Journal of Women's Health Care

Staykova and Chilingirova, J Women's Health Care 2016, 5:4
DOI: 10.4172/2167-0420.1000325

Research Article Open Access

Benchmarking of the Results from the Performed Activities in the Preventive Medicine in Schools in Some Regions of Republic of Bulgaria

Staykova J[1]* and Chilingirova R[2]

[1]*Preventive Medicine Department, Medical University, Sofia, Bulgaria*

[2]*Regional Health Inspectorate, Kardzhali, Bulgaria*

***Corresponding author:** Staykova J, Faculty of Public Health, Preventive Medicine Department, Medical University, Sofia, Bulgaria, Tel: +359888273707; E-mail: j.staykova@abv.bg

Received date: August 29, 2015; **Accepted date:** July 29, 2016; **Published date:** August 12, 2016

Abstract

Introduction: The policy for effective functioning of maternity, child and school healthcare comprises actions for integrated approach of the institutions and publicity for children's health. It is also a reflection of the statement that the cares for children's health are investment in future healthy generations, as in childhood are set the foundations for human health and is formed the health behaviour of each person, which ensure higher quality of life and health of the national human capital. The purpose of the present work is to study the health and dental status of pupils aged between 7 and 15 from municipality of Kardzhali and Sandanski by benchmarking.

Materials and Methods: There are included in the survey schools from municipality of Kardzhali and Sandanski, determined by the method of random selection. The survey comprises 1594 children aged between 7-15. The examinations were performed by physician-specialists: a paediatrician, an otorhinolaryngologyst, an ophthalmologist and a dentist. For registration of the data from the prophylactic examinations are used "Dental Treatment/ Examination Form" and "Medical History and Screening Form". For the statistical processing of the data there is used the Fisher's criterion.

Results and Discussion: The comparative analysis of the results for health and dental status of the examined children from municipality of Kardzhali and Sandanski shows statistically significant difference in the early development of the children from the two municipalities in favour of the children from municipality of Kardzhali (94% against 1% for Sandanski). There is a significant difference between them concerning allergies, respectively 1.38% and 15.44%. There were also reported the diseases (Heart Diseases and Diabetes) of children from Kardzhali. The examination by physician-otorhinolaryngologyst shows significantly lower levels of all indicators of the examined children from Kardzhali. The visual acuity of the children from Kardzhali is with better values in comparison to the children of Sandanski, respectively 79% against 64%. The main share of the cases with colour deficiency is also lower in Kardzhali-0.13% against 1.29%. The cases of esotropia/exotropia show higher levels of the examined patients in Kardzhali (4% against 0.4%). As a whole the dental status of the children from Kardzhali is better (64% against 53%), but by indicators: presence of caries, gingivitis and orthodontic problems are observed more favourable values of the children from Sandanski.

Conclusion: The showed results are disturbing and it is necessary to develop intervention program, which include preventive actions with focus on health promotion and health changes in the environment and way of life of children.

Keywords: Preventive medicine; Heath status; Dental status; Pupils

Introduction

The policy of effective functioning of maternal, child and school healthcare comprises measures for integrated approach of the society and institutions to children's health. It is also a reflection of the statement that the cares for children's health are an investment in future healthy generations, as it is namely in childhood that are laid the foundations of human health and is formed the health behaviour of each person, which insures higher quality of life and health of the national human capital [1].

The health status of the population mostly depends on factors, whose influence starts in childhood [2]. The presence of risk factors in the early stages of life facilitates the accumulation of risk over time and increases the likelihood of development of a disease in active age. The efficiency of the preventive measures is determined by the moment they are held. A significant and permanent limitation of the pandemic of chronic and other diseases may be expected by health promotion and preventive measures which were taken in early childhood, because of their radical and long–term effect [3].

According to the World Health Organization (WHO) about 1.1 billion adolescents and young people around the world are at risk of hearing loss, because of using musical players, including smart phones, as well as being exposed to dangerously high sound levels on noisy places such as night clubs, bars, discos and sports events [4]. The hearing loss leads to disastrous effects on the physical and psychological health, education and employment.

In the last decades the use of video displays has turned into an ordinary activity since early childhood. The failure to comply with the health norms when working and playing with a computer at home, as well as the long stay before the displays increase the risk of problems with sight. The uncorrected refraction abnormalities, such as myopia, hyperopia and astigmatism, lead to different visual complaints.

The results of the epidemiological research of the oral health of children in Bulgaria show that the prevalence of caries is in significantly higher levels in comparison to the global aims for oral health of WHO in all age groups. The presence of dental fluorosis, in times of free access to different fluorine sources in modern living conditions, evidences insufficient awareness of the effect of fluorine and the fluoride prevention to the dental caries. The oral hygiene is not satisfactory, which determines the need of raising the awareness of parents and children through educational and motivation events. The goal of the present work is to study the health and dental status of pupils aged between 7-15 from municipality of Kardzhali and municipality of Sandanski, by making a comparative analysis.

Materials and Methods

The research comprises schools in municipality of Kardzhali and municipality of Sandanski, which are selected randomly. There are comprised 1594 children aged between 7 to 15. 801 are the children from Kardzhali, of them 49.1% are boys and 50.9% are girls, 792 children from Sandanski-of them 51.8% are boys and 48.2% are girls. The examinations are performed by a team of four doctors–specialists: a paediatrician, otorinolaryngologist, ophthalmologist and dentist.

Results and Discussion

The examination by a paediatrician comprises: medical history taking; data for presence of diseases (asthma, problems with the thyroid, heart diseases and diabetes); surgical interventions; allergies; information for the performed immunizations and missed doses. All kids were determined the anthropometric status with measuring the weight, height and head circumference. There was determined the body mass index. There was reported the general state of children; their skin; respiratory system; circulation. They were measured the blood pressure and the femoral pulse. The benchmarking of the results show:

- Early developed are 94% of the children in Kardzhali in comparison to only 1% of the children in Sandanski.
- It is observed a statistically significant difference (P<0.0001).
- From the diseases: with asthma is respectively 0.5% and 0.6%; 0.13% has problems with the thyroid; 0.13% of the children in Kardzhali have heart diseases, and 0.25% - diabetes.
- With allergies are 1.38% of the examined children in Kardzhali and 15.44% - in Sandanski.

It is observed a statistically significant difference (P<0.0001).

For registration of the data of the prophylactic examinations are used "Stomatological Treatment/Examination Form" and "Medical History and Screening Form". For statistical processing of the data is applied the precise Fisher's criterion.

The examination by an otolaryngologist was performed by obtaining information for presence of symptoms and diseases in the past, such as: rhinitis, nose bleeding, snoring, breathing through the mouth, sleep apnoea, allergies, chronic angina, frequent otitis, surgeries, etc. After that the oropharynx of each child was examined; rhinoscopy; otoscopy (Figure 1 and Table 1).

DENTAL TREATMENT FORM

Name: Age:		Sex: M ( ) F (…..)
Social security: EOPPY (…..) Un insured (...) None (….) Other……	School:	Municipality:
	Partner body:	Examination date:
1st examination:	YES	NO
Oral health status	GOOD	AVERAGE BAD
Tooth decay	YES	NO
Inflammation of the gums/gingivitis	YES	NO
Abscess /inflammation	YES	NO
Dental trauma	YES	NO
Orthodontic problems	YES	NO
Needs fluoride treatment	YES	NO
Needs dental cleaning	YES	NO
Needs extraction	YES	NO
Needs dental filling	YES	NO
Needs temporary sealant	YES	NO
Dentist consultation required	YES	NO
Orthodontist consultation required	YES	NO
Observations: Note: The above record is indicative of the dental status of the child. You should consult your dentist for treatment.		
Dear parent, You should be aware that the permanent teeth of a child will gradually erupt by the age of12 years, that is all primary (milk or baby) teething are replaced by permanent ones. To maintain proper oral health and to avoid serious future problems, you should encourage your child through discussion and through games to be interested in his/her oral health. Teach your child to eat healthy, by avoiding excessive consumption of sweets (sugary foods) and refreshments. Reward it! If necessary, brush your teeth together, every morning and every night. Your example will help your child to better understand that the teeth need care and cleaning, just like his/her body. To prevent any potential dangerous oral health problems proactively visit your dentist twice a year. Do not neglect the fluoride treatment and the dental cleaning. Do not scold your child when is indifferent or forgets to brush his teeth. Explain the child that good oral health is important to our overall well-being The dentist is our ally, consult him and trust him in order to have a healthy and beautiful SMILE! "		The dentist

Figure 1: Stomatological Treatment/Examination Form

Epicrisis	Kardzhali	Sandanski
Early development	94.35	0.63
Asthma	0.50	0.63
Thyroid problems	0.13	0.13
Heart diseases	0.13	0.00
Diabetes	0.25	0.00
Allergies	1.38	15.44

Table 1: Results of paediatric examinations (%)

There was made the Weber test and the Rinne test. After which was made tympanogram and audiogram. The benchmarking of the results of the ears-nose–throat examination show:

- With rhinitis are 0.63% of the examined children in Kardzhali and 18.37% in Sandanski (P<0.0001).
- With nose bleeding – 0.76% and 12.76 (P<0.0001), with snoring – 1.64% and 5.48% (P<0.0001).
- Breathing through the mouth are 3.03% and 5.99% (P=0.005).
- With sleep apnea are 0.38% of the examined in Sandanski.

- 0.13% of the examined children in Kardzhali are with allergies in comparison to 13.78% of Sandanski.
- It is observed a statistically significant difference (P<0.0001), with abnormalities of the oropharynx are 1.01% and 5.48% (P<0.0001), When made rhinoscopy 3.15% of the examined in Kardzhali show abnormalities against 3.70% in Sandanski and by 0.13% in the otoscopy (Table 2).

Ear-nose-throat examinations		Kardzhali	Sandanski
Diseases	Rhinitis	0.63	18.37
	Nose bleeding	0.76	12.76
	Snoring	1.64	5.48
	Breathing through the mouth	3.03	5.99
	Sleep apnoea	0.00	0.38
	Allergies	0.13	13.78
	Chronic angina	0.00	0. 51
	Frequent otitis	0.00	0.26
With abnormalities in	Oropharynx	1.01	5.48
	Rhinoscopy	3.15	3.70
	Otoscopy	0.13	0.13

Table 2: Comparative analysis of the ear-nose-throat examinations (%)

The ophthalmologic examination was performed after medical history taking. It was determined the visual acuity with and without lenses. There was performed an examination of the fundus and examination with a bio microscope.

There was determined the normality of the colour vision through the Ishihara test and the presence of near sightedness. There were prescribed corrective lenses when needed.

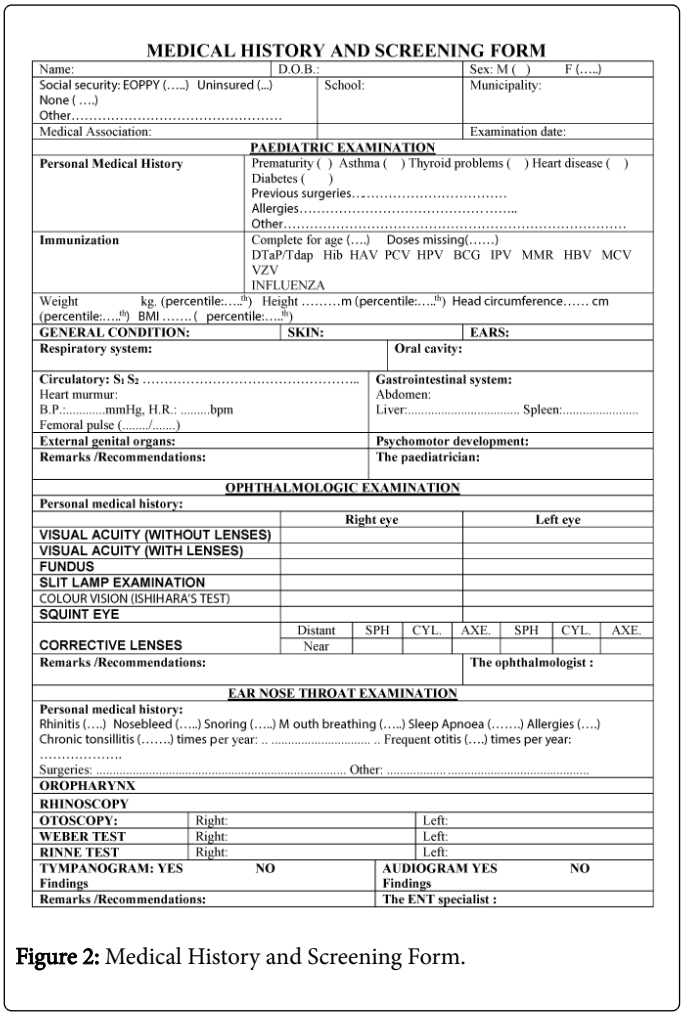
The summary analysis of the results show:

- With good visual acuity are 79% of the examined children in Kardzhali in comparison to 21% of whom the visual acuity is reduced. The data from Sandanski show that in 64% the visual acuity is good, while in 36% - with abnormalities. It is observed a statistically significant difference (P<0.0001).
- With esotropia/exotropia are 4% of the examined in Kardzhali against 0.4% in Sandanski (P<0.0001).
- Of the examined with colour deficiency are respectively 0.13% and 1.29% (P=0.006) (Table 3).

Ear-nose-throat examinations		Kardzhali	Sandanski
Visual acuity	Good	78.77	63.53
	Not very good	21.23	36.47
Serious diseases	Esotropia / exotropia	3.52	0.39
	Colour deficiency	0.13	1.29

Table 3: Results of the ophthalmologic examination (%)

The dental status is determined on basis of presence or lack of the following abnormalities: caries, gingivitis, abscess, inflammation, tooth trauma, orthodontic problems, necessity of treatment with fluorine, necessity of cleaning tartar, extraction, tooth filling, necessity of temporary fillings, consultation with a dentist, and consultation with an orthodontist (Figure 2) (Table 4).



MEDICAL HISTORY AND SCREENING FORM

Name: | D.O.B.: | Sex: M ( ) F (…..)

Social security: EOPPY (…..) Uninsured (...) None (….) Other…… | School: | Municipality:

Medical Association: | Examination date:

PAEDIATRIC EXAMINATION

Personal Medical History: Prematurity ( ) Asthma ( ) Thyroid problems ( ) Heart disease ( ) Diabetes ( ) Previous surgeries…… Allergies…….. Other……

Immunization: Complete for age (….) Doses missing(…….) DTaP/Tdap Hib HAV PCV HPV BCG IPV MMR HBV MCV VZV INFLUENZA

Weight kg. (percentile:….th) Height ……m (percentile:…..th) Head circumference…… cm (percentile:….th) BMI ……. (percentile:…..th)

GENERAL CONDITION: | **SKIN:** | **EARS:**

Respiratory system: | **Oral cavity:**

Circulatory: S_1 S_2 …… Heart murmur: B.P.:……mmHg, H.R.: ……bpm Femoral pulse (……/……) | **Gastrointestinal system:** Abdomen: Liver:…… Spleen:……

External genital organs: | **Psychomotor development:**

Remarks /Recommendations: | **The paediatrician:**

OPHTHALMOLOGIC EXAMINATION

Personal medical history:

	Right eye			Left eye		
VISUAL ACUITY (WITHOUT LENSES)						
VISUAL ACUITY (WITH LENSES)						
FUNDUS						
SLIT LAMP EXAMINATION						
COLOUR VISION (ISHIHARA'S TEST)						
SQUINT EYE						
CORRECTIVE LENSES	Distant	SPH	CYL.	AXE.	SPH	CYL.	AXE.
	Near						

Remarks /Recommendations: | **The ophthalmologist :**

EAR NOSE THROAT EXAMINATION

Personal medical history: Rhinitis (….) Nosebleed (…..) Snoring (…..) M outh breathing (…..) Sleep Apnoea (…….) Allergies (….) Chronic tonsillitis (……) times per year: .. …….. .. Frequent otitis (….) times per year: ……. Surgeries: …… Other: ……

OROPHARYNX

RHINOSCOPY

OTOSCOPY:	Right:	Left:
WEBER TEST	Right:	Left:
RINNE TEST	Right:	Left:

TYMPANOGRAM: YES NO Findings | **AUDIOGRAM YES NO Findings**

Remarks /Recommendations: | **The ENT specialist :**

Figure 2: Medical History and Screening Form.

Orthodontic Indicators		Kardzhali	Sandanski
Status	Good	64.08	53.16
	Average	34.96	41.52
	Bad	1.00	5.32
Caries		71.21	55.57
Gingivitis		56.70	28.48
Orthodontic problems		81.73	36.33

Table 4: Results of stomatological examination of the students (%)

The benchmarking of the results show:

- Around 64% of the examined pupils in Kardzhali are with good orthodontic status, in comparison to 53% of the pupils in Sandanski. Respectively of 35% and 42% the status is average,

while of 1% and 5% - bad. It is observed a statistically significant difference (P<0. 0001).

- With caries are 71% of the students in Kardzhali and 56% - in Sandanski. It is observed a statistically significant difference (P<0.0001).
- 57% suffer gum inflammation /gingivitis/ of the examined student in Kardzhali in comparison to 28% in Sandanski (P=0.025).
- With orthodontic problems are respectively 81% and 36% (P<0.0001).

Conclusions

The comparative analysis of the results for the health and dental status of the examined children from municipality of Kardzhali and municipality of Sandanski give us reason to make the following conclusions:

- The paediatric examination shows a statistically significant difference in the early development of the children in both municipalities in favour of the children in Kardzhali (94% against 1% in Sandanski). There is also a significant difference concerning the allergies, respectively 1.38% against 15.44%. There were reported diseases (heart diseases and diabetes) of the children in town of Kardzhali.
- The examination of the otolaryngologist shows significantly lower levels of all indicators of the examined children in Kardzhali.
- The visual acuity of the children in Kardzhali is with better levels, against the same of the children in Sandanski, respectively 79% against 64%. The share of the cases with colour deficiency is lower in Kardzhali, too-0.13% against 1.29%. The cases with esotropia/ exotropia show higher levels of the examined in Kardzhali (4% against 0.4%).
- Generally the dental status of the children in Kardzhali is better (64% against 53%). but by indicators: presence of caries. gingivitis and orthodontic problems we observe more favourable levels of the children from Sandanski.
- The results are alarming and prove the necessity of development of intervention program, which include preventive measures with focus on health promotion and healthy changes in the way of living and environment of children.

References

1. National Health Strategy (2014). The Ministry of Healthcare of Republic of Bulgaria, 2013.
2. WHO (2008) Health Behaviour in School-Aged Children. International Report.
3. Whitehead D (2003) Evaluating Health Promotion: a model of nursing practice. J Adv Nurs 41: 490-498.
4. WHO (2015) 1.1 Billion People at Risk of Hearing Loss.