

MORBIDITY ASSESSMENT THROUGH EPIDEMIOLOGICAL TRIAGE IN THE CHILDREN OF SIBIU COUNTY

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Abstract: This paper analyses the health status of the school-aged children in Sibiu County with the help of the epidemiological triage. The aim of this medical examination is to assess the health status of the children in Sibiu County, to prevent, fight and treat the infectious and contagious diseases identified after each holiday. The study took place between 2011 and 2013 and included a total number of 117 599 children enrolled in pre-university education (kindergartens, elementary schools and high schools) at the level of Sibiu County. Following the epidemiological triage, there were found 6 575 cases of parasitic and infectious diseases, of which most cases were registered in the children belonging to elementary schools, followed by those in kindergartens and high schools. At the level of the children in kindergartens, most cases of infectious diseases were registered in 2013, compared to the elementary schools and high schools, where in 2011, there were found most cases of illness.

INTRODUCTION

Children's health status is indisputably one of the most valuable assets of any nation, as it is stipulated in the European Union Public Health Strategy 2008-2013: "health is the greatest wealth of a society".(1) A healthy and productive society which will have a sustainable and prosperous future will always have at its cornerstone, the healthy development of its children. Knowing the health of the children attending education units using epidemiological descriptive data is a scientific approach of the concept of the prevention of the infectious, contagious diseases in health care practice regarding the population group of 0-18 years old.(2) The prophylactic aim of the medical actions is to protect the young people's health by knowing the epidemiological potential in the school-aged children.(3)

PURPOSE

The present study has as its starting point the working hypothesis according to which, after the school holidays, among preschoolers and students, there are sick children or children shedding pathogens who are healthy and who can be a source of infection for all the children present in schools.

The purpose of the epidemiological triage is to assess the epidemiological health status of preschool children and pupils in schools and to prevent, fight and treat the infectious, contagious and parasitic diseases detected during the medical examination made by the medical staff after each school holiday.

The objectives of this study are the following:

1. Preventive epidemiological supervision of the children in the local public schools.
2. Accurate knowledge of the epidemiological potential risk for the children's health through detection within the epidemiological triage of the infectious, contagious and parasitic diseases.
3. Implementation of immediate measures in relation to the nosologic entity and the clinical form of the detected disease (isolation, treatment and regular check-up).
4. Promotion of sanitary-epidemic and health education

measures in order to prevent epidemic situations with a critical character for the population.

METHODS

The epidemiological triage is an active method regarding the surveillance (4) of the health status of preschool children and pupils in schools and is carried out by history, temperature measurement (as case may be), clinical examination of the skin and mucous membranes by the health professionals working in school medical offices.

The study was a descriptive, retrospective one, based on the data collected during the epidemiologic triage, reported to Sibiu Public Health Directorate, School Hygiene Department for the period 2011 - 2013. The data refer to the children enrolled in pre-university education (kindergartens, elementary schools and high schools) in Sibiu. There were examined a total number of 117 599 children, of whom 41 554 in the year 2011, 40 533 in 2012 and 32 512 in the year 2013.

Processing the statistical data regarding the epidemiological triage was done taking into account the school year (after the holidays in January, April and September), the type of community and the detected diseases.

RESULTS AND DISCUSSIONS

The epidemiological triage was performed between 2011 and 2013, on a total number of 117 599 children, of whom 23 586 (20%) were preschool children from kindergartens, 57 233 students from elementary schools (49%) and 36 738 (31%) high school students. We studied only the first seven causes of the detected diseases, depending on the highest frequency. These were: angina, angina due to Group A beta-hemolytic *Streptococcus*, scabies, pediculosis, rubella, varicella and mycosis.

Below, I will present the data regarding the incidence of the epidemiological triage in kindergartens, elementary schools and high schools, between the years 2011 and 2013.

Of the 6 880 preschool children examined in January

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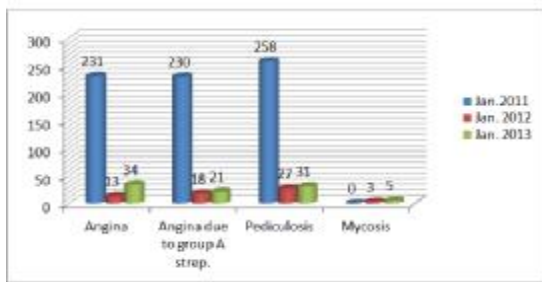
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2011, there were found 231 angina, 13 group A streptococcal angina and 34 cases of pediculosis. In January 2012, of 8 240 preschool children examined, there were found 230 cases of angina, 18 group A streptococcal angina and 21 cases of pediculosis (table no. 1). Of the 8 466 preschool children examined in January 2013, there were found 258 angina, 27 group A streptococcal angina and 31 cases of pediculosis. If we analyze and compare the three years taken into study, one can notice an increase in the number of angina cases in 2013 (258 cases) than in January 2011, when there were 231 and 230 cases in January 2012.

Table no. 1. Incidence of the epidemiological triage in kindergartens between 2011 and 2013

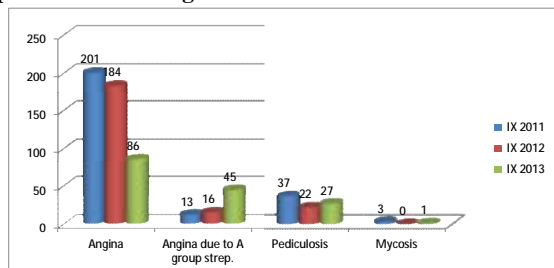
Kindergartens triage	I 2011	I 2012	I 2013	IV 2011	IV 2012	IV 2013	IX 2011	IX 2012	IX 2013
No. of examined children	6880	8240	8466	6035	7473	6481	9466	7965	4891
Angina	231	230	258	151	140	271	201	184	86
Angina due to Group A beta-hemolytic Streptococcus.	13	18	27	11	13	23	13	16	45
Pediculosis	34	21	31	14	23	22	37	22	27
Mycosis	0	3	5	5	6	0	3	0	1

Figure no. 1. Incidence of epidemiological triage in kindergartens in January, between 2011 and 2013



Regarding the triage in January 2013, there were recorded 27 cases of beta hemolytic group A streptococcal angina, 18 cases in 2012 and 13 cases in 2011. The number of cases of pediculosis was higher in January 2011, 34 cases as against 31 cases in January 2013 and 21 cases in January 2012 (figure no. 1). Regarding the epidemiological triage in the month of April in kindergarten children, there is found a number of 271 cases of angina in the year 2013, 151 cases in April 2011 and 140 cases in 2012. The number of cases of angina due to A group streptococcus was higher in April 2013, 23 cases as compared to April 2012, when there were 13 cases and to April 2011, 11 cases. Most cases of pediculosis occurred in April 2012, 23 cases, 22 cases in 2013 and 14 cases in the month of April 2011.

Figure no. 2. Incidence of the epidemiological triage in September in kindergartens between 2011 and 2013

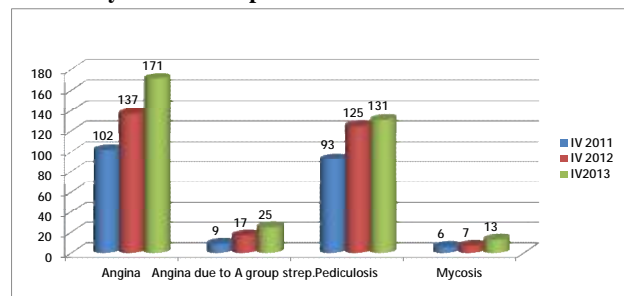


Regarding the epidemiological triage performed in kindergartens in the month of September, there is a greater number of angina cases in 2011, 201 cases, 184 cases in September 2012 and in September 2013, there were 86 cases (figure no. 2). In September, there were 45 cases in 2013, 16 cases in 2012 and 13 cases in 2011. The number of pediculosis was higher in September 2011, 37 cases as compared to 27 cases in 2013 and 22 cases in September 2012 (figure no. 2).

Table no. 2. Incidence of the epidemiological triage in elementary schools between 2011 and 2013

Triage Elementary schools	I 2011	I 2012	I 2013	IV 2011	IV 2012	IV 2013	IX 2011	IX 2012	IX 2013
No. of children examined	17049	18339	21845	15251	16793	17260	20312	20281	17633
Angina	200	180	347	102	137	171	226	119	102
Angina due to A group strep.	14	16	49	9	17	25	18	14	42
Pediculosis	168	149	17	93	125	131	184	169	107
Mycosis	0	12	8	6	7	13	8	17	4

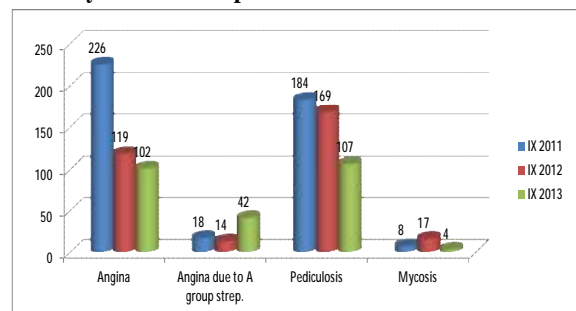
Figure no. 3. Incidence of epidemiological triage in elementary schools in April 2011-2013



Following the epidemiological triage in elementary schools in January 2013, there was found a greater number of angina cases, 347 cases, compared with 200 cases in 2011 and 180 cases in 2012. The number of group A beta hemolytic streptococcal angina was higher in 2013, 49 cases, as against 16 cases in 2012 and 14 cases in 2011. In 2011, the number of pediculosis cases was higher, 168 compared to 149 in 2012 and 17 cases in 2013 (table no. 2).

In April 2013, there were 171 cases of angina, 137 cases in 2012 and 102 cases in 2011. The number of group A streptococcal angina was higher in 2013, 25 cases, as compared to 17 cases in 2012 and 9 cases in 2011. The cases of pediculosis were higher in April 2013, 131 cases, 125 cases in 2012 and 93 cases in 2011 (figure no. 3).

Figure no. 4. Incidence of epidemiological triage in elementary schools in September 2011-2013

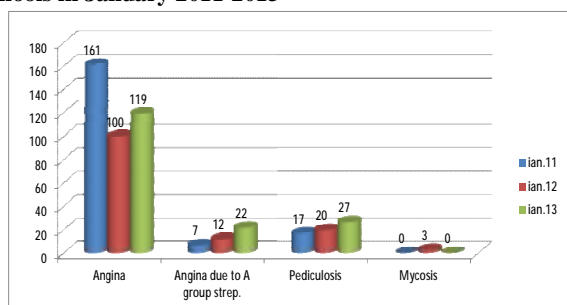


After the epidemiological triage in September, there were 226 cases of angina in 2011, 119 cases in 2012 and 102 cases in 2013. In 2013, there were a total of 42 cases of beta-hemolytic A group streptococcal angina, 18 cases in 2012 and 14 in 2012. The number of pediculosis cases was higher in 2011, 184 cases compared with 169 cases in 2012 and 107 cases in 2013 (figure no. 4).

Table no. 3. Incidence of the epidemiological triage in high schools between 2011 and 2013

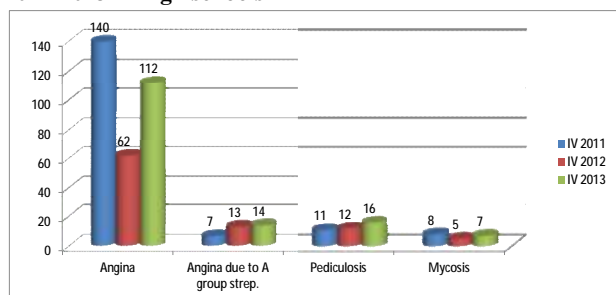
Triage	I 2011	I 2012	I 2013	IV 2011	IV 2012	IV 2013	IX 2011	IX 2012	IX 2013
High schools									
No. of examined children	12540	11914	12284	12098	11778	11780	1776	12187	9988
Angina	161	100	119	140	62	112	102	102	76
Angina due to A group strep.	7	12	22	7	13	14	14	10	21
Pediculosis	17	20	27	11	12	16	29	28	35
Mycosis	0	3	0	8	5	7	0	12	8

Figure no. 5. Incidence of epidemiological triage in high schools in January 2011-2013



Regarding the epidemiological triage in high schools in January 2011, of the 12 540 students examined, there was found a number of 161 cases of angina, 7 cases of angina due to A group streptococcus and 17 cases of pediculosis. In January 2012, a total of 11 914 school pupils, there were examined 100 cases of angina, 12 cases of angina due to A group streptococcus, 20 cases of pediculosis and 3 cases of mycosis and in January 2013, there were 119 cases of angina, 22 angina cases due to group A streptococcus and 27 cases of pediculosis. In conclusion, it appears that the number of angina found in 2011 was higher than in 2013 and the number of pediculosis was lower in 2011 compared to 2012 and 2013 (table no. 3, figure no. 5).

Figure no. 6. Incidence of epidemiological triage in April 2011-2013 in high schools



Following the epidemiological triage made in April, there was an increase in the number of angina cases in April 2011 followed by the year 2013, while the number of pediculosis increased in 2013 (figure no. 6).

In September 2011, the number of angina remained equal to 2012 and decreased significantly in 2013. The number of group A streptococcal angina decreased in 2012 compared to

2011, but increased in 2013. The number of pediculosis cases decreased in 2012 and increased in 2013.

CONCLUSIONS

The epidemiological triage was performed in the children from kindergartens, elementary schools and high schools in the period 2011-2013, including a total number of 117 599 children, of whom almost half were students from elementary schools, one-third were high school students and the remaining were preschoolers.

Following the epidemiological triage, there were found 6 575 cases of parasitic and infectious diseases, of which most cases were registered in the children belonging to elementary schools, followed by those in kindergartens and high schools.

Depending on the year taken into study, it can be noticed that following the epidemiological triage made in 2011, of a total of 2 237 parasitic, infectious and contagious diseases detected, most cases were found in the children in the elementary schools, followed by the children in kindergartens and then the high school students.

In 2012, the number of infectious, contagious and parasitic diseases detected registered a downward trend from the previous year, while maintaining their weight per types of schools.

For the year 2013, the data showed an upward trend compared to 2011 and 2012, both in the number of cases and in their distribution per types of education units.

At the level of the children in kindergartens, most cases of infectious diseases were registered in 2013, compared to the elementary schools and high schools, where in 2011, there were found most cases of illness.

Depending on the type of disease detected, angina cases are ranked first, with an increased weight in January in the preschoolers in kindergartens and in the elementary schools students.

In dynamics, the cases of pediculosis register a significant increase in the months of September and January in the elementary schools students.

In conclusion, the actions of health education focusing on individual and collective hygiene, at school, family, community level, represent a priority of the medical activity regarding the epidemiological, hygienic and sanitary surveillance in all communities including children.

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