumptions for the use of parametric tests (verification of normality with the Shapiro-Wilk test and correction of Liliefors). For not validating the assumptions of normality of the distribution of the values of these questionnaires in this sample, a non-parametric approach was chosen for paired samples (Friedman test). Regarding knowledge about the disease, to analyze the right and wrong answers, we used the Q Cochran test for dichotomous variables in paired samples.

The Wilcoxon test and Fisher's exact test were applied to analyze the differences introduced by the independent variables (sex, age group, time of diagnosis, form of insulin administration and previous experience of colony frequency). To evaluate any differences in the group according to the independent variables sex, age group, time of diagnosis, form of insulin administration and experience prior to the colony in self-efficacy and HRQoL, the Mann-Whitney test was used at the first time (T0).

The study received a favorable opinion from the ethics committee of the Portuguese Diabetic Protective Association. Adolescents and their parents were asked for signed, free and informed consent. All field participants were invited and agreed to participate in the study. The codification of the questionnaires for the three moments of evaluation and data pairing ensured the anonymity of the participants.

RESULTS

At the first time of evaluation (n=30), the sample consisted of 16 female adolescents and 14 male from 13 to 18 years, with a mean of

15.24 years (SD=1.50). Most had been diagnosed with DM1 for more than 8 years (56.7%), used the PSCI (73.3%) and were attending the colony for the first time (63.3%). The retention rate in T1 was 83.3% (n=25) and in T2 of 60% (n=18) so the comparative evolution analysis between moments could only be done with 18 participants. Despite the diligence to obtain the evaluation of all participants in the three moments, the answers received were progressively in lower number in both T1 and T2.

Knowledge about the disease

The participants presented, at the initial moment, high levels of global knowledge, with Scores higher than 80% in the different domains of knowledge evaluated and maintained throughout the three moments (Table 1). There stands out the knowledge about the practice of physical exercise, reference value for hypoglycemia and hyperglycemia, and complications of diabetes 100% correct answers in the three moments. There were, however, areas of lesser knowledge, namely the storage and conservation of insulin (56.7%), lancet

replacement (30%), meals (40%), variation of capillary glycemia (53.3%), flash monitoring system (63.3%), PSCI (72.2%), vomiting and diarrhea (50%) and consumption of alcoholic beverages (53.3%).

Considering the evolution of the results per item, there was a statistically significant difference in the results of item 22 (capillary blood glucose monitoring), with a decrease in correct responses over the three moments and a significant difference between T0 and T2. In contrast, according to table 1, some items related to the management of hypoglycemia (p=0.368), glucose monitoring (p=0.368), glycemic variability (p=0.641), insulin conservation (p=0.895) and management of alcohol consumption (p=0.761) improvements in knowledge levels, although without significant differences.

It was also sought to assess whether knowledge about the disease varied according to demographic and clinical variables, and only in the question related to the therapy of insulin administration with pump, and replacement of the cannula, the boys showed better knowledge when compared with female adolescents.

Table 1. Proportion of Correct Answers per item and analysis of differences (Cochran's Q Test) and Global Value (Friedman's Test) at T0, T1 and T2 (/n=18)

Item	T0 n=18	T1 n=18	T2 n=18	Cochran's Q Test	
	%	%	%	Q	p
Q1 - What is DM1	96,7	100,0	94,4	1,000	0,607
Q2 - What are the causes of DM1	93,3	96,0	88,9	1,000	0,607
Q3 - Carbohydrates in a food with a nutritional label	93,3	88,0	100,0	4,000	0,135
Q4 - What are the symptoms of excessive blood sugar	96,7	92,0	94,4	0,000	1,000
Q5 - From what values is hypoglycemia considered?	100,0	100,0	94,4	2,000	0,368
Q6 - One of the causes of hypoglycemia is:	93,3	96,0	100,0	1,000	0,607
Q7 - Could these be symptoms of	90,0	92,0	94,4	0,500	0,779
Q8 - Proceed with hypoglycemia of 60mg/dl	80,0	92,0	88,9	1,143	0,565
Q9 - You may be considered hyperglycemic if:	100,0	100,0	94,4	2,000	0,368
Q10 - Complications of poorly controlled diabetes?	100,0	96,0	94,4	- (**)	- (**)
Q11 - Insulin administration sites	93,3	96,0	100,0	2,000	0,368
Q12 -Do you store and preserve the insulin after it has been opened?	56,7	100,0	100,0	0,222	0,895
Q13 - Insulin administration with pen	80,0	88,0	94,4	0,667	0,717
Q14 - When assessing capillary blood glucose, you should:	100,0	100,0	94,4	2,000	0,368
Q15 -The lancet for the assessment of capillary blood glucose must:	30,0	24,0	24,0	0,857	0,651
Q16 - What meals should a teenager with DM1 eat?	40,0	44,0	38,9	0,286	0,867
Q17 - Do you practice physical exercise?	100,0	100,0	100,0	-	-
Q18 - Before practicing physical exercise, an adolescent:	100,0	100,0	100,0	-	-
Q19 - The variation in blood glucose is related to:	53,3	56,0	61,1	0,889	0,641
Q20 - Diet for a teenager with DM1:	96,7	100,0	100,0	2,000	0,368

Q21 ¹ - Insulin administration with pump:	72,2	64,3	66,7	1,750	0,717
Q22 - Regarding capillary blood glucose monitoring:	93,3	88,0	77,8	8,000	0,018
Q23* - Flash glucose monitoring system:	63,3	100,0	93,8	1,333	0,368
Q24 - In a situation of vomiting and diarrhea, one should:	50,0	60,0	44,4	0,264	0,264
Q25 - When drinking alcoholic beverages:	53,3	56,0	61,1	0,545	0,761

OVERALL KNOWLEDGE	84,4	81,9	81,3	-	0,225***
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Note. * The number of validated responses does not include the alternative "Not applicable". ** In the case of items with 100% correct answers at T0, these are not recognized as dichotomous and it is not possible to calculate differences". *** Friedman test.

Table 2 shows that self-efficacy values were already relatively high before starting the vacation colony (>4), with a slight decrease, although without statistical significance, from

T0 to T2. However, in social self-efficacy, there was a slight increase after the colony with a statistically significant decrease six months after the follow-up.

Table 2. Comparison of Self-efficacy between Moments (n=18) (T0/T1/T2)

	Evaluation of Self-efficacy between Moments ($\bar{X}/SD$)			Friedman's Test	
	(T0)	(T1)	(T2)	χ^2	p
SE treatment	4,26 / 0,63	4,33 / 0,61	4,10 / 0,80	1,968	0,374
SE Social	4,19 / 0,52	4,36 / 0,51	3,93 / 0,86*	6,590	0,037
SE Global	4,17 / 0,78	4,25 / 0,54	3,96 / 0,77	2,571	0,276

Note. *p<0.05 results related to the Friedman Test. Max=5 Min=1 SE= Self-efficacy

Table 3 shows relatively high values in DQOL and DT in T0 (>4), which remained

throughout the three moments.

Table 3. Comparison of HRQoL (n=18) (T0/T1/T2))

	Evaluation of Self-efficacy between Moments ($\bar{X}/SD$)			Friedman's Test	
	(T0)	(T1)	(T2)	χ^2	p
DQOL	4,28 / 0,64	4,38 / 0,75	4,16 / 0,73	5,607	0,061
DT	4,02 / 0,89	4,04 / 1,25	4,17 / 1,10	1,118	0,572

Note. Min.=1, Max.=5 DQOL= Dimension Quality of Life; DT= Dimension Treatment

Finally, Table 4 shows that all participants performed a HbA1c survey (n=30) before the colony and six months after. The results

remained high with an average of 8%, with no statistically significant differences between T0 and T2.

Table 4. Glycated Hemoglobin T0 / T2 (n=30)

	Glycated Hemoglobin					Wilcoxon's test	
	$\bar{X}$	Md	SD	x _{min}	x _{max}	Z	p
Before the Camp	8,04	7,60	1,17	6,3	11,0	-0,402	0,688
After the Camp	8,07	7,75	1,11	6,4	10,5		

DISCUSSION

With regard to adolescents with DM1 who attended a summer camp, it was possible to analyze over three moments, how they evolved in terms of knowledge, self-efficacy, HRQoL and evolution at the level of glycated hemoglobin.

A first domain evaluated was the knowledge of adolescents about their disease

and treatment. Knowledge is a determining factor for glycemic control, adherence to treatment⁽¹⁹⁾ and adherence to insulinotherapy⁽²⁰⁾, being a necessary condition for self-management of the disease⁽¹⁰⁾. An educational intervention in the context of a summer camp revealed gains in knowledge about self-control, nutrition and the adoption of new behaviors⁽²⁰⁾. The adolescents, before starting the summer camp, already

demonstrated high knowledge about diabetes, in particular about the management of hypoglycemia, complications of diabetes and the practice of physical exercise, which is a good indicator of the work developed by the teams that accompany them.

However, weaknesses were also observed in this knowledge, and in some domains, a high number showed ignorance in the topics related to the storage and conservation of insulin and lancet replacement. This situation may be related to the fact that 73.3% of participants use CSII and do not value this care in their daily lives. Weaknesses were also observed in other knowledge related to the storage and conservation of insulin, replacement of lancets, meals, variation of capillary glycemia, flash monitoring system, management of acute disease (vomiting and diarrhea) consumption of alcoholic beverages, which reveals the need for intervention focused on the dimensions identified.

Considering the evolution over the three moments in some domains of crucial relevance in the management of DM1, there was a slight, non-significant increase in the percentage of certain responses in the items: hypoglycemia, flash monitoring, insulin conservation and storage, variation of capillary glycemia and alcohol consumption.

Regarding the measure of self-efficacy, a systematic review with meta-analysis that evaluated the advantages of participating in vacation colonies as well as the psychological effects on participants showing gains in knowledge in the short term after the camp⁽¹⁰⁾. However, in this study, there was an increase in wrong responses (e.g. lancet substitution, meals, CSII and vomiting and diarrhea), which suggests a need to work on these items. The overall average self-efficacy values were quite high before the colony, and did not change significantly over the three evaluation moments, with the exception of social self-efficacy that decreased significantly in the 6-month follow-up, although slight ascent immediately after the camp. These results suggest that the colony may have had some positive effect, probably due to the opportunity to learn and train social skills in a peer group, but point to the need for continuity

of contact between participants over time. In the study conducted by Troncone et al.⁽²¹⁾, which sought to assess the impact of a summer camp for adolescents and children with DM1, there were no improvements in self-efficacy. The authors highlight as a limitation the short duration of the colony, considering that seven days is insufficient to produce long-term effects⁽²¹⁾. These results also reinforce the need for a continuous follow-up by the team, in order to reinforce the skills developed throughout the holiday colony.

With regard to the impact of the colony on HRQoL, it was found that adolescents already had relatively high values before starting the colony, values that remained after it. These results are consistent with the study that evaluated the effectiveness of a program in the context of vacation camp, and there were no gains at the level of HRQoL⁽²²⁾. Also in the study reporting the implementation of a program for adolescents with DM1, there were no gains in HRQoL⁽²²⁾. Also in a study that refers to the implementation of a program over a year of intervention that culminated in the realization of a vacation colony, there were no statistically significant differences in HRQL⁽²⁰⁾.

Regarding HbA1c, the results corroborate other studies that have reported difficulties in obtaining gains^(10,23). In a study that correlated HbA1c and quality of life, the results revealed that adolescents with better metabolic control also had better quality of life⁽²⁴⁾.

The results of this study indicate a small advantage in knowledge and absence of significant changes in the other indicators evaluated. However, the results should be analyzed taking into account their limitations, namely: the study design, without control group, the small number of participants and the sample loss over the three moments (retention rate of 60%). No other indicators of well-being and satisfaction that could have registered possible positive developments were evaluated.

CONCLUSION

The results suggest the need for a more consistent intervention at the level of the

holiday colonies, with the implementation of structured and solid programs, focusing on the promotion of self-management of DM1, essential for the autonomy of adolescents in diabetes management. Despite the importance of establishing links between peers with equal disease condition, it is necessary for teams to differentiate in the implementation of interventions focused on the development of adolescent autonomy, self-care and self-management skills, management of the conscious disease, with effects in minimizing the complications arising from the evolution of the disease.

The results at the level of self-efficacy, with

particular reduction at six months, reinforce the need for continuity of peer contact in the post-camp period. It would be recommended that adolescents remain in contact, and may for this purpose resort to complementary activities, developed by the team, that strengthen the ties between the participants.

It is recommended the development and implementation of structured intervention focused on the areas of knowledge identified and the promotion of self-management of adolescents with DM1, taking place in parallel with the playful and therapeutic activities of the field, replication of the study in a larger sample.

IMPACTO DE UMA COLÔNIA DE FÉRIAS PARA ADOLESCENTES COM DIABETES TIPO 1: ESTUDO LONGITUDINAL

RESUMO

Objetivo: caracterizar adolescentes com diabetes tipo 1, frequentadores de uma colônia de férias, e sua evolução nas dimensões do conhecimento acerca da doença, na autoeficácia, qualidade de vida e hemoglobina glicada. **Método:** estudo quantitativo comparativo antes e após o campo, com *seguimento* de seis meses. Foram avaliados o conhecimento (teste de conhecimentos acerca da diabetes), a autoeficácia (*self-efficacy diabetes scale*), a qualidade de vida (*disabkids chronic generic measure*) e a hemoglobina glicada, em três momentos, de 2018 a 2019, em 30 adolescentes com diabetes dos 15 aos 18 anos, que participaram numa colônia de férias.

Resultados: os adolescentes apresentavam inicialmente conhecimento global elevado (>80%) na área do exercício físico, hipoglicemia e complicações da diabetes, e inferior a 60% sobre conservação de insulina, substituição de lanceta, refeições, monitorização de glicose, vômitos, diarreia e consumo de bebidas alcoólicas. Os níveis de autoeficácia social aumentaram após a colônia, contudo não se mantiveram após seis meses. Não se observaram alterações nos valores da hemoglobina glicada e na qualidade de vida após a colônia.

Conclusão: a colônia produziu efeito na autoeficácia social, contudo, não se pode afirmar impacto ao nível dos conhecimentos e qualidade de vida dos participantes. Os resultados sugerem a implementação de programas estruturados, com foco na promoção da autogestão da diabetes.

Palavras-chave: Adolescente. Diabetes Mellitus Tipo 1. Acampamento; Conhecimentos. Autoeficácia. Qualidade de Vida.

IMPACTO DE UNA COLONIA DE VACACIONES PARA ADOLESCENTES CON DIABETES TIPO 1: ESTUDIO LONGITUDINAL

RESUMEN

Objetivo: caracterizar adolescentes con diabetes tipo 1, frequentadores de una colonia de vacaciones, y su evolución en las dimensiones del conocimiento acerca de la enfermedad, en la autoeficacia, calidad de vida y hemoglobina glicosilada. **Método:** estudio comparativo cuantitativo antes y después del campo, con un *seguimiento* de seis meses. Fueron evaluados el conocimiento (test de conocimientos acerca de la diabetes), la autoeficacia (*self-efficacy diabetes Scale*), la calidad de vida (*disabkids Chronic Generic Measure*) y la hemoglobina glicosilada, en tres momentos, de 2018 a 2019, en 30 adolescentes con diabetes de 15 a 18 años que participaron en una colonia de vacaciones. **Resultados:** los adolescentes presentaban inicialmente conocimiento global elevado (>80%) en el área del ejercicio físico, hipoglucemia y complicaciones de la diabetes, e inferior a 60% sobre conservación de insulina, sustitución de lanceta, comidas, monitoreo de glucosa, vômitos, diarrea y consumo de alcohol. Los niveles de autoeficacia social aumentaron después de la colonia, pero no se mantuvieron después de seis meses. No se observaron alteraciones en los valores de la hemoglobina glicosilada y en la calidad de vida después de la colonia. **Conclusión:** la colonia ha producido efecto en la autoeficacia social, sin embargo, no se puede afirmar impacto al nivel de los conocimientos y calidad de vida de los participantes. Los resultados sugieren la implementación de programas estructurados, con enfoque en la promoción de la autogestión de la diabetes.

Palabras clave: Adolescente. Diabetes Mellitus Tipo 1. Campamento. Conocimientos. Autoeficacia. Calidad de Vida.

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