

Title of the doctoral thesis:

Evaluation of health related physical fitness of elementary school students in Libya

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The manuscript presents the results of the experimental research aimed on health related physical fitness in Libyan schoolboys aged 10 to 11 years of age. The author had collected the data, i.e. body height, weight, and indices of body composition (sum of two skinfolds), cardiorespiratory endurance (time of 1-mile run), muscular strength (sit-up test, repetitions in 1 min), and flexibility (sit and reach test) in 311 schoolboys coming from six elementary schools of the three selected Libyan cities (Aljmeel, Regthaleen and Zwara) of the region Alniquat Alkhams. The results of the study were compared to those of the US standards for boys aged 10 and 11 years and showed that cardiorespiratory endurance, muscular strength and flexibility in Libyan schoolboys lower than in US ones, whereas body composition is comparable in Libyan and US schoolboys aged 10 and 11 years. These findings, in general, confirmed the hypotheses previously stated by the author.

The dissertation consists of 100 pages of the main text, 6 pages of appendices and 10 pages of references.

Overall the manuscript is well-written and the results of the study are interesting – as a pilot study aimed on health related physical fitness in one of Arabic countries.

Literature review (p. 21 - 61) is detailed and aimed on recent studies and concepts. The statistical elaboration of the results is well done and well presented.

However, the Discussion is very general and mainly formal, and not detailed enough; regardless the author is very competent as regards the deep knowledge cultural, psychosocial, economical and demographic conditions that are influencing physical fitness and health-related behavior in young Libyan population.

The Conclusions are completed by Deductions and Recommendation for the school practice, namely to the implementation of the standards of health related fitness into the practice of physical education and school education in general.

Formal considerations

From the formal point of view the thesis itself is adequate to the level of PhD thesis. The references used in text are relevant and author refers to literature correctly.

The main formal problem is that units for all the variables followed in the study are mentioned only in Table 8 and 9. Units are lacking in Abstract and in all the tables.

Other problem as regards formal quality is the non adequate use of decimal places, e.g. why body height is reported using three decimal places, 141.832 +/- 9.405 cm, when the accuracy of the measurement is 0.5 cm (and the biological variability approx. +/- 1 cm). The same is true for the data on body weight, stopwatch measurement of time of 1-mile run, number of repetitions for sit-up test and measurements in cm for sit and reach test.

There are also some small orthographic errors in the text.

Conceptual considerations

The aim of the study – evaluating the elements of physical fitness related to health in Libyan schoolboys – is valuable, however the life-style habits, nutritional, cultural, psychosocial, economical and demographic conditions in Libya seem to be far from those in USA and Canada. Why the author had selected the U.S. and Canadian data as “norms” for his study done on Libyan boys’ population? There are huge differences among these populations and it is difficult to make comparisons. For example, body height, mass and BMI between U.S. and Libyan 10- and 11-year-old boys are comparable?

For example, on the Internet there is available information on “The International Physical Fitness Test for the Arab World” (<http://www.thesportjournal.org/article/international-physical-fitness-test-manual>), A. M. Elnashar and J. L. Mayhew had published Physical fitness status of Egyptian children aged 9-18 years (Br. J. Sports Med. 1984;18:26-29.), there are also some publications of prof. Hazzaa from King Saud University...

There are also substantial differences among the groups from elementary schools of the three selected Libyan cities (Aljmeel, Regthaleen and Zwara) of the region Alniquat Alkhams. On the page 63 it could be seen, that the 10-year-old boys from Aljmeel were at about 10 kg heavier than those from Regthaleen and Zwara and 11-year-old boys from Zwara were at about 6 cm taller than those from Aljmeel, and Regthaleen. Are these differences related to ethnical and/or socio-economical local differences, or are there any other reasons?

The use of fitness component instead of test item or indicator seems not to be scientifically correct and may cause some problems. For example, speaking about “cardiorespiratory endurance” instead of “running time on 1-mile run” may lead to some misunderstanding, e.g. p. 81 or 95 ...if the weight increase by 1 kg the cardiorespiratory endurance decrease, and ..if the height increase by 1 cm the cardiorespiratory endurance decrease by 0.011 (without unit), however, in general, body weight has detrimental effect on cardiorespiratory and/or endurance function, in contrast to body height, that has usually positive effect cardiorespiratory and/or endurance function (e.g. longer step in taller subjects).

Conclusions and recommendations.

Despite of the shortcomings mentioned above and several methodological weaknesses of the study I found this thesis valuable and contributive to the field of Kinanthropology. Thus, I found the candidate qualified enough for the degree of doctor of Philosophy (Ph.D.). At the same time, however, I recommend the author to reconsider the methods and approaches to be employed in future studies and publications.

Prague, May, 9th, 2012

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