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The Relationship Between Stress Levels And The Incidence Of Hair Loss (Telogen Effluvium) In Beginning And Final Level Students Of Unimus Faculty Of Medicine

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Abstrak

Telogen effluvium adalah salah satu bentuk kerontokan rambut kulit kepala yang paling umum. Telogen effluvium ditandai dengan kerontokan rambut yang menyebar, dimana rambut telogen melebihi batas normal kerontokan rambut dalam sehari, yaitu lebih dari 80-100 helai. Salah satu penyebab paling umum dari gangguan kerontokan rambut (Telogen Effluvium) adalah stres. Mahasiswa kedokteran merupakan salah satu kelompok masyarakat yang berisiko mengalami stres akibat aktivitas pendidikan yang dialaminya. Tugas perkuliahan, praktikum, ujian, dan proses adaptasi dengan lingkungan belajar di kampus merupakan stressor bagi mahasiswa kedokteran. Penelitian ini merupakan penelitian observasional analitik dengan pendekatan cross sectional. Populasi penelitian adalah seluruh mahasiswa angkatan 2018 dan 2021. Sampel penelitian dibagi menjadi dua yaitu kelompok yang mengalami kerontokan rambut dan kelompok tidak mengalami kerontokan rambut yang masing-masing berjumlah 35 sampel. Pengumpulan data menggunakan kuesioner. Analisis data menggunakan uji univariat dan bivariat dengan uji Odd Ratio. Mahasiswa tingkat akhir yang mengalami stres sedang hingga berat OR = 2.67 (95% CI 1.3-3.7) mengalami kerontokan rambut dibandingkan mahasiswa tingkat akhir yang memiliki tingkat stres ringan. Sedangkan siswa tingkat awal yang memiliki tingkat stres sedang-berat akan memiliki OR = 1,3 (95% CI 1,2-4,6) mengalami kerontokan rambut dibandingkan siswa tingkat awal yang memiliki tingkat stres ringan.

Kata Kunci : Mahasiswa Kedokteran, Stress, Rambut Rontok.

Abstrack

Telogen effluvium is one of the most common forms of scalp hair loss. Telogen effluvium is characterized by diffuse hair loss, with telogen hair exceeding the normal limit for hair loss in a day, which is more than 80-100 strands. One of the most common causes of disrupted hair loss (Telogen Effluvium) is stress. Medical students are one of the groups of people who are at risk of stress due to the educational activities they experience. Lecture assignments, practicums, exams, and the process of adapting to the learning environment on campus are stressors for medical students. This research was an analytic observational study with a cross sectional approach. The research population is all 2018 and 2021 students. The research sample was divided into two, namely the group who suffered from hair loss and those who did not suffer from hair loss, each of which consisted of 35 samples. Collecting data using a questionnaire. Data analysis applied univariate and bivariate tests with the Odd Ratio test. Final year students with moderate to severe stress OR = 2.67 (95% CI 1.3-3.7) to experience hair loss than final year students who had mild stress levels. Meanwhile, early-level students who had moderate-severe stress levels will had an OR = 1.3 (95% CI 1.2-4.6) experiencing hair loss than early-level students who had mild stress levels.

Keywords : Medical Students, Stress, Hair loss.

INTRODUCTION

Hair is a reflection of character and a specific individual, hair can indicate ethnic health, personal aspects, social status. In individuals who experience hair loss, their sense of self-esteem and self-confidence can decrease. Hair loss can be a psychological, aesthetic complaint and can be a sign of a systemic disorder. (Wosicka H & Cal K. 2010)Telogen effluvium is a type of scalp hair loss that often occurs. Telogen effluvium is seen as diffuse hair loss, telogen hair exceeding the normal limit of hair loss in a day, namely exceeding 80-100 strands.(Hutapea S. 2011)

One of the causes of hair loss (Telogen Effluvium) that often occurs is stress. (Shahsavarani AM, Kalkhoran MH, Abadi EA. 2015). Stress is a tension, disturbance, unpleasant pressure that originates from outside the individual. Stress can originate from the social environment or personal circumstances where a person feels pressure to adapt to certain conditions. Stress can arise at various ages and job levels, including students. (Augesti G, Saputra O, Lisiswanti R, Nisa K.2015)

Based on the results of research on medical students in Pakistan, it was found that there was a significant correlation between stress and hair loss and the prevalence of the majority of students, 173 (57.7%) had moderate to severe stress and as many as 257 (85.67%) experienced temporary hair loss.(Fatima A, Ali MD, Safdar M, Rafique A, Shah S. 2015). Meanwhile, research conducted conducted in Indonesia, approximately 50.8% of students

at the Faculty of Medicine, Muhammadiyah University, Purwokerto experienced stress. Negeri Surabaya states that stress in final year students is 97.0%. Meanwhile, research by Surabaya State University students stated that stress in final year students was 97.0%. (Agung G, Budiani MS. 2013)

For new students, there are various changes due to the transition from high school to new students at college level. The changes can be in the form of coursework, learning styles and other problems. This adaptation can be strengthened by individual factors, for example living far from parents, financial conditions, adapting to a new environment and other problems that students must experience. Major changes in the academic environment of campus life require an adjustment process, but not many students are able to adjust quickly, so this can be a source of stress. (Augesti G, Saputra O, Lisiswanti R, Nisa K.2015). Meanwhile, final year students carry out final research or it is one of the mandatory requirements that undergraduate program students must complete in order to be able to get a bachelor's degree, therefore working on a thesis is often considered to be a heavy pressure for students who are doing it and there are many obstacles that often occur which cause students to experience stress. (Agung G, Budiani MS. 2013)

Students are at risk of experiencing stress from various sources of stress (stressors) which can hinder academic activities and result in the hair growth cycle being disrupted so that abnormalities can occur, namely hair loss. According to several studies, there is a relationship between stress levels and cases of hair loss in medical students, but there has been no research that has specifically linked this at Unimus Faculty of Medicine to early and final level students, so researchers are encouraged to examine whether there is a relationship between stress levels and cases of hair loss in students. beginning and final year students of FK Unimus.

METHOD

This research is an analytical observational study with a case control design. Sampling was taken with the condition that the respondent met the criteria for being an active student at FK Unimus at the initial (Semester 1) and final (Semester 7) stage of Bachelor of Medicine (S1) and was willing to be a respondent in the research. Meanwhile, the exclusion criteria are that they have just recovered from a certain disease (typhus, high fever, malaria) for 2 to 4 weeks, have a family history of hair loss/baldness, poor nutritional status, have hair in hair extensions, often dye their hair and frequently (every day) using a hair dryer or curling iron, flat iron. The research population includes a case population and a control population consisting of the 2018 and 2021 classes of 70 students who are divided into 35 respondents in the case group and 35 respondents in the control group. Research data collection used

the SSI (Student Stress Inventory) online questionnaire to determine stress levels with 52 questions and the Telogen Effluvium incidence questionnaire which consisted of 3 questions including: whether the respondent experienced hair loss or not, the amount of hair loss in one day, and exclusion criteria. The SSI online questionnaire is a standard questionnaire so validity and reliability tests are not carried out. Research data analysis used univariate analysis using frequencies and percentages, as well as bivariate tests using the Chi Square test and Cross Tabulation.

RESULTS AND DISCUSSION

Result

The research results include the characteristics of the research subjects, univariate analysis and bivariate analysis as follows.

Characteristics Subject Study

Table 1. Characteristics of Research Subjects

Variable	Frequency	Percentage
Type sex		
Man	28	40.0
Woman	42	60.0
Force		
2018 (level end)	25	35.7
2021 (level beginning)	45	64.3
Total	70	100.0

Analysis Univariate

Table 2 Frequency Distribution of Hair Loss

Variable	Frequency	Percentage
Loss Hair		
Yes	35	50.0
No	35	50.0
Total	70	100.0

Table the come on stage that amount between subject research in groups case (experienced loss hair) and subject research in groups control (no experience loss hair) is same .

Table 3 Frequency Distribution of Stress Levels

Variable	Frequency	Percentage
Stress Level		
Heavy	33	47.1
Currently	24	34.3
Light	13	18.6
Total	70	100.0

Table 3, is shown that the majority (47.1%) of subjects study This have level stress with category heavy.

Analysis Bivariate

Table 4 Analysis of the Relationship Between Stress Levels and Hair Loss Based on Student Level

			Loss Hair		Total	OR	95%CI
			Yes	No			
of 2018 Stress Levels	Medium-Heavy	N	16	3	19	2.67	1.3-3.7
		%	80.0%	60.0%	76.0%		
	Light	N	4	2	6		
		%	20.0%	40.0%	24.0%		
of 2021 Stress Levels	Medium-Heavy	N	13	25	38	1.3	1.2-4.6
		%	86.7%	83.3%	84.4%		
	Light	N	2	5	7		
		%	13.3%	16.7%	15.6%		
	Total	N	15	30	45		
		%	100.0%	100.0%	100.0%		

Table above _ show that on students class of 2018 who experienced it loss hair , the majority (80.0%) have level stress which is category medium-heavy . Analysis results explain that student level the ending has level stress medium-heavy will 2.67 times the risk more tall For experience loss hair than student level the ending has level stress light , next based on 95% CI value 1.3-3.7, then the risk range incident loss hair in students experiencing moderate stress _ until heavy is 1.3-3.7 times more tall compared to student with mild stress level . Also found in students class of 2021 who experienced it loss hair , the majority (86.7%) have level stress which is category medium-heavy . Analysis results show that student level the beginning has level stress medium-heavy will 1.3 times the risk more tall For experience loss hair than student level beginning ,

next based on 95% CI value 1.2-4.6, then the risk range incident loss hair in students experiencing moderate stress _ until heavy is 1.2-4.6 times more tall compared to student with mild stress level .

Table 5 Differences in Stress Levels Between Initial and Final Level Students of FK Unimus

			Stress Level			Total	*P*
			Heavy	Currently	Light		
Force	2018	N	12	7	6	25	0.585
		%	48.0%	28.0%	24.0%	100.0%	
	2021	N	21	17	7	45	
		%	46.7%	37.8%	15.6%	100.0%	
	Total	N	33	24	13	70	
		%	47.1%	34.3%	18.6%	100.0%	

Table above _ show that on students class of 2018 (level end), the majority (48.0%) experienced level stress which is category heavy . In students class of 2021 (level beginning), the majority (46.7%) also have level stress which is category heavy .

significance value (*p*) is 0.585 (0.585 > 0.05) so withdrawn the conclusion there is no difference significant stress level towards student level final and student level Unimus ' initial FK.

Table 6 Differences in the incidence of hair loss between beginning and final level students at FK Unimus

			Loss Hair		Total	*P*
			Yes	No		
Force	2018	N	20	5	25	0,000
		%	80.0%	20.0%	100.0%	
	2021	N	15	30	45	
		%	33.3%	66.7%	100.0%	
	Total	N	35	35	70	
		%	50.0%	50.0%	100.0%	

Table above _ show that on students class of 2018 (level end), the majority (80.0%) experienced loss hair . Meanwhile for students class of 2021 (level initial), the majority (66.7%) did not experience loss hair.

significance value (*p*) is 0.000 (0.000 < 0.05), then withdrawn the conclusion that is there is difference significant loss hair between student level the beginning and end of FK Unimus .

Discussion

Overview of Loss Hair

Effluvium or hair loss is problem hair that can reduce hair loss amount hair , thus hair head thinning occurs .(Sari DK, Wibowo A. 2016). J type oh my God One loss hair The head that usually occurs is *Telogen effluvium (* TE). Signs of TE occur such as hair loss with diffuse in her telogen hair that goes beyond _ limit One day For loss normal hair , namely 80 - 100

strands.(Schalka S, Canale C, Bombarda PCP. 2018)

Study this applies _ design *case control* , so amount between experiencing group _ loss hair and what not experience loss hair is same . Nevertheless Thus , tabulation cross based on level education student it turns out that on students class of 2018 (level end), the majority (80.0%) experienced loss hair . Meanwhile for students class of 2021 (level initial), the majority (66.7%) did not experience loss hair .

On research this is one of the contributing factors its height case loss hair on students is type sex respondents part big woman . This thing as put forward by a research that says that TE can occur in women Who knows men , but in women generally will more likely alert when you experience it.(Peters EMJ, Snaga W, Mu Y, et al. 2017). Styling patterns hair in women is one of the factors in its emergence loss hair on women . This thing as stated by Soepardiman (2010) who stated that one _ factor most common reason effluvium is attraction . On circumstances This is the follicle hair So atrophy . Effluvium can happens in order hair and habits interesting hair (trichotillomania). Severity and early onset happen effluvium I'm more often occurs in women with history the usual hair pull experienced by women who wear the hijab . Besides that factor pull there are also other factors that cause it effluvium , i.e factor humidity , temperature , infection , trauma, deficiency nutrition , disorders endocrine , etc.(Soepardiman L.2008)

Overview of Stress Levels

Research results This find that _ the majority (47.1%) of subjects study This have level and stress included _ in category heavy . Tabulation cross based on level education student it turns out that on students class of 2018 (level end), the majority (48.0%) have level stress with category heavy . In students class of 2021 (level beginning), the majority (46.7%) also have level stress with category heavy.

Rony's (2015) research examined this description level stress on students faculty Riau University of Medicine First explain that _ of 166 samples study there were 57.23% experiencing moderate stress , 17.47% experiencing severe stress even There were 2.41% of respondents who experienced very severe stress .(Wahyudi R, Nazriati E, Freeari E.2015). Study Villaseeni (2014) related description stress levels in students faculty Medicine , University of North Sumatra, Odd Semester show that 61% of respondents of the 100 students studied experienced moderate stress , and there were 4% of respondents who experienced severe stress .

By generally , that's three on student can linked with difficulty adapt self with field academic and social surroundings , which can reduce optimization capacity student For reach growth personal in field academic and social . A student 's problem in front of clear become

prayer , that is for problems and academic and non- academic issues . On the problem related academics with planning study , method learning and making rules . Meanwhile , for non - academic problems related with adaptation self with environment campus , difficulties friendship , difficulties develop self , and problems other individuals .(Wahyudi R, Nazriati E, Freeari E.2015)

Stress Level Relationship with Loss Hair

Research results This it turns out that sanya to students level experienced ending _ loss hair , the majority (80.0%) have level stress included _ in category medium-heavy . Analysis results find that _ student level the ending has level stress medium-heavy will to 2.67 times the risk more big For experience loss hair than student level ending that has level stress mild (95% CI 1.3-3.7). Also found in students level initial experience _ loss hair , the majority (86.7%) have level stress that with categories medium-heavy . Analysis results show that _ student level the beginning has level stress medium-heavy will to 1.3 times the risk more tall For experience loss hair than student level the beginning that has level stress mild (95% CI 1.2-4.6).

Research results This consistent with a number findings previous they study Ainun (2020) regarding " The Relationship Between Stress Levels To Incident Loss Hair (Telogen Efluvium) in Female Students Faculty of Muhammadiyah Medical University Malang Year First " that states exists meaningful relationships _ between level stress to incident loss Hair on first year FK UMM students .(Chairani AN.2020). Study other carried out by Soorih who researched it prevalence loss hair and stress as a case study . Findings This explained that _ there is significant relationship _ stress with loss hair . Study This also show that prevalence loss hair in women more twice as high as men.(Shin H, Cho AR, Choi SJ, Kim DY, Kwon O, Kim KY.2016)

The incidence of stress is increasing among medical students due to the influence of many learning materials, so that medical students have less time to relax , which is related to physical and psychological stress (Fatima A, Ali MD, Safdar M, Rafique A, Shah S.2015). Reason stress to students are differentiated become internal and external factors . Origin from internal actors , namely in self student _ That yourself , for example circumstances physical , motivation , and type _ his personality . _ Factor external often come from outside a person , for example family , facilities , work , lecturers , environment , and so on .

Hair loss hair Headaches can be caused by stress . Based on Aprilia's expression , compilation worried or stress , body respond *flight or fight* , which is response physiological body to stress , whether body oppose or run and go . Effect stress can cause follicles enter phase rest . Causes hair start fall out , resulting in depletion hair on the skin area head . Follicles hair have cycle lifetime himself , incl growth , displacement , breakage , and loss of

the hair shaft . Stress change percentage hair in phase growth and transition phase Rest or phase *telogen*(Fatima A, Ali MD, Safdar M, Rafique A, Shah S.2015).

CONCLUSION

Study This show exists connection between stress level with incident hair hair loss (*Telogen Effluvium*) in students beginning and students end of FK Unimus Semarang. Research also shows exists difference level loss hair between student level beginning and students level end of FK Unimus Semarang, however study No succeed prove exists difference intermediate stress levels student level initial and level end of FK Unimus Semarang.

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