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OVERVIEW OF BLIND-CHILDREN CARIES INDEX IN SPECIAL NEED SCHOOLS IN CIMAHI CITY (GAMBARAN INDEKS KARIES PADA ANAK TUNANETRA DI SEKOLAH KOTA CIMAHI)

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ABSTRACT

Blind people have limitations in receiving dental and oral health information. It can facilitate the occurrence of caries. Blind people have limitations in performing various activities that require vision assistance, such as maintaining oral and dental hygiene when brushing their teeth, so blind people often experience multiple problems with their teeth, one of which is caries. This study aimed to determine the caries index in blind children in SLBN A Cimahi City and SLBN A Bandung City. The study used a cross-sectional design and consecutive sampling. The number of samples was 21 blind children. The study's results on blind children aged 6-12 showed a very low to moderate caries index. The def-t index in children with low vision blindness has moderate criteria; in children with total blind blindness, it has low standards. Children with low vision and total blind have the same DMF-T index, which is low. The def-t index in SLBN A Citeureup Cimahi City has low criteria, while SLBN A Padjadjaran Bandung City has a def-t index with moderate standards. SLBN A Citeureup Cimahi City and SLBN, A

Padjadjaran Bandung City, have the same DMF-T index, which is low. Parents, teachers, caregivers, and health workers need to pay more attention to the dental and oral health of blind children.

Keywords: blind children; caries index

ABSTRAK

Tunanetra memiliki keterbatasan dalam menerima informasi kesehatan gigi dan mulut sehingga dapat memudahkan terjadinya karies. Tunanetra memiliki keterbatasan untuk melakukan berbagai aktivitas yang membutuhkan bantuan penglihatan seperti menjaga kebersihan gigi dan mulut saat menggosok gigi sehingga tunanetra sering mengalami berbagai masalah pada gigi salah satunya karies. Tujuan penelitian ini adalah untuk mengetahui indeks karies pada anak tunanetra di SLBN A Kota Cimahi dan SLBN A Kota Bandung. Penelitian dilakukan dengan menggunakan rancangan cross sectional dan pengambilan sampel secara consecutive sampling. Jumlah sampel sebanyak 21 anak tunanetra. Hasil penelitian pada anak tunanetra usia 6-12 tahun menunjukkan indeks karies sangat rendah hingga sedang. Indeks def-t pada anak tunanetra low vision memiliki kriteria sedang dan pada anak tunanetra total blind memiliki kriteria rendah. Anak tunanetra low vision dan total blind memiliki indeks DMF-T yang sama yaitu rendah. Indeks def-t pada SLBN A Citeureup Kota Cimahi memiliki kriteria rendah sedangkan SLBN A Padjadjaran Kota Bandung memiliki indeks def-t dengan kriteria sedang. SLBN A Citeureup Kota Cimahi dan SLBN A Padjadjaran Kota Bandung memiliki indeks DMF-T yang sama yaitu rendah. Orang tua, guru, pengasuh, dan tenaga kesehatan perlu memberikan perhatian yang lebih terhadap kesehatan gigi dan mulut anak tunanetra

Kata kunci: *indeks karies; tuna netra*

INTRODUCTION

The problem of dental and oral disease that most people suffer from childhood to adulthood is cavities (caries). Based on Riset Kesehatan Dasar (Riskesdas), in 2007, the number of dental and oral health problems in Indonesia reached 23.4%, while in 2013, the number of dental and oral problems in Indonesia reached 25.9% or an increase of 2.5%.[1,2] An increase in caries prevalence in Indonesian society often occurs in school-age children. The Regulation of the Minister of Health of the Republic of Indonesia in 2014 concerning child health efforts stipulates that school-age children are children aged more than six years until before 18 years. School-age children still do not know and understand how to maintain oral hygiene. Dental and oral problems that often occur in children are caries.[3,4]

Caries is an aggressive dental disease caused by various factors and affects the hard tissues of the teeth. It is characterized by the loss of the hard part of the tooth and damage to the soft part of the tooth. Caries can be reversible if it is still in their early stages, and if a cavity has formed, it is said to be irreversible. Not only normal children who need attention to dental and oral hygiene to prevent caries, but children with special needs also need to be given more attention to prevent caries.[5,6]

Children with special needs (ABK) have physical and mental limitations and limited physical development, behavior or emotions. It causes impaired physiological function and psychological or anatomical structure to decrease or disappear so that they cannot carry out normal daily activities, which results in changes in thoughts, feelings, and actions. One example of ABK is a child with reduced vision, called a blind person.[7]

Blind people have visual impairments, so they experience obstacles in receiving information from outside and carrying out daily activities such as walking, reading, and learning activities. The social development of blind children is not like normal children, where blind children face more problems in social development. However, the intelligence of blind children is the same as that of other children, which differ only in receiving information and their perception. There are two Blind people classifications: total blinds who have no vision and low vision who still have residual vision.[8,9] several factors cause Blind people, namely internal factors and external factors. Internal factors include factors closely related to the baby's

condition during pregnancy, such as gene factors, maternal psychological conditions, malnutrition, or drug poisoning. External factors occur at or after the baby is born, such as accidental factors, syphilis which affects the eyes at birth, the influence of medical aids during childbirth, lack of nutrition or vitamins, exposure to toxins, body heat being too firm, and eye inflammation. Due to disease, bacteria, or viruses.[10, 11] Blind people have limitations in vision that will affect their ability to receive knowledge about dental and oral health. Wrong perceptions will lead to wrong actions in maintaining dental and oral health, so the risk of oral disease, among others, is predicted to be higher in blind people.[12]

Dental caries assessment used the def-t (decayed, extracted, filled-teeth) caries index for children's teeth and the DMF-T (Decayed, Missing, Filled-Teeth) caries index for permanent teeth. The DMF-T/def-t index is a cumulative dental caries index obtained from a community group. The index value of DMF-T/def-t is the sum of D+M+F or d+e+f divided by the number of people examined.[13] Previous research stated that children with special needs in the Special Schools in Cimahi City had a low caries index, while those in Bandung had a moderate caries index. Cimahi City and Bandung City only have one SLB section A, namely SLBN A Citeureup Cimahi City and SLBN A Padjadjaran Bandung City.[11,12] Based on the background described above, the authors are interested in researching the description of the caries index in blind children at the State Extraordinary School (SLBN) A Cimahi City and at SLBN A Bandung City.

METHOD

Research Design

The research used a descriptive method. The approach used was a cross-sectional design. The sampling technique used in this study was consecutive sampling taken from blind children aged 6-12 years at SLBN A Citeureup Cimahi City and SLBN A Bandung City. Inclusion criteria were blind children with low vision or total blind criteria, children willing to be examined, and parents/guardians ready to sign the informed consent. Exclusion criteria were children with multiple disabilities and children with visual impairment who were absent during the examination.

The research received an ethical exemption from the Research Ethics Committee of the University of Padjadjaran Bandung Indonesia under Number 279/UN6.KEP/EC/2018.

Research Procedure

The tools and materials were the

status sheet, mouth mirror, sonde, tray, stationery, mask, gloves, 70% alcohol, flashlight, and inspection approval sheet. The following procedures were:

1. Explain the research objectives to the school and parents/guardians.
2. Filling out the research subject's informed consent by the research subject's parent/guardian.
3. Filling in the research subject data in the examination form in the form of the name, gender, age, and a group of visually impaired.
4. The subject is positioned against the window's light so that it can be examined in sufficient light.
5. Caries examination using a mouth mirror to see caries in parts that cannot be seen directly and using a sonde by tracing the teeth. Caries can be detected when the probe is stuck while tracing the teeth.
6. Check the subject's permanent teeth first, and then after all the permanent teeth have been examined, you can proceed to the primary teeth.
7. The results of the caries examination were recorded on the examination form according to the carious tooth. First, for permanent teeth with caries, it is written in D. For teeth extracted due to caries, it is written in M, and for filling teeth, it is written in F.
8. After all permanent teeth were examined, the primary teeth were examined. First, for primary teeth with caries, it is written with the letter d. Primary teeth extracted due to caries are noted with the letter e; for primary teeth that are filled, it is registered with the letter F.
9. After the examination is complete, the subject is asked to leave the examination site.

RESULT

From the study results, the number of samples was 21 from the State Special School A Citeureup Cimahi City and the State Special School A Bandung City.

Dental Caries Index in Blind Children by Gender

Dental caries index in blind children in SLBN A Citeureup Cimahi City and SLBN A Bandung City by gender can be seen in Table 1 as follows.

Table 1. Dental caries index in blind children by gender

Gender	n	d	e	f	def index	Criteria
L	12	33	0	0	2,75	Sedang
P	9	25	0	0	2,78	Sedang

Gender	n	D	M	F	DMF index	Criteria
L	12	32	0	1	2.75	Sedang
P	9	9	0	0	1	Sangat Rendah

Based on the data processing results in table 1, the male gender has a def index of 2.75 with moderate criteria, while women have a def index of 2.78 with moderate standards. The female gender has a DMF index of 2.75 with moderate standards, while men have a DMF index of 1 with very low criteria. It showed that each male child has three primary teeth and three permanent teeth with caries. The female sex has three primary teeth and one permanent tooth with caries.

Dental Caries Index in Blind Children Based on Blind Classification

Dental caries index in blind children in SLBN A Citeureup Cimahi City and SLBN A Bandung City based on the classification of the blind can be seen in Table 2 as follows.

Table 2. Dental caries index in blind children based on the blind classification

Classification	n	d	e	f	Def index	Criteria
Low Vision	8	27	0	0	3.38	Currently
Total Blind	13	31	0	0	2.38	Low

Classification	n	D	M	F	DMF index	Criteria
Low Vision	8	10	0	0	1.25	Low
Total Blind	13	31	0	1	2.46	Low

Based on the results of data processing in Table 2, it is known that the classification of the low vision blind has a def index of 3.38 with moderate criteria. In contrast, the total blind has a def index of 2.38, with the requirements according to WHO that is low. The low vision classification has a DMF index of 1.25 with low criteria, while the total blind has a DMF index of 2.46 with low standards. It shows that each low vision child has three primary teeth with caries and one permanent tooth with caries. In the total blind group, each child had two primary teeth with caries and two permanent teeth with caries.

Dental Caries Index in Blind Children at SLBN A Citeureup Cimahi City and SLBN A Bandung City

Dental caries index in blind children in SLBN A Citeureup Cimahi City and SLBN A Bandung City based on the classification of the blind can be seen in Table 3 as follows.

Table 3. Dental caries index in blind children at SLBN A Citeureup Cimahi City and SLBN A Bandung City

SLBN A	n	d	e	f	def index	Criteria
Citeureup Cimahi	7	13	0	0	1.86	Low
Padjadjaran Bandung	14	45	0	0	3.21	Currently

SLBN A	n	D	M	F	DMF index	Criteria
Citeureup Cimahi	7	9	0	0	1.29	Low
Padjadjaran Bandung	14	32	0	1	2.36	Low

Based on the data processing results in Table 3, SLBN A in Cimahi City has a def-t index of 1.86 with low criteria. In contrast, SLBN A in Bandung City has a def-t index of 3.21 with moderate standards. SLBN A Cimahi City has a DMF index of 1.29 with low criteria, while SLBN A in Bandung City has a DMF index of 2.36 with low criteria. Children in SLBN A Cimahi City have two carious teeth in primary teeth and one carious tooth in adult teeth. Blind children in SLBN A Bandung City experienced three carious teeth in primary teeth and two carious teeth in adult teeth.

DISCUSSION

Dental and oral health is essential in every individual's life, including children, because damaged and untreated teeth cause masticatory disorders and pain and can interfere with the health of other bodies. Overall health can be affected by oral health. Dental and oral health in Indonesia is still a problem. It shows the continued increase in dental and oral health problems in Indonesia, influenced by several factors, including behavioral factors. Dental caries is a dental and oral problem that most often occurs in children where children aged 6-12 years are in the phase when mixed teeth are present, primary teeth and permanent teeth.[13, 14]

The results of the above study regarding the description of the visually impaired by gender follow the research conducted by Mustika et al. (2013) in South Kalimantan that shows the caries index in males is higher than in females. It is associated with the correct behavior of brushing teeth where more women who behave correctly brush their teeth with a value of 2.1% compared to men who have a value of 1.5.[14, 15]

Another study by Mustika (2016) said that 24% of male students aged 12 years had visited the dentist, while female students aged 12 years had seen the dentist by 32.44%. More female students visit the dentist than male students. There is a significant relationship between visits to the dentist and the caries index because visiting the dentist aims to check whether there are

problematic teeth so that treatment and prevention can be carried out as early as possible.[16, 17]

Dental caries index in blind children at SLBN A Citeureup Cimahi City and SLBN A Bandung City, based on the classification by Fathiah (2015), shows the average number of DMF-T in fostered primary schools in Pontianak was 2.7, and the average def-t in the SD is 3.5. Tooth decay in these children is due to a lack of dental care from an early age. In addition to internal factors such as host, microorganism, substrate, and time, brushing skills also play a role in tooth decay. Some blind children in SLBN A Cimahi and Bandung do not know if their teeth are clean after brushing. They only feel that they have brushed their teeth and think they are clean. The skills of brushing the teeth of a blind child will affect the oral hygiene of the blind child.[18,19]

Another factor that can cause caries is knowledge about dental and oral health. It is because there are still many blind children who have not received dental and oral health education. And do not have the opportunity to learn by observing and imitating excellent and correct habits in maintaining oral and dental health due to limited vision.[12]

Blindness is damage or malfunction of the organ of vision (eyes) which results in a person not being able to receive information from the outside. Blind people cannot see or are totally blind, and someone who still has residual or low vision. Blind people have limitations in performing various activities that require vision assistance, such as maintaining oral and dental hygiene when brushing their teeth, so blind people often experience multiple problems with their teeth, one of which is caries. Caries is an aggressive dental disease. The loss of the hard part of the tooth and damage to the soft part of the tooth. Caries is caused by several factors such as bacteria, host, substrate, and time. Other factors that can influence the occurrence of caries are tooth brushing behavior, tooth structure, and cariogenic food consumption behavior. Dental caries index in blind children at SLBN A Citeureup Cimahi City and SLBN A Bandung City based on the classification of the visually impaired according to research conducted by Ramadhan (2015) said that blind children in Special Schools Part A Wyata Guna Bandung City had a high level of dental hygiene and mouth in moderate criteria. It follows the research conducted, where the def-t index in blind children also has moderate standards. There was no change in dental and oral hygiene that occurred in blind children at SLBN A Bandung City from 2015 to 2018.[20] Based

on the research that has been done, parents, teachers, caregivers, and health workers need to pay more attention to dental and oral health of blind children. Research on the caries index needs to be done on other children with special needs because it is indispensable to know the condition of their oral health.

CONCLUSION

The research results show that the def-t index in children with low vision blindness has moderate criteria, and in children with total blind blindness, it has low standards. Children with low vision and total blind have the same DMF-T index, which is low. The def-t index in SLBN, A Citeureup Cimahi City, has low criteria, while SLBN A Padjadjaran Bandung City's def-t index with moderate criteria. SLBN A Citeureup Cimahi City and SLBN, A Padjadjaran Bandung City have the same DMF-T index, which is low.

CONFLICT OF INTEREST

We declare no potential conflict of interest in the scientific articles we write.

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