



INCREASING LEVEL OF EYE HEALTH WITH HEALTH EDUCATION COLOR BLINDNESS SCREENING METHOD IN THE BULAKDAWUNG STUDY GROUP KEDIRI

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Article info	ABSTRACT
<p>Corresponding Author:</p> <p>Sandy Kurniajati sandykurniajati@gmail.com STIKES RS Baptis Kediri, Indonesia</p>	<p>Implementation of increasing level of eye health using health education using color blind screening method in the Bulakdawung Study Group Kediri showed that increasing in the knowledge of parents and children regarding eye health through health education using color blind screening method with 100% results of not experiencing color blindness. Parents need to maintain eye health by providing nutrition/diet to children with a source of vitamin A, need to prevent eye trauma when children play, and to give health education to prevent eye trauma in children. In play groups, it is necessary to provide supplementary food rich sources of Vitamin A periodically every 2-3 months and eye health education to children in study groups.</p> <p>Keywords: <i>Degree of Eye Health, Color Blindness Screening, Health Education</i></p>
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INTRODUCTION

Sight is the most important sense because almost 80% of information from the outside world is obtained from the visual pathway. The presence of visual impairment can have a profound effect on quality of life. The visual process includes sharp vision, light sensitivity, contrast sensitivity, movement detection, color perception and contrast, and visual field. However, in general only one of the functions above is checked, namely sharp vision.

Congenitally inherited color blindness consists of three types, namely monochromacy, dichromacy and trichromacy anomaly. Monochromacy is total color blindness, where the sufferer cannot distinguish colors due to damage to the cone cells in the retina. Dichromacy is color blindness due to damage to one of the cone cell pigments so that color is only two-dimensional. Dichromacy consists of protanopia (no red photoreceptors), deuteranopia (no green photoreceptors), and tritanopia (no blue photoreceptors). Trichromacy anomaly is color blindness due to damage to the retinal cone cell pigment in the sensitivity part of the spectrum. Trichromacy anomalies consist of protanomaly and deuteranomaly (difficulty distinguishing red and green) and tritanomaly (difficulty distinguishing blue and yellow).

In Indonesia itself, there are many cases of a knowledge deficit regarding color blindness which is caused by the lack of education received by the public regarding color

blindness and the lack of provision of facilities in the form of Ishihara books in health services because the price is high, especially in remote areas. As a result, many people find out too late that they are color blind and of course this has a big impact on the person's choice of educational level and career in the future. Because there are several departments in the world of education that require students not to be color blind.

Bulakdawung, Parang Village, Banyakan District, Kediri Regency is area left behind by Mount Wilis where the economic and nutritional status of children is still low, so efforts to improve health status are needed through health education with color blindness screening methods for early detection of color blindness in children.

METHOD

Implementation of increasing level of eye health with health educating color-blind screening method was done with the target of this activity was school age children. This community service was located at the Mission House, Bulakdawung, Parang Village, Banyakan District, Kediri Regency,

The method used in this activity carried out in intervention through direct examination of the target, namely school age children. Color blindness detection was carried out using the Ishihara method using color blind paper which was used specifically for color blindness tests.

RESULT AND DISCUSSION

Implementation

Planned work procedures to support work methods that was implemented through community activities include:

1. First Stage: Carrying out Color Blind Screening in children.
 - 1) The color-blind paper used was Ishihara 38 plate.
 - 2) Examinations were carried out in turns one by one according to the number of students.
 - 3) Plates or sheets were displayed one by one. Plate 1-25 consisted of a numeral component (numbers) which should be answered in no more than 3 seconds. If students cannot read numbers, plates 26-38 can be used, which were used by connecting lines and must be completed in 10 seconds. Then the examiner observed the answers mentioned by the students.
 - 4) After all the plates had been presented, the examiner then concluded the examination results based on the answers given, then wrote the results on the examination sheet with the conclusion in the form: normal/partial color blindness/total color blindness as follows:
 - a. Total Color Blindness: If plates 1-11 only see the numbers on plate 1
 - b. Partial Color Blindness:
 - If plate 1 is correct, there are more than 3 plate errors in 2-16, or
 - If plate 1 is correct, plate 22-25 answers are only correct on one of the plates or
 - If plate 1 is correct, plates 18-21 show numbers.

- c. Normal:
- If plates 1-17 are correct, or plate 1 must be correct and > 13 plates are answered correctly.
 - If plate 22-24 is correct or 2 plates are correct.
 - Collect examination results.
2. Second stage includes: Health Education
- 1) Providing Counseling on the Dangers of Illiteracy
 - 2) Providing Foods/Snacks High in Vitamin A.
 - 3) Activities for implementing improving nutritional status through health education through screening for study group children:
 - a. Meeting I eye examination by conducting a color blindness test for school age children.
 - b. Meeting II monitoring and evaluation through measuring how many children are color blind.

Discussion

The problem that become a priority for partners in Bulakdawung Kediri was that there has never been any counseling for children about color vision acuity, so through this community service, the proposed solution or effort was to examine school-age children for color blindness using the Ishihara Test method so that color blindness can be detected early and followed-up management quickly and precisely.



Figure 1. Activity of Color Blindness Screening

Table 1. Color Blindness Screening for Children in Bulakdawung Kediri Study Group on April,26, 2024

Number of Gender	Color-Blindness Screening	Percentage
20 Female	Normal	54,05%
17 Male	Normal	45,95%
37 Children	Normal	100%

From the table showed that color blindness screening examination on 37 children with 100% results, no partial or total color blindness was found.



Figure 2. Health Education about Color Blindness in Children

Health education to parents using leaflets about color blindness in children, signs and symptoms. Parents need to maintain eye health by providing nutrition/diet to children with a source of vitamin A, need to prevent eye trauma when children play, and to give health education to prevent eye trauma in children. In play groups, it is necessary to provide supplementary food rich sources of Vitamin A periodically every 2-3 months and eye health education to children in study groups.

CONCLUSION

Implementation of increasing level of eye health using health education using color blind screening method in the Bulakdawung Study Group Kediri showed that increasing in the knowledge of parents and children regarding eye health through health education using color blind screening method with 100% results of not experiencing color blindness. Parents need to maintain eye health by providing nutrition/diet to children with a source of vitamin A, need to prevent eye trauma when children play, and to give health education to prevent eye trauma in children. In play groups, it is necessary to provide supplementary food rich sources of Vitamin A periodically every 2-3 months and eye health education to children in study groups.

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