

Correlation of Puberty Status Effect of Teenage Islamic Students with Oral Hygiene and Gingiva Condition

Cahyo Nugroho¹, Agung Widayado², Culia Rahayu³, Lely Tri Wahyuni⁴

^{1,2,3,4}Jurusan Keperawatan Gigi, Poltekkes Kemenkes Tasikmalaya, Jl. Tamansari No 210, Kec. Tamansari, Kota Tasikmalaya, Jawa Barat 46115

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ABSTRACT

Islamic boarding schools are social, religious institutions that become educational vehicles for Muslims who desire to investigate the religious sciences; someone accompanies a teacher wherever they go or settle in a cottage to learn science (santri/student at the muslim school). Adolescents at puberty experience growth characterized by physiological and hormonal influences on their physical appearance. Visible changes can affect their behavior, transition period, and health problems, especially in dental and oral health and gingiva. The teeth and mouth are the most crucial hygiene in the human body, becoming a significant problem in adolescent health. The absence of teeth and mouth for gingiva is frequently used as a sign of diseased periodontal tissue. This study was conducted to assess the hormonal impacts of adolescents with poor dental hygiene and gingival diseases. This type of research uses a cross-sectional design. The research sample was conducted on Daar El Fikri Islamic Boarding School adolescents, with as many as 40 people. The measuring instrument uses a questionnaire, the Oral Hygiene Index Simplified (OHI-S), and the Gingival Index. The Spearman Correlation test carried out data analysis. The results of this student girl at the Muslim school are that the average age of puberty adolescents and experiencing a cycle turns out that oral hygiene is not good and the gingivitis has mild inflammation, this occurs due to hormonal effects.

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Corresponding Author:

Cahyo Nugroho
Jurusan Keperawatan Gigi,
Poltekkes Kemenkes Tasikmalaya,
Jl. Tamansari No 210, Kec. Tamansari, Kota Tasikmalaya, Jawa Barat 46115
Email: cahyojkgtasik@gmail.com

INTRODUCTION

Whoever has experienced Islamic boarding schools will be exposed to a dynamic, religious, scientific, and exotic dimension of life; conversely, pesantren may provide the impression of an orthodox, stagnant, restricted, and convenient location to learn religion. As the oldest institutions in Indonesia, Islamic boarding schools constantly uphold traditional educational principles. This model pesantren is referred to as a conventional pesantren since it preserves traditional systems and practices. (Aliyah, 2018; Farihi, 2021; Hasanah & Kosim, 2021; Lesmana et al., 2021).

In the 16th century, Islamic boarding schools initially appeared in Indonesia, precisely in Ampel Denta, under the supervision of Sunan Ampel. He recruited his students to disseminate Islamic teachings nationwide; some were even assigned to neighboring countries. These Sunan Ampel students then increased throughout the nation's Islamic boarding institutions. In the early middle of the 19th and early 20th centuries, specifically during Syekh Kholil Bangkalan, the great Islamic scholars of the Archipelago who were able to incubate other great kiai arose from his frigid hands. At that time, there was an Islamic boarding school in every sub-district town and village. At the same time, the Daar El Fikri Islamic Boarding School was a Modern Islamic Boarding School located in Kp. Cijeruk, Lengkongjaya Village, Cigalontang District, Tasikmalaya. Among the 129 Islamic boarding school students and pupils, 59 are teenagers, and 70 are teenagers. (Sutrisno, 2009).

Adolescence is a period of transition from children to adults. During this period, various changes occur, both hormonal, physical, psychological, and social (Hembree et al., 2017; Orben et al., 2020; Steinberg, 2017). These changes happen very quickly and sometimes without us even realizing it. Physical changes that stand out are the development of secondary sex characteristics, the growth spurt, and changes in behavior and social relations with the environment. These changes can lead to certain disorders or diseases if not paid close attention to.

Puberty is when a child experiences physical, psychological, and sexual function maturity changes. The term puberty can describe biological changes, including morphology and physiology, that occur rapidly from childhood to adulthood, especially during sex changes from childhood to adulthood. The growth of the reproductive organs undergoes rapid changes, and they already can reproduce, but it is a phenomenon showing that teenagers do not know about reproductive health. Many young women do not realize that they have produced egg cells, which teenagers fear facing puberty (Kayowuan Lewoleba & Helmi Fahrozi, 2020; Sahertian, 2022).

According to (Putri & Nurjannah 2013), gingivitis and periodontitis are inflammatory diseases of the periodontal tissues affecting many people in Indonesia. A similar situation is also found even in considered advanced countries, such as the US (Survey by the National Health and Nutrition Examination III, taken from 1988-1994).

Gingivitis is inflammation of the gingiva (Meliawati et al., 2022; Soraya et al., 2019; Yoana & Sasmita, 2019). Another definition states that gingivitis is an inflammation of the gingiva where the junctional epithelium is still intact and attached to the teeth in the initial condition so that the approach has not changed. The inflammatory process involves the gingiva and other periodontal tissues, and there has been a detachment of the periodontal fibers; this condition is referred to as periodontitis.

According to (Nataris & Santik, 2017; Sukanti, 2017), The gingiva is the outermost part of the periodontal tissue. The gingiva is often used to indicate if the periodontal tissues are diseased. This is because most periodontal disease starts from the gingiva; sometimes, it can also reflect the state of the alveolar bone beneath it. This study wanted to see how the hormonal effects of puberty on teenage female students with oral hygiene and gingival conditions at the Daar El Fikri Islamic Boarding School, Cigalontang District, Tasikmalaya.

RESEARCH METHOD

Descriptive and quantitative research was conducted using a cross-sectional design and a purposive sampling technique to obtain a sample of 40 persons. Respondents were selected based on inclusion criteria, and the sample was obtained by selecting respondents at random. This study utilized a questionnaire, the Simplified Oral Hygiene Index (OHI-S), and the Gingival Index as its measuring instruments (GI). Spearman Correlation was used in the examination of the data.

RESULTS AND DISCUSSIONS

The research was conducted at the Daar El Fikri Islamic Boarding School, Jl. Raya Cigalontang Kp. Babakan Cijeruk, RT/RW 005/002, Lengkongjaya Village, Cigalontang District, Tasikmalaya Regency, West Java 46463 on February 2 2019. The distribution of respondents by age can be seen in table 1:

Table 1. Respondent frequency distribution by age

No	AGE	$\sum N$	PERCENTAGE (%)
1	13 YEARS OLD	17	42,5
2	14 YEARS OLD	15	37,5
3	15 YEARS OLD	8	20,0
TOTAL		40 PEOPLE	100

Table 1 obtained the highest results for female students aged 13 years with 17 people. Furthermore, the distribution of Puberty frequencies in female students can be seen in the table below:

Table 2. Distribution Of Puberty Frequency In Students

No	PUBERTY	$\sum N$	PERCENTAGE (%)
1	DONE	8	20
2	ONGOING	30	75
3	NOT YET	2	5
AMOUNT		40 PEOPLE	100

Table 2 shows that most teenage female students are experiencing puberty, namely as many as 30 people. Then the distribution table for cleaning the frequency of female students can be seen in the table below:

Table 3. Distribution of mouth hygiene frequency of students

No	MOUTH HYGIENE	$\sum N$	PERCENTAGE (%)
1	GOOD	10	25
2	FAIRLY	23	57,5
3	POOR	7	17,5
AMOUNT		40 PEOPLE	100

Table 3 shows the average frequency distribution of oral hygiene for teenage female students who have moderate or poor oral hygiene, as many as 23 people. The frequency distribution of the gingival conditions can be seen in the table below:

Table 4. Frequency distribution of gingival condition of students

No	GINGIVA CONDITION	$\sum N$	PERCENTASE (%)
1	HEALTHY	10	25
2	MILD	21	52,5
3	MODERATE	4	10
4	SEVERE	5	12,5
AMOUNT		40 PEOPLE	100

Table 4 shows the frequency distribution of the condition of the gingiva of teenage female students with an average of mild inflammation as many as 21 people. Then the table of cross-results of the hormonal effects of teenage female students with oral hygiene can be seen in the table below:

Table 5. Cross table of hormonal effects with students' mouth hygiene

HORMONAL EFFECTS OF TEENAGE STUDENTS	MOUTH HYGIENE						TOTAL	
	GOOD		FAIRLY		POOR		ΣN	%
	ΣN	%	ΣN	%	ΣN	%		
ALREDY	0	0	5	12,5	3	7,5	8	20
ONGOING	8	20	18	45	4	10	30	75
NOT YET	2	5	0	0	0	0	2	5
TOTAL	10	25	23	57,5	7	17,5	40	100

Table 5 obtained the highest results, namely female students who were experiencing puberty with moderate oral hygiene, namely 18 people. Then the cross-results table for the hormonal effects of teenage female students with gingival conditions can be seen in the table below:

Table 6. Cross table of hormonal effects with gingival state of students

HORMONAL EFFECTS OF TEENAGE STUDENTS	GINGIVA CONDITION								TOTAL	
	HEALTHY		MILD INFLAMMATION		MODERATE INFLAMMATION		SEVERE INFLAMMATION		ΣN	%
	ΣN	%	ΣN	%	ΣN	%	ΣN	%		
ALREDY	1	2,5	2	5	1	2,5	4	10	8	20
ONGOING	9	22,5	17	42,5	3	7,5	1	2,5	30	7,5
NOT YET	0	0	2	5	0	0	0	0	2	5
TOTAL	10	25	21	52,5	4	10	5	12,5	40	100

Table 6 obtained the most results, namely from female students who were experiencing puberty with mild inflammation of the gingiva, as many as 17 people. The results of data analysis using a computer application with the Spearman correlation test obtained the following results:

Table 7. Statistical test results of spearman's correlation of hormonal effects in adolescent students with oral hygiene and gingival conditions

		PUBERTY	MOUTH HYGIENE	GINGIVA CONDITION
PUBERTY			0,322*	0,332*
	SIG. (2-TAILED)		0,042	0,037
MOUTH HYGIENE	CORRELATION COEFFICIENT	0,322*		0,490**
	SIG. (2-TAILED)	0,042		0,001
GINGIVA CONDITION	CORRELATION COEFFICIENT	0,332*	0,490**	
	SIG. (2-TAILED)	0,037	0,001	

Table 7. This shows the analysis results that there is a significant relationship between puberty and oral hygiene, namely 0.42 because the considerable value is <0.05 , as well as puberty with the state of the gingiva, which also has a significant value relationship, namely 0.037. The Correlation Coefficient results are 0.322 and 0.332, which can be concluded that the relationship between the two variables is quite solid and unidirectional.

The research was done at Daar El Fikri Islamic Boarding School in Cigalontang, Tasikmalaya, on February 2, 2019. The respondents studied numbered 40, and the average age was 13 years,

namely 17 individuals, and the highest number of puberty frequency results occurred in female students, namely 30 individuals. The average respondent was between 13 and 14 years old because puberty begins at 13. There are three categories for puberty or the condition of puberty in female adolescent students who have completed questionnaires regarding their pubertal experience and knowledge: already, moderately, and not yet – the transitional phase from childhood to adulthood, marked by biological, cognitive, and social-emotional changes. (Ani, 2020). In most cultures, it starts or starts from the age of 13.

The analysis using the Spearman correlation test proved that the hormonal effect variable had a significant relationship ($p=0.042$) with the oral hygiene of teenage female students at Daar El Fikri Islamic Boarding School. The hormonal effect variable had a significantly more substantial relationship than oral hygiene ($p= 0.037$) with the condition of the gingiva of teenage female students at the Daar El Fikri Islamic Boarding School.

The highest number of oral hygiene frequencies is in the unfavorable criteria, namely as many as 21 people, this shows a lack of dental care behavior and experiencing puberty is the main cause of poor dental hygiene. Research conducted by (Lesar et al., 2015) stated that adolescents experience growth or maturity during puberty, which is characterized by physiological and hormonal influences that affect their physique. It is seen that these changes can affect behavior, transitional periods, and health problems, especially in the health of the teeth and mouth, and gingiva.

The highest number of gingival conditions, namely in the criteria of mild inflammation, is as many as 20 people, this is due to a lack of self-care, and there are very high hormones compared to those who have not experienced puberty. The results of this study follow the research (Jannah, 2014) stated that the gingival health status of prepubertal students was better than that of pubertal students; this was due to the lower endocrine hormone levels in the prepubertal stage compared to the pubertal endocrine hormone levels and the lack of self-care during puberty.

The results of the cross table between hormonal effects and oral hygiene obtained the highest marks in respondents who were experiencing puberty with moderate or poor oral hygiene criteria of 45%, who were experiencing puberty with good oral hygiene criteria of 20%, and who had already experienced puberty. With moderate or poor oral hygiene criteria as much as 12.5%, those who are experiencing puberty with inadequate oral hygiene criteria as much as 10%, and those who have experienced puberty with poor oral hygiene criteria as much as 7.5%. These results are spread among respondents with good, moderate, and poor oral hygiene criteria.

The results of the cross table between hormonal effects and the condition of the gingiva showed the highest results in respondents experiencing puberty with mild inflammation criteria of 42.5%, who were experiencing puberty with healthy gingiva criteria of 22.5%, who had already experienced puberty with the criteria severe inflammation as high as 10%, who are experiencing puberty with moderate inflammation criteria of 7.5%, and those who are exempt from puberty.

CONCLUSION

The conclusions of the research results on the hormonal effects of teenage female students on oral hygiene and gingival conditions are 1) The oral hygiene of female students at the Daar El Fikri Islamic Boarding School is not good. The condition of the gingiva also changes color and swelling. This is due to a lack of dental and oral hygiene maintenance, and female students are moderately going through puberty. 2) The hormonal effect of female students at the Daar El Fikri Islamic Boarding School is very high. It can be seen from the results of the study that it is stated that many teenage female students at the Daar El Fikri Islamic Boarding School have experienced puberty. 3) The average oral hygiene status of teenage female students at the Daar El Fikri Islamic Boarding School experience poor oral hygiene due to a lack of maintenance of oral hygiene and knowledge about dental and oral health. 4) On average, the condition of the gingiva of teenage female students at the Daar El Fikri Islamic Boarding School experiences discoloration and swelling. This occurs due to a lack of self-maintenance in female students and female students experiencing puberty.

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