

Education and Knowledge Level Analysis of the Teachers Regarding Dental Education Program in Primary Schools

Taufan Bramantoro¹, Titiek Berniyanti¹, Retno Palupi¹, Ninuk Hariyani¹,
Fatan Fakihardi², Aulia Ramadhani¹, Sarah Fitria Romadhoni¹

¹Department of Dental Public Health, ²Graduate Student of Dental Health Science,
Faculty of Dental Medicine, Universitas Airlangga

Abstract

Introduction: The highest caries prevalence occurs in the age group 10-14 which is the age of school children. Increased teacher knowledge about dental and oral health will determine students in behaving to maintain oral health.

Objective: This study aimed to determine the level of education towards the level of knowledge of dental and oral health and School's Dental Education Program for kindergarten and elementary school teachers.

Method: This was an observational descriptive study with cross sectional approach. The population of this study were kindergarten and elementary school teachers in Public Health Center working area in Surabaya with a total sample size of 76 respondents.

Results: Chi-Square analysis of education level did not correlate with the level of dental and oral health knowledge and School's Dental Education Program ($p = 0.951$ and $p = 0.098$).

Conclusion: There was no relationship between the level of education on the level of knowledge of dental and oral health and School's Dental Education Program for kindergarten and elementary school teachers.

Keywords: *Dental education, Education status, Knowledge, Oral health,*

Introduction

Data from basic health research (RISKESDAS) in 2013 showed that the national prevalence of oral and dental health problems was 25.9%. East Java Province ranked third with the highest increase in dental and oral problems in 2007 of 20.3% and in 2013 it increased to 28.6%¹. The highest caries prevalence occurred in the age group of 10-14 years which is the age of school children which is equal to 25.2%².

Based on secondary data on visits of children at the Dental Clinic of health center, pulpitis was found to be a common health problem. In July 2017 until May 2018 the diagnosis of diseases ranked first in children was pulpitis. Children with pulpitis in July 2017 until May 2018 were as many as 118 children.

In the study of the caries severity of elementary school students in Surabaya health center in 2017, based on the DMF-T index, it showed mean of 5 of the total range of 0 to 15. According to WHO, this value is categorized as high.

Teachers are parents in school for children because they have a high responsibility for education that their students have to obtain in order to acquire knowledge. Such knowledge can help students and distinguish good and bad habits. In addition, teachers must have proper knowledge so that it can be channeled to their students to

Corresponding Author:

Taufan Bramantoro

Jl. Prof. Dr. Moestopo No. 47, Surabaya, Indonesia

Phone Numbers: (+6231) 5030255, 5020256

Facsimile Numbers: (+6231) 5020256

e-mail: taufan-b@fkg.unair.ac.id

aim the target³. An increase in the proper knowledge of teachers about dental and oral health will determine how students behave in maintaining oral health. Teachers have a role to prevent the occurrence of oral problems, such as caries, which in general often occurs in children in school age due to lack of knowledge of children in maintaining dental and oral hygiene and eating habits in schools of cariogenic food⁴.

Based on the results of previous research regarding the relationship between education level, age, and years of work with the level of dental and oral health knowledge in elementary school teachers in Tampak Siring, Gianyar sub-district, shows that the more mature the level of maturity and strength a person, the more mature his/her thought and the higher his/her knowledge⁵.

In the Health Center Performance Assessment in October-November 2017, the health center had carried out School's Dental Education Program (School Oral Health Program) activities covering 3934 students in Grade 1 of the total target of 3534 students. Students in grades 1-6 receiving treatment were 3505 students from a total target of 1402 students. Whereas, the target for elementary/Islamic elementary school with School's Dental Education Program Phase III of 30% of the total SD/MI targets was 9 schools and 8 out of it had been implemented.

The Indonesian government seeks to improve the dental health knowledge of elementary school-age children through the School Dental Health Program. According to the Republic of Indonesia Ministry of Health's Decree of the Director General of Health Care Development no. HK.02.04/II/963/2012, School's Dental Education Program is a public health effort aimed

at maintaining, improving the dental and oral health of all students in school.

Based on what has been described above, it is necessary to conduct research on the analysis of education level on knowledge level of dental and oral health and School's Dental Education Program for kindergarten and elementary school teachers in the working area of health center in Surabaya.

Subjects and Method

This research was carried out by observational descriptive method with a cross sectional approach in the urban area of health center in Surabaya. The population in this study were kindergarten and elementary school teachers in the working area of the urban area in the Surabaya's public health center with a total sample taken in total sampling. The number of samples in this study were 76 respondents.

This research was conducted in June 2018. Data were collected in 4 elementary schools and kindergartens in the coverage area of the Surabaya's Public health center. Before taking the subject of research in total sampling technique, the licensing process was carried out to the authorities at health center and schools, then the researcher collected teachers' data by stating the last name, gender, age, and education.

In this study the level of knowledge and understanding of dental and oral health and an understanding of School's Dental Education Program was carried out by filling out questionnaires by teachers at the kindergarten and elementary school level in health center area. The data obtained were analyzed using Chi Square Test to observe the relationship between variables in this study.

Findings:

Table 1. Respondents' Sex Frequency Distribution Regarding Knowledge of Dental and Oral Health and School's Dental Education Program Knowledge.

Sex	Dental and Oral Health Knowledge			School's Dental Education Program Knowledge		
	High	Low	Total	High	Low	Total
Female	9 (13%)	57 (87%)	66 (100%)	47 (72%)	19 (28%)	66 (100%)
Male	0 (0%)	10 (100%)	10 (100%)	6 (60%)	4 (40%)	10 (100%)

Based on Table 1, it can be seen that the level of knowledge about dental and oral health is high (13%) and low (66%) in female. So does the level of knowledge

about School's Dental Education Program is high (72%) and low (28%) in women.

Table 2. Age Frequency Distribution of Respondents on Knowledge of Dental and Oral Health and School’s Dental Education Program Knowledge

Age	Dental and Oral Health Knowledge			School’s Dental Education Program Knowledge		
	High	Low	Total	High	Low	Total
<35 years	4 (13%)	27 (87%)	31 (100%)	23 (74%)	8 (26%)	31 (100%)
>35 years	5 (11%)	40 (89%)	45 (100%)	30 (67%)	15 (33%)	45 (100%)

Based on Table 3, it can be seen that the level of knowledge about dental and oral health is mostly low at age >35 (89%), and the lowest high value was at age <35 years (13%). The table shows that the level of knowledge about School’s Dental Education Program is mostly high at age <35 years (74%) and low at age <35 (26%).

Table 3. Frequency Distribution of Respondents School Status Regarding Knowledge of Dental and Oral Health nad School’s Dental Education Program Knowledge.

School status	Dental and Oral Health Knowledge			School’s Dental Education Program Knowledge		
	High	Low	Total	High	Low	Total
Public	4 (13%)	26 (87%)	30 (100%)	21 (70%)	9 (30%)	30 (100%)
Private	5 (11%)	41 (89%)	46 (100%)	32 (70%)	14 (30%)	46 (100%)

Based on Table 5, it can be seen that the level of knowledge about dental and oral health is mostly high in public schools (13%) and mostly low in private schools (89%). While the level of knowledge about School’s Dental Education Program that the status of schools both public and private have a high level of School’s Dental Education Program Knowledge.

Table 4. Frequency Distribution of Respondents’ School Level Regarding Knowledge of Dental and Oral Health and School’s Dental Education Program Knowledge.

School Level	Dental and Oral Health Knowledge			School’s Dental Education Program Knowledge		
	High	Low	Total	High	Low	Total
Kindergarten	5 (11%)	42 (89%)	47 (100%)	36 (77%)	11 (23%)	47 (100%)
Elementary School	4 (14%)	25 (86%)	29 (100%)	17 (59%)	12 (41%)	29 (100%)

Based on Table 7, it can be seen that the level of knowledge regarding dental and oral health is mostly high in elementary school (14%) and mostly low in kindergarten (89%) and the level of knowledge about School’s Dental Education Program is mostly high in kindergarten (77%) and mostly low in elementary school (41%).

Table 5. Chi-Square Analysis of Dental and Oral Health Knowledge and School’s Dental Education Program Knowledge based on Respondent’s Education Level

Education Level	Dental and Oral Health Knowledge			p -Value(Chi-Square)
	High	Low	Total	
Bachelor	8(12%)	60(88%)	68(100%)	.951
Non-bachelor	1(12.5%)	7(87.5%)	8(100%)	
Education Level	School’s Dental Education Program Knowledge			Total
	High	Low	Total	
Bachelor	48(71%)	20(29%)	68(100%)	8(100%)
Non-bachelor	5(62.5%)	3(37.5%)	8(100%)	

Based on Table 5, it can be seen that the level of knowledge about dental and oral health is mostly high in non-bachelor (12.5%) and mostly low in bachelor (88%). Chi-Square test results show p value = 0.951 (>0.05), indicating that there was no relationship between knowledge skills and education level. The table also shows that the level of knowledge about School's Dental Education Program is high in bachelor (71%) and mostly low in non-bachelor (37.5%). Chi-Square test results shows p value = 0.098 (>0.05), so it can be concluded that there was no relationship between School's Dental Education Program knowledge and education level.

The results of the test analysis showed the results of the Chi-Square test with p results = 0.591 (> 0.05). On the results of the Chi-Square test about the level of School Dental Health Program knowledge on the level of education, p results = 0.098 (> 0.05) was obtained. The results of the two Chi-Square tests showed that there was no relationship between the level of education and the level of knowledge of dental and oral health and School Dental Health Program. The level of one's knowledge is not only influenced by education level factors. There are still many other factors that influence it, so the results of the study provide insignificant results between the level of knowledge and the level of education. Similar research shows that there is no relationship between the level of education and the knowledge of women about breast cancer risk factors with p results = 0.192 (> 0.05)(6).

In the previous study, it was stated that the factors that affect the level of knowledge are not only from the level of education, but there are still other factors that influence it, including work and information media. Someone who works in a particular profession will have a level of knowledge related to his/her profession. For example, people will be called laymen of having limited health knowledge if they do not involve in the world of health or not work as health workers. Therefore, occupational factors play an important role in measuring a person's level of knowledge and not only from the level of education⁶. A person's occupation is very influential on the process of accessing information needed on an object⁷. The performance and ability of a person's brain in storing (memory) increases when it is often used. This is directly proportional when someone's occupation uses the brain more than muscles. A person's brain or cognitive abilities will increase when it is often used for activities and doing things in the form of puzzles or reasoning⁶.

Furthermore, information media factors will also influence the level of knowledge. Even though a person has low education level, but if he/she acquires good information from various information media, for example: TV, radio, or newspapers, his/her knowledge still may increase⁶. In the era of communication and information, the mass media cannot be left behind to participate in conveying important information to the public and adolescents in general⁹.

Apart from these two factors, there are other factors that influence the level of knowledge, i.e. experience. A person's experience greatly influences knowledge. The more a person's experience about an aspect, the more one's knowledge will increase⁷. The more the age, the level of maturity and strength of a person will be more mature in thinking and working. However, Verner and Davison stated that there are 6 physical factors that can inhibit the learning process in adults, thus making a decline at a time in the power of thinking and working¹⁰. So, through prior knowledge, personal experience, experience of others, the environment and other intrinsic factors can shape a person's knowledge for a long time and will survive until old age. This is in accordance with previous research which shows that there is a relationship between knowledge and practice among school children in Ajman University of the United Arab Emirates with a significant p value = 0.001 (<0.05)¹¹.

Another factor that affects the level of knowledge is interest. A previous study by Hayati (2007) in Wardani (2014) stated that the higher a person's interest in something, the higher the level of knowledge¹².

Some studies also explain that the age of a person at a productive age has the best level of knowledge or cognition. In addition, at that age, a person also has extensive experience and abilities for activities which will certainly support his/her knowledge in all aspects^{13,14}. At the age of 20-35 years, individuals will play an active role in society and social life and prepare more for the success of efforts to adjust to old age. In addition, they will use more time to read more⁸. The age of a person influences one's perception and mindset. Increasing age will also develop the ability to capture and mindset, so that the knowledge gained is getting better^{15,16}.

Conclusion

There was no relationship between the level of education on the level of knowledge of dental and

oral health and School Dental Health Program for kindergarten and elementary school teachers in the working area of health center in Surabaya.

Conflict of Interest: Nill

Acknowledgement: Department of Dental Public Health, Faculty of Dental Medicine, Universitas Airlangga

Source of Funding: Self funding

Ethical Clearance:

References

1. Ministry of Health Republic of Indonesia. Indonesia Health Profile 2014. Jakarta: Indonesian Ministry of Health;2015.
2. Ministry of Health Republic of Indonesia. Basic Health Survey (RISKESDAS) 2013. Jakarta: Indonesian Ministry of Health;2014.
3. Dawani N, Afaq A, Bilal S. Oral Health Knowledge, Attitude and Practices Amongst Teacher of Public School Set-up Karach, Pakistan. *Journal of the Dow University of Health Sciences Karachi*. 2013;7(1):15.
4. Tangade P, Jain M, Mathur A, Prasad S, M N. Knowledge, Attitude and Practice of Dental Caries and Periodontal Disease Prevention among Primary School Teachers in Belgaum City, India. *Pesquisa Brasileira em Odontopediatria e Clínica Integrada*. 2011;11(1):77–81.
5. Dharmawati G, Wirata I. Relationship between Education Level, Age, and Work Period with the Level of Knowledge of Dental and Oral Health in Elementary School Teachers in Tampak Siring Gianyar District. *Jurnal Kesehatan Gigi*. 2016;4(12)
6. Sari REP. Relationship between Education Levels and Women's Knowledge About the Risk Factors for Breast Cancer in RW 02 Complex Taman Rempoa Indah. Jakarta: UIN Syarif Hidayatullah; 2010.
7. Notoatmodjo S. Health Promotion. Jakarta: Rineka Cipta; 2010.
8. Suwaryo PAW, Yuwono P. Factors Affecting the Level of Community Knowledge in Landslide Mitigation Natural Disaster Mitigation. *Proceeding 6th University Research Colloquium*. 2017;9(7):305–14.
9. Soetjoningsih. Youth Growth and Its Problems. Jakarta: Sagung Seto; 2004.
10. World Health Organization. Global Initiative for the Elimination of Avoidable Blindness : action plan 2006-2011 [Internet]. Geneva : World Health Organization; 2007 [cited 2018 Dec 13]. Available from: <http://apps.who.int/iris/handle/10665/43754>
11. Dakhili S, Alsuwaidi NO, Saeed S, Murad SB, Mohammad D, Muttappallymyalil J, et al. Oral hygiene: association between knowledge and practice among school going children in Ajman, United Arab Emirates. *American Journal of Research Communication*. 2014;2(10):39–48.
12. Wardani NI, Sr DS, Masfiah S. Factors Relating to the Knowledge Level of Health Cadres about Thalassemia in Sumbang District, Banyumas Regency. *Jurnal Kesmasindo*. 2014;6(3):194–206.
13. Galve JP, Cevasco A, Brandolini P, Soldati M. Assessment of shallow landslide risk mitigation measures based on land use planning through probabilistic modelling. *Landslides*. 2015 Feb;12(1):101–14.
14. Pangesti A. An overview of the level of knowledge and application of disaster preparedness to students of the University of Indonesia Faculty of Nursing in 2012. [Universitas Indonesia]; 2012.
15. Rasuna G, Sabila MP, Bramantoro T, Setijanto D, Zamzam A. Strawberry utilization empowerment program in low-temperature environment as a dental health promotion. *J Int Oral Health* 2019;11:S26-9
16. Palupi R, Berniyanti T, Bramantoro T, Wening GR, Kusumo AD, Zamzam A. Local myth and facts approach for maximizing oral health promotion training among the school teachers and parents in urban village. *J Int Oral Health* 2019;11:S34-6.