17 - COMPARATIVE CRITICAL STUDY OF THE METHODOLOGIES OF EVALUATION OF THE PORCENTAGE OF HUMAN CORPORAL FAT IN THE SCHOOL

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1. Introduction

They are basically the three methodologies to be used for the evaluation of the physical composition of the individual, the direct method, the indirect methods and the considered methods doubly indirect. The direct human evaluation method is the only one obtains a result without contestation but is necessary the analysis in corpses. Observing the primitive times of the evaluation of the corporal composition human being meets in Monteiro (2004), Behnke (1942) and Brozek (1953) had established that the hydrostatic weight is a method criterion for all the other indirect methods and had divided the corporal composition in two components: weight fat person and lean weight. However Brozek (1953) warns already at that time that variations in the physical activity can modify the compositions of the body and create riots in the relations of weight and percentage of corporal fat.

It's important to understand about the history, it is said in a total of only 34 bodies evaluated for the direct method (MONTEIRO, 2004) for an intangible population of individuals and consider advance historical moment. Beyond this imbalance the searched population was of a determined ethnic group of one continent one in one determined time in its majority of advanced age. Visa this was understood that the sample does not have ecological validity to generate external validity in the research, in the reality the facts had more seemed a study of case of what one searches applied, thus generating resulted without significance.

2. The Problem

Which the level of proximity of values between the different methods of physical evaluation of the corporal composition human being?

3. Questions to Investigation

The methods reach with the same precision all the individuals of the group the one that if destine?

When evaluating the corporal composition of the pupils in the schools of all country is taking measured based in necessary methods that correspond what they are considered?

4. Justification

The study human being justifies itself for the questioning deepest on the methods of evaluation of the corporal composition that today are used by Professors of Physical Education in the Schools, a time that the base of these methods was not created for this population. In such a way when carrying through decisions in the area of health under the platform of data constructed with one

5. Objective

The objective of this work is to search regarding the corporal evaluation and of its methodologies, models and norms being carried through a study in the variation measured of the corporal compositions human beings and then to establish the level of relevance of determined methods for the pertaining to school environment.

6. Delimitation of the Study

The both sex, daily pay-pubescent and pubescent will be investigated adolescent of both of the public schools of the cities of Cabo Frio handle with age between 10 and 18 years.

7. Methodology

An analytical research on field in normal conditions of a school will be carried through, where if series invited during the lesson of Physical Education 100 pupils of 7º student class. Choosing then a method quantifier and it will be compared resulted between the calculation of the percentage of fat of the pupils for the method of coetaneous folds and the method of bio-impedance. Adipômeter of the factory Creative Health will be used one model Slim Guide, a common ruler, one estadiometer connected to a Balmar scale and a metric flexible metal scale.

Of each participant of the research three measurements of the coetaneous folds in the methodology and the described points for Fernandes Filho (2003) and will be effected the respective arithmetic means. After this procedure will be applied the refined averages of the coetaneous folds, in formulas proposals for Jackson & Pollock (apud Marins, Giannichi, 2003, p.50) for the definition of the coetaneous fold of men and women who had been public target of this research.

After the definition of the coetaneous folds will be applied in this value found in the formula of Jackson & Pollock and others for definition of the percentage of fat of the participants. In the bio-impedance test a portable device of measurement of bio-impedance will be used electronic. The measures of the percentual of fat will be compared gotten by the method of coetaneous fold and for the bio-impedance method, then an analysis will be carried through statistics of the data of the reason between a value and another one and will be made the separation of the same ones in class intervals for a comparison of the data.

8. Results of Field

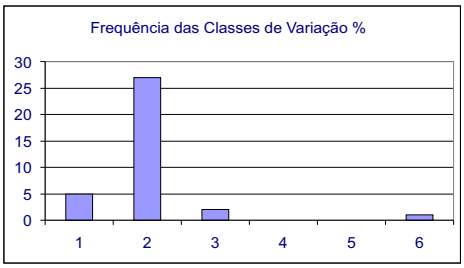
Then 40 pupils if had submitted to the physical evaluation, being in some cases the bio-Impedance device he gave error of reading and in other cases the pupil was not possible to collect the measurements of the coetaneous folds therefore was without appropriate clothes for such or simply he did not want to participate even so of the lesson being observing the event or going.

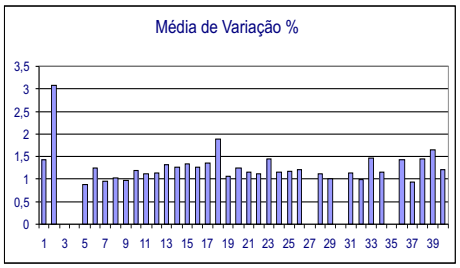
For better evaluation the refined values in the percentual of the difference between the two measures had been divided in six classrooms of intervals, propitiating better visualization of the process.

The gotten results had been the following ones :

	Diferença
Média (28%)	1,28
Mediana (18%)	1,18
Des. Médio	0,22
Des. Padrão	0,38
Variância	0,14

Intervalo	Classes	Frequência
1	0,5 -----| 1	5
2	1 -----| 1,5	27
3	1,5 -----| 2	2
4	2 -----| 2,5	
5	2,5 -----| 3	
6	3 -----| 3,5	1





5 - Conclusion

We have a perception of a great difference in to the measurements, if we considerer the "R" factor of the study methodologies have a variance of 0,80 and 0,99, this variance is not normal to happened.

This imprecision in act of measure the human corporal composition specially in the point were we make a analysis of the human fat mass is more important to be questioned when we remember the quality of population used in to the research to determine the direct method of human body composition. It's a population of old man of a specific ethnical group.

To use this methods of evaluation in to the school is not proper. If it makes necessary for a good orientation of the physical activity in the school a massive investment in research that obtains to create a database brought up to date and allows a more serious inquiry of the state of the child in the school.

Methods developed the sets of ten and until hundreds of years guide scientific research in a millennium marked for the technology, while this politicians debate if he is or not viable the expense with science and affirm through action that some few only can have the ability and sobriety to manage this expense. They forget that what calls expenses in the truth they had been important investments and also they forget that great discovered of science they had occurred in unusual places and with little conventional scientists who militated outside of State headquarters.

When observing the pictures displayed in this article are claimed firmly the orientation in the direction of a more intense collection regarding the form of quantitative distribution and of mounts of money made use for the research in the area of the prevention to the problems of the health and the maintenance and accompaniment of the general state of health of the population.

The current methods have its validity in the current picture of the research however its cost, its bases and its availability are beside the point restricted and they do not reach of efficient form to a considerable population mass that needs more care.

The form as she has been lead the research can at risk compromise in the long run the quality of science and the veracity of results, placing decisions based in information wrong treated. New times demand of science the modernity and disposal of resources and all the certainty of that without an active attitude in the collection of these resources nothing it will modify.

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Summary

The direct human evaluation method is the only one obtains a result without contestation but is necessary the analysis in corpses. Throughout history a total of only 34 corpses is evaluated for the direct method and this corpses based the composition of the indirect and doubly indirect methods, for a intangible population of individuals in all world. This imbalance is increased because the searched population was of a determined ethnic group of one continent one in one determined time. This imprecision in the selection of the research increases of abrupt form when if remember that all the research guided in the direction to quantify for the direct method these relations between the corporal composition and the weight of the individual, was constructed on of individuals of advanced age, that is, a group of total diverse study of the profile of the pertaining to school group. For use of these anthropometric measures in the pertaining to school environment where in its majority they are individuals in growth phase these relations are well distant of the reality.

Word-Key: Evaluation, Corporal Composition, School,

ÉTUDE CRITIQUE DE COMPARATIF DES MÉTHODOLOGIES DE L'ÉVALUATION DU PORCENTAGE DE GROSSES CORPOREL HUMAIN EN ECOLE

Résumé

La méthode humaine directe d'évaluation est la seule qu'elle obtient pour avoir un résultat sans contestation et est nécessaire l'analyse en cadavres. À travers l'histoire un total de seulement 34 cadavres est évalué pour la méthode directe avait basé la composition des méthodes indirectes et doublement indirectes, à une population intangible des individus pour l'avance du moment historique. Au delà de ce déséquilibre la population recherchée était d'un groupe ethnique déterminé d'un continent un dans un déterminé temps. Cet imprecion dans l'acte de mensured l'être humain de composition corporelle principalement dans ce qu'il se rapporte au pourcentage de grosses augmentations de forme brusque quand si se rappeler que toute recherche guidée dans la direction pour mesurer pour la méthode directe ces relations entre la composition corporelle et le poids de l'individu, a été construite dessus avec des individus de l'âge avançé, c'est-à-dire, un groupe de l'étude diverse totale du profil du concernant le groupe d'école. Pour l'usage de ces mesures antropometric dans concernant l'environnement scolaire où dans sa majorité ils sont les individus dans la croissance mettent ces relations vont bien éloignés de la réalité.

Mot-Clef : Évaluation, Composition corporelle, école,

ESTUDIO CRÍTICO DEL COMPARATIVO DE LAS METODOLOGÍAS DE LA EVALUACIÓN DEL PORCENTAGE DE GRASA CORPORAL HUMANA EN LA ESCUELA

El resumen

El método humano directo de la evaluación es el único que obtiene para tener un resultado sin la contestación y es necesario el análisis en cadáveres. A través de la historia un total de solamente 34 cadáveres se evalúa para el método directo había basado la composición de los métodos indirectos y doble indirectos, para una población intangible de los individuos dados el avance del momento histórico. Más allá de este desequilibrio la población buscada estaba de un grupo étnico resuelto de un continente uno en uno determinado tiempo. Este imprecion en el acto de mensured el est humano de la composición corporal principalmente en a lo que se refiere al porcentaje de massa gorda de la forma precipitada cuando si recordar que toda la investigación dirigida en la dirección para cuantificar para el método directo estas relaciones entre la composición corporal y el peso del individuo, fue construida encendido de individuos de la edad avanzada, es decir, un grupo del estudio diverso total del perfil del referente a grupo de la escuela. Para el uso de estas medidas antropometric en referente al ambiente de escuela donde en su mayoría están los individuos en crecimiento ponen en fase estas relaciones son bien distantes de la realidad.

Palabra-Llave: Evaluación, Composition corporal, escuela,

ESTUDO CRÍTICO COMPARATIVO DAS METODOLOGIAS DE AVALIAÇÃO DOS PORCENTUAIS DE GORDURA CORPORAL HUMANA NA ESCOLA

Resumo

O método direto na avaliação corporal humana é o único que consegue ter um resultado sem contestações e se realiza apenas em cadáveres através da análise e quantificação pontual de cada corpo. Ao longo da história um total de apenas 34 corpos mensurados pelo método direto embasaram a composição dos métodos indiretos e duplamente indiretos, para uma população intangível de indivíduos dado o avanço do momento histórico. Além desta defasagem a população pesquisada foi de um grupo étnico de um determinado continente em uma determinada época. Esta imprecisão no ato de mensurar a composição corporal humana principalmente no que tange ao percentual de gordura, aumenta de forma abrupta quando se relembra que toda a pesquisa orientada no sentido de quantificar pelo método direto estas relações entre a composição corporal e o peso do indivíduo, foi construída em cima de indivíduos de idade avançada, ou seja, um grupo de estudo totalmente diverso do perfil do grupo escolar. Para utilização destas medidas antropométricas no ambiente escolar onde em sua maioria são indivíduos em fase de crescimento estas relações ficam bem distantes da realidade chegando a uma média de 28% de diferença entre diferentes metodologias o que questiona sua probidade científica.

Palavras-Chaves: Avaliação, Composição Corporal, Escola.