77 - ASSOCIATION BETWEEN NUTRITIONAL STATUS AND ORAL HEALTH OF SCHOOL HEALTH PROGRAM PARTICIPANTS IN THE MUNICIPALITY OF SCHOOL MOSSORÓ / RN

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doi: 10.16887/85.a2.77

INTRODUCTION

The Brazilian Sanitary Reform Movement existing in the 1970s and 1980s culminated with the inclusion in the Constitution of 1988 the creation of the Unified Health System, had the doctrinal principles of the universality, comprehensiveness, equity and popular participation in the management and control (FLEURY, 2009).

This in Multidisciplinary teams of health walks toward comprehensive care in the school health program, referring us to an integrated networks and sustained intersectoral health system. Contributory and integrated way, knowing each offers its contribution, within its area of operation, aiming at attaining the goals of the team, from the perspective of constructing individual and collective solutions to collective problems. This relationship will always be marked by the presence of the self and other, similar and different, and therefore by different ways of seeing the world and see the human being in the world (BRASIL, 2009).

Health promotion in schools is presented as a way of thinking and acting in line with this educational act, whose purpose and the formation of subjects and educational projects aimed to the right to life. Schooling becomes a playing field where we can develop a constructive public service nature of socially understood men. It is a right granted, but above all, to be achieved through a collective and multidisciplinary construction(FIGUEIREDO, MACHADO E ABREU, 2010).

The Body Mass Index has been the most used indicator to identify the nutritional status of children and adults, his qualifying result has effect in relation to numerical quantity used also used in scientific and epidemiological research on the health theme (CAVAZZOTTO et. al, 2014).

The DMFT clinical examination of oral health is categorized by three distinct components together to generate a score able to identify the state of oral health of the individual. The classification criterion is adopted by the WHO, it is worth noting that oral health is linked to overall health of the body in relationship to the well-being and quality of life (WHO, 2014).

This study may aid the understanding of the local realities of the students can identify the key health issues and forward solutions in all levels of care: primary, secondary and tertiary - providing comprehensive healthcare for continuous and resolute manner.

Based on this assumption the objective of this study is to analyze the association between nutritional status epidemiological profile of the oral health of school children at the School Health Program of the municipality of Mossoró/RN.

MATERIAL AND METHODS

The research will be conducted in four public schools in elementary school, each representing one health region of the town of Mossoró / RN, were included in the schools that have the highest number of students enrolled in each region, and is also included in the Health Program school: Public School Teacher Alcides Manoel de Medeiros - North Zone; Municipal School Paulo Cavalcante de Moura - South Zone; Municipal School Raimunda Nogueira Couto - East Zone and Municipal School Professor Antônio Fagundes - West Zone.

Oral health assessments to detect incidence of caries was performed by a professional dentist, study participant, at the health center involved in the program. Anthropometric variables were weight, height, Body Mass Index (BMI). Body weight (kg) will be given in electronic portable digital scale Iron Man Model Tanita BC 553 with a precision of 0.100 kg. For height measurements a portable stadiometer SANNY Personal Caprice with an accuracy of 0.1 cm is used. The calculation of body mass index (BMI) is given by the ratio of weight / height (kg / m2), with the cutoff points, the indices proposed by the World Health Organization.

Statistical analyzes were performed using SPSS 20.0 software. We use measures of central tendency such as mean (continuous variables) and median (discrete variables) for the representation of sample groups and measures of dispersion such as standard deviation and minimum and maximum values that define the distribution of the data. As inferential analysis, we used the t test for independent samples in comparisons of variables by gender and an analysis of variance (ANOVA) for comparisons between regions. For the association use the index of the coefficient of Pearson correlation in the independent variables. All analyzes maintained a confidence level of 95% for a type I error ($p < 0.05$).

Results and discussion:

Table 01: Descriptive analysis of anthropometric variables by region and sex

Regions	Anthropometric Variables	Sex		Test t (p value)
		Men	Female	
R1	***Body Weight***	38,8 ± 13,8	38,5 ± 11,7	0,101 (0,920)
	Stature	1,4 ± 0,1	1,4 ± 0,1	0,551 (0,583)
	Body Mass Index	18,2 ± 4,1	18,4 ± 2,9	-0,228 (0,820)
R2	***Body Weight***	39,6 ± 14,1	40,6 ± 16,1	-0,377 (0,707)
	Stature	1,4 ± 0,2	1,4 ± 0,1	0,551 (0,583)
	Body Mass Index	18,4 ± 3,4	19,3 ± 5,5	-1,128 (0,261)
R3	***Body Weight***	43,1 ± 17,9	39,4 ± 11,7	1,323 (0,189)
	Stature	1,5 ± 0,5	1,4 ± 0,5	0,366 (0,715)
	Body Mass Index	19,1 ± 4,9	18,6 ± 3,1	0,787 (0,433)
R4	***Body Weight***	39,4 ± 11,2	41,9 ± 17,2	-0,932 (0,353)
	Stature	1,4 ± 0,3	1,5 ± 0,2	-1,227 (0,222)
	Body Mass Index	17,9 ± 2,7	18,8 ± 5,1	-1,237 (0,219)

As for the data presented in Table 1, the mean values and standard deviations of body weight, height and body mass index of school separated by regions meet. An ANOVA was performed in order to find the differences of a given dependent

variable according to the region in males and females, and subsequently no significant differences ($p < 0.05$) were found between all the comparisons made by the regions. It is noted that higher values of body weight shown in the table was the value of R3 index resulting in a greater body mass later. It is noteworthy that more than half of the students analyzed in all regions is in the healthy zone when their BMI classified categorically.

Table 02: Descriptive analysis of the distribution of decayed, missing and filled that comprise the DMFT teeth of the male sample.

	Decayed Tooth *		Lost Tooth *		Crowned Tooth*		DMFT
R1 (n = 26)	1,0	[0,0; 3,0]	0,0	[0,0; 5,0]	0,0	[0,0; 8,0]	3,2 ± 2,5
R2 (n = 71)	1,0	[0,0; 11,0]	0,0	[0,0; 6,0]	0,0	[0,0; 9,0]	$4,3^{\alpha}$ ± 3,1
R3 (n = 48)	2,0	[2,0; 8,0]	0,0	[0,0; 6,0]	0,0	[0,0; 3,0]	3,3 ± 2,5
R4 (n = 60)	1,0	[0,0; 6,0]	0,0	[0,0; 7,0]	0,0	[0,0; 4,0]	2,7 ± 2,5

* Values represented by the median [minimum value and maximum value] distribution
α = Significant difference between the South and West rgions ($p < 0,05$) found by ANOVA.

The data of Tables 2 and 3 comprise the median values of minimum and maximum decayed, missing and filled teeth followed by the mean and standard deviation of DMFT teeth, where most average was 4.3 in region 2 (R2) and 2.7 in the lower region 4 (R4), the other near scores followed with 3, 3.2 in region 1 (R1) and in the region 3.3 3 (R3). The ANOVA revealed a significant difference only in DMFT regions 2 compared with region 4. Values which are similar to the findings of Edalata et, al. (2014) that when analyzing the DMFT and BMI of 202 preschool children in India, we obtained the average value of 4.3 identical to the value found in this study.

Table 03: Descriptive analysis of the distribution of decayed, missing and filled that comprise the DMFT teeth of the female sample.

	Decayed Tooth *		Lost tooth *		Crowned Tooth*		DMFT
R1 (n = 29)	1,0	[0,0; 6,0]	0,0	[0,0; 3,0]	0,0	[0,0; 3,0]	2,5 ± 2,5
R2 (n = 56)	1,0	[0,0; 12,0]	0,0	[0,0; 4,0]	0,0	[0,0; 6,0]	3,5 ± 3,6
R3 (n = 64)	1,0	[0,0; 10,0]	0,0	[0,0; 4,0]	0,0	[0,0; 3,0]	2,5 ± 2,4
R4 (n = 49)	2,0	[0,0; 8,0]	0,0	[0,0; 4,0]	0,0	[0,0; 4,0]	3,5 ± 2,7

The amounts included in table 3 refer to the females in the sample, it is observed that no significant differences were found between regions when compared to each other. The highest values were DMFT in regions 2 and 4 (R1 and R4) with an average of 3.5 both. Resembling the values of the male sample where the highest values were also found in the same regions.

Oliveira et, al. (2013) to conduct an analysis of school oral health of 1,117 from public and private schools in the city of Pelotas - RS by DMFT, it was observed that the students who obtained the DMFT ≥ 1 were mostly included the government assistance program Bolsa Família, consequently they had a higher prevalence of caries compared with private school students. Under this assumption we see the need to include policies to promote the attention of the oral health of schoolchildren included in certain government programs.

When attempting to conduct a study to examine the level of knowledge about oral health of school children and their associations with clinical diagnosis in which they were Vakani, Basaria and Kaptar (2011) analyzed 300 sixth grade students in a city of Pakistan. The mean DMFT was found 1.27, about 50% of the students had no awareness of the importance of a dentist in their life. Through these figures we see the need for a wider promotion of maintaining oral health in school.

Table 04: Association between oral health and anthropometric variables.

R1	**Men**							**Female**					
	St	**BMI**	**D**	**M**	**F**	**DMFT**		**St**	**BMI**	**D**	**M**	**F**	**DMFT**
Weight	**0,80****	**0,92****	-0,25	-0,44	0,55	0,03	***Weight***	**0,90****	**0,90****	0,14	-0,16	0,14	0,07
St	-	0,51	-0,14	-0,62	0,34	-0,21	**St**	-	0,64	0,05	-0,10	0,03	0,01
BMI		-	-0,26	-0,27	0,56	0,14	**BMI**		-	0,22	-0,17	0,20	0,15
D			-	0,16	-0,31	0,36	**D**			-	0,38	-0,01	**0,88****
L				-	-0,18	0,59	**L**				-	-0,16	0,65
C					-	0,53	**C**					-	0,23
R2	**Men**							**Female**					
	St	**BMI**	**D**	**M**	**F**	**DMFT**		**St**	**BMI**	**D**	**M**	**F**	**DMFT**
Weight	**0,89****	**0,87****	-0,12	-0,4	0,24	-0,11	***Weight***	**0,75****	**0,90****	-0,21	-0,34	0,20	-0,19
St	**-**	0,59	-0,11	- 0,49	0,34**	-0,06	**St**		0,42	-0,25	-0,33	0,25	-0,20
BMI		-	-0,13	- 0,27	0,08	-0,16	**BMI**			-0,13	-0,26	0,12	-0,14
D			-	0,07	-0,17	**0,69****	**D**				0,32	0,10	**0,92****
L				-	-0,14	0,38	**L**					-0,14	0,47
C					-	0,46	**C**						0,38
R3	**Men**							**Female**					
	St	**BMI**	**D**	**M**	**F**	**DMFT**		**St**	**BMI**	**D**	**M**	**F**	**DMFT**
Weight	0,61	**0,89****	0,20	-0,17	-0,06	0,05	***Weight***	**0,71****	**0,85****	-0,11	-0,12	0,26	-0,07
St	-	0,30*	0,38	-0,29*	0,07	0,15	**St**		0,39	-0,17	-0,25*	0,09	-0,22
BMI		-	0,14	0,06	-0,01	0,15	**BMI**			-0,09	0,03	0,22	-0,01
D			-	-0,12	-0,07	**0,74****	**D**				0,15	-0,22	**0,88****
L				-	-0,05	0,51	**L**					0,12	0,54
C					-	0,19	**C**						0,11
R4	**Men**							**Female**					
	St	**BMI**	**D**	**M**	**F**	**DMFT**		**St**	**BMI**	**D**	**M**	**F**	**DMFT**
Weight	0,67	**0,71****	-0,04	**-**0,40	-0,06	-0,25	***Weight***	**0,73****	**0,93****	0,02	-0,31*	0,22	-0,01
St	-	0,31*	0,10	-0,16	0,16	0,06	**St**	-	0,56	-0,14	-0,35*	0,06	-0,23
BMI		-	-0,14	-0,36	-0,18	**-**0,36	**BMI**		-	0,06	-0,24	0,19	0,03
D			-	0,01	-0,06	**0,77****	**D**			-	0,18	-0,10	**0,79****
L				-	0,03	0,57	**L**				-	-0,02	0,54
C					-	0,35**	**C**					-	0,36

Performing associations of anthropometric measures with clinical examination of DMFT in Table 04 we note that in none of the regions, BMI values were strongly associated with the clinical examination of oral health. Such responses resemble the values of Edalata et, al. (2014) that when analyzing the DMFT and BMI of 202 preschool children in India, we obtained the average value 4.3, there was also no significant association to BMI. In regions 1 and 2 associations were strongly perceived values between weight and height and BMI, are proportional and appropriate these values seen what the BMI value is extracted from the results of weight and height. The DMFT index was also strongly associated with the index of the average values of the "C" component presented in school except for the male sample in region 1 (R1) however there was no correlation in this region. In regions 3:04 still find associations between BMI and weight previously discussed and DMFT with the value of decay. In male samples did not achieve the stature strong positive associations with different weight from other regions these values were not proportional.

CONCLUSION

It can be concluded that the obtained results are not presented significant associations between BMI and DMFT variables on the analysis occurred. It is noteworthy that obesity and dental caries are multifactorial diseases, which must be diagnosed early, accordingly realizes the importance of new strategies to promote the public policy of the school environment consequently greater recognition and appreciation of government programs that level.

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ASSOCIATION BETWEEN NUTRITION AND ORAL HEALTH OF SCHOOL HEALTH PROGRAM PARTICIPANTS IN THE MUNICIPALITY OF SCHOOL MOSSORÓ / RN

ABSTRACT

The objective of this study was to analyze the association between nutritional status and oral health of school children at the School Health Program of the municipality of Mossoró. The samples were collected at four public schools, the sample comprised 403 pupils aged between 7 and 15 years entered into the Health Program enrolled in primary school, four schools represent each health region town of Mossoró/RN where they achieved good development indices in the program,. For quantitative data analysis of oral health and nutritional status of schoolchildren descriptive statistics One Way ANOVA was used. For the association use the index of the coefficient of Pearson correlation in the independent variables ($p \geq 0,05$). Analysis of nutritional status revealed that students in the program mostly are the perfect weight for your height, in relation to oral health the highest average found in a particular region in DMFT clinical examination was 4.3, no statistically strong relationship of this variable with the body mass index of the participating school. It is therefore concluded that there was no statistically significant relationship between nutritional status and oral health of schoolchildren.

KEYWORDS: Health, School, Multidisciplinary.

ASSOCIATION ENTRE LA NUTRITION ET SANTÉ ORALE DE PARTICIPANTS AU PROGRAMME SCOLAIRE DE LA SANTÉ DANS LA MUNICIPALITÉ DE L'ÉCOLE MOSSORÓ / RN

RÉSUMÉ

L'objectif de cette étude était d'analyser l'association entre l'état nutritionnel et la santé bucco-dentaire des enfants de l'école à la School Health Program de la municipalité de Mossoró. Les échantillons ont été prélevés à quatre écoles publiques, l'échantillon comprenait 403 élèves âgés de 7 à 15 ans inscrits dans le programme de santé à l'école primaire, quatre écoles représentent chaque région sanitaire ville de Mossoró / RN où ils ont réalisé une bonne indices de développement dans le programme,. Pour l'analyse de données quantitatives de la santé buccodentaire et l'état nutritionnel des écoliers statistiques descriptives One Way ANOVA a été utilisée. Pour l'association utiliser l'indice du coefficient de corrélation de Pearson dans les variables indépendantes ($p \geq 0,05$). Analyse de l'état nutritionnel a révélé que les étudiants du programme sont pour la plupart le poids idéal pour votre taille, en matière de santé bucco-dentaire la plus haute moyenne trouvée dans une région particulière dans DMFT examen clinique était de 4,3, pas statistiquement forte relation de cette variable avec l'indice de masse corporelle de l'école participante. Il est donc conclu qu'il n'y avait pas de relation statistiquement significative entre l'état nutritionnel et la santé buccodentaire des élèves.

MOTS-CLÉS: santé, école, multidisciplinaire.

ASOCIACIÓN ENTRE LA NUTRICIÓN Y LA SALUD ORAL DE LOS PARTICIPANTES DEL PROGRAMA DE SALUD ESCOLAR EN EL MUNICIPIO DE ESCUELA MOSSORÓ / RN

RESUMEN

El objetivo de este estudio fue analizar la asociación entre el estado nutricional y la salud oral de los niños de la escuela en el Programa de Salud Escolar del municipio de Mossoró. Las muestras se recogieron en cuatro escuelas públicas, la muestra fue de 403 alumnos de edades comprendidas entre 7 y 15 años ingresados en el Programa de Salud de matriculados en la escuela primaria, cuatro escuelas representan cada ciudad región sanitaria de Mossoró / RN donde lograron buena índices de desarrollo en el programa,. Para el análisis de los datos cuantitativos de la salud bucal y el estado nutricional de los escolares estadística descriptiva se utilizó un ANOVA de un factor. Para la asociación utilizar el índice del coeficiente de correlación de Pearson en las variables independientes ($p \geq 0,05$). Análisis del estado nutricional reveló que los estudiantes en el programa en su mayoría son el peso ideal para su altura, en relación con la salud oral de la media más alta se encuentra en una región en particular, en el examen clínico CPOD fue de 4,3, estadísticamente sólida relación de esta variable con el índice de masa corporal de la escuela participante. Por tanto, se concluyó que no había ninguna relación estadísticamente significativa entre el estado nutricional y la salud oral de los escolares.

PALABRAS CLAVE: Salud, Escuela, Cultura multidisciplinar.

ASSOCIAÇÃO ENTRE ESTADO NUTRICIONAL E A SAÚDE BUCAL DOS ESCOLARES PARTICIPANTES DO PROGRAMA SAÚDE NA ESCOLA DO MUNÍCIPIO DE MOSSORÓ/RN.

RESUMO

O objetivo deste estudo foi de analisar associação entre o estado nutricional e a saúde bucal dos escolares participantes do Programa Saúde na Escola do município de Mossoró. As coletas ocorreram em quatro escolas municipais, a amostra foi formada por 403 escolares com idade entre 7 e 15 anos inseridos no Programa Saúde matriculados no ensino fundamental, as quatro escolas representam cada uma região sanitária da cidade de Mossoró/RN onde as mesmas atingiram bons índices de desenvolvimento no programa,. Para análise quantitativo de dados da saúde bucal e estado nutricional dos escolares foi utilizada a estatística descritiva One Way ANOVA. Para a associação utilizamos o índice do coeficiente de correlação de Pearson nas variáveis independentes analisadas ($p \geq 0,05$). A Análise do estado nutricional revelou que os alunos incluídos no programa em sua maioria se encontram com o peso ideal para sua altura, em relação à saúde bucal a maior média encontrada em uma determinada região no exame clínico CPO-D foi de 4,3, não houve relação estatisticamente forte desta variável com o índice de massa corporal dos escolares participantes. Conclui-se portanto que não houve relação estatisticamente significativa entre o estado nutricional e a saúde bucal dos escolares pesquisados.

PALAVRAS-CHAVE: Saúde, Escola, Multidisciplinaridade.