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Analysis Learning Activity with Andragogy Approach to Dental and oral Health Knowledge in Sidoarjo District, East Java, Indonesia.

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Abstract
Introduction: *Dental and oral health issues affect to overall health and degrade the quality of life. One of the most common dental and oral health issues in community is dental carries. The prevalence of dental carries in school-aged children is very high. Dental carries can be prevented with healthy behaviors. Healthy school environment will affect student's healthy behavior. Teachers as lead figures at school, play a role for motivating students to be able to perform healthy behaviors. Healthy behaviors are formed from sufficient knowledge to understand maintaining dental and oral health, such as dental health training. Dental health training is such as learning activity focused in dental and oral health. This study used learning activity with andragogy approach.*

Objective: *This study aimed to analyze the differences of dental and oral health knowledge before and after learning activity with andragogy approach.*

Methods: *The study used quasi experimental with pre post control group design. This study consisted of treatment group and control group given questionnaires before intervention (pretest) and after intervention (posttest). The population is first grade to sixth grade of homeroom teachers and health counselors of primary school in Sidoarjo District (East Java, Indonesia) from January 2016 until March 2017. Sampling was done by using simple random sampling technique with a sample size of 43 people. The study has two groups, such as treatment group and control group. Questionnaires were used for data collection and analysis was performed using paired-samples t test.*

Results: *The result showed that the value of P value < α (0.05). There is a difference of dental and oral health knowledge average before and after learning activity with andragogy approach (dental and oral health training). Dental and oral health training affects to dental health knowledge of homeroom teachers and health counselors.*

Conclusion:
Knowledge of the group of respondents who conducted dental and oral health training with andragogy approach is better than the group of respondents who were not conducted dental and oral health training with andragogy approach.

Keywords: *Dental Health Training, Dental And Oral Health, Andragogy Approach.*

I. INTRODUCTION

Dental and oral health issues affect to overall health and degrade the quality of life [7]. Dental and oral health issues in Indonesia continue to increase every year. The national prevalence of dental and oral health problems was 23.4% in 2007 and increased to 25.9% in 2013. The school-aged children group has high prevalence of dental and oral health disease in Indonesia. Prevalence of dental and oral health disease in school-aged children group increased from 2007 to 2013. The highest increase occurred in the 5 to 9 year age group ranging from 21.6% in 2007 to 28.9% in 2013, and in the 10 to 14 year age group from 20.6% in 2007 to 25.2% in 2013. The two age groups experienced the highest increase in dental and oral health disease prevalence within six years [3][4]. Dental and oral health issues in Sidoarjo District (East Java, Indonesia) also increased, seen in increasing case findings. The increase in cases can be seen from the findings of the case of filling from 7,192 cases to 9,730 cases, furthermore the teeth extraction case increase very high from 1,763 cases to 9,572 cases [1]. One of the most common dental health diseases in community is dental carries with a prevalence of 60% - 80% in 2013 [4].

Dental caries occurs due to internal factors and external factors Internal factors causing dental caries include host (tooth), agent (microorganisms, plaque), and environment (oral pH or saliva)[14]. External factors that cause dental caries is behaviors associated with maintaining healthy teeth [11]. The number of dental carries increases the risks of functional dental disorder such as digestive system disorder, speech disorder, high absenteeism at school, sleep disorders due to pain, etc. Preventive efforts are important, so dental health problem are not getting worse and interfere with the development of children [9]. Child tooth decay (dental carries) can be prevented by healthy behavior. Behavior is influenced by knowledge. Healthy behavior is created because a person has enough knowledge to understand how to maintain health. Behavior based on correct knowledge, will last longer than behavior that is not based on knowledge [12]. Dental carries can be prevented with healthy behaviors. Healthy behaviors are formed from sufficient knowledge to understand maintaining health, such as health training.

Healthy school environment, both physical and social environment will affect healthy behavior of school-aged children (students). Teachers as lead figures at school, play a role in motivating students to be able to perform healthy behaviors. The key to health education in schools is teachers, therefore teacher behavior must be conditioned in healthy behavior. Healthy behavior can be formed through various health training [13].

The teachers have a specific character as an adult learner. The individual as an adult is an individual who has had a lot of experience, knowledge, skills and ability to solve their life problems independently [6]. This situation requires

researcher to use adult learning theory (andragogy approach). One of andragogy elements is learning activity. Experience provides the basis for the learning activity. Experience in life will lead to problems that have occurred in terms of dental and oral health. Adult learning is problem-centered learning rather than content-oriented learning. A key point of adult learning theory is self-directed learning [10]. Since adults are self-directed, instruction should allow learners to discover things and knowledge for themselves without depending on other people. However, learners should be offered guidance and help when mistakes are made [5].

II. METHOD

The study used quasi experimental research with pre post control group design. This study consisted of treatment group and control group given questionnaires both before intervention (pretest) and after intervention (posttest). The research was conducted in Sidoarjo District, East Java (Indonesia), from January 2016 to March 2017. The population of this research is first grade to sixth grade of homeroom teachers and health counselors of elementary school in Sidoarjo District (East Java, Indonesia). The sampling technique used is simple random sampling with sample size of 43 teachers. The study has two groups, such as treatment group and control group. The treatment group consisted of 21 respondents and the control group consisted of 22 respondents. The treatment group was the group given the intervention in the form of dental and oral health training with andragogy approach. The control group was the group that was not given intervention in the form of dental and oral health training, but this group got posters and leaflets containing dental and oral health materials.

Learning activity with andragogy approach focuses on issues, encourages learners to participate actively, encourages participants to express their daily experiences, fosters collaboration, both among learners, and between learners and educators, so as to share experiences. Learning activity with andragogy approach puts forward the issues that the respondent to asks as much as possible. The problem is discussed and the educator explains the problem solution by including the dental and oral health materials explanation. The researcher knows the material on the training can be understood by the respondent or not, by testing it with the questionnaire before and after the training.

This research used primary data. Primary data is data obtained from the respondents by filling out questionnaires (pretest and posttest) made by researcher. Questionnaires were used for data collection and analysis was performed using paired-samples t test.

III. RESULTS

Research conducted in treatment group in the form of dental and oral health training on respondents (teachers homeroom and health counselors). The training includes knowledge of basic dental and oral health.

Table 1: The Distribution Of Knowledge in Treatment Group

Variable		Treatment Group				
		Mean	**SD**	**SE**	**Paired Difference**	**N**
Knowledge	**Before**	16.67	3.638	0.794	0.000	21
	After	25.52	2.581	0.563	0.000	21

The analysis in table 1 shows that the value of knowledge in the treatment group before and after intervention (dental and oral health training with andragogy approach) has P value <0.05, so it can be concluded that there is a difference in the knowledge average in the treatment group before and after intervention. The average difference of knowledge is the increase of knowledge average. The average increase in knowledge variables, as respondents received dental and oral health training with andragogy approach that appropriate with respondent's characteristics as an adult individual. Andragogy approach is able to facilitate the respondents in learning process. This approach facilitates respondents to learn, gain knowledge and practice directly dental and oral health materials so that respondents can understand well.

The posters and leaflet's materials are similar enough with the materials in dental and oral health training. This is done to appropriate the principle of equality in research. However, posters and leaflets were not used effectively by the respondents in the control group because of a knock on school regulations.

Table 2: The Distribution Of Knowledge in Control Group

Variable		Control Group				
		Mean	**SD**	**SE**	**Paired Difference**	**N**
Knowledge	**Before**	17.05	3.244	0.692	0.001	22
	After	16.27	3.195	0.681	0.001	22

The analysis in table 2 shows that the value of knowledge in the control group before and after giving leaflets and posters has P value <0.05, so it can be concluded that there is a difference of knowledge average in the control group before and after giving leaflets and posters. The average difference of knowledge and skill variables is the decrease of knowledge average. There is an average decrease in knowledge and skill variables, because the respondents in the control group were not trained in dental health with andragogy approach. The control group received posters and leaflets containing materials such as dental and oral health training materials, but posters and leaflets are not used well.

IV. DISCUSSION

Research conducted by Hutabarat explaining that there is a role of teachers in the maintenance of dental and oral health of students in primary schools. Research is based on the communication that exists between students and teachers affecting the student's health status [2]. Homeroom teachers play a role as educator, controller, and role model for students, especially on dental health issues. Health counselors have the responsibility to teach health education at schools. Teachers such as adult learners who have well educated background and having life experiences.

Knowles explained that the adult is an individual who has had a lot of experience, knowledge, skills and ability to solve life problems independently. Adult education is not enough just to provide additional knowledge, but must be equipped with a strong sense of trust in them so that the learning activity will be done and be well executed [6]. Learning activity with andragogy approach has the principle that adults learn well and taking part in learning activities or participating actively, learning materials interesting and related to their daily lives, learning materials are useful and practical, having the opportunity to use their basic knowledge and life experience [8]. Participation makes respondents feel responsible with training and fostering good relationships between learners and facilitators so as to form a conducive learning atmosphere.

This atmosphere made respondents feel comfortable sharing experiences or dental health problems they have experienced. Experience provides the basis for the learning activity with andragogy approach. Andragogy approach is able to facilitate the respondents in learning process. According to the previous explanation that creating a comfortable and conducive situation during the learning process is one of the principles in andragogy approach, because the knowledge delivered and well absorbed by the participants of learning [6].

Appropriate approach with the target characters can result the output of teachers who are able to behave healthy and able to motivate their students to behave healthily. This motivation is expected later in the long term can prevent the sustainability of the problem of tooth decay in children, because children are able to behave healthily without coercion.

V. CONCLUSION

Sustainability of dental and oral health training with andragogy approach affects the development of dental health knowledge of homeroom teachers and health counselors at schools. Healthy behavior can be established by dental and oral health training with andragogy approach.

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