

More⁺ oral health with ProSorriso Program

Summary

INTRODUCTION AND OBJECTIVE. The proactive involvement of health and education professionals with a focus on development transition groups is an important pillar for achieving the oral health goals for 2020 established by the World Health Organization and require reinforcement of actions for health promotion and prevention of oral diseases. Thus, it is justified to develop a program of oral health promotion in schools, such as ProSorriso (Costa, 2014), in order to evaluate the effectiveness of the Program.

METHODS. Quasi-experimental study, with measures' application before and after the implementation of the ProSorriso Program, in 200 adolescents, aged between 11-16 years (mean of 13.21 ± 1.014 years). This Program is developed in three phases: diagnosis, intervention and evaluation of the oral health of adolescents. The application of the Questionnaires of Eating Habits, Oral Hygiene and Oral Health Knowledge, as well as mouth observation according to WHO criteria (1997), occurred before and after participation in the program.

RESULTS. Adolescents improved their oral health after active participation in ProSorriso, presenting fewer decayed teeth and more filled teeth. Their dental plaque biofilm also improved with significant benefits for adolescents who benefited from the Program interventions ($t = 7.389$; $p = .000$). Adolescents' knowledge about oral health and nutrition enhanced significantly after participation in the ProSorriso Program ($t = -6.510$; $p = .000$); ($t = 2.523$; $p = .012$).

CONCLUSIONS. Adolescents improved their health status, eating habits, hygiene and oral health knowledge, recognizing the effectiveness of the implementation of the ProSorriso Program as a determinant of adolescents present and future health.

KEYWORDS: ADOLESCENT, ORAL HEALTH, PROSORRISO PROGRAM.

Introduction

The promotion of health has been conceptualized as a public health action oriented to increasing individual control over health determinants, notably through the implementation of health policies and the identification and development of living conditions in their different settings (school, leisure, etc.) that influence the behavior more or less directly¹. According to the Ottawa Charter, a source of inspiration and guidance for further action², health promotion, based on salutogenic paradigm, aims to control the behavioral, psychosocial, and environmental factors, highlighting the aspects that affect their health positively in order to improve it³.

Given its importance, the health promotion is considered a strategy which

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needs to be incorporated into all dimensions of life (individual, social and environmental). For this, on the main factors that determine health, is required the development of diversified activities, based on health promotion actions related and complementary, and that can be systematized in three areas of intervention³: health education (process using the pedagogical communication to facilitate the health learning), disease prevention (set of measures to prevent, detect early and treat specific diseases and possible consequences) and health protection (set of measures for the control of environmental risk factors and the conservation of natural resources).

The Declaration of Liverpool on Oral Health Promotion in the XXI century, in September 2005, enshrines the school as a platform for the promotion of health, quality of life and disease prevention in children and adolescents and provides for the involvement of families and rest of the community.

Methods

The school as a place of election to establish healthy lifestyle habits, should assume that the promotion and health education is a training, participation and accountability process, that should lead children and adolescents to feel competent, happy and valued, by adopting and maintaining healthy lifestyles⁴. It takes rather a response organized around the surrounding system so that health education has influence on people's lives and their daily lives, in order to they acquire skills and thus make an informed choice, thereby contributing to improve their quality of life, development and consolidation of literacy to health⁵.

According to the National School Health Program, one of the priority areas for the promotion of quality of life is the oral health^{6,7}. It is in this context that the various partners, the 3rd cycle school clusters and cluster health centers of Lafões region, participated in the implementation of the Program for Promotion of Oral Health – “ProSorriso in Adolescents”.

It was defined as a general research question “What is the impact of the implementation of an Oral Health Program (ProSorriso) on quality of life related to adolescents oral health?”.

The aim of developing this program was to contribute to the improvement of oral health indicators diagnosed in adolescents and the promotion of oral health in adolescents⁸. Looking to be a value added to the National Program for Promotion of Oral Health, which draws a global intervention strategy based on the promotion of health, prevention and treatment of oral diseases, developed over the lifecycle and environments where children and young people live and study⁹.

The study type of the implementation of the educational intervention program in adolescents ProSorriso is quasi-experimental, before and after, without control group¹⁰⁻¹¹. The study was commissioned by the General Curriculum Innovation and Development Department and the Ethics Committee of Health School of Viseu.

In the collection of information, the instruments used were: Questionnaire about Oral Hygiene Habits and Knowledge of Oral Health; Health Assessment Form¹²⁻¹³.

The completion of the field work required preliminary definitions that would ensure the established planning. Thus, the study was conducted in three phases.

In the first phase was carried out the random selection of four schools of the 3rd cycle of basic education in the central region of Portugal. Were encompassed in the study adolescents who voluntarily participated and presented the consent form signed by parents/guardians, and participated in all education sessions for health and/or data collection, constituting the study sample 200 adolescents.

At this stage we proceeded to the data collection, evaluation of the oral cavity (DMFT and OHI-S) and were given a single oral hygiene kit (toothbrush and toothpaste). The DMFT index record was calculated based on procedures recommended by WHO¹⁴. The Simplified Oral Hygiene Index (OHI-S) was obtained based on an objective examination of the oral cavity, and was used in the evaluation, a revealing dye plate (solute erythrosine 2%) and analyzed the buccal and lingual surfaces of six predefined teeth, according to the criteria Greene & Vermillion classification and General Health Department (DGS)¹⁵⁻¹⁶.

In the second phase the educational intervention revolved around the themes of oral health. Health promotion was prioritized based on prior identification of needs of adolescents. It consisted of education sessions for health on oral health and oral hygiene, and practical sessions on oral hygiene/brushing teeth, lasting 90 minutes each.

In the theoretical health education sessions we used the expository method, using audiovisual, and demonstrative method, in order to increase motivation and participation of adolescents. In demonstration of oral hygiene procedures were used macro models (Denture, molar tooth decay, toothbrush and dental floss), for exemplification of the correct technique of brushing teeth.

At the end of each theoretical session we proceeded to the distribution of illustrated leaflets, prepared by the DGS, demonstrating the techniques of oral hygiene (brushing and use of dental floss) and dissemination of the page <http://www.prosorriso.host56.com>.

In the practice sessions we used the demonstrative method, using the material and technique, referred in the theoretical session. Each adolescent had the opportunity to practice the correct technique of brushing teeth in macro models, and in his own mouth.

The third phase began three months after the educational intervention program and was held again the observation of the oral cavity (DMFT assessment and OHI-S) and applied the data collection tool to adolescents.

Processing and analysis of data were used IBM Statistical Package for Social Sciences (SPSS) Statistics 20.

Findings

Sample characterization

The sample consists of 200 adolescents who completed ProSorriso Program. It is mostly female (56.0%), aged between 11 and 16 years, with an average of 13.21 (SD = 1.014). Adolescents who participated in the intervention program – ProSorriso, reside mostly in rural areas and attend the 7th (41.0%), 8th (34.5%) and 9th (25.9%) grade.

Oral health of adolescents

The index of decayed teeth of ado-

DMFT INDEX BEFORE AND AFTER THE PROGRAM – PROSORRISO **1**

	n	Min	Max	\bar{x}	SD	Sk/error	K/error	CV (%)	Sort Average	Mann Whitney U Test	T test paired samples
Decayed Teeth Index (before)											
Male	88	0	6	0.98	1.422	7.031	6.257	145.10	102.52	U=4750.0	t=4.267 p=0.000***
Female	112	0	12	1.05	1.912	13.096	24.985	182.09	98.91	Z=-0.485	
Total	200	0	12	1.02	1.710	16.139	31.029	167.64		p=0.628	
Decayed Teeth Index (after)											
Male	88	0	7	0.64	1.252	10.937	19.702	195.62	100.70	U=4910.0	
Female	112	0	7	0.56	1.105	12.885	24.913	197.32	100.34	Z=-0.055	
Total	200	0	7	0.60	1.170	16.686	30.705	195.0		p=0.957	
Missing Teeth Index (before)											
Male	88	0	2	0.17	0.485	11.295	15.042	285.29	102.43	U=4758.0	t=-2.083 p=0.039*
Female	112	0	4	0.16	0.623	21.403	57.287	389.37	98.98	Z=-0.787	
Total	200	0	4	0.17	0.565	25.610	66.377	332.35		p=0.431	
Missing Teeth Index (after)											
Male	88	0	2	0.32	0.635	7.085	3.913	198.44	107.00	U=4788.5	
Female	112	0	4	0.19	0.623	17.320	37.792	327.89	95.39	Z=-2.208	
Total	200	0	4	0.25	0.630	16.988	27.295	252.0		p=0.027*	
Filled Teeth Index (before)											
Male	88	0	7	1.24	1.788	5.583	2.610	144.19	102.09	U=4788.5	t=-5.243 p=0.000***
Female	112	0	9	1.07	1.680	9.061	10.569	157.01	99.25	Z=-0.378	
Total	200	0	9	1.15	1.726	10.186	8.576	150.09		p=0.705	
Filled Teeth Index (after)											
Male	88	0	9	1.64	2.129	5.719	3.877	129.81	96.45	U=4572.0	
Female	112	0	10	1.68	1.851	6.346	6.300	110.19	103.68	Z=-0.911	
Total	200	0	10	1.66	1.973	8.447	6.839	118.86		p=0.362	

STATISTICS FOR THE OHI-S BEFORE AND AFTER THE PROGRAM - PROSORRISO **2**

	N	Min	Max	\bar{x}	SD	Sk/error	K/error	CV (%)	T Student Test	T test paired samples
Simplified Oral Hygiene Index (before)										
Male	88	0	3	1.53	0.541	0.089	-0.220	35.35	t=1.384 p=0.169	t=7.389
Female	112	0	3	1.41	0.675	0.342	-1.000	47.87		
Total	200	0	3	1.47	0.621	0.016	-0.831	42.24		
Simplified Oral Hygiene Index (after)										
Male	88	0	3	1.33	0.612	0.217	-0.221	46.01	t=2.686 p=0.008**	p=0.000***
Female	112	0	3	1.09	0.621	0.945	0.018	56.97		
Total	200	0	3	1.20	0.626	0.779	-0.392	52.17		

	N	Min	Max	\bar{x}	SD	Sk/error	K/error	CV (%)	T Test Student	T test paired samples
Summation of Oral Hygiene Habits (before)										
Male	88	10	19	15.31	1.938	-0.972	0.191	12.66	t=-2.716	
Female	112	11	20	16.13	2.232	-0.859	1.578	13.84	p =	
Total	200	10	20	15.77	2.141	-0.744	1.409	13.57	0.007**	t=-4.591;
Summation of Oral Hygiene Habits (after)										
Male	88	10	20	15.97	2.266	-2.143	0.133	14.19	t=-3.237	
Female	112	11	20	16.96	2.046	-1.618	-0.768	12.07	p =	
Total	200	10	20	16.52	2.196	-2.872	0.085	13.29	0.001***	p = 0.000***

lescents was higher before the program – ProSorriso, with significant differences ($p < 0.05$), i.e., adolescents after participating in the program had fewer decayed teeth.

It was also found that the number of missing teeth and the number of filled teeth increased after participating in the program – ProSorriso, the differences between the two-time points are significant in missing teeth ($p < 0.05$), and the index filled teeth ($p < 0.05$), i.e. there is an increase in the number of missing teeth and the number of filled teeth after participation in the program – ProSorriso.

There was significant differences by gender of adolescents, but only in the lost teeth index after participation in the program – ProSorriso. The girls were fewer missing teeth compared to males ($p < 0.05$) (table 1).

It was found that the adolescents’ OHI-S is on average lower after participating in the program – ProSorriso ($p < 0.05$) (see table 2).

Before the program – ProSorriso, the average value of OHI-S was 1.47, showing boys worst oral health, but the differences are not statistically significant ($p > 0.05$). After participating in the program, it was observed that the adolescents had an average OHI-S 1.20, verifying that females have better oral health, less OHI-S, and the differences are statistically significant ($p < 0.05$) (table 2).

Oral hygiene habits

The study of oral hygiene habits of adolescents showed that before the program – ProSorriso, 71.5% brushed their teeth two or more times per day, 28.5% did so at least once per day. After participating in the program – ProSorriso there is an increase of adolescents to brush their teeth two or more times per day (74%), but the differences are not statistically significant between the two-time points (McNemar test $p = 0.583$).

Before the program – ProSorriso most adolescents (57.5%) never or rarely brushed their teeth before bedtime and after participating in the program the percentage of adolescents who said to brush their teeth at night often or always increased (83%), and the differences between the two moments were highly statistically significant (McNemar test $p = 0.000$).

As for the utensils used by adolescents in their oral hygiene, no significant differences before and after the implementation of the program ProSorriso ($Z = -0.434$; $p = 0.664$), or the frequency of flossing use (McNemar test $p = 0.742$), or the type of brush to use (McNemar test $p = 0.999$).

With regard to oral hygiene, it was found that before the program – ProSorriso, 57% of adolescents brushed teeth, tongue and gums, 31% teeth and

tongue and 6.5% teeth and gums. After the program, there is an increase of adolescents that make an oral hygiene more correctly (brush teeth, tongue and gums: 67% vs. 57%), and the differences between the two moments of evaluation were statistically significant ($Z = -2.801$; $p = 0.005$). As for the time spent on brushing teeth, 62.5% in the pre program spent between 2 to 5 minutes and 30.0% spent less than 2 minutes. After participating in the program, 74.0% spend between 2 to 5 minutes and only 22.0% takes less than 2 minutes. The t test for paired sample showed that the differences between the two time points are significant ($Z = -3.509$; $p = 0.000$).

Making an overall assessment on the oral hygiene habits of adolescents in the time before and after intervention is concluded that they are better after participation in the program – ProSorriso, with statistically significant differences ($p < 0.05$), i.e., adolescents improved their oral hygiene habits after participating in the program. The girls have better oral hygiene habits relative to boys, either before or after ProSorriso, with significant differences ($p < 0.05$) (see table 3).

Knowledge of oral health

We sought to determine whether the program – ProSorriso helped to increase knowledge of adolescents regarding oral health, it was found that

STATISTICS ON KNOWLEDGE OF ORAL HEALTH BEFORE AND AFTER THE PROGRAM – PROSORRISO

	n	Min	Max	\bar{x}	SD	Sk/error	K/error	CV (%)	OM	T Test Student	T test paired samples
Summation of knowledge on oral health (before)											
Male	88	28	54	44.35	4.801	-1.938	1.208	10.82	83.78	t=-4.886 p=0.000***	t=-6.510 p=0.000***
Female	112	30	53	46.46	3.862	-6.412	8.364	8.31	113.64		
Total	200	28	54	45.53	4.417	-5.627	4.433	9.70			
Summation of knowledge on oral health (after)											
Male	88	33	54	47.07	4.046	-3.455	3.085	8.59	87.67	t=-3.841 p=0.000***	
Female	112	33	56	48.62	3.696	-3.745	4.940	7.60	110.58		
Total	200	33	56	47.94	3.919	-5.063	5.286	8.17			

in the issues brushing frequency of teeth, brush type used, oral hygiene performance and brushing time of teeth the values obtained before and after participation in the program - ProSorriso are similar, with no significant differences between the two moments. As for the utensils used in the brushing of the teeth it was observed that before the program, most of the adolescents (66.5%) considered that should use the brush/folder/dental/pipe cleaner wire. After participating in the program – ProSorriso there is an increase of participants to consider the use of this set of tools as the most correct (74.5%) (McNemar test: $p = 0.057$). Most of adolescents (83.5%) before participating in the program states that you should use dental floss once or more per day, and 16.5% report that should never or rarely be used. After the program, it was found that there was a greater number of adolescents to be noted that the dental floss should be used one or more times per day (89.5%). The assessment in the two periods reveals that adolescents after the participation in the program - ProSorriso have better knowledge about the use of dental floss, but the differences are not statistically significant (McNemar test: $p = 0.059$).

Regarding the time interval to change the toothbrush, 39.5% of adolescents before the intervention considered that was to take place 3 at 3 months, 33.5% in less than three months, existing 8.0% which meant not know when it had to proceed the tooth brush exchange. After the program - ProSorriso knowledge of the adolescents have improved, and 48.5% said that it should be changed from 3 in 3 months and only 3.0% persists without knowing when to do it. The differences in the two moments are highly significant ($t = -13,018$, $p = 0.000$).

Regarding the age at which you should start brushing teeth autonomously, it was found that before the program – ProSorriso, 67.5% of adolescents understand that should be between 3 and 6 years and 12.0% from 6 years of age, but after the program knowledge increase since 44.5% of adolescents think it should be from the age of six. The differences between the two time points are significant ($Z = -8,224$; $p = 0.000$).

Regarding the definition of plaque before the program – ProSorriso 60.0% of adolescents do not know what that is, 20.0% consider to be tartarus/yellowish plaque that accumulates on teeth. After intervention 10.5% of participants correctly defined plaque as food / dirt that accumulates on the teeth (6.5%) and bacteria which accumulate on the teeth (4.0%). There was also a decrease of students who do not know what is plaque (52.0% vs. 60%). The differences in the two stages of evaluation reveal that

adolescents after participating in the program - ProSorriso have better knowledge in the definition of plaque ($Z = -3,716$; $p = 0.000$).

After participating in the program – ProSorriso the percentage of adolescents who think that tobacco use affects the oral health increases (before: 90.0% vs. after: 95.0%) with significant differences between the two time points ($p = 0.004$). Also regarding the influence of plaque in the oral health has been an increase of knowledge (before: 83.5% vs. after: 91.5%), and the differences in the two moments were significant ($p = 0.000$).

No significant differences were found in the improvement of knowledge in the following variables: use toothpaste with fluoride ($p = 0.496$), oral hygiene habits ($p = 0.665$), alcohol consumption ($p = 0.289$), use of illicit substances ($p = 0.566$) and use of oral and perioral piercings in oral health ($p = 0.135$).

Considering the global knowledge of adolescents on oral health (overall score) it was found that is higher after participation in the program-ProSorriso, with significant differences ($p < 0.05$). Due to this result it was concluded that the level of knowledge of adolescents on oral health after participating in the program increased (see table 4).

It was also found that girls have better knowledge on oral health

compared to boys either before or after the program-ProSorriso, and the differences in the two moments were statistically significant ($p < 0.05$) (table 4).

Discussion

Health education is a key strategy in the formation of behaviors that promote and maintain health. Mastrantonio and Garcia¹⁶ point out that, through it, you can transform attitudes and behavior throughout the life cycle, forming habits in the population for the benefit of their own health. Adolescence “offers a window of opportunity to intervene early, not only preventing the initiation of risk behavior but influencing adherence to healthy behaviors that last throughout life”¹⁸.

The educational intervention program-ProSorriso proved to be effective, adolescents after participating in the program, improved oral health, oral hygiene habits, reduced plaque index and increased their knowledge of oral health. As refer Ericsson, Ostberg, Wennstrom & Abrahamsson¹⁹, the effectiveness of a program of oral health in adolescence depends, besides the type of resources used, the active involvement of adolescents and strengthening of oral hygiene education that can improve knowledge, practices, gingival health and reduce plaque levels.

Thus, it is suggested to carry out educational interventions for health, with greater accuracy, particularly with regard to procedures for correct oral hygiene, should parents and teachers be involved; the realization of facilitating partnerships of oral health promotion with local authorities, schools and adolescents/families. These interventions must then be geared towards the empowerment of adolescents to adopt healthy lifestyles and to create environmental and social conditions most favorable to the health of citizens throughout the life cycle.

Bibliography

1. Nutmeat D. Health literacy as a public health goal: a challenge for contemporary health education and communication strategies into the 21st century. *Health Promot Int.* [Internet]. 2000; [cited 2017 Aug 15];15(3):[about 8 p.]. Available from: <https://academic.oup.com/heapro/article/15/3/259/551108>
2. Martins MC. A Promoção da Saúde: Percursos e Paradigma. *Revista de Saúde Amato Lusitano.* [Internet]. 2005; [cited 2017 Aug 16];IX(22): [about 4 p.]. Available from: <https://repositorio.ipcb.pt/bitstream/10400.11/93/1/A%20Promo%C3%A7%C3%A3o%20da%20sa%C3%BAde.pdf>
3. World Health Organization. Ottawa charter for health promotion. *Can J Public Health.* 1986; 77(5):425-30.
4. Rodrigues V, Carvalho A, Gonçalves A, Carvalho G. Situações de risco para a saúde de jovens adolescentes. In: Escola Superior de Educação da Universidade de Trás dos Montes e Alto Douro, editor. *Encontro de Investigação – Perspetivar a Investigação em Saúde*; 2007. Vila Real: Escola Superior de Educação; 2007. p. 65-71.
5. Carvalho A, Carvalho GS. Educação para a saúde: conceitos, práticas e necessidades de formação: um estudo sobre práticas de educação para a saúde dos enfermeiros. 1st ed. Lisboa: Lusociência; 2006.
6. The Directorate-General of Health. Programa Nacional de Saúde Escolar. Lisboa: Ministério da Saúde; 2006.
7. The Directorate-General of Health. Programa Nacional de Saúde Escolar. Lisboa: Ministério da Saúde; 2015.
8. Costa, MIBC. Qualidade de vida relacionada com a Saúde Oral em adolescentes. [doctoral thesis]. Porto: Instituto de Ciências Biomédicas Abel Salazar da Universidade do Porto; 2014.
9. The Directorate-General of Health. Programa Nacional de Promoção da Saúde Oral. Lisboa: Ministério da Saúde; 2005.
10. Fortin MF. Fundamentos e etapas do processo de investigação. 1st ed. Loures: Lusodidacta; 2009.
11. Pallás JM, Villa J. Métodos de investigación clínica y epidemiológica. 3rd ed. Amsterdam: Elsevier; 2007.
12. The Directorate-General of Health. Estudo Nacional de Prevalência de Doenças Orais: Programa Nacional de Promoção da Saúde Oral. Lisboa: Ministério da Saúde; 2008.
13. World Health Organization. Jakarta Declaration on Leading Health Promotion into the 21st Century. *Health Promot Int.* [Internet]. 1997; [cited 2017 Aug 15];12(4): [about 3 p.]. Available from: <https://academic.oup.com/heapro/article/12/4/261/558587>
14. World Health Organization. Levantamentos básicos em Saúde Bucal. 4th ed. São Paulo: Livraria Santos Editora; 1999.
15. Greene JC, Vermillion JR. The simplified oral Hygiene index. *J Am Dent Assoc.* 1964;68:7-13.
16. The Directorate-General of Health. Programa Nacional de Promoção da Saúde Oral: Plano B. Lisboa: Ministério da Saúde; 2008.
17. Mastrantonio SDS, Garcia PPN. Programas educativos em saúde bucal: Revisão da Literatura. *Jornal Brasileiro de Odontopediatria & odontologia do bebê*; 2002;5(25):215-22.
18. Story M, Neumark-Sztainer D, Ireland M, Evans. Adolescent health and nutrition: A survey of perceived knowledge and skill competencies and training interests among dietitians working with youth. *Research and Professional Briefs.* 2000;100(3):362-4.
19. Ericsson JS, Ostberg AL, Wennstrom JL, Abrahamsson KH. Oral health-related perceptions, attitudes, and behavior in relation to oral hygiene conditions in an adolescent population. *Eur J Oral Sci.* 2012;120(4):335-41. Available from: <https://onlinelibrary.wiley.com/doi/abs/10.1111/j.1600-0722.2012.00970.x>

Conclusions

Education for oral health have been addressed based on the directives of the General Health Department. However, there is no reference to educational intervention programs, with this scope, related to oral health in this specific population.

The study shows that adolescents after participating in the program, ProSorriso, improved indicators (decayed and filled teeth) of oral health, oral hygiene habits, reduced plaque index and increased their knowledge of oral health. The results also allowed us to identify some predictors of oral health and suggest ProSorriso’s replication in other contexts and with other samples, as it promotes the development of future investigations and good clinical practices that favor the oral well-being of adolescents.

Finally research evidence as conceptually advocated, which is pertinent to intervention in adolescence as a window of opportunity to promote and protect health with high benefits in the future. The educational intervention in partnership with the family assumes increased health gains, due to its potential to construct salutogenic lifestyles with positive implications in reducing risk factors for oral diseases.

The interventions to be delineated should be based on the recognition of the competences and resources of the adolescents/family, whose decisions should be centered on, contrary to the classic models of (in)formation, being particularly relevant to intervene in the disadvantaged families.

The encouraging results of the study, especially at the level of the implications of ProSorriso for the empowerment of adolescents, provide innovative subsidies for the understanding and scientific incursion of the importance of the role of health professionals in the health status and improvement of the oral health indicators of the portuguese adolescents.