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AN 1. Rekomendasi Persetujuan Etik

KEMENTERIAN PENDIDIKAN, KEBUDAYAAN, RISET DAN TEKNOLOGI
UNIVERSITAS HASANUDDIN FAKULTAS KEDOKTERAN
KOMITE ETIK PENELITIAN UNIVERSITAS HASANUDDIN
RSPTN UNIVERSITAS HASANUDDIN
RSUP Dr. WAHIDIN SUDIROHUSODO MAKASSAR
Sekretariat : Lantai 2 Gedung Laboratorium Terpadu
JL.PERINTIS KEMERDEKAAN KAMPUS TAMALANREA KM.10 MAKASSAR 90245.
Contact Person: dr. Agussalim Bukhari.,MMed,PhD, SpGK TELP. 081241850858, 0411 5780103, Fax : 0411-581431

REKOMENDASI PERSETUJUAN ETIK

Nomor : 181/UN4.6.4.5.31/ PP36/ 2023

Tanggal: 20 Maret 2023

Dengan ini Menyatakan bahwa Protokol dan Dokumen yang Berhubungan Dengan Protokol berikut ini telah mendapatkan Persetujuan Etik :

No Protokol	UH23030172	No Sponsor Protokol	
Peneliti Utama	**dr. Muhammad Arda Bili**	Sponsor	
Judul Peneliti	Perbandingan Antara Derajat Kerusakan Endplate Dan Perubahan Modic Terhadap Derajat Degeneratif Discus Intervertebralis Menurut Pfirrmann Grading System Menggunakan Magnetic Resonance Imaging Pada Pasien Nyeri Punggung Bawah		
No Versi Protokol	**1**	Tanggal Versi	**16 Maret 2023**
No Versi PSP		Tanggal Versi	
Tempat Penelitian	RSUP Dr. Wahidin Sudirohusodo Makassar		
Jenis Review	[X] Exempted [ ] Expedited [ ] Fullboard Tanggal	Masa Berlaku **20 Maret 2023** sampai **20 Maret 2024**	Frekuensi review lanjutan
Ketua KEP Universitas Hasanuddin	Nama **Prof.Dr.dr. Suryani As'ad, M.Sc.,Sp.GK (K)**	Tanda tangan	
Sekretaris KEP Universitas Hasanuddin	Nama **dr. Agussalim Bukhari, M.Med.,Ph.D.,Sp.GK (K)**	Tanda tangan	

Kewajiban Peneliti Utama:

- Menyerahkan Amandemen Protokol untuk persetujuan sebelum di implementasikan
- Menyerahkan Laporan SAE ke Komisi Etik dalam 24 Jam dan dilengkapi dalam 7 hari dan Lapor SUSAR dalam 72 Jam setelah Peneliti Utama menerima laporan
- Menyerahkan Laporan Kemajuan (progress report) setiap 6 bulan untuk penelitian resiko tinggi dan setiap setahun untuk penelitian resiko rendah
- Menyerahkan laporan akhir setelah Penelitian berakhir
- Melaporkan penyimpangan dari prokol yang disetujui (protocol deviation / violation)
- Mematuhi semua peraturan yang ditentukan

AN 2. Data Sampel Penelitian Dan Analisis Statistik

No.	RM	Nama	Jenis Kelamin	Umur	Kelompok Usia	IMT	Level Discus	Derajat Degeneratif Diskus	Tipe Modic Change	Derajat Kerusakan Endplate
1.	965096	S	2	70	3	3	4	4	2	4
2.	864760	AS	1	46	1	4	4	4	3	2
3.	963559	JJ	2	62	2	3	3	3	3	3
4.	523929	T	1	49	1	5	3	3	1	4
5.	966622	SHN	2	52	1	5	2	4	3	2
6.	785305	HNR	2	54	1	3	5	5	3	6
7.	425243	M	2	48	1	2	3	4	3	2
8.	966738	S	1	62	2	4	4	3	3	2
9.	967091	BA	1	60	2	4	4	5	1	4
10.	951085	K	2	46	1	4	4	4	1	3
11.	967328	R	2	46	1	4	5	4	3	6
12.	967376	A	2	45	1	4	4	4	1	2
13.	838718	MY	1	67	3	4	5	5	3	6
14.	236457	J	2	68	3	2	3	4	3	2
15.	968031	M	1	46	1	4	4	5	3	5
16.	967651	HJ	2	50	1	5	5	4	1	3
17.	193390	CL	2	74	3	4	5	4	3	3
18.	80318	H	2	60	2	4	5	4	1	2
19.	968082	AM	1	52	1	4	5	3	3	2
20.	870347	APR	1	46	1	4	5	4	1	2
21.	931127	NH	2	62	2	4	4	4	1	2
22.	10449	SH	2	45	1	4	5	3	1	2
23.	968880	J	1	45	1	2	4	3	2	3
24.	968869	S	1	46	1	3	4	4	3	2
25.	872407	Z	2	48	1	3	5	3	1	2
26.	969042	J	2	67	3	2	4	4	3	3
27.	969160	S	1	48	1	4	5	3	3	3
28.	969295	HDN	2	56	2	2	4	4	1	2
29.	969630	R	2	49	1	4	5	4	1	3
30.	969748	MTP	1	46	1	4	5	4	1	3
31.	969768	P	1	82	4	2	5	4	1	2
32.	969997	S	2	67	3	4	4	4	1	2
33.	970480	H	1	46	1	3	5	3	1	4
34.	970089	IH	2	48	1	5	3	3	3	2
35.	962028	SN	2	69	3	2	4	4	1	2
36.	970500	EAPG	1	45	1	2	4	4	1	3
37.	970812	R	1	46	1	4	5	5	3	6
38.	970936	S	1	45	1	3	5	3	1	3
39.	970969	BP	2	48	1	2	4	3	1	4
40.	971013	EP	2	63	2	4	4	4	3	1
41.	810963	NA	1	45	1	3	2	3	1	4
42.	827160	J	2	77	4	4	3	4	3	4
43.	971417	K	2	53	1	3	5	4	1	3
44.	964449	ROS	2	46	1	4	5	3	1	2
45.	590796	S	2	51	1	2	5	4	1	2
46.	970990	CFE	2	64	2	2	5	4	1	2
47.	971550	R	1	60	2	3	3	3	3	5
48.	351627	HW	2	65	2	2	5	4	1	2
49.	871527	SJ	1	46	1	3	5	3	1	2
50.	972061	MRS	1	60	2	3	3	4	1	3
51.	670711	S	2	46	1	4	3	3	1	4
52.	972347	N	1	66	3	3	5	4	3	5
53.	972726	MM	2	47	1	4	4	4	1	4
54.	567245	H	2	51	1	4	3	3	3	4
55.	926696	SF	2	47	1	4	5	5	3	6
[illegible]	[illegible]578	S	1	72	3	3	4	4	3	4
[illegible]	[illegible]046	A	1	55	2	4	5	4	3	2
[illegible]	[illegible]402	S	1	48	1	3	5	3	1	2
[illegible]	[illegible]165	AN	1	50	1	3	5	4	1	3
[illegible]	[illegible]339	AP	2	55	2	4	5	4	1	2
[illegible]	[illegible]421	AHR	1	54	1	3	4	4	2	4
[illegible]	[illegible]700	SI	1	52	1	2	5	3	1	3

63.	353961	HRT	2	67	3	5	5	3	1	2
64.	324748	I	1	46	1	3	4	2	1	2
65.	971450	SH	2	48	1	4	5	4	1	5
66.	975089	NWM	2	45	1	4	4	4	1	6
67.	886911	JY	2	59	2	4	5	4	1	4
68.	974994	MJ	1	50	1	4	5	4	3	2
69.	975425	ZM	1	61	2	3	5	3	1	2
70.	822269	D	1	57	2	4	4	3	3	2
71.	457282	MST	2	62	2	2	2	3	3	4
72.	428505	VVP	1	45	1	5	4	3	1	2
73.	977101	P	1	50	1	3	3	2	3	4
74.	977198	R	2	48	1	5	4	4	3	2
75.	977241	KPJ	1	63	2	3	5	4	3	4
76.	977433	G	1	60	2	4	4	5	3	6
77.	979674	AP	1	58	2	3	5	3	1	4
78.	980951	RK	1	45	1	3	3	2	1	4
79.	981076	HNM	2	56	2	4	4	3	1	2
80.	853402	S	1	47	1	2	5	2	1	2
81.	981691	M	2	55	2	2	5	4	1	2
82.	981860	BHS	1	45	1	3	5	4	1	6
83.	981990	MP	2	58	2	5	5	4	3	3
84.	980435	RS	1	52	1	3	4	4	1	2
85.	553570	U	2	48	1	2	4	2	3	3
86.	706349	A	1	53	1	2	5	3	1	4
87.	981965	MP	2	48	1	2	3	4	2	3
88.	979738	HD	2	58	2	2	4	4	3	5
89.	982664	H	1	56	2	1	5	4	3	2
90.	644026	A	1	60	2	3	4	4	3	3
91.	982365	N	2	75	4	2	5	4	1	5
92.	983750	Z	1	47	1	4	5	3	1	2
93.	209663	WR	2	45	1	3	4	3	1	2
94.	983952	H	2	55	2	4	4	4	3	4
95.	983986	H	2	50	1	4	5	4	3	3
96.	984663	INB	2	56	2	4	4	4	1	5
97.	984740	SAM	2	62	2	5	2	4	3	4
98.	985024	ASP	2	79	4	4	4	4	1	5
99.	984081	JH	1	55	2	2	4	3	3	3
100.	938757	SL	1	53	1	4	4	3	1	4

Hasil Analisis Deskriptif

Jenis Kelamin

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Laki-laki	47	47.0	47.0	47.0
	Perempuan	53	53.0	53.0	100.0
	Total	100	100.0	100.0	

Kelompok Usia

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	45-54	56	56.0	56.0	56.0
	55-65	30	30.0	30.0	86.0
	66-74	10	10.0	10.0	96.0
	75-90	4	4.0	4.0	100.0
	Total	100	100.0	100.0	

IMT

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Berat badan kurang	1	1.0	1.0	1.0
	Berat badan normal	22	22.0	22.0	23.0
	Kelebihan berat badan	27	27.0	27.0	50.0
	Obesitas I	41	41.0	41.0	91.0
	Obesitas II	9	9.0	9.0	100.0
	Total	100	100.0	100.0	

Level Discus

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	L2-L3	4	4.0	4.0	4.0
	L3-L4	13	13.0	13.0	17.0
	L4-L5	37	37.0	37.0	54.0
	L5-S1	46	46.0	46.0	100.0
	Total	100	100.0	100.0	

Derajat Degeneratif Discus

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	GRADE II	5	5.0	5.0	5.0
	GRADE III	32	32.0	32.0	37.0
	GRADE IV	56	56.0	56.0	93.0
	GRADE V	7	7.0	7.0	100.0
	Total	100	100.0	100.0	

Tipe Modic Change

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Grade 0	55	55.0	55.0	55.0
	Grade 1	4	4.0	4.0	59.0
	Grade 2	41	41.0	41.0	100.0
	Total	100	100.0	100.0	

Derajat Kerusakan Endplate

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	GRADE I	1	1.0	1.0	1.0
	GRADE II	40	40.0	40.0	41.0
	GRADE III	21	21.0	21.0	62.0
	GRADE IV	22	22.0	22.0	84.0
	GRADE V	8	8.0	8.0	92.0
	GRADE VI	8	8.0	8.0	100.0
	Total	100	100.0	100.0	

Descriptive Statistics

	N	Minimum	Maximum	Mean	Std. Deviation
Umur	100	45.00	82.00	54.6100	9.03405
Valid N (listwise)	100				

Hasil Analisis Crosstab

Crosstab

			Derajat_Degeneratif_Discus				Total
			GRADE II	GRADE III	GRADE IV	GRADE V	
Derajat_Kerusakan Endplate	GRADE I	Count	0	0	1	0	1
		% within Derajat_Degeneratif_Discus	0.0%	0.0%	1.8%	0.0%	1.0%
	GRADE II	Count	2	15	23	0	40
		% within Derajat_Degeneratif_Discus	40.0%	46.9%	41.1%	0.0%	40.0%
	GRADE III	Count	1	6	14	0	21
		% within Derajat_Degeneratif_Discus	20.0%	18.8%	25.0%	0.0%	21.0%
	GRADE IV	Count	2	10	9	1	22
		% within Derajat_Degeneratif_Discus	40.0%	31.3%	16.1%	14.3%	22.0%
	GRADE V	Count	0	1	6	1	8
		% within Derajat_Degeneratif_Discus	0.0%	3.1%	10.7%	14.3%	8.0%
	GRADE VI	Count	0	0	3	5	8
		% within Derajat_Degeneratif_Discus	0.0%	0.0%	5.4%	71.4%	8.0%
Total		Count	5	32	56	7	100
		% within Derajat_Degeneratif_Discus	100.0%	100.0%	100.0%	100.0%	100.0%

Chi-Square Tests

	Value	df	Asymptotic Significance (2-sided)
Pearson Chi-Square	49.885[a]	15	.000
Likelihood Ratio	35.725	15	.002
Linear-by-Linear Association	10.001	1	.002
N of Valid Cases	100		

a. 18 cells (75.0%) have expected count less than 5. The minimum expected count is .05.

Crosstab

			Derajat_Degeneratif_Discus				Total
			GRADE II	GRADE III	GRADE IV	GRADE V	
Tipe_Modic_Change	Grade 0	Count	3	21	30	1	55
		% within Derajat_Degeneratif_Discus	60.0%	65.6%	53.6%	14.3%	55.0%
	Grade 1	Count	0	1	3	0	4
		% within Derajat_Degeneratif_Discus	0.0%	3.1%	5.4%	0.0%	4.0%
	Grade 2	Count	2	10	23	6	41

	% within Derajat_Degeneratif_Discus	40.0%	31.3%	41.1%	85.7%	41.0%
Total	Count	5	32	56	7	100
	% within Derajat_Degeneratif_Discus	100.0%	100.0%	100.0%	100.0%	100.0%

Chi-Square Tests

	Value	df	Asymptotic Significance (2-sided)
Pearson Chi-Square	7.766[a]	6	.256
Likelihood Ratio	8.324	6	.215
Linear-by-Linear Association	3.864	1	.049
N of Valid Cases	100		

a. 8 cells (66.7%) have expected count less than 5. The minimum expected count is .20.

Crosstab

			Level_Discus				
			L2-L3	L3-L4	L4-L5	L5-S1	Total
Derajat_Kerusakan_Endplate	GRADE I	Count	0	0	1	0	1
		% within Level_Discus	0.0%	0.0%	2.7%	0.0%	1.0%
	GRADE II	Count	1	3	15	21	40
		% within Level_Discus	25.0%	23.1%	40.5%	45.7%	40.0%
	GRADE III	Count	0	3	7	11	21
		% within Level_Discus	0.0%	23.1%	18.9%	23.9%	21.0%
	GRADE IV	Count	3	6	8	5	22
		% within Level_Discus	75.0%	46.2%	21.6%	10.9%	22.0%
	GRADE V	Count	0	1	4	3	8
		% within Level_Discus	0.0%	7.7%	10.8%	6.5%	8.0%
	GRADE VI	Count	0	0	2	6	8
		% within Level_Discus	0.0%	0.0%	5.4%	13.0%	8.0%
Total		Count	4	13	37	46	100
		% within Level_Discus	100.0%	100.0%	100.0%	100.0%	100.0%

Chi-Square Tests

	Value	df	Asymptotic Significance (2-sided)
Pearson Chi-Square	19.451[a]	15	.194
Likelihood Ratio	19.989	15	.172
Linear-by-Linear Association	.312	1	.576
N of Valid Cases	100		

a. 17 cells (70.8%) have expected count less than 5. The minimum expected count is .04.

Crosstab

			Level_Discus				
			L2-L3	L3-L4	L4-L5	L5-S1	Total
Tipe_Modic_Change	Grade 0	Count	1	4	19	31	55
		% within Level_Discus	25.0%	30.8%	51.4%	67.4%	55.0%
	Grade 1	Count	0	1	3	0	4
		% within Level_Discus	0.0%	7.7%	8.1%	0.0%	4.0%
	Grade 2	Count	3	8	15	15	41
		% within Level_Discus	75.0%	61.5%	40.5%	32.6%	41.0%
Total		Count	4	13	37	46	100
		% within Level_Discus	100.0%	100.0%	100.0%	100.0%	100.0%

Chi-Square Tests

	Value	df	Asymptotic Significance (2-sided)
Pearson Chi-Square	10.677[a]	6	.099
Likelihood Ratio	12.226	6	.057
Linear-by-Linear Association	6.435	1	.011
N of Valid Cases	100		

a. 6 cells (50.0%) have expected count less than 5. The minimum expected count is .16.

Level_Discus * Derajat_Degeneratif_Discus Crosstabulation

			Derajat_Degeneratif_Discus				
			GRADE II	GRADE III	GRADE IV	GRADE V	Total
Level_Discus	L2-L3	Count	0	2	2	0	4
		% within Derajat_Degeneratif_Discus	0.0%	6.3%	3.6%	0.0%	4.0%
	L3-L4	Count	2	6	5	0	13
		% within Derajat_Degeneratif_Discus	40.0%	18.8%	8.9%	0.0%	13.0%
	L4-L5	Count	2	9	23	3	37
		% within Derajat_Degeneratif_Discus	40.0%	28.1%	41.1%	42.9%	37.0%
	L5-S1	Count	1	15	26	4	46
		% within Derajat_Degeneratif_Discus	20.0%	46.9%	46.4%	57.1%	46.0%
Total		Count	5	32	56	7	100
		% within Derajat_Degeneratif_Discus	100.0%	100.0%	100.0%	100.0%	100.0%

Chi-Square Tests

	Value	df	Asymptotic Significance (2-sided)
Pearson Chi-Square	8.093[a]	9	.525
Likelihood Ratio	8.642	9	.471
Linear-by-Linear Association	2.928	1	.087
N of Valid Cases	100		

a. 11 cells (68.8%) have expected count less than 5. The minimum expected count is .20.

Crosstab

			Level_Discus				
			Uhnjmhnmp nbhpok	L3-L4	L4-L5	L5-S1	Total
Jenis_Kelamin	Laki-laki	Count	1	5	17	24	47
		% within Level_Discus	25.0%	38.5%	45.9%	52.2%	47.0%
	Perempuan	Count	3	8	20	22	53
		% within Level_Discus	75.0%	61.5%	54.1%	47.8%	53.0%
Total		Count	4	13	37	46	100
		% within Level_Discus	100.0%	100.0%	100.0%	100.0%	100.0%

Chi-Square Tests

	Value	df	Asymptotic Significance (2-sided)
Pearson Chi-Square	1.669[a]	3	.644
Likelihood Ratio	1.715	3	.634
Linear-by-Linear Association	1.593	1	.207
N of Valid Cases	100		

a. 2 cells (25.0%) have expected count less than 5. The minimum expected count is 1.88.

Crosstab

			Level_Discus				
			L2-L3	L3-L4	L4-L5	L5-S1	Total
Kelompok_Usia	45-54	Count	2	8	18	28	56
		% within Level_Discus	50.0%	61.5%	48.6%	60.9%	56.0%
	55-65	Count	2	3	13	12	30
		% within Level_Discus	50.0%	23.1%	35.1%	26.1%	30.0%

	66-74	Count	0	1	5	4	10
		% within Level_Discus	0.0%	7.7%	13.5%	8.7%	10.0%
	75-90	Count	0	1	1	2	4
		% within Level_Discus	0.0%	7.7%	2.7%	4.3%	4.0%
Total		Count	4	13	37	46	100
		% within Level_Discus	100.0%	100.0%	100.0%	100.0%	100.0%

Chi-Square Tests

	Value	df	Asymptotic Significance (2-sided)
Pearson Chi-Square	3.727[a]	9	.928
Likelihood Ratio	4.107	9	.904
Linear-by-Linear Association	.048	1	.827
N of Valid Cases	100		

a. 11 cells (68.8%) have expected count less than 5. The minimum expected count is .16.

Crosstab

			Level_Discus				
			L2-L3	L3-L4	L4-L5	L5-S1	Total
IMT	Berat badan kurang	Count	0	0	0	1	1
		% within Level_Discus	0.0%	0.0%	0.0%	2.2%	1.0%
	Berat badan normal	Count	1	3	9	9	22
		% within Level_Discus	25.0%	23.1%	24.3%	19.6%	22.0%
	Kelebihan berat badan	Count	1	5	8	13	27
		% within Level_Discus	25.0%	38.5%	21.6%	28.3%	27.0%
	Obesitas I	Count	0	3	18	20	41
		% within Level_Discus	0.0%	23.1%	48.6%	43.5%	41.0%
	Obesitas II	Count	2	2	2	3	9
		% within Level_Discus	50.0%	15.4%	5.4%	6.5%	9.0%
Total		Count	4	13	37	46	100
		% within Level_Discus	100.0%	100.0%	100.0%	100.0%	100.0%

Chi-Square Tests

	Value	df	Asymptotic Significance (2-sided)
Pearson Chi-Square	14.634[a]	12	.262
Likelihood Ratio	12.898	12	.377
Linear-by-Linear Association	.223	1	.637

N of Valid Cases	100			

a. 13 cells (65.0%) have expected count less than 5. The minimum expected count is .04.

Crosstab

			Derajat_Degeneratif_Discus				Total
			GRADE II	GRADE III	GRADE IV	GRADE V	
Jenis_Kelamin	Laki-laki	Count	4	20	18	5	47
		% within Derajat_Degeneratif_Discus	80.0%	62.5%	32.1%	71.4%	47.0%
	Perempuan	Count	1	12	38	2	53
		% within Derajat_Degeneratif_Discus	20.0%	37.5%	67.9%	28.6%	53.0%
Total		Count	5	32	56	7	100
		% within Derajat_Degeneratif_Discus	100.0%	100.0%	100.0%	100.0%	100.0%

Chi-Square Tests

	Value	df	Asymptotic Significance (2-sided)
Pearson Chi-Square	11.911[a]	3	.008
Likelihood Ratio	12.220	3	.007
Linear-by-Linear Association	3.647	1	.056
N of Valid Cases	100		

a. 4 cells (50.0%) have expected count less than 5. The minimum expected count is 2.35.

Crosstab

			Derajat_Degeneratif_Discus				Total
			GRADE II	GRADE III	GRADE IV	GRADE V	
Kelompok_Usia	45-54	Count	5	22	25	4	56
		% within Derajat_Degeneratif_Discus	100.0%	68.8%	44.6%	57.1%	56.0%
	55-65	Count	0	9	19	2	30
		% within Derajat_Degeneratif_Discus	0.0%	28.1%	33.9%	28.6%	30.0%
	66-74	Count	0	1	8	1	10
		% within Derajat_Degeneratif_Discus	0.0%	3.1%	14.3%	14.3%	10.0%
	75-90	Count	0	0	4	0	4
		% within Derajat_Degeneratif_Discus	0.0%	0.0%	7.1%	0.0%	4.0%
Total		Count	5	32	56	7	100
		% within Derajat_Degeneratif_Discus	100.0%	100.0%	100.0%	100.0%	100.0%

Chi-Square Tests

	Value	df	Asymptotic Significance (2-sided)
Pearson Chi-Square	12.092[a]	9	.208
Likelihood Ratio	15.704	9	.073
Linear-by-Linear Association	6.773	1	.009
N of Valid Cases	100		

a. 11 cells (68.8%) have expected count less than 5. The minimum expected count is .20.

Crosstab

			Derajat_Degeneratif_Discus				Total
			GRADE II	GRADE III	GRADE IV	GRADE V	
IMT	Berat badan kurang	Count	0	0	1	0	1
		% within Derajat_Degeneratif_Discus	0.0%	0.0%	1.8%	0.0%	1.0%
	Berat badan normal	Count	2	6	14	0	22
		% within Derajat_Degeneratif_Discus	40.0%	18.8%	25.0%	0.0%	22.0%
	Kelebihan berat badan	Count	3	11	12	1	27
		% within Derajat_Degeneratif_Discus	60.0%	34.4%	21.4%	14.3%	27.0%
	Obesitas I	Count	0	11	24	6	41
		% within Derajat_Degeneratif_Discus	0.0%	34.4%	42.9%	85.7%	41.0%
	Obesitas II	Count	0	4	5	0	9
		% within Derajat_Degeneratif_Discus	0.0%	12.5%	8.9%	0.0%	9.0%
Total		Count	5	32	56	7	100
		% within Derajat_Degeneratif_Discus	100.0%	100.0%	100.0%	100.0%	100.0%

Chi-Square Tests

	Value	df	Asymptotic Significance (2-sided)
Pearson Chi-Square	14.538[a]	12	.268
Likelihood Ratio	18.143	12	.111
Linear-by-Linear Association	1.997	1	.158
N of Valid Cases	100		

a. 13 cells (65.0%) have expected count less than 5. The minimum expected count is .05.

Crosstab

			Tipe_Modic_Change			
			Grade 0	Grade 1	Grade 2	Total
Jenis_Kelamin	Laki-laki	Count	25	2	20	47
		% within Tipe_Modic_Change	45.5%	50.0%	48.8%	47.0%
	Perempuan	Count	30	2	21	53
		% within Tipe_Modic_Change	54.5%	50.0%	51.2%	53.0%
Total		Count	55	4	41	100
		% within Tipe_Modic_Change	100.0%	100.0%	100.0%	100.0%

Chi-Square Tests

	Value	df	Asymptotic Significance (2-sided)
Pearson Chi-Square	.119[a]	2	.942
Likelihood Ratio	.119	2	.942
Linear-by-Linear Association	.106	1	.745
N of Valid Cases	100		

a. 2 cells (33.3%) have expected count less than 5. The minimum expected count is 1.88.

Crosstab

			Tipe_Modic_Change			
			Grade 0	Grade 1	Grade 2	Total
Kelompok_Usia	45-54	Count	35	3	18	56
		% within Tipe_Modic_Change	63.6%	75.0%	43.9%	56.0%
	55-65	Count	14	0	16	30
		% within Tipe_Modic_Change	25.5%	0.0%	39.0%	30.0%
	66-74	Count	3	1	6	10
		% within Tipe_Modic_Change	5.5%	25.0%	14.6%	10.0%
	75-90	Count	3	0	1	4
		% within Tipe_Modic_Change	5.5%	0.0%	2.4%	4.0%
Total		Count	55	4	41	100
		% within Tipe_Modic_Change	100.0%	100.0%	100.0%	100.0%

Chi-Square Tests

	Value	df	Asymptotic Significance (2-sided)
Pearson Chi-Square	8.211[a]	6	.223
Likelihood Ratio	9.391	6	.153
Linear-by-Linear Association	1.777	1	.182
N of Valid Cases	100		

a. 7 cells (58.3%) have expected count less than 5. The minimum expected count is .16.

Crosstab

			Tipe_Modic_Change			
			Grade 0	Grade 1	Grade 2	Total
IMT	Berat badan kurang	Count	0	0	1	1
		% within Tipe_Modic_Change	0.0%	0.0%	2.4%	1.0%
	Berat badan normal	Count	13	2	7	22
		% within Tipe_Modic_Change	23.6%	50.0%	17.1%	22.0%
	Kelebihan berat badan	Count	16	2	9	27
		% within Tipe_Modic_Change	29.1%	50.0%	22.0%	27.0%
	Obesitas I	Count	22	0	19	41
		% within Tipe_Modic_Change	40.0%	0.0%	46.3%	41.0%
	Obesitas II	Count	4	0	5	9
		% within Tipe_Modic_Change	7.3%	0.0%	12.2%	9.0%
Total		Count	55	4	41	100
		% within Tipe_Modic_Change	100.0%	100.0%	100.0%	100.0%

Chi-Square Tests

	Value	df	Asymptotic Significance (2-sided)
Pearson Chi-Square	7.590[a]	8	.475
Likelihood Ratio	9.409	8	.309
Linear-by-Linear Association	.724	1	.395
N of Valid Cases	100		

a. 9 cells (60.0%) have expected count less than 5. The minimum expected count is .04.

Crosstab

			Derajat_Kerusakan_Endplate						Total
			GRADE I	GRADE II	GRADE III	GRADE IV	GRADE V	GRADE VI	
Jenis_Kelamin	Laki-laki	Count	0	18	10	12	3	4	47
		% within Derajat_Kerusakan_Endplate	0.0%	45.0%	47.6%	54.5%	37.5%	50.0%	47.0%
	Perempuan	Count	1	22	11	10	5	4	53
		% within Derajat_Kerusakan_Endplate	100.0%	55.0%	52.4%	45.5%	62.5%	50.0%	53.0%
Total		Count	1	40	21	22	8	8	100
		% within Derajat_Kerusakan_Endplate	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%

Chi-Square Tests

	Value	df	Asymptotic Significance (2-sided)
Pearson Chi-Square	1.776[a]	5	.879
Likelihood Ratio	2.162	5	.826
Linear-by-Linear Association	.162	1	.687
N of Valid Cases	100		

a. 6 cells (50.0%) have expected count less than 5. The minimum expected count is .47.

Crosstab

			Derajat_Kerusakan_Endplate						
			GRADE I	GRADE II	GRADE III	GRADE IV	GRADE V	GRADE VI	Total
Kelompok_Usia	45-54	Count	0	22	14	12	2	6	56
		% within Derajat_Kerusakan_Endplate	0.0%	55.0%	66.7%	54.5%	25.0%	75.0%	56.0%
	55-65	Count	1	13	5	7	3	1	30
		% within Derajat_Kerusakan_Endplate	100.0%	32.5%	23.8%	31.8%	37.5%	12.5%	30.0%
	66-74	Count	0	4	2	2	1	1	10
		% within Derajat_Kerusakan_Endplate	0.0%	10.0%	9.5%	9.1%	12.5%	12.5%	10.0%
	75-90	Count	0	1	0	1	2	0	4
		% within Derajat_Kerusakan_Endplate	0.0%	2.5%	0.0%	4.5%	25.0%	0.0%	4.0%
Total		Count	1	40	21	22	8	8	100
		% within Derajat_Kerusakan_Endplate	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%

Chi-Square Tests

	Value	df	Asymptotic Significance (2-sided)
Pearson Chi-Square	16.351[a]	15	.359
Likelihood Ratio	13.289	15	.580
Linear-by-Linear Association	.385	1	.535
N of Valid Cases	100		

a. 18 cells (75.0%) have expected count less than 5. The minimum expected count is .04.

Crosstab

			Derajat_Kerusakan_Endplate						Total
			GRADE I	GRADE II	GRADE III	GRADE IV	GRADE V	GRADE VI	
IMT	Berat badan kurang	Count	0	1	0	0	0	0	1
		% within Derajat_Kerusakan_Endplate	0.0%	2.5%	0.0%	0.0%	0.0%	0.0%	1.0%
	Berat badan normal	Count	0	10	7	3	2	0	22
		% within Derajat_Kerusakan_Endplate	0.0%	25.0%	33.3%	13.6%	25.0%	0.0%	22.0%
	Kelebihan berat badan	Count	0	8	6	9	2	2	27
		% within Derajat_Kerusakan_Endplate	0.0%	20.0%	28.6%	40.9%	25.0%	25.0%	27.0%
	Obesitas I	Count	1	16	6	8	4	6	41
		% within Derajat_Kerusakan_Endplate	100.0%	40.0%	28.6%	36.4%	50.0%	75.0%	41.0%
	Obesitas II	Count	0	5	2	2	0	0	9
		% within Derajat_Kerusakan_Endplate	0.0%	12.5%	9.5%	9.1%	0.0%	0.0%	9.0%
Total		Count	1	40	21	22	8	8	100
		% within Derajat_Kerusakan_Endplate	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	100.0 %

Chi-Square Tests

	Value	df	Asymptotic Significance (2-sided)
Pearson Chi-Square	14.477[a]	20	.806
Likelihood Ratio	17.714	20	.606
Linear-by-Linear Association	.421	1	.517
N of Valid Cases	100		

a. 23 cells (76.7%) have expected count less than 5. The minimum expected count is .01.

Hasil Analisis Korelasi Spearman

Correlations

			Derajat_Kerusakan_Endplate	Derajat_Degeneratif_Discus
Spearman's rho	Derajat_Kerusakan_Endplate	Correlation Coefficient	1.000	.237*
		Sig. (2-tailed)	.	.018
		N	100	100
	Derajat_Degeneratif_Discus	Correlation Coefficient	.237*	1.000
		Sig. (2-tailed)	.018	.
		N	100	100

*. Correlation is significant at the 0.05 level (2-tailed).

Correlations

			Tipe_Modic_Change	Derajat_Degeneratif_Discus
Spearman's rho	Tipe_Modic_Change	Correlation Coefficient	1.000	.199*
		Sig. (2-tailed)	.	.047
		N	100	100
	Derajat_Degeneratif_Discus	Correlation Coefficient	.199*	1.000
		Sig. (2-tailed)	.047	.
		N	100	100

*. Correlation is significant at the 0.05 level (2-tailed).

Correlations

			Level_Discus	Derajat_Degeneratif_Discus	Tipe_Modic_Change	Derajat_Kerusakan_Endplate
Spearman's rho	Level_Discus	Correlation Coefficient	1.000	.141	-.247*	-.099
		Sig. (2-tailed)	.	.160	.013	.325
		N	100	100	100	100
	Derajat_Degeneratif_Discus	Correlation Coefficient	.141	1.000	.199*	.237*
		Sig. (2-tailed)	.160	.	.047	.018
		N	100	100	100	100
	Tipe_Modic_Change	Correlation Coefficient	-.247*	.199*	1.000	.169
		Sig. (2-tailed)	.013	.047	.	.092
		N	100	100	100	100
	Derajat_Kerusakan_Endplate	Correlation Coefficient	-.099	.237*	.169	1.000
		Sig. (2-tailed)	.325	.018	.092	.
		N	100	100	100	100

*. Correlation is significant at the 0.05 level (2-tailed).

Case Processing Summary

	Cases					
	Valid		Missing		Total	
	N	Percent	N	Percent	N	Percent
age_cat * Level_Discus	100	100.0%	0	0.0%	100	100.0%
age_cat * Derajat_Degeneratif_Discus	100	100.0%	0	0.0%	100	100.0%
age_cat * Tipe_Modic_Change	100	100.0%	0	0.0%	100	100.0%
age_cat * Derajat_Kerusakan_Endplate	100	100.0%	0	0.0%	100	100.0%
obese_cat * Level_Discus	100	100.0%	0	0.0%	100	100.0%
obese_cat * Derajat_Degeneratif_Discus	100	100.0%	0	0.0%	100	100.0%
obese_cat * Tipe_Modic_Change	100	100.0%	0	0.0%	100	100.0%
obese_cat * Derajat_Kerusakan_Endplate	100	100.0%	0	0.0%	100	100.0%

age_cat * Level_Discus

Crosstab

			Level_Discus			
			L2-L3	L3-L4	L4-L5	L5-S1
age_cat	age<=55y	Count	2	8	20	31
		% within Level_Discus	50.0%	61.5%	54.1%	67.4%
	age >55	Count	2	5	17	15
		% within Level_Discus	50.0%	38.5%	45.9%	32.6%
Total		Count	4	13	37	46
		% within Level_Discus	100.0%	100.0%	100.0%	100.0%

Crosstab

			Total
age_cat	age<=55y	Count	61
		% within Level_Discus	61.0%
	age >55	Count	39
		% within Level_Discus	39.0%
Total		Count	100
		% within Level_Discus	100.0%

Chi-Square Tests

	Value	df	Asymptotic Significance (2-sided)	Exact Sig. (2-sided)	Exact Sig. (1-sided)
Pearson Chi-Square	1.745[a]	3	.627	.652	
Likelihood Ratio	1.746	3	.627	.653	
Fisher-Freeman-Halton Exact Test	1.940			.622	
Linear-by-Linear Association	.851[b]	1	.356	.391	.212
N of Valid Cases	100				

Chi-Square Tests

	Point Probability
Pearson Chi-Square	
Likelihood Ratio	
Fisher-Freeman-Halton Exact Test	
Linear-by-Linear Association	.063
N of Valid Cases	

a. 2 cells (25.0%) have expected count less than 5. The minimum expected count is 1.56.

b. The standardized statistic is -.923.

age_cat * Derajat_Degeneratif_Discus

Crosstab

			Derajat_Degeneratif_Discus			
			GRADE II	GRADE III	GRADE IV	GRADE V
age_cat	age<=55y	Count	5	23	29	4
		% within Derajat_Degeneratif_Discus	100.0%	71.9%	51.8%	57.1%
	age >55	Count	0	9	27	3
		% within Derajat_Degeneratif_Discus	0.0%	28.1%	48.2%	42.9%
Total		Count	5	32	56	7
		% within Derajat_Degeneratif_Discus	100.0%	100.0%	100.0%	100.0%

Crosstab

			Total
age_cat	age<=55y	Count	61
		% within Derajat_Degeneratif_Discus	61.0%
	age >55	Count	39
		% within Derajat_Degeneratif_Discus	39.0%
Total		Count	100
		% within Derajat_Degeneratif_Discus	100.0%

Chi-Square Tests

	Value	df	Asymptotic Significance (2-sided)	Exact Sig. (2-sided)	Exact Sig. (1-sided)
Pearson Chi-Square	6.830[a]	3	.078	.071	
Likelihood Ratio	8.604	3	.035	.050	
Fisher-Freeman-Halton Exact Test	6.604			.073	
Linear-by-Linear Association	5.209[b]	1	.022	.025	.015
N of Valid Cases	100				

Chi-Square Tests

	Point Probability
Pearson Chi-Square	
Likelihood Ratio	
Fisher-Freeman-Halton Exact Test	
Linear-by-Linear Association	.009
N of Valid Cases	

a. 4 cells (50.0%) have expected count less than 5. The minimum expected count is 1.95.

b. The standardized statistic is 2.282.

age_cat * Tipe_Modic_Change

Crosstab

			Tipe_Modic_Change			
			Grade 0	Grade 1	Grade 2	Total
age_cat	age<=55y	Count	37	3	21	61
		% within Tipe_Modic_Change	67.3%	75.0%	51.2%	61.0%
	age >55	Count	18	1	20	39
		% within Tipe_Modic_Change	32.7%	25.0%	48.8%	39.0%
Total		Count	55	4	41	100
		% within Tipe_Modic_Change	100.0%	100.0%	100.0%	100.0%

Chi-Square Tests

	Value	df	Asymptotic Significance (2-sided)	Exact Sig. (2-sided)	Exact Sig. (1-sided)
Pearson Chi-Square	2.888[a]	2	.236	.249	
Likelihood Ratio	2.892	2	.236	.292	
Fisher-Freeman-Halton Exact Test	2.819			.229	
Linear-by-Linear Association	2.463[b]	1	.117	.141	.072
N of Valid Cases	100				

Chi-Square Tests

	Point Probability
Pearson Chi-Square	
Likelihood Ratio	
Fisher-Freeman-Halton Exact Test	
Linear-by-Linear Association	.025
N of Valid Cases	

a. 2 cells (33.3%) have expected count less than 5. The minimum expected count is 1.56.

b. The standardized statistic is 1.569.

age_cat * Derajat_Kerusakan_Endplate

Crosstab

			Derajat_Kerusakan_Endplate			
			GRADE I	GRADE II	GRADE III	GRADE IV
age_cat	age<=55y	Count	0	25	15	13
		% within Derajat_Kerusakan_Endplate	0.0%	62.5%	71.4%	59.1%
	age >55	Count	1	15	6	9
		% within Derajat_Kerusakan_Endplate	100.0%	37.5%	28.6%	40.9%
Total		Count	1	40	21	22
		% within Derajat_Kerusakan_Endplate	100.0%	100.0%	100.0%	100.0%

Crosstab

			Derajat_Kerusakan_En...		
			GRADE V	GRADE VI	Total
age_cat	age<=55y	Count	2	6	61
		% within Derajat_Kerusakan_Endplate	25.0%	75.0%	61.0%
	age >55	Count	6	2	39
		% within Derajat_Kerusakan_Endplate	75.0%	25.0%	39.0%
Total		Count	8	8	100
		% within Derajat_Kerusakan_Endplate	100.0%	100.0%	100.0%

Chi-Square Tests

	Value	df	Asymptotic Significance (2-sided)	Exact Sig. (2-sided)	Exact Sig. (1-sided)
Pearson Chi-Square	7.613[a]	5	.179	.164	
Likelihood Ratio	7.935	5	.160	.183	
Fisher-Freeman-Halton Exact Test	7.147			.187	
Linear-by-Linear Association	.121[b]	1	.728	.753	.393
N of Valid Cases	100				

Chi-Square Tests

	Point Probability
Pearson Chi-Square	
Likelihood Ratio	
Fisher-Freeman-Halton Exact Test	
Linear-by-Linear Association	.059
N of Valid Cases	

a. 6 cells (50.0%) have expected count less than 5. The minimum expected count is .39.

b. The standardized statistic is .348.

obese_cat * Level_Discus

Crosstab

			Level_Discus			
			L2-L3	L3-L4	L4-L5	L5-S1
obese_cat	non-obese	Count	2	8	17	23
		% within Level_Discus	50.0%	61.5%	45.9%	50.0%
	obese	Count	2	5	20	23
		% within Level_Discus	50.0%	38.5%	54.1%	50.0%
Total		Count	4	13	37	46
		% within Level_Discus	100.0%	100.0%	100.0%	100.0%

Crosstab

			Total
obese_cat	non-obese	Count	50
		% within Level_Discus	50.0%
	obese	Count	50
		% within Level_Discus	50.0%
Total		Count	100
		% within Level_Discus	100.0%

Chi-Square Tests

	Value	df	Asymptotic Significance (2-sided)	Exact Sig. (2-sided)	Exact Sig. (1-sided)
Pearson Chi-Square	.936[a]	3	.817	.872	
Likelihood Ratio	.942	3	.815	.872	
Fisher-Freeman-Halton Exact Test	1.065			.872	
Linear-by-Linear Association	.130[b]	1	.719	.811	.406
N of Valid Cases	100				

Chi-Square Tests

	Point Probability
Pearson Chi-Square	
Likelihood Ratio	
Fisher-Freeman-Halton Exact Test	
Linear-by-Linear Association	.089
N of Valid Cases	

a. 2 cells (25.0%) have expected count less than 5. The minimum expected count is 2.00.

b. The standardized statistic is .360.

obese_cat * Derajat_Degeneratif_Discus

Crosstab

			Derajat_Degeneratif_Discus			
			GRADE II	GRADE III	GRADE IV	GRADE V
obese_cat	non-obese	Count	5	17	27	1
		% within Derajat_Degeneratif_Discus	100.0%	53.1%	48.2%	14.3%
	obese	Count	0	15	29	6
		% within Derajat_Degeneratif_Discus	0.0%	46.9%	51.8%	85.7%
Total		Count	5	32	56	7
		% within Derajat_Degeneratif_Discus	100.0%	100.0%	100.0%	100.0%

Crosstab

			Total
obese_cat	non-obese	Count	50
		% within Derajat_Degeneratif_Discus	50.0%
	obese	Count	50
		% within Derajat_Degeneratif_Discus	50.0%
Total		Count	100
		% within Derajat_Degeneratif_Discus	100.0%

Chi-Square Tests

	Value	df	Asymptotic Significance (2-sided)	Exact Sig. (2-sided)	Exact Sig. (1-sided)
Pearson Chi-Square	8.768[a]	3	.033	.028	
Likelihood Ratio	11.090	3	.011	.020	
Fisher-Freeman-Halton Exact Test	8.496			.030	
Linear-by-Linear Association	6.120[b]	1	.013	.019	.009
N of Valid Cases	100				

Chi-Square Tests

	Point Probability
Pearson Chi-Square	
Likelihood Ratio	
Fisher-Freeman-Halton Exact Test	
Linear-by-Linear Association	.005
N of Valid Cases	

a. 4 cells (50.0%) have expected count less than 5. The minimum expected count is 2.50.

b. The standardized statistic is 2.474.

obese_cat * Tipe_Modic_Change

Crosstab

			Tipe_Modic_Change			
			Grade 0	Grade 1	Grade 2	Total
obese_cat	non-obese	Count	29	4	17	50
		% within Tipe_Modic_Change	52.7%	100.0%	41.5%	50.0%
	obese	Count	26	0	24	50
		% within Tipe_Modic_Change	47.3%	0.0%	58.5%	50.0%
Total		Count	55	4	41	100
		% within Tipe_Modic_Change	100.0%	100.0%	100.0%	100.0%

Chi-Square Tests

	Value	df	Asymptotic Significance (2-sided)	Exact Sig. (2-sided)	Exact Sig. (1-sided)
Pearson Chi-Square	5.359[a]	2	.069	.062	
Likelihood Ratio	6.910	2	.032	.052	
Fisher-Freeman-Halton Exact Test	5.056			.082	
Linear-by-Linear Association	1.053[b]	1	.305	.356	.178
N of Valid Cases	100				

Chi-Square Tests

	Point Probability
Pearson Chi-Square	
Likelihood Ratio	
Fisher-Freeman-Halton Exact Test	
Linear-by-Linear Association	.048
N of Valid Cases	

a. 2 cells (33.3%) have expected count less than 5. The minimum expected count is 2.00.

b. The standardized statistic is 1.026.

obese_cat * Derajat_Kerusakan_Endplate

Crosstab

			Derajat_Kerusakan_Endplate			
			GRADE I	GRADE II	GRADE III	GRADE IV
obese_cat	non-obese	Count	0	19	13	12
		% within Derajat_Kerusakan_Endplate	0.0%	47.5%	61.9%	54.5%
	obese	Count	1	21	8	10
		% within Derajat_Kerusakan_Endplate	100.0%	52.5%	38.1%	45.5%
Total		Count	1	40	21	22
		% within Derajat_Kerusakan_Endplate	100.0%	100.0%	100.0%	100.0%

Crosstab

			Derajat_Kerusakan_En...		
			GRADE V	GRADE VI	Total
obese_cat	non-obese	Count	4	2	50
		% within Derajat_Kerusakan_Endplate	50.0%	25.0%	50.0%
	obese	Count	4	6	50
		% within Derajat_Kerusakan_Endplate	50.0%	75.0%	50.0%
Total		Count	8	8	100
		% within Derajat_Kerusakan_Endplate	100.0%	100.0%	100.0%

Chi-Square Tests

	Value	df	Asymptotic Significance (2-sided)	Exact Sig. (2-sided)	Exact Sig. (1-sided)
Pearson Chi-Square	4.472[a]	5	.484	.489	
Likelihood Ratio	4.963	5	.420	.486	
Fisher-Freeman-Halton Exact Test	4.363			.500	
Linear-by-Linear Association	.215[b]	1	.643	.701	.350
N of Valid Cases	100				

Chi-Square Tests

	Point Probability
Pearson Chi-Square	
Likelihood Ratio	
Fisher-Freeman-Halton Test	
-by-Linear iation	.055
alid Cases	

cells (50.0%) have expected count less than 5. The minimum expected count is .50.

he standardized statistic is .463.

LAMPIRAN 3.

CURRICULUM VITAE

A. Data Pribadi

Nama	: dr. Muhammad Arda Bili
Tempat/Tanggal Lahir	: Lhokseumawe / 16 November 1982
Alamat	: Perumahan Tamalanrea Mas Blok M1 No. 57, BTP Tamalanrea, Makassar
Agama	: Islam

B. Keluarga

Ayah	: Alm. dr. H. A. Manaf Hanafiah
Ibu	: Alm. Hj. Roslaini
Istri	: dr. Ika Defriany
Anak	: - Muhammad Alfatih Defli - Shazia Alkhinza Defli

C. Riwayat Pendidikan

- SD : SD Negeri 4 Lhokseumawe, Lulus tahun 1995
- SMP : SMP Negeri 1 Lhokseumawe, Lulus tahun 1998
- SMA : SMA Negeri 1 Lhokseumawe, Lulus tahun 2001
- S1 : Pendidikan Kedokteran Umum, Fakultas Kedokteran Universitas Abulyatama Aceh, Lulus tahun 2009
- Program Pendidikan Dokter Spesialis-1 : Program Studi Ilmu Radiologi, Fakultas Kedokteran Universitas Hasanuddin, Periode Juli 2019

D. Riwayat Pekerjaan

- Dokter Umum Kontrak RSUD Cut Mutia, Kabupaten Aceh Utara, Tahun 2010-2011
- Dokter Umum PTT Puskesmas Madat, Kabupaten Aceh Timur, Tahun 2011-2014
- Dokter Umum PNS Puskesmas Madat, Kabupaten Aceh Timur, Tahun 2014-2016
- Dokter Umum PNS Puskesmas Pante Bidari, Kabupaten Aceh Timur, Tahun 2016-2018
- Kepala Puskesmas Puskesmas Pante Bidari, Kabupaten Aceh Timur, Tahun 2018-2019
- Kasi. Pelayanan Rawat Darurat, Intensif dan Bedah Sentral RSUD dr. Zubir Mahmud, Kabupaten Aceh Timur, Tahun 2019

E. Makalah pada Seminar / Konferens Ilmiah Nasional :

"Stanford A Debakey Type I Aortic Dissection In Patient With Marfan Syndrome" dibawakan pada acara PIT PDSRKI 16th "Role of Radiology in emergency setting : Current and Future Challenges" Manado, 11-12 Maret 2022