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Original Article

EDUCATIONAL ACTIONS FOR AWARENESS OF A HEALTHIER LIFESTYLE IN ADOLESCENTS

AÇÕES EDUCATIVAS PARA A SENSIBILIZAÇÃO DE UM ESTILO DE VIDA MAIS SAUDÁVEL DE ADOLESCENTES

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RESUMO

A fase da adolescência promove transformações biopsicossociais, como: aumento da independência e ganho de autonomia na tomada de decisões sobre práticas e comportamentos de vida, podendo também influenciar de maneira positiva ou negativa no estilo de vida. Diante disso, o objetivo do estudo foi analisar a efetividade de ações de educação em saúde sobre os parâmetros de alimentação saudável, atividade física e educação postural na sensibilização de um estilo de vida mais saudável de adolescentes matriculados em duas escolas públicas do município de Criciúma, Santa Catarina. O estudo foi temporal, prospectivo, e analítico, realizado em duas escolas estaduais da rede pública, divididas em dois grupos: Ensino Fundamental e Ensino Médio. A amostra foi composta por 109 adolescentes, de ambos os sexos, com idade entre 11 a 17 anos. Foram aplicados questionários (pré e pós). Os dados foram exportados para o SPSS versão 20.0. O nível de significância α estabelecido para os testes estatísticos foi de ≤ 0,05 e um intervalo de confiança de 95%. Verificou-se aumento significativo de conhecimento nas temáticas sobre alimentação saudável (3,86±1,395/4,64±1,67), atividade física (4,52±1,696/5,10±1,46) e educação postural (4,03±1,50/5,02±1,49). As ações realizadas no âmbito escolar demonstraram ser efetivas no ganho de conhecimento dos escolares.

Palavras-chave: Adolescente. Educação em Saúde. Estilo de Vida. Saúde Coletiva.

ABSTRACT

Adolescence promotes biopsychosocial changes, such as increased independence and development of autonomy in making decisions about lifestyle practices and behaviors, as it may also influence lifestyle positively or negatively. Thus, the objective of the study was to analyze the effectiveness of health education interventions on the topics of healthy eating, physical activity and posture education in raising awareness of a healthier lifestyle in adolescents enrolled in two public schools in Criciuma, Santa Catarina. A prospective and analytical study was conducted in two state public schools, divided in two groups: Elementary School and High School. The sample consisted of 109 adolescents of both genders, aged 11 to 17 years. Questionnaires (pre and post action) were applied . Data was exported to SPSS version 20.0. The significance level α set for the statistical tests was ≤ 0.05 and a confidence interval was 95%. There was significant increase in knowledge about healthy eating (3,86±1,395/4,64±1,67), physical activity (4,52±1,696/5,10±1,46) and posture education (4,03±1,50/5,02±1,49). Regarding gender, both presented acquisition of knowledge. The actions carried out in schools have proven effectiveness in the acquisition of knowledge by the students.

Keywords: Adolescents. Health Education. Lifestyle. Public Health.

Introduction

The industrial revolution phenomenom has modified people's behavior through time, due to urbanization, industrialization and technological advancement, increasing morbidity in all age groups and causing a significant aggravation in the population's lifestyle[1].

Adolescence promotes biopsychosocial transformations such as increased independence and development of autonomy in making decisions about lifestyle practices and behaviors, as it may also influence lifestyle positively or negatively[2]. Therefore, it is important to establish actions that can contribute to changing the lifestyle scenario. Physical activity[3], healthy eating[4] and posture habits[5] are aspects related to the lifestyle of adolescents which stand out at this moment and have the capacity to interfere in human growth and

development and in school performance, also possibly causing the onset of some Chronic Noncommunicable Diseases (NCDs) that can last a lifetime[6].

In this context, the concern about physical activity arises from data from the National Research of School Health (PeNSE) of 2009, a study that revealed that 56.9% of Brazilian adolescents do not meet the recommendations for practice of physical activity, in addition to regional researches showing a variation of 39% to 93% of adolescents with low or insufficient levels of physical activity[3,8]. These data are alarming given that the practice of physical activity during adolescence helps maintaing and improving cardiovascular health, increasing bone mass, having a better school performance, besides preventing NCDs, anxiety, depression and others[9].

In addition to this behavior, there is an inadequate diet, characterized by the consumption of foods rich in fat, sugar and sodium, with a small share of whole grains, fiber, fruits and vegetables. According to Toral, Conti and Slater[4], these eating habits may increase diseases and health problems, caused by what is called in this age as "functional autonomy", which translates to a freedom to choose food, modifying habits acquired and switching to an unhealthy diet.

Incorrect posture habits in the classroom and/or at home is also within the behaviors which should be considered, due to an increase of muscular imbalances and triggering of postural alterations. The prevalence of postural alterations in school students is high, varying from 53,8%[10] to 97,7%[11], depending on the evaluation criteria. These data indicate the need for preventive actions during school period, aiming to reduce aggravations or a possible progression to more severe functional disabilities.

Considering that many habits from this stage of life are continued in adult life, it is evident that there is a need for actions and strategies that expand the possibilities to change this scenario, involving school-age youth, family members, health professionals and mainly professionals linked to school units, such as the physical education teacher.

Thus, health education can be a strategy in the process of behavior formation, aiming to promote and maintain a healthy lifestyle, through a methodology of discussions, counseling, debates and others, considering the cultural and social context where the population is inserted, with the goal of building knowledge and changing behaviors and skills related to a healthy lifestyle[12].

Based on this context, the objective of this study was to analyze the educational action capacity in the learning or acquisition of health knowledge, based on the topics of healthy eating, physical activity and postural education, raising awareness of a healthier lifestyle in adolescents enrolled in two public schools in the city of Criciúma, SC.

Method

Participants

The research population consisted of 150 adolescents, 50.5% were female and 49.5% male, aged 11 to 17 years, enrolled in the afternoon and evening period. The E1 group was composed by 112 elementary school students from the final grades (8th and 9th grades) from the afternoon period; and the E2 group consisted of 38 high school students (1st and 2nd year), studying at night. The choice of institutions was due to location - central area of the city, interest in the research and approval from the school officials and study participants.

Procedure

The research is characterized as quantitative quasi-experimental without randomization according to Leopardi[(13)]; it is the model employed by the functionalism,

which studies manifest and latent functions in the organizational structures. The study was carried out in two public schools in the city of Criciúma (SC), which were divided into two categories: Elementary School (E1) and High School (E2), analyzing the knowledge before and after the health education actions.

The research was approved by the Committee of Ethics in Research on Human Beings (CEP), from the University Universidade do Extremo Sul Catarinense (UNESC) under the protocol 278.224/2013. To participate in the study, adolescents should be regularly enrolled and with a minimum of 75% frequency in the school unit, fill in and return the questionnaire at both moments of the activity and sign a consent form. Underage students required authorization from parents or guardians. Thus, 41 students who did not fill in and/or return the questionnaire in one of the research moments were excluded, totaling a sample of 109 students.

The research included the following actions: 1) application of the questionnaire before the educational action, evaluating the adolescents' previous knowledge on the topics; 2) development of a health education action through audiovisual exhibition; 3) reapplication of the questionnaire 30 days after the educational action, analyzing knowledge acquired.

The instruments used contained only closed-ended questions, elaborated by each professional involved in the research, containing multiple choice questions about the topics covered. Nutrition questioned about the nutritional deficiency of iron (iron deficiency anemia); consumption of fibers in the prevention of chronic diseases; the importance of the intake of calcium and in what foods we can find it; transmission of nerve impulses, intestinal regulation and muscle contraction. Physical therapy addressed major postural problems that you will develop by adopting inappropriate postures; function of the spine in the human body; use of backpack; excessive weight that can lead to possible postural damage. And Physical Education asked about how much exercise you need to do to be physically active; what types of physical exercise are appropriate for health; best times to practice; physical exercise and school performance. In order to evaluate the effectiveness of the educational actions and to quantify the improvement in knowledge acquired, scores were assigned for each topic in the pre and post educational evaluation.

The health education actions were carried out monthly between August and October 2013, totalizing three health educational actions covering topics considered important for the promotion of adolescent health. The educational actions were carried out by professionals specialized in the topics discussed in the areas of Nutrition, Physical Education and Physiotherapy, all residents of the Multiprofessional Residency Program from UNESC.

Statistical Analysis

Statistical Package for Social Sciences (SPSS) version (20.0) was used for statistical analysis and data was expressed in absolute frequency, relative frequency, mean and standard deviation. Normality was assessed by the Kolmogorov-Smirnov test. The comparison between the pre and post scores in relation to the gender was given by the t test for paired samples. And the percentage variation in the other analyses was calculated by the percentage delta ($\Delta\%$) that represents the proportional difference between the frequency of correct answers in the pre and post questionnaires. The significance level α established in all statistical tests was 0.05 and the confidence interval was 95%.

Results

In this section, the results are presented by the characterization of the participants; followed by the group notes in general, the stratified assessment by gender and lastly the incidence of correct answers. All the analyses are divided in pre and post health education

action, assessing the increase in knowledge in each topic addressed.

The mean age of the sample is 13.63 (± 1.58) years, 55 (50.5%) female and 54 (49.5%) male. Three health education actions were carried out for adolescents, with a frequency of 100% in the physical activity, 91.7% in posture education and 85.3% in healthy eating. The reduction of the sample in the last two actions derives from the exclusion criteria: evasion in one of the moments of the activity, excluding 16 students in the action on healthy eating and 9 students in posture education. Table 1 presents the general mean (pre and post action) of the three topics involved in the research.

Table 1. Score results from pre and post educational actions

			Pre Score	Post Score	MD	P
Healthy Eating	93	Mean/SD	3,86 ± 1,39	4,64 ± 1,67*	-0,78	0,001
		CI	(3,57 - 4,14)	(4,29 – 4,98)		
Physical Activity	109	Mean/SD	4,52 ± 1,69	5,10 ± 1,46*	-0,58	0,007
		CI	(4,19 – 4,84)	(4,82 – 5,37)		
Posture Education	100	Mean/SD	4,03 ± 1,50	5,02 ± 1,49*	-0,99	0,0001
		CI	(3,73 – 4,32)	(4,72 – 5,31)		

* Significant differences in p< 0,05. CI – Confidence Interval. MD – Mean Difference.
Source: authors

In Table 2 we can observe the mean scores (pre and post action) stratified by the female and male gender.

Table 2. Pre and post educational actions scores stratifcied by gender.

	Female					Male				
Variables	**N**	**Pre Mean Score/SD CI**	**Post Mean Score/SD CI**	**MD**	**P**	**N**	**Pre Mean Score/SD CI**	**Post Mean Score/SD CI**	**MD**	**P**
Healthy eating	42	3,60 ± 1,45 (3,14 – 4,05)	4,57 ± 1,63* (4,06 – 5,07)	-0,97	0,009	51	4,08 ± 1,32 (3,70 – 4,45)	4,71 ± 1,74 (4,22 – 5,19)	-0,63	0,052
Physical activity	55	4,27 ± 1,79 (3,78 – 4,75)	5,35 ± 1,16* (5,03 – 5,66)	-1,08	0,0001	54	4,78 ± 1,56 (4,35 – 5,20)	4,85 ± 1,70 (4,38 – 5,31)	-0,07	0,811
Posture education	54	4,11 ± 1,53 (3,69 – 4,52)	5,00 ± 1,48* (4,59 – 5,40)	-0,89	0,0001	46	3,93 ± 1,48 (3,49 – 4,36)	5,04 ± 1,52* (4,58 – 5,49)	-1,10	0,0001

* Significant differences in p< 0,05. CI – Confidence Interval. MD – Mean Difference.
Source: authors

Analysis on the frequency of correct answers (pre/post action) was carried out in order to identify which subjects of each topic aroused greater interest in the participants. Table 3 presents the frequency of correct answers (pre/post action) and the percentage delta variation related to the topic of healthy eating.

Table 3. Frequency correct answers of pre and post action on Healthy Eating.

Healthy Eating	**N = 93**			
	Pre N (%)	**Post N (%)**	**ES**	**(Δ%)**
Sources of iron	54 (58,1)	64 (68,8)	± 7,61	18,52
Consumption of fiber in the prevention of chronic diseases	24 (25,8)	38 (40,9)	± 9,66	58,33
Foods that have dietary fiber	46 (49,5)	47 (50,5)	± 2,86	2,17
Sources of calcium	56 (60,2)	65 (69,9)	± 7,2	16,07
Healthy eating	50 (53,8)	56 (60,2)	± 6,37	12,00
The role of carbohydrates in the body	49 (52,7)	39 (41,9)	± 7,9	-20,41
Ideal amount of water to drink per day	53 (57,0)	65 (69,9)	± 8,2	22,64
Ideal percentage that vegetables should occupy in the dish	27 (29,0)	58 (62,4)	± 0,0	114,81

Sources of the research. (Δ%) Percentual Delta; ES = effect-size.
Source: authors.

Table 4 shows the proportion of correct answers and the percentage delta on the health education action on Physical Activity.

Table 4. Frequency of correct answers pre and post action on Physical Activity.

Physical Activity	**N = 109**			
	Pre N (%)	**Póst N (%)**	**ES**	**(Δ%)**
Main behaviors for having good health	87 (79,8)	105 (96,3)	± 7,6	20,69
Hypokinetic diseases	71 (65,1)	70 (64,2)	± 2,21	-1,41
Effects of physical exercise on the hypertensive individual	53 (48,6)	61 (56,0)	± 6,72	15,09
Examples of aerobic exercises	56 (51,4)	49 (45,0)	± 6,21	-12,50
Checking the heart rate during exercise	39 (35,8)	54 (49,5)	± 9,13	38,46
Main cautions when practicing physical exercise	69 (63,3)	89 (81,7)	± 8,52	28,99
What is the measure of the Body Mass Index (BMI)	55 (50,5)	70 (64,2)	± 8,37	27,27
Considering yourself physically active	63 (57,8)	58 (53,2)	± 5,08	-7,94

Sources of the research. (Δ%) Percentual Delta; ES = effect-size.
Source: authors.

Table 5 shows the frequency of correct answers and the percentage delta on the health education action related to posture education.

Tabela 5. Frequency of correct answers pre and post action on Posture Education

Posture Education	N = 100			
	Pre N (%)	Post N (%)	ES	(Δ%)
Incorrect functions of the spine	51 (51)	52 (52)	± 2,72	1,96
Ideal sleeping position	39 (39)	78 (78)	± 0,0	100,00
Ideal mattress for sleeping	85 (85)	94 (94)	± 6,03	10,59
Spine overload	49 (49)	63 (63)	± 8,85	28,57
Spinal changes	29 (29)	49 (49)	± 9,07	68,97
Backpack weight limit	55 (55)	57 (57)	± 3,67	3,64
Postural problems caused by improper use of the backpack	51 (51)	60 (60)	± 7,47	17,65
Incorrect positions to be in front of the computer	44 (44)	49 (49)	± 6,22	11,36

Sources of the research. (Δ%) Percentual Delta; ES = effect-size.
Source: authors.

Discussion

As shown in Table 1, there was a significant increase ($p < 0.05$) in knowledge after the health education actions on the topics of healthy eating, physical activity and adequate postural habits, indicating the effectiveness of these actions with adolescents.

These findings are relevant to the health of these individuals, since building new knowledge, according to Funnell and Andersons[14] leads to acquisition of preventive behavior, encourages comprehension of incorrect habits and makes it possible to make healthier choices in the daily life.

In Deminice et al.[15], the findings in a study carried out in 2005 in a public primary school in the city of Ribeirão Preto (SP), with 951 students, aged from 6 to 16 years, corroborate the findings of our research, demonstrating meaningful improvements in knowledge about eating, nutrition and eating practices in school students undergoing a food education program.

Similar results were also found in the cross-sectional research by Alves, Melo and Melo[16], conducted at a university in the city of Araguari (MG), with 67 public school students aged 12 to 16 years, selected by an institutional extension project which offered tutoring in mathematics, notions of health, ethics and citizenship.

However, it is important to highlight that in order to have an effective change in the adolescents' eating habits, the inclusion of family, friends and peers would be necessary in these strategies, since they are considered to be either positive and negative influences on the adoption of healthy eating habits[4].

As for the topic of physical activity (Table 1), the knowledge presented significant improvement ($p < 0.05$) after the intervention. Studies[17-19] have indicated that educational programs and physical activities have been effective in increasing knowledge about physical activity, food, nutrition and health, as well as in contributing to behavioral changes in relation to eating habits and physical activity. In our research, we highlight, as a distinctive feature, the fact that we analyzed only the educational actions capacity of changing knowledge, not necessarily changing the level of daily phisical activity (data not considered).

Regarding the knowledge achievement in posture education (Table 1), the results

present important improvements, similar to the experimental study carried out by Santos[20] with 129 adolescents, from the 5th to 8th grade in the city of Maringá (located in State of Paraná), or the quasi-experimental study carried out by Zapater et al.[21] with 71 students from the first grade of elementary school in public and private schools in Bauru (in the state of São Paulo). Their findings indicate that posture education actions have contributed to changing knowledge about the importance of correct posture habits. However, it is important to point out that none of the studies verified if the acquisition of knowledge was effective in the adoption of new posture habits.

As for the acquisition of knowledge by the female and male participants (Table 2), a significant increase of knowledge ($p < 0.05$) after the intervention of this research can be verified in the topics of healthy eating and physical activity only in the female audience. The cross-sectional study by Alves, Melo and Melo[16] had the same outcome. This difference can be explained by the fact that women are more concerned with body image and health than men[22].

The frequency of correct answers indicates the interest of adolescents pre and post health education action. Healthy eating correct answers (Table 3) were more expressive in the questions about "the ideal percentage that vegetables should occupy in the dish" and "consumption of fiber in the prevention of chronic diseases", which lets us infer that there is a participation of the family or the cultural aspects. It is emphasized that the low intake of fibers, vitamins and minerals among adolescents can affect the memory, intelligence and defense of the organism to infections and also cause a predisposition for NCDs at an earlier age[19]. It is expected that increased knowledge can contribute to behavioral changes.

The frequency of correct answers in the topic of physical activity was higher in the questions referring to "checking the heart rate during exercise" and "main cautions when practicing physical exercise", which allows us to infer that to be physically active there is a need for knowledge and safety in the practice and that intrinsic factors may be determinant to be physically active, meaning that knowledge, practice, and safety along with motivation can be essential elements to become physically active, under the responsability of the physical education teacher.

Regarding posture education, everyday life is once again related to research, and body perceptions such as "pain and tiredness" reflected in a certain way on the questions that have the most expressive results, such as "what is the ideal sleeping position" and "what are the main changes caused by improper posture". The importance of this knowledge is supported by several studies, describing that adolescents are frequently exposed to risk behaviors for their spine, acquiring predisposition for postural problems[5, 10, 11, 23].

Conclusion

The actions of health education carried out in the school level, even when occasional, demonstrated effectiveness in the acquisition of knowledge by adolescents of both genders on healthy lifestyle issues, presenting a scenario that was not expected, the lack of information and opportunity for behavioral changes in school adolescents. Small actions can have important outcomes for lifestyle changes.

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