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**A HEALTH EDUCATION PROJECT'S EFFECT ON
ELEMENTARY SCHOOL STUDENTS' HEALTH STATUS**

(„Fitness”, or fatness”?! Or never too soon to begin)

Thesis for the doctor's degree
(PhD)

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Pécs, 2016.

INTRODUCTION

When I was an elementary school student - as everyone else in the school - I took part in a health education program and had the chance to experience the effects of the project personally. At University of Pécs, I had the chance to acquire the academic basics, too. Compared the gained knowledge and experience, a question arose in my mind: How does health education function in field of public education? That is the main purpose why I have chosen to research the effects of health education on the elementary school age-group.

Since I have the acquired scientific knowledge and experience in my possession - gained at University of Pécs - I noted scientific curiosity in myself towards the questions of health education in schools. My thesis' topic was about the basic options of health education, written in 2009. To present the topic in practice and to end my bachelor education years, I have chosen the Mezőszél Utcai Elementary School to write about in my final thesis.

From the results of the comparison of my own tests from 2009 and the school's prior tests, it was quite clear for me the program is well managed and prosperous, even could serve as a health education model for other institutes too. That particular time marks the starting point of my six years old monitoring studies, which I had the opportunity to extend to other establishments too.

In 2007, a new initiative, a seven institutes included (Mezőszél Utcai Elementary School also) "Citycenter School" was formed and declared. The leader of the "Mezőszél" health education team formed a professional partnership between the seven schools to represent themselves on one hand, on the other hand to work out a long term program. This is the project I joined in in 2009 with the results of my former tests, then carried on with my tests and researches, results examined again in 2012 and 2015.

My thesis is divided for several parts and related questions.

Firstly, I am looking for the answers in terms of what kind of changes would happen in the exact educational units under the new initiative and centralized (seven institutions involved) management, called the "Citycenter" health education and in its working group. The first follow-up tests in 2012 were showing positive results, then in my opinion we have the ground to hope the next tests will also bring positive or at least stagnating results. Secondly, I will be interested to see the analogy or difference between the given answers for immediate considerational and supplementary or subjective questions. How efficient was the effort to unify

the general view of the students towards health education in each consolidated schools; was it successful to realize the common goals; even can we find maintainability for the 2009-2015 period besides influenced inside and outside factors?

We hope the new health education program was sufficient in each consolidated schools and the new way of thinking presents effect.

Inasmuch as it is not, what are the causes and could we detect these causes?

Research has been done in the elementary school age-group, because we do believe that kind of health education and health development could never be started early, as we also referred in the title. We also find our research topical because as we know, obesity is showing an increasing trend in younger age. We would like to confirm that good strategy and effective short term goals brings positive results in health education relatively in short time.

We suppose if health education begins in childhood within the boundaries of elementary school and a committed group of health educators are in charge with a good program, that just makes significant changes in health status and thinking not just in the life of students but every other citizens of the institution.

We do hope monitoring the results and with the help of follow-up tests, we manage to run an efficient health education program, which advantages and results will also show up in the future, at next educational levels. We do believe that a good and proven health education program can be successful in other institutions too.

OBJECTIVES:

The primal aim of the research is to present a health strategy in the elementary education institution, which quality is highly decisive regarding that a secondary social field is where students take up standards. Further aims:

- Add test information and results
- To present the options of operative planning leads to achieve strategic aims, basic experiences of creating short term objectives and declare that strategic plans' success depends on participants' commitment too
- To present that every future plan should be managed step by step and declare the importance of constant feedbacks and checks

In view of the above we find important to compare our tests and method with similar tests to see ourselves in the right position in the particular field of research.

1. We presume physical activity is decreasing by the age increasing of children
2. We presume we find significant coherence between sex and health awareness and regular exercise
3. We presume a deliberately formed elementary school health education program runned in the "Citycenter" Initiative has the positive effect on mixed nurture and physical activity and will also show a lower number regarding overweight children compared to the other institution's and national statistic numbers.
4. We presume with the help of a proper stategic plan alongside committed participants, we manage to achie positive results in elementary school health education.
5. We presume the method of health education and development of Mezőszél Utcai Elementary School is effective and quite useful for the other school units (regarding statistic numbers), and we do hope we realize and keep the results in form in the future.

SUBJECT AND METHOD

During the research phase an anonym query was used in every year to be the ground of the study. The sheets (which are showing main content similarities for the ones used in the international "Shape-up" program's hungarian research) were divided to decisive and special questions. Required by the direction of the institution, we rendered a few points in the survey. In some parts we took the question differently but with the same content to make the choice easier, in some parts we entirely changed the question. We did it this way to help ourselves to monitor the needs of the students. The queries were filled out by upper division students of four units of "Citycenter School" initiative (n=866). Students were without exception fifth to eighth grade, aged from 11 to 14 (av. 12,04, spread:1,51). The lowest number of queries were collected from Mátyás Király Utcai Elementary School (119), the highest Jókai Mór Elementary School (319).

Since the last query, it was a huge progress the forms were completed through on-line (in Google) during computer science classes. Thanks to this progress and method, in spite of sport contests and events and other school related activities and duties, involvement of the Citycenter School initiative's upper division students were hundred percent. Compared my sample number to other studies, it is clear that we were able to work with equal numbers (886-886 persons) regarding measurement of physical attributes and settle queries too. Comparing to the population of Pécs, the similarity of the test are even brighter.

Year by year, the work-group tries to harmonize the questions of the surveys, sometimes to change a question, of course we regarded main factors and elements stays packed in the questions. Besides that, we could monitor the actual tasks, programs and aims too (for example: What sport do you like to try out in the school?). Through there are questions listed in every year's surveys regarding these questions form the backbone of the query. In addition there are questions we skipped in certain year's queries for obvious reasons (for example: What do you like to buy for food in the school buffet? - Buffets were almost entirely disappeared from 2012 from schools).

The surveys only and exclusively included questions related physical activity and nurture. It means the results were only investigated by the aspect of health education (exercise and nutrition). Questions are alternately connected to health and sport subjects, referred to students and the research field's inner and outer factors.

We were curious about the feeding habits and trends of the students, even personal opinions and feedbacks were welcomed (for example: How do they think about healthy foods? Habits of eating; Do they prefer more sporting opportunities at the school?)

Steps of the research:

- Convince schools' directors about the need of the tests, manage to approve
- Survey the students
- Data gathering (from school documents also)
- Evaluation of the surveys
- Comparing analysis
- Present the facts, draw conclusions and summarize

IBM SPSS Statistics version 20 and Microsoft Excel 2010 were the softwares used for our for statistic analysis. Through the process we practiced descriptive statistics and deductive method also (consistency and diversity inspection). Significance was determined as $p < 0,05$. Through the process of data presentation, aggregated data was shown by different graphicons and statistic charts. Through the inspection we focused on cross-sectional results, because we would also like to give an actual report on the single institution, furthermore we would like to portray actual and valid trends. The final database was created of the solo institution statistics, health visitors' report on body fat and BMI data and the previous test results collected of ours. These are the results we compared to other national and international measurements and tests.

RESULTS

Complex follow-up tests were involved 11-14 age old students (n=886), researched the direct factors in relation of sports activity and health.

By the body mass index, our statistics were proven better than other national scans (Szomdis and associates report in 2014, HBSC 2011, Valek OGYEI report 2014) regarding overweight or fattened students with its frequency rate 8,80 %. However, the rate of overweight or fattened students - based on body fat percent - was 21,82 % and 11,31 %, which is also a lower number compared to the similar work of Szomdis and associates in 2014.

In questions targeting the physical activity, we can find significant difference between fifth grade students and no daily activity, and seventh grade students and daily sport activity.

Regarding the Hungarian Sports Science Association's (MSTT) report from 2014, nearly 30 % of children are eating fruit and vegetable daily. Regarding milk intake, approximately half of children take some kind of dairy product each day, mainly milk. Regarding gender, we can settle the quality of nurture is worsened by the age, but we can also say generally, upper division students nurture is worsened by the time.

In opposite, our research holds that 40% of students are eating vegetables and 60 % of them are eating fruits. These numbers exceeds the ones in the report of Szomdis and associates from 2014. Regarding dairy products intake habits we have received better results again, 61,65 % of students of the 'Citycenter School' initiative consume these kind of products. We have found correlation in terms of meat consumption between boys and daily meat intake, and girls and multiple weekly intake. In terms of daily and weekly multiple fruit intake, we have found significant correlation between eleven age old and thirteen age old students. As time goes and age increasing, it becomes clear that consumption of sweet is increasing.

Physical activity influenced by age, our results were showed similarities to the study of OGYEI-HSBC (Németh and associates from 2011), which is saying regular physical activity is decreasing by age, even not enough and mostly typical between girls. At the same time frequency were lower regarding non-exercising students or barely exercising students in our sample.

Finally, our last and complex, interdisciplinary research (involved 886 elementary school aged students from Pécs) has stated the following results and references:

Due to body mass index (BMI), two thirds of the students were in good nutrition condition. More than 3 % of the students were morbidly obese or weight deficient. Almost 9 % of students were overweight or fattened. Firstly, because BMI test is not always enough to size-up body condition, we considered to test body fat also during the lay down of overweight tests. Based on these body fat tests, 30 % of children and pubescent were over the relative health limit of body fat.

- **It is important to screen students, mainly regarding body fat content**
For achieving this aim, it is needed to strengthen and develop connection and co-operancy between institutions and school doctor and health visitor. It is important to emphasize school prevention programs about nutrition and feeding.
- **It would be rewarding to create special add-on sport opportunities for overweight or fattened students, even as a school class**
- **High priority of health screening for seventh grade students or higher**

On the ground of surveys, more than 72 % of students doing sports on regular basis - besides the school classes - at the lowest estimate 2 or 3 times a week. However this trend shows decreasing form by age, eight grade students ratio at the same terms are much lower. Nearly 10 % of children never doing sports. Schools' sports activities are not so popular, altogether 9,05 % of students take part in.

- **Need to improve schools' infrastructure and selection of sport activities. Special sports need to be provided based on students needs.**
- **It would be rewarding to set a similar next year, specially in seven and eight grade, because it is the first time (academic season 2015/2016) in the history of school to have physical education as a class in every single day for all the divisions. Is it possible that seven grade students would show the same results (which class have PE class five times a week in the last few years)?**
- **Most of eight grade students are doing sport at home or at gym individually. From eight grade, it would be important to add to syllabus informative lectures - with the help of experts - about proper training, so students could learn the basics of**

creating a training program for themselves, giving information they can work up on their own to help the prevention of injuries and posterior developmental issues.

Feeding habit are showing good trends, mixed nutrition had proven good and the results are also affected by that. The major problem is the satisfaction level of the school canteen's meal selection, told by the students.

- **Furthermore it is relevant to publicize healthy lifestyle for one and all, parents and children**
- **Create opportunity to open reform canteen or bar, even based on the requirements and needs of children (of course based on health issues). Operational conditions would be ideal to be set by the institution, not the renter.**

In connection with the research, it would be rewarding to extend these tests to other facilities too, even to municipal levels, to elementary and secondary education. Local government of the City of Pécs, Educational Centrum or Klebensberg Institution Sustaining Center would help to realize the effort.

SUMMARY

It was an exciting and resultful process until the end of the research. After all, we were curious about the results, whether institutions' staff hard work and the reached aims prove our hypothesis or not. In our opinion, we do confirmed our hypothesis. Alongside effort and commitment, it is visible a good strategy makes difference and a well-trying health education program can bring positive effects not just on one but other establishments too.

The first hypothesis was proven, physical activity shows decreasing trend outside of school by age increasing. On the ground of our samples, we can point out seventh grade, this is the phase when young students disappear and get lost of our sight as regular partaker of activity. Similar results were published in other studies, for example Szmodis and associates from 2014.

As we supposed, it was also proven that mixed and diversified nutrition showed up amongst the students of Citycenter School initiative, evenmore regular physical activity increased on regular basis. It became clear that the health education and development program managed by the Mezőszél Utcai Elementary School was efficient and that efficiency rating is maintainable in other institutions too, evenmore it is possible to keep standards and results alive through the test years.

It was not proven that there is significant difference between gender and health awareness in terms of activity and nutrition. There was just a significant correlation related to gender between cooked meal consumption and amount of consumption. Based on BMI data, we also verified the hypothesis of ours that the ratio of overweight and fattened students are low compared to the national average. For the record, it is important to highlight that bodyfat percentages are not quite good as a result. We need to work out a program to reduce that ratio number.

To realize our goals in health education, we should also help develop health conscious behaviour. Educators and their models are regarded as major factors as their relation to students too. In our opinion, for realizing efficient health education, it is indispensable to have the right synergy and chemistry between educators, not depending on educator's department. Since we do believe students need to have first hand experience to see how health conscious behavior could effect. Tours and trips, workshops and sport activities in the school could serve as common team building experiences. The quality of all time growing up generation's health education is a

responsibility of the elementary and secondary educational institutions, so it is their duty to work out the right long term prevention and health care-taking strategy and the right way of development. The sharing of the results and experiences of 'Citycenter School initiative should help the process of "thinking together" and easily effects better overall results.

It is proved that sport activity decreasing by age, as follows secondary school students are not exercising as much, means their stamina shows failing trend. Based on our samples, this process starts right after seventh grade. Therefore it is important to create motivation and need in students for physical activity. I gladly noticed Citycenter School initiative's units are top on this factor. In turn, in reflection by the results, it is likely to work out even more focused program strategy for the next phase to deal with the problem. Many of data was collected through the process of follow-up testing, which is a quite fair ground for further work. Results hold many options for the future.

It is gratifying to see compared to other similar researches, our results are showing positive tendencies and we can clearly match effort with result regarding the outcomes. Definitely, schools were having benefit of the study and that fact was also clear for the managements of the schools so they supported and helped us through the years.

It has been proven again, that education and health education for healthy lifestyle of growing up generation would begin in elementary school (even in kindergarten) to form that common health conscious attitude in our children what they take on and hold through the process of becoming an adult.

It is our plan to share all our results and data with the school units for further processing. Facts published in the thesis are also free to use for the Citycenter School initiative to set the health picture of the institution. There is so much potential in our results; further examination of tendencies within single classes; gender diversities; parental background and social status compared to obtained results.

It would be worthwhile to expound our surveys' results with other elementary and secondary schools in Pécs to help their own health education work. At last but not least - as a non-negligible concept - it would be great to see the whole picture in Pécs based on the researched areas.

We would like to express our gratitude for the school directors and educators for allowing and helping students take part in our process in efficient way. We would specially thank children and their parents for actively helping our work.

ACKNOWLEDGEMENT

To be honest, it was quite a challenge to complete my thesis. Through my research, many people helped me to summarize my results, even supported and encouraged me. Without them, my thesis would never have been finished.

With all my respect, I should like to express my thanks to professor **Mrs. Erzsébet Rétsági** and professor **Mr. Pongrác Ács** (University of Pécs Faculty of Health Sciences) for their immense and tireless support and motivation, as for the help as supervisors of my thesis.

I would like to thank rector **Mr. József Bódis** and professor **Mr. Endre Sulyok** (University of Pécs Faculty of Health Sciences Doctorate School) for allowing my social science oriented thesis to be defended.

Express my honest thanks to dean **Mr. József Betlehem** (University of Pécs Faculty of Health Sciences) for all the support and patience through my scientific work and research.

Express my thanks for all the colleagues of University of Pécs Faculty of Health Sciences and Citycenter School for their help, support and advices through the way of completing my study.

In the end, I would like to specially thank my family, my loved ones and friends for the long time support and help, for their unconditional love.

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