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ATHROPOMETRIC STANDARDS OF CHILDREN ASSISTED BY NGO, ACCORDING TO THE GROWTH CURVES OF WHO

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ABSTRACT

Based on the socioeconomic conditions are, in most cases, factors crucial to the growth and development of children and adolescents, this study aims to analyze the demographics of children served by PROCRIU NGO, located in the City Recife Pernambuco. The height of children was checked with fixed metal anthropometer to the wall, according to the WHO criteria, the Frankfurt plane; while the weight was obtained by positioning the center of the scale, with little clothing as possible; the data (height, weight and BMI) were recorded and later applied to the WHO curves. The percentage of children between z-scores (+3) and (+2) was 11.3 %, indicating that there is an obesity, according to their age, height and wheight10. The children overweight (z-score corresponded to 18 % of the studied Among these children, 61 % are eutrophic, rating given by z-scores: > (- 2) and <(+1) have children with unsatisfactory weight account for 9 % of the total, with 4.5 % classified as thin and markedly thin as 4.5 %

Keywords: anthropometry, WHO, malnutrition, undernourishment.

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INTRODUCTION

Malnutrition still remains one of the most common causes of mortality and morbidity among children worldwide. While in Brazil the prevalence of underweight children has fallen in recent decades, the percentage of infant deaths from malnutrition are in the 20% range, well above the 5% recommended by WHO[1]. The drop in the percentage of undernourished people in Brazil occurs in a heterogeneous manner, and is currently still a major public health issue in the Northeast and North, since these two regions are the greatest weight and estaturais deficits país[2,3]. Poor nutrition, especially early in life, often caused by reduced breastfeeding rates, as well as a bad introduction of food, cause the problems of malnutrition. Associated with this there is also the lack of proper hygiene of food, as well as low sanitation given and taught to children, bringing infection rates and is another factor that nfluences the loss of peso[3,4].

There are a lot of factors that influence the nutritional status of children and adolescents and therefore its growth and development, such as socio-economic, reproductive factors (birth order, birth interval, maternal age), birth weight, environmental (housing , agglomeration, presence or absence of basic sanitation), morbidity (hospitalizations, diarrhea, cough and fever), breastfeeding and maternal care, desnutrição[6]; with possession of this information it can be concluded that the issue of low levels of infant growth is a reflection of reality to which they are submitted, and can denote that the resolution of this problem is not located in just one area, but is global, so that many factors need to change for what the antropometric numbers of these children may be more suitable.

The North and Northeast regions have between two and three times more likely of having kids with height and weight deficits, especially a length deficit in relation to other children Brasil[4,5]. For this study we used anthropometry, which provides universally applicable data, cheap and easy to perform, which are non-invasive methods and able to perform the verification of weight, proportions and composition of the human body, anthropometric data reflect the physical health as well as the nutritional status and may be indicative of performance, health and longevidade[7,8]. In addition to these factors, there is the advantage of using anthropometric data lot of tools and technical and methodological resources that already exist to make a comparison with the data obtained, being able to make global regional comparisons with such data8.Whereas the socioeconomic conditions are often decisive for the growth and development of children and adolescents, this study aims to analyze the anthropometric data of the children assisted by the NGO PROCRIU, located in Recife, Pernambuco; comparing them to world standards recommended by the World Health Organisation.

METHOD

The measured height and weight of children is based on the “Guidelines for the collection and analysis of anthropometric data on health services”[8]. Children and adolescents were barefoot, with free head props in the center of the balance. Height was measured with a fixed metal anthropometer to the wall, children were placed in the Frankfurt plane (bottom edge of the opening of the orbital and the top edge of the external auditory meatus on the same horizontal line, the legs were parallel, with feet forming a right angle to your legs, heels, calves, buttocks, shoulder blades and the back of the head were pressed against the stadiometer. After this mobile piece of equipment was down, pinning her against the head, with enough pressure to compress the hair, so then individuals were removed, with the

assurance that the equipment did not move, the result was then noted.

After checking that the balance was adjusted children were placed in the center of it, with minimum clothing, barefoot, erect, with feet together and arms extended along the body and remained in that position, after it held themselves to reading the fixed weight on the display. After

$$\text{Z score: } \frac{\text{(value of the studied child) - (median reference value)}}{\text{Standard deviation of the reference population}}$$

1-Formula for calculation of z-score;

Indexes and indicators of children accompanied by the NGO were analyzed, it is worth mentioning that indexes are a combination of two anthropometric measurements, eg height and weight; indicators, in turn, refers to the application of rates, with cutoff points for these indexes, ie critical values to separate individuals who are healthy those which are not, as children need to be better monitored, the those that do not require increased vigilance due to satisfactory values of indices and indicadores[8].

In this work we used the WHO recommendations regarding the use of reference curves for analyzing children and adolescents study target, so that it can If making the comparison with the standard adopted worldwide in order to observe the health status of these children and adolescents, who are assisted by PROCIU NGOs and outline measures which have as their goal to provide for these children, better health perspective in order to provide subsidies for those who are out of proper health standards, so that they can improve their health.

The application of the data in this study classifies children by statistical values that express the classification of anthropometric indices; using the z-score, which is a statistical term which quantifies the distance of the value in relation to the median value of that measure or what is considered normal in the population. Corresponding to the standardized difference between the measured value and the median for this measure of the reference population and is calculated by this formula in image 1[8].

RESULTS

The 44 children and male adolescents assisted by the NGO in the year 2015 were studied. As a result we obtained a chart with the old values in years and months, as well as weight, height and body mass index. As well as two charts in which the values found and recorded in the table have been applied.

Age (years)	Months	Height (cm)	Weight (kg)	BMI (kg/m2)
12	9	154	43	18,13
10	10	131	39	22,73
13	3	147	35	16,2
10	5	144	47	22,67
14	1	151	36	15,79
16	2	156	68	27,94
10	3	132	27	15.49
10	1	135	26	14,26
13	1	145	31	14,74
13	6	162	79	30,10
14	0	160	40	15,62
14	9	154	70	29,53
12	6	151	37	16,22
17	3	154	41	17,29
13	9	150	40	17,78
15	3	157	54	21,91
14	3	151	30	13,16
12	9	148	30	13,70
9	1	129	33	19,83
11	10	142	32	15,87
10	4	140	31	15,82
12	5	148	34	15,52
10	10	140	30	15,31
13	2	155	42	17,48
7	3	119	25	17,65
12	8	139	34	17,60
10	6	143	37	18,09

12	2	154	40	16,87
11	3	137	38	20,25
9	11	141	43	21,63
13	8	148	41	18,72
11	9	151	39	17,10
13	2	149	46	20,72
13	5	166	53	19,23
6	1	115	23	17,39
14	9	173	50	16,71
14	6	140	45	22,96
13	0	148	43	19,63
11	2	146	45	21,11
15	7	165	59	21,67
10	1	136	36	19,46
17	5	167	62	22,23
12	8	158	42	16,62
12	0	150	40	17,78

The graph 1 relates to height for age of children and adolescent males, and resulted in 13 boys between the z-score (+1) and (0), 14 in the z-score between (0) and (-1); 14 between the z-score (-1) and (-2); 2 between the z-score (-2) and (-3) and one below

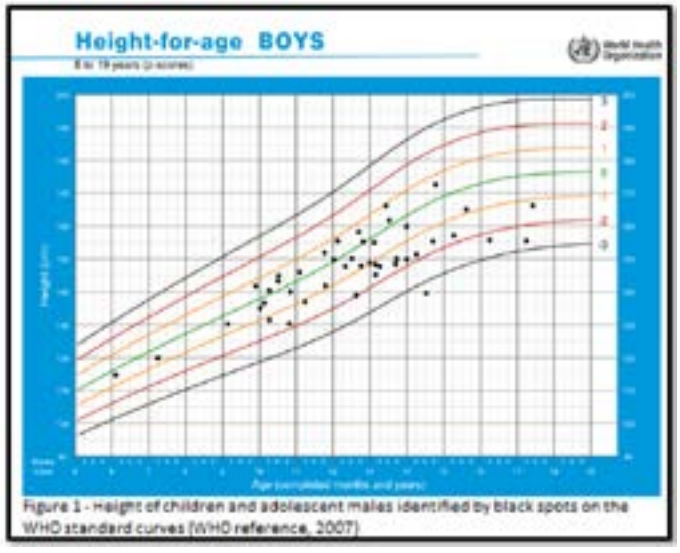

Figure 1 - Height of children and adolescent males identified by black spots on the WHO standard curves (WHO reference, 2007)

The graph 2 shows the values of body mass index (BMI), according to the age, so that the values of the children were identified by black dots in the graph, and thus it was observed the z-scores. As a result of this study there was obtained: 5 across the Z-scores (+3) and (+2); 8 from (+ 2) and (+1); 9 from (+1) and (0); 11 between (0) and (-1); 7 between (-1) and (-2); Between two (-2) and (-3); 2 below the z-score (-3)

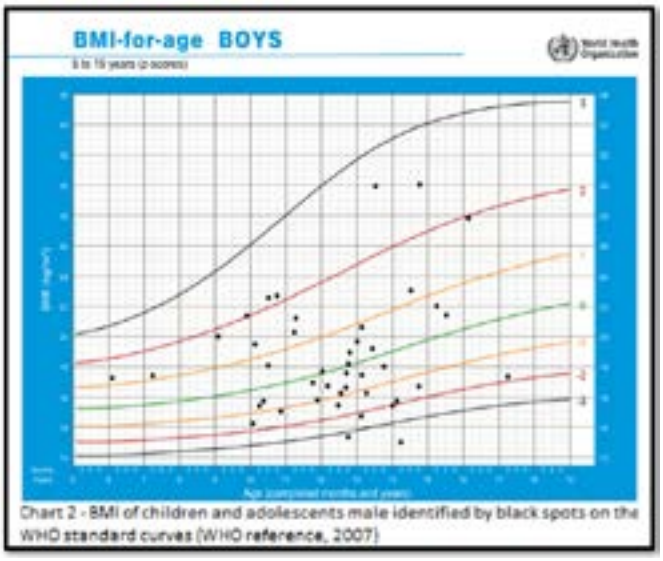

Chart 2 - BMI of children and adolescents male identified by black spots on the WHO standard curves (WHO reference, 2007)

DISCUSSION

After obtaining the data and its application in the WHO charts, it's up to perform the analysis of such data in order to understand the context in which children fit. According to Figure 2, the percentage of children between z-scores (+3) and (+2) was 11.3%, indicating that there is an obesity, according to your age, height and wheight[10]. The children overweight (z-score corresponded to 18% of the studied Among these children, 61 % are eutrophic, rating given by z-scores: > (-2) and <(+1) have children with unsatisfactory weight account for 9% of the total, being classified as Lean 4.5% and 4.5% to markedly thin.10 The unsatisfactory weight values of these children are high compared to national figures, which are 6.8 %[11]. This result reflects the reality of the poor to be assisted by NGOs, reflecting the need for biological analysis, psychological, social and cultural of these children in order to understand the source of this malnutrition table and then try to solve this problem.

FINAL CONSIDERATIONS

To maintain adequate levels of height and weight in children studied, as well as in the other, it is interesting the use of territorial, which is one of the existing basic assumptions in the work of Basic Professional Health Care. Using this feature allows projects and resources are used according to each context of a given population in order to analyze many social issues such as cultural, thus allowing more strategies efetivas[12]. Not only the spatial dimension should be analyzed, as well as the cultural aspect of power, as a lack of nutrition education in the case of children with overweight and obese mainly influences the frame, as the power of these are rich in carbohydrates and fat and devoid of fiber and protein, which does not bring repercussions only in weight but also in the probability of having these comorbidities related or not to grastrointestinal tract. As for children with nutritional deficit, one must consider not only the low socio-economic conditions, but also if that child is encouraged to properly feed or if problems in the short stature do not have hormonal origin, for it is valid to analyze the stature parents, in order to guide the need, or not, to make up the dosage of growth hormones and seek a feasible and effective treatment.

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