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PROPHYLACTIC EYE CARE IN EARLY CHILDHOOD – PERSPECTIVE FOR VISUAL DEVELOPMENT

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ABSTRACT

PURPOSE: To evaluate the eye health awareness between parents of young children (1-3 years of age) and the role of the nurse for prophylaxis and systematic approach to potential eye problems.
METHODS: Study included parents of 281 children, based on specially designed questionnaire with 16 items. All children were between 1 and 3 years of age and were admitted into 5 crèches in Varna region. Standard SPSS was used for data analysis.
RESULTS: Results showed that 28% of included parents "would care for child's eye health" only if they believe that child is having problems with vision. However, 86% would agree their child to participate in screening programme. Another 80% would take advice about their child's vision from the nurse, who' s experience and competence is highly valuable for them.
CONCLUSIONS: Early childhood is a critical period for development of optimal visual functions. Nurse plays a specific role for public opinion regarding children's eye health prophylaxis. The main instrument in the process of improving awareness is public education.

Key words: nurse care, children's vision, children's eye health

INTRODUCTION

Vision is a key function providing good quality of life. Visual acuity is of primary significance for personal and social integration of an individual. Children's prophylaxis as a combination of medical and non-medical activities for achieving better health, is based on early detection, timely treatment and reduction of health consequences of ophthalmic disorders in young age. The WHO initiative "Vision 2020 – The right to sight" highlights the prevention of the avoidable blindness among children by screening different age groups and introducing first prophylactic exam at early age (1).

Period of early childhood (1-3 years) is characterizing by an intensive development: improvement of motor and verbal skills, learning first language, general body control improvement, enrichment of the number of games and increase of complexity, development of personality as declaration of "Myself" (fist age crisis). At this age normal visual acuity as demonstrated by E. Helveston is 0.5 (20/40) (2). Visual system in children is immature, characterized by its plasticity and easy suppression of visual function, and possible alterations are most significant up to third year of age (3). Most common disorders at that age are hyperopia, myopia, astigmatism, amblyopia, trabismus. Over 80% of ophthalmic diseases diagnosed in early childhood can be treated.

In early childhood (1-3 years) in addition to follow-up indices of physical development: growth (height, weight, head circumference), maturation (bone age, dentition), neuropsychological development, nutrition, education and training, also development of visual function should be evaluated and studied. This period is limited for adequate action. Early identification of ophthalmic problem is of great importance for successful treatment and good prognosis in order to

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establish development of normal visual functions (4).

The right approach for adequate children's eye health care according world-wide standards requires an early examination, regular follow-up, assessment of visual function, and immediate treatment when disorder is defined, regardless of early age. Healthy children out of risk should undergo medical check-up at the age of 3-6 months, 1 year, 3 years, 5 years, 7 years, and after reaching school age – every year.

According to Bulgarian National Law Standards (App № 15 „Activities for programme "Children's health") during first year of life (once every 6 months) general assessment of child's vision should be done. There is no specific instruction for eye health care during first and second year of life. For the period 2-7 years the law provision is assessment of visual acuity "once in five-year period" (5). The process of prophylaxis of children's ophthalmic health requires a multidisciplinary approach with participation of various specialists, every one with a specific role (6).

World Health Organization (WHO) defines four fundamental functions of modern nursing: nursing care, working in partnership, education and scientific nurse research (7). By implementing the function "nursing care" the nurse works out existing or potential problems of human health, family and society in conditions of dynamic developing environment. Qualified and well-trained nurse successfully can conduct screening of children vision and educational programs with children's parents. Nurse-parents collaboration would be very helpful for early detection of visual disorders and would make the ophthalmic health a family priority.

The possibility of nurse carrying out prophylactic activities is normatively regulated. Ordinance №1/08.02.2011 by Ministry of health paragraph 2. (1) specifies the following professional activities, which nurses can perform as an assignment, or independently: submitting and collecting medical information, health promotion, prevention and prophylaxis of diseases, providing medical and health care, rehabilitation, manipulations, emergency medical help, project work-up, education and research in the field of health care (8).

This study was conducted in order to utilize those professional activities in the field, with application of questionnaires. Young children and their parents were the target group because the law is not specific about standards of eye care prophylaxis at that age. The study was designed as prospective, questionnaires based study.

PURPOSE OF THE STUDY

To investigate the level of eye health knowledge of parents who's children are 1 to 3 years of age, and to define the role of the nurse in ophthalmic health prophylaxis.

MATERIALS AND METHODS

This prospective study was conducted over 300 parents, who were asked to fill a paper anonymous questionnaire on site (in the crèche, when collecting their child). The questionnaire was handled by the local nurse or principal investigator and the parent was asked to return it to a specially designated box. All participants were from 5 sites in Varna for the period January – March 2012. All the questionnaires were collected and analysed by the principal investigator including statistics with SPSS (version 20). Developed for the purpose of the study, questionnaire includes 16 questions assessing the issues as per **table 1.**

RESULTS

From 300 questionnaires only 281 were completely filled and/or returned to the box. The results are presented by item. When asked: "How do you take care for the eye health of your child?", 44% of the parents answered that they rely on their GP for taking care, 14% believed that their child has no eye problem, 14% annually take their child for an examination, and 28% take "eye health actions" only when the child has complaints **(fig. 1).**

The sources for information about necessity of prophylactic eye examination are shown in **fig. 2.** Interestingly, for 36% of the participants the information source is the GP, but 18% would use the nurse advice (15% the nurse in the crèche, 2% the GP nurse, and 1% other nurse). Internet was shown as a source by 10%, and 15% didn't know a prophylactic exam was necessary.

Table 1. *Structure of the questionnaire developed for parents of young children.*

Question N	Question	Type of answer
1	How do you take care for the eye health of your child?	MCQ
2	According to you, is it necessary to take your child to a prophylactic eye examination?	MCQ
3	When was the first time when you brought your child to an eye examination?	MCQ / openQ
4	If your child wears glasses when do you take him/her to an eye testing for changing the diopter?	MCQ
5	How do you learn that your child needs prophylactic eye examination?	MCQ
6	In your opinion, is it necessary to perform screening programs for detecting eye problems in infancy?	MCQ / openQ
7	Have your child participated in prevention programs for children's vision so far?	MCQ
8	If you answered "yes" to the previous question (N7) – do you know who had conducted the vision screening for children in your case?	MCQ
9	Would you allow participation of your child for screening eye test conducted by a nurse?	MCQ / openQ
10	Would you trust the recommendations regarding your child's eye health given by a nurse?	MCQ / openQ
11	Do you know what is amblyopia – "lazy eye" ?	MCQ / openQ
12	Do you think that diagnosis of "lazy eye" at young age is important in order to treat it?	MCQ
13	Sex	male / female
14	Age	range
15	Education	MCQ
16	Residence	Bulgarian / Non Bulgarian

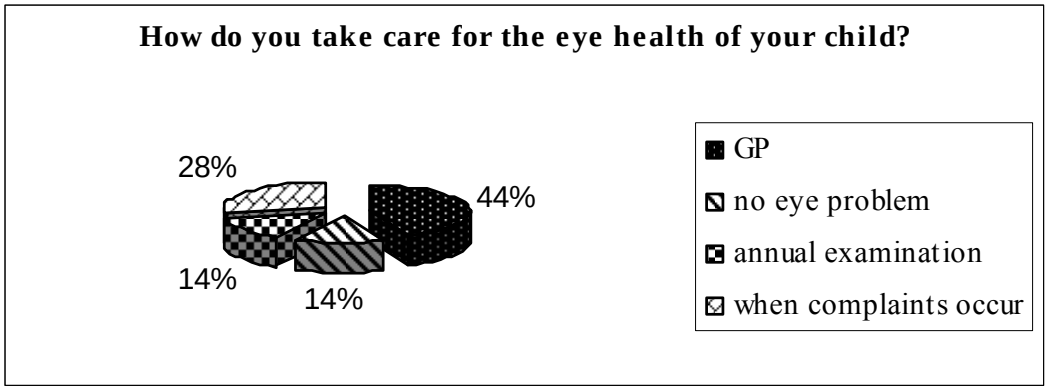

Figure 1. Results for the question "How do you take care for the eye health of your child?"

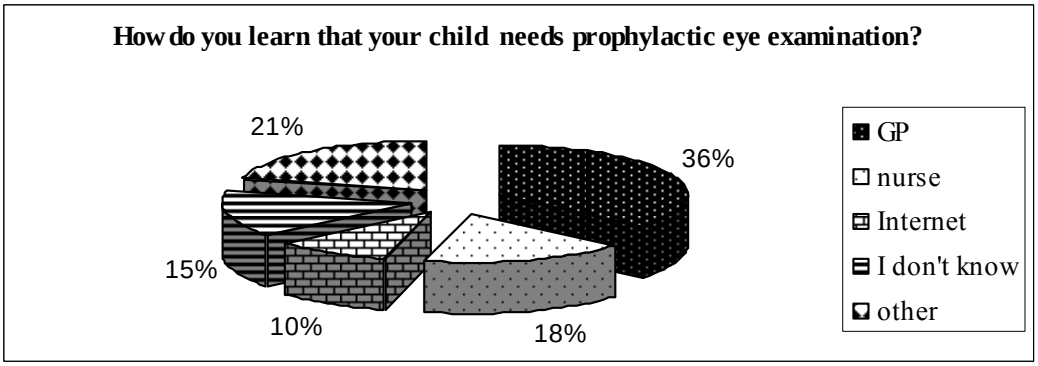

Figure 2. Results for the question "How do you learn that your child needs prophylactic eye examination?"

Although 90% of the interviewees answer that prophylaxis of ophthalmic health of the children is necessary, 46% haven't taken their child for an exam. However 86% of the parents express a desire for a screening for children's vision to be conducted with their children with participation of a nurse **(fig. 3)**.

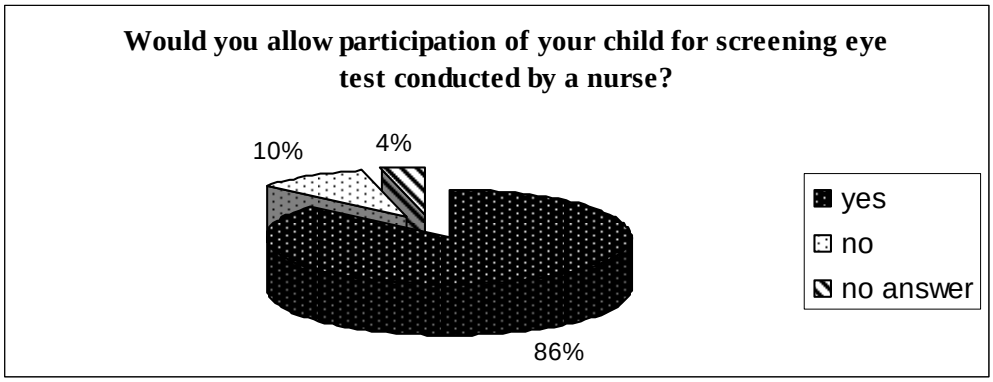

Figure 3. Results for the question "Would you allow participation of your child for screening eye test conducted by a nurse?"

More over 80% of the parents trust nurse's advice and recommendations and appraise her professional care as well-qualified and competent, 11% have already done that, 6% don't trust the nurse because "she isn't a doctor" **(fig. 4)**.

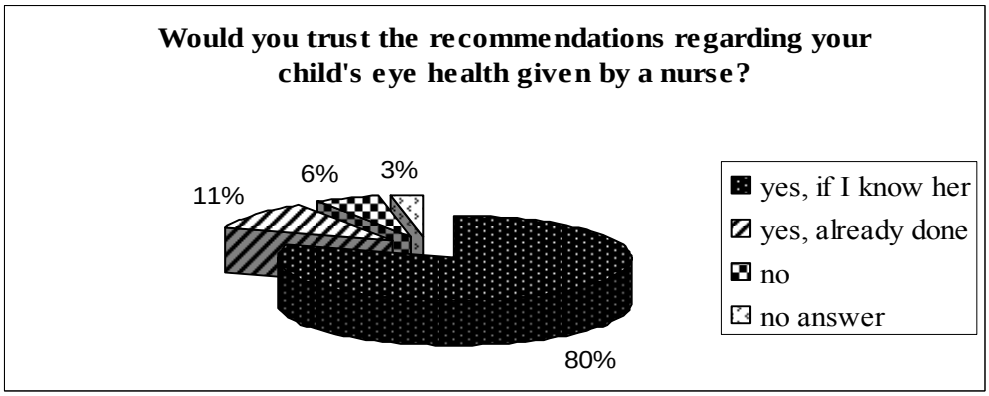

Figure 4. Results for the question "Would you trust the recommendations regarding your child's eye health given by a nurse?"

Disturbing fact is that 64% of the respondents did not know what "amblyopia – lazy eye" means. Despite the unfamiliarity of the term 54% say it can be treated up to 7 years of age, according to 4% amblyopia is not a disorder, according to 2% it is not treatable, and same percentage claim it can be treated throughout entire life **(fig. 5.)**.

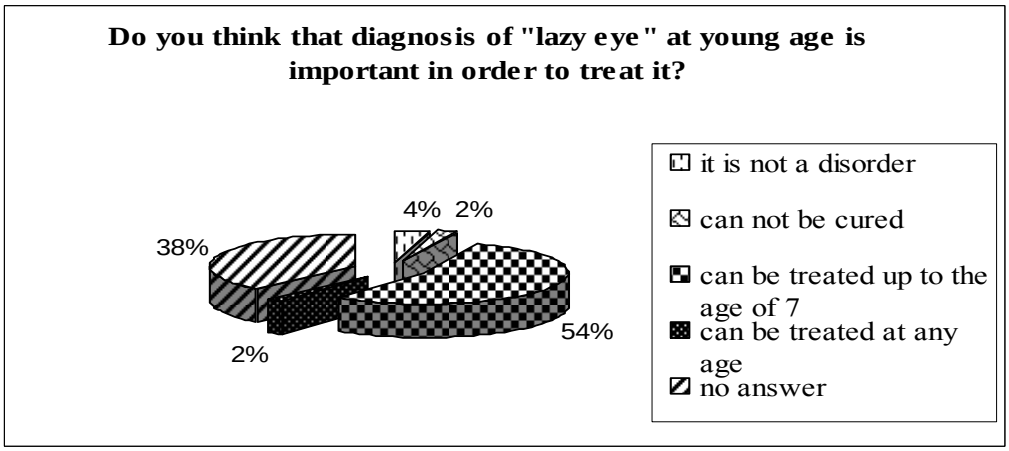

Figure 5. Results for the question "Do you think that diagnosis of "lazy eye" at young age is important in order to treat it?"

Demographic date demonstrated that 75% of respondents are university graduates, 89% are between 18 and 40 years of age.

DISCUSSION

According to American Academy of Pediatrics (9,10) screening examinations should be performed after birth, at 6 months of age, 3 and 5 years of age and periodically during school age. In Bulgaria following application № 15 „Activities part of the programme „Children's healthcare" (2012) during the first year of life visual assessment of a child is to be performed twice, and during 2 to 7 years of age – visual acuity assessment is planned "once in five years". This regulation is a source of significant restrains and difficulties on prophylaxis of infant ophthalmic health.

There are additional issues that make working on infant's ophthalmic health problems a very difficult task. In Bulgaria, and worldwide as well, there is specialists' withdrawal from working on infant eye health problems because of the necessity of specific approach and more difficulties in examination, management and collaboration with child's family, and also long-term follow-up. According to our study, another issue is low education of the parents, which leads to underestimating of the current problem and despite of many available information sources, luck of information.

Screening activity of a nurse is legally regulated (ordinance №1/2011). According to this ordinance, the nurse can educate parents about problems of ophthalmic diseases prophylaxis (seminars, brochures). Nurses can prepare children both for examination in the office and for occlusion therapy by means of activities suitable for the early age, such as "role game". These activities can be performed together with parents as well. Up to date there are no publications concerning screening programs for infant sight performed by nurses.

Collaboration between nurse and parents is possible not only because of existing regulations of nurse activities, but – as our study presents - because of significant parents' trust as well. The latter gives nurse opportunity to change public attitude towards nurse profession, to exert her autonomy and successfully fulfill modern nursing duties.

CONCLUSIONS

Despite of the fact that parents are informed from different sources (including nurse) for necessity of prophylaxis of children's vision, most of them don't take their children for an eye examination. However, parents value the screening performed by trained ophthalmic nurse. Preventive activities of the nurses are normatively regulated.

Children's ophthalmic health care requires competency and proactivity - nurses must have extensive eye care knowledge in order to take part in prophylactic programs for children's eye health. Improving parent's awareness about the necessity of prophylaxis of children's eye health is attainable by means of educational programs conducted by nurses.

The process of prophylaxis of children's ophthalmic health requires a multidisciplinary approach with participation of various specialists and good collaboration with the parents, as well as general society effort. The nurse has a specific role in changing parents' knowledge about prophylaxis, by means of creating a subjective health education and highlight on the eye health.
Adequate nurse care for children ophthalmic health is crucial for establishing ophthalmic health as a family value and priority.

REFERENCES

1. VISION 2020 The Right to Sight" A Global initiative to eliminate unnecessary blindness from The Report, CBM, Bensheim, Sept. 26-27,2000.
2. Контрова Е., Г. Петрова, Профилактика на детското зрение в контеста на глобалната инициатива VISION 2020 , Реферативен бюлетин по офталмология, 3:19-23, 2005
3. Учебник по очни болести за студенти по медицина и дентална медицина под редакцията на проф.д-р Хр. Групчева, СТЕНО, 2010
4. Pediatric Ophthalmology and Strabismus, American Academy of Ophthalmology, Section 6: 61-69, 2010 - 2011
5. Национален рамков договор за медицински дейности 2012, Приложение 15 „Дейности на лекаря специалист по педиатрия по програма „Детско здравеопазване"
6. Трифонова К, Л. Деспотова – Толева, К. Славейков, Зл. Трифонов, Очното здраве на новороденото – мултидисциплинарен подход, насоки и препоръки, Реферативен бюлетин по офталмология, 6:19-24, 2011

7. Мухина С.А., Тарновская И.И., Теоретични основи на сестринските грижи, ИЦ на ВМИ – Плевен, 2006
8. НАРЕДБА № 1 на МЗ от 8 февруари 2011 г за професионални дейности, които медицинските сестри, акушерките и асоциираните медицински специалисти и здравни асистенти могат да извършват по назначение или самостоятелно,обн. ДВ. бр.15 от 18 Февруари 2011г., изм. ДВ. бр.50 от 1 Юли 2011г.
9. Amblyopia: etiology, diagnosis and treatment. American Academy of Ophthalmology. J Ophthalmic Nurs Technol., Nov-Dec; 13(6):273-5, 1994
10. Eibschitz-Tsimhoni M, Friedman T, Naor J, Eibschitz N, Friedman Z. Early screening for amblyogenic risk factors lowers the prevalence and severity of amblyopia. AAPOS. Aug; 4(4): 194 – 9, 2000