



Dr. Svetozar Marković – The founder of the school hygiene in Serbia

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SUMMARY

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Dr. Svetozar Marković (1860-1916) graduated from the Medical School in Paris, France (1894) and was the founder of the schools hygiene in Serbia. He founded the Society for School Hygiene and People's Enlightenment (1906); he also established the Svetlost (1908), a periodical that was regularly published for six years, until the beginning of the World War I (1914). He was involved in introducing high standards in schools based on medical science, with a purpose of maintaining, and not ruining the health of students. He was a pioneer in this field of work.

Key words: History of Medicine; History, 20th Century; Famous Persons; Physicians; Hygiene; Schools; Serbia Non MeSH Svetozar Marković

INTRODUCTION

Dr. Svetozar Marković appears at the time of a great movement in medicine following the victory of Pasteur's scientific discoveries. It is relevant where a person sleeps, what he eats, what kind of water he drinks, or the kind of marriage he has. There was a general demand for doctors not just to be plain artisans but also educators and lawmakers.

Svetozar attended high school in Belgrade, contrary to the wishes of his father so he was forced to finance his own schooling by working as a domestic or as a janitor.

Later on, being an excellent student, he received a government's scholarship and graduated from a medical school in Paris. He spent two years there specializing in gynecology and obstetrics while running a private practice. He personally experienced poor health conditions while attending school in Serbia and now, while being in France, he observed the great influence doctors had through their daily work and practice. They contributed in introducing *standards into the French school system*. School hygiene is a part of hygiene and therefore a part of medicine. The greatest involvement for its implementation is upon the doctors. *The French league of People's Education* showed that there was enough room for other professions, such as teachers, school managers, and lawyers to get involved. Upon his return to Serbia, Dr. Svetozar Marković was employed as a school doctor in Belgrade. For him, the introduction of medical standards in Serbian schools became an act of patriotism.

MATERIALS AND METHODS

A special foundation named *Dr. Svetozar Marković* was established and it contained specialized, technical publications. This was a gift his widow donated in 1927 to the *Svetozar Marković* library¹. Her desire was that a special foundation should be established from these publications. Marković's annual school reports on health condition of students who attended the *Third Belgrade Grammar School* (Pančić's grammar school) are of special importance. There are three such reports (2-4) in existence, but there were probably more.

The methodology used by Marković:

- (1) Registration of the student's illnesses during the school year
- (2) Systematic physical examination of all students at the beginning and at the end of each school year
- (3) Statistical documentation collected during the systematic physical examinations
- (4) Description of the conditions in current school year
- (5) Conclusion and the recommendations.

RESULTS

Dr. Marković does not consider all the medical reports concerning students' illnesses during their school year to be accurate. There were diagnoses that were established not only by school doctors, but also by some other doctors, and by illiterate parents in order to justify students' absences. Marković classified them into systems (neurological, respiratory, cardiac, blood vessels' illnesses, digestive organs' illnesses, etc). The statistical analysis of the medical reports for the year 1903/04 showed that out of total 366 examined students there were 411 (112.29%) disease cases. The results were similar in next two years: 111.29% reported diseases in the year 1904/05 and 123.56% in the year 1905/06. In 1906/07, the situation was *seemingly* better when 92.42% disease cases were reported. Personal hygiene was based on how clean the students' nails were. It was something that did not significantly improve in the coming generations. Poor hygiene standards could also be expressed by dental exams. He divided them into the groups of excellent, very good, fair, and bad. The ratio between the excellent and bad was as follows:

1903/04 = 10.92%: 22.92%;

1904/05 = 20.32%: 24.27%.

For the school year of 1906/1907, Dr. Marković records show that 'as far as the state of bad teeth and very bad teeth results are as follows: excellent = 7.53%, bad = 32.49% and very bad 6.65%".

Statistically speaking, there is no significant difference between excellent and very bad. Nail cleanliness speaks of hand cleanliness and hand cleanliness of body cleanliness. We could say the same thing about the state of mouth and teeth, even though that may be a little more complicated because it depends on the visits to dentist's office.

¹ University library 'Svetozar Marković' was named after the first member of the socialist party in Serbia, Svetozar Marković, who was not a medical doctor

Just as the behavior learned at home is reflected in the way one behaves in school, the same influence is shown when it comes to the habits of hygiene. These, on the other hand, depend on the state of literacy.

According to the government statistics written in the "Svetlost", an educational publication run by Dr. Marković, the percentage of illiteracy among enlisted men in the Serbian army was 58.88% in 1901 and 52.99% in 1902. If we can share the responsibility for such bad body hygiene between the parental home and school, there is something that is only related to school and that is that there are no *standards concerning hygiene*. But if there are, then by chance, they would stand upside down. The results come from anthropometrical documents following systematic physical exams. According to the criteria of bodily constitution, the modality is divided into excellent, very good, bad and very bad. The ratio between excellent, bad and very bad constitution is 2.66% against 21.06% (!) to the advantage of latter. This is recorded for the year 1906/07.

In the school year 1903/04, the ratio was 1.36% against 13.66%, for 1904/5 the ratio was 6.35% against 13.58%, and the predominance is related to good 60.31%. The frequency of this distribution among the examined students is also similar in later school years.

Body weight in kilograms is taken at the beginning and at the end of 1906/07. The following modalities were applied: increased, reduced, and remained the same. It was to be expected that the body weight would be increased among all students due to the growth and development. The increase was recorded in 60.53% of students, weight remained the same in 29.04% students and it was reduced in 9.31% of students.

The same alarming facts could be added to the previous. The size of chest measured at the beginning and at the end of the year was enlarged in 46.56% of students. In his research regarding the health standards in school system, he noticed, for example, that the *Third Belgrade Grammar School* (Pancićeva) is unhealthy, a killer and dangerous. The new building, which stands to this day, took a long time to be built, but was not built on a healthy grounds. Previously, a military hospital stood there. "Today's school desks are not good; they are the main culprit for so many twisted and damaged students' backs. The conditions in a new building may be better, but if the old school desks are brought back into it, there will be no improvement.

Gymnastics is missing in Serbian high schools. It should be introduced not as a subject by itself, but as recreation during the class intermissions. The easy gymnastic exercises are tied to the schoolyard size. In Serbia, they are narrow, dusty and there are not enough of them. The modern hygiene requirement would be a large school backyard, at least 15m² per student and it is desirable that they should look like parks."

An inspection of a school and its students took place in Čičevac on April 6, 1909 and it gave the following negative results: the capacity and the given volume of breathing air by classrooms (there were 4 of them) was as follows: for each student it was 1.48m³ to 2.74m³.

Out of 105 students, 48 or 48.85% of them were in a sickly state, meaning nearly half of them. The new school in Mladenovac was not build according to the required standards. The air capacity expressed in cubic meters per student was between 2.74 and 3.68 cubic meters. Half of the students' school desks were satisfactory and the other half were not.

DISCUSSION AND CONCLUSION

Lead by the idea that the more people are enlightened, the better their health will be Dr. Marković spoke of high health standards that existed in Western Europe and the United States and he tried to bring their model to our schools.

This was a cry into deaf ears. Dr. Svetozar Marković's medical reports did not meet the approval either from school authorities or from the responsible ministries. Much less did they create a desire to follow the recommendations of those reports. In order to remove the obvious shortcomings, Dr. Marković was already faced with difficulties while performing systematic medical exams: procurement and transport of all the necessary objects such as scale, instruments for measuring the heights, dynamometer, for example; he also encountered difficulties while providing adequate examination.

Each of his medical reports according to the law was first presented to the director of school who tried to change it, soften it or rearrange it. For these reasons Svetozar Marković was forced to turn to people.

His first step was to print an annual medical report magazine in 1908 (for the years 1903/04 and 1904/05 at his own expense). The next step was the foundation of *The Society for School Hygiene and People's Enlightenment* (1906) under whose auspices the medical report for 1906/07 was issued. It dealt with the health conditions in the *Third Belgrade's Grammar School* as well as with the medical report concerning the medical state of the students attending the Seminary of Saint Sava in 1907/08. His final step was the creation of the "Svetlost" magazine.

The mere establishment of the "Society" and especially of the "Svetlost" magazine required voluntary contributions. The names, including the exact amount of their donation was written in every notebook. Contributors with larger amounts had their picture included. At the end of each publication, there was a written record of each donor and the way money was spent. As we would say today, that was an absolute transparency. Today, we are trying to teach ourselves what transparency is.

Following his contemporaries as well as doctors from previous years, Marković believed in "Truth"; quoting the words of Aristotle, he would say: "Plato is dear to me, but the truth is dearer" (Amicus Plato, sed magis amica veritas). He took an approach of a naturalist. Facts speak for themselves, everything can be changed. Have faith in doctors and science. And then, act!

However, contrary to Marković's cries, *The Third Belgrade's Grammar School* was built on the site of an old military hospital. Its courtyard was too small.

That is what the medical report stated for the school year 1907/08. Furthermore, there were no school desks according to the specifications commission suggested and Marković was one of its members.

Pictures of school desks found in German and Hungarian catalogs were given by the responsible Ministry to domestic manufacturers for production. Marković wrote that those school desks were not good at all. Besides the bad quality they were made of, they were of the same size for all grades even though it is known that the students going to the same grade differ in heights. One of them may be 137 cm while the other may be 183 cm tall (as it is often the case in the fourth grade of the grammar school of these days, e.i. the eighth grade of today's elementary school).

So, Marković wrote that it was already clear that the spine of one student could be more or less straight while the other ones would be twisted as bows.

There was a discussion as to why the school system did not introduce the French standards in our schools. One of the facts that would explain it is that the medical profession at the time was not respected. A doctor was just a 'side link' in the military, civil, and popular medicine.

A remark posed by Radoje Domanović regarding Marković's useless efforts was that: among us Serbs, there are two kinds of people: those who want something and others who do not want anything; and among those who do not want anything, there are always those who want to stand on the way of those who want something good.

Let us ask ourselves if the situation is better today? Is the given space of classrooms cut according to the number of students? How big are the schoolyards or (once again) how practical are the students' desks?

To what are we suppose to attribute today's heavy students' backpacks (for elementary school pupils), the excessive number of weekly classes (students have less classes than pupils), and so forth and so on.

Today there are no more patriotic, energetic, uncompromising Dr. Svetozar Marković. No more the type of his associates. There are no more grant givers, there is no more transparency, and there is no more the *Svetlost*. "May my soul celebrate you Almighty, that with my school certificate, you did not give me a twisted spine" (Marković's quotation).

Are there any facts today about the state of spinal cord of our students in Serbia? Who has that information? Were those facts collected at all and how were they collected?

Whichever the way, they are not accessible to wider public. Are we going back to the beginning? We can now start with the question of transparency and go on further.

Conflict of interest

We declare no conflicts of interest.

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