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APPENDIX

Appendices 1 Inform Consent and Research Explanation

INFORM CONSENT DAN
RESEARCH EXPLANATION

Dear Sir.
Prospective Respondents

Respectfully,
I am the undersigned:

Name	:	Muhammad Bima
Study Program	:	STr. Nursing and Nurse Profession
NIM	:	P01720322026
No. HP	:	081276930754

It is a student of the Bengkulu Ministry of Health Polytechnic who is carrying out a research entitled: **The Effect of *Brain Gym* Therapy and *Puzzle Therapy* on the Improvement of Cognitive Function in the Elderly in the Working Area of the Small Bridge Health Center of Bengkulu City in 2026.** The purpose of this research is to increase knowledge to be applied at home related to hypertension treatment in the working area of the East Ring Health Center, Bengkulu City.

This study did not cause any harm, harm, and effect to respondents. If you have become a respondent and incriminating things occur, then it is allowed to report to the researcher or can immediately withdraw from this study by contacting the researcher at the phone number listed above. Respondents will be compensated for the reimbursement of time for filling out this questionnaire determined by the researcher.

The confidentiality of all information provided will be maintained and will only be used for research purposes. All results of records or respondent data will be

stored at the Bengkulu Ministry of Health Polytechnic. If you agree, then I ask for your willingness to sign the consent sheet as a research respondent. I thank you for your attention, cooperation and willingness to be a responder.

Bengkulu, 2026

Appendices 2 Respondent's Application Letter

APPLICATION LETTER
THEY RESPOND

Respectfully,

I am a student of the Applied Bachelor of Nursing Study Program of the Ministry of Health of the Ministry of Health of Bengkulu:

Name: Muhammad Bima

Nim : P01720322026

I will conduct a research entitled "The Effect of *Brain Gym* Therapy and *Puzzle* Therapy on Improving Cognitive Function in the Elderly in the Working Area of the Small Bridge Health Center of Bengkulu City in 2026"

In connection with this intention, I humbly ask for your participation to become a respondent in this research. The data obtained from this study can be beneficial for the community, health workers, and educational institutions. Information about the data obtained will be guaranteed confidentiality and will only be used for research data. Thus this request, I thank you for your attention and participation.

Sincerely,

Muhammad Bima

Appendices 3 Respondent Consent Letter

LETTER OF APPROVAL

THEY RESPOND

I am the undersigned:

Name :

Age :

Gender :

Address :

I am hereby willing to participate as a respondent in a research conducted by Mr. Muhammad Bima, a Bachelor of Applied Nursing Student at the Health Polytechnic of the Ministry of Health of Bengkulu with the title "The Effect of *Brain Gym* Therapy and *Puzzle Therapy* on the Improvement of Cognitive Function in the Elderly in the Working Area of the Small Bridge Health Center of Bengkulu City in 2026"

This research will not harm me or have a bad effect on me and my family, so I am willing to be a respondent. Thus, I made this letter of approval to be used as it should.

Bengkulu, 2026

(.....)

Appendices 4 MMSE Measurement

MINI MENTAL STATUS MEASUREMENT EXAMINATION (MMSE)

Respondent Name: ..... (Lk / Pr) Age: .....

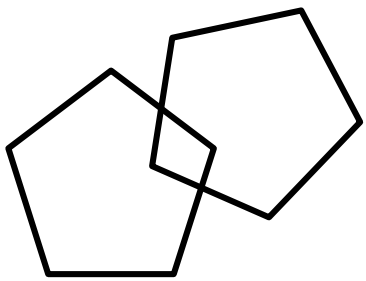
Education: ..... Occupation: .....

Disease History: Stroke ( ) DM ( ) Heart Disease ( )

Other Diseases.....

Inspector: ..... Date: .....

Item	Tests	Max value.	Value
ORIENTATION			
1	Now (year), (month), (date), what day?	5	
2	Where are we? (country), (province), (city), (hospital), (floor/room)	5	
REGISTRATION			
3	Name 3 object names (**oranges, money, roses**), each object 1 second. Respondents were asked to repeat the names of the three objects. Value 1 for each correct object name. Repeat until Respondents can correctly name and record the number of repetitions	3	
ATTENTION AND CALCULATION			

4	Subtract 100 by 7. Score 1 for each correct answer. Stop after 5 answers. Or be asked to spell the word "WAHYU" in reverse (the value is given to the correct letter before the error; e.g. uyahw = 2 values)	5	
RECALLING			
5	Respondents were asked to rename the 3 names of the objects above	3	
LANGUAGE			
6	Respondents were asked to name the object shown (pencil, watch)	2	
7	Respondents were asked to repeat a series of words: "**without if and or but** "	1	
8	Respondents were asked to perform the command: "Take this paper with your right hand, fold it in half and place it on the floor".	3	
9	Respondents are asked to read and perform commands "Lift up your left hand"	1	
10	Respondents are asked to write a sentence (spontaneous)	1	
11	Respondents were asked to imitate the image below 	1	
Total Score		30	

Score description :

Value : 27 -30 : normal

Score : 21-26 : mild cognitive impairment

Score : 11-20 : moderate cognitive impairment

Score : 0-10 : severe cognitive impairment

Source : (Widia et al., 2021)

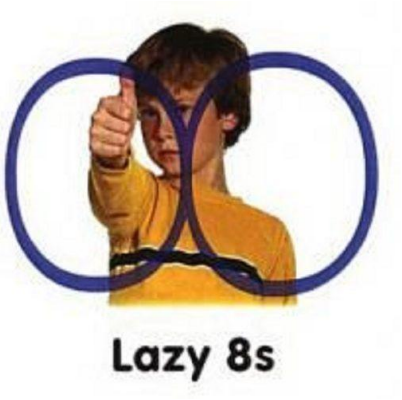
Appendices 5 SOP Brain Gym and Puzzle

	STANDARD OPERATING PROCEDURES (SOP) ***Brain Gym* and Puzzle Therapy**
Definition	*Brain Gym* is a series of exercises based on simple body movements, brain gymnastics can smooth the flow of blood and oxygen to the brain, also stimulate both sides of the brain to work. Light movements with play through hand and foot exercises can provide stimulus to the brain. Puzzle games are one of the games that are useful for honing and improving brain power and problem-solving skills. This game has several stages that are passed so that it can complete a pattern or image.
Purpose	1. To enhance cognitive stimulation Improved 2. memory and memory 3. Improves concentration and focus 4. Social interaction 5. To improve cognitive function in the elderly 6. Improves memory 7. Improves concentration and thinking ability
Tools and Materials	1. *Puzzle* 2. Speaker 3. Laptop

Researcher preparation	Create a comfortable environment for respondents, maintain respondents' privacy and condition respondents in a relaxed state
Respondent preparation	Contract topics, times, and goals are carried out *Brain Gym* and Puzzle Therapy

Implementation stage	1 **Onboarding stage** 1. Therapeutic greetings and introductions 2. Evaluation and validation 3. Informed concent 2 **Stages of work** 1. **a. Lateral dimensions** 1) Cross *Craw* Movement: Moving the right hand simultaneously with the left leg and the left hand with the right foot. Move forward, sideways, backwards, or walk in place. To cross the center line, you should have your hands touching the opposite knee on a count of 1 x 8.  2) 8 tidur *(Lazy 8s)* Movement: The movement of making the number eight sleep in the air, hands clenched and thumbs up starts with moving the fist to the upper left and making the number eight sleep. Followed by the movement of the eyes looking at the tip of the thumb. Make the number 8 sleep 3 times with each hand and continue with 3 times with both

hands.



3) Putaran leher *(Neck Rolls)*

Movement: Bow your head forward, and slowly rotate from one side to the other. Tilt your head back, then turn it left and right again. Repeat with your shoulders lowered, as many as 2x2 turns to the left and right.

2. **b. Focusing dimensions**

1) jari tangan *(finger coordination exercise)*

Movements: structured and repetitive finger movements in a **2–1–2–1 pattern** between the right and left hands, aimed at stimulating the cooperation of both hemispheres of the brain, improving concentration, and training working memory and fine motor coordination in the

elderly.

2) Lambaian Kaki *(The footflex)*

Movements: Grip the painful places on the ankles, calves and back of the knees one by one, while slowly moving the legs outward and inward, do 1 time on the left and right legs.

3. **c. Centering dimensions**

1) Energetic Yawning (Energetic yawning)

Movement: Put a finger on the jaw that feels tense. Make the sound yawn wide and relax,

	while massaging gently to release tension 3 times.  2) Ear massage *(The thinking cap).* 3) Then rest for 5 minutes and continue with brain gymnastics  **4. Work stage** 1. Help patients to get into a comfortable position 2. Conducting SPMSQ and MMSE pre-tests 3. Disassembling *the Jigsaw Puzzle Box* 4. Turn on the stopwatch 5. Inviting patients to put together *puzzles* 6. After completing the *puzzle* , record the completion time 7. Perform SPMSQ and MMSE post tests Give compliments to clients

	3. Termination Stage a. Subjective evaluation: Contains the patient's expression after receiving *Brain Gym therapy* b. Objective evaluation: results of observations and abilities that appear after *Brain Gym* is performed. c. Follow-up plans. Upcoming contracts

Source : (Yuniar, 2022) (Sularyo, 2021)

Appendices 6 Documentation

ACTIVITY DOCUMENTATION

Consent to Become a Respondent

Consent to Become a Respondent

MMSE Measurement

MMSE Measurement

Puzzle Therapy Delivery

Puzzle Therapy Delivery

Puzzle Therapy Delivery

Puzzle Therapy Delivery

Brain Gym *Therapy Provision*

Brain Gym *Therapy Provision*

Brain Gym *Therapy Provision*

Brain Gym *Therapy Provision*

Memory Training *Therapy Provider*

Memory Training *Therapy Provider*

Memory Training *Therapy Provider*

Memory Training *Therapy Provider*

Memory Training *Therapy Provider*

Memory Training *Therapy Provider*

Appendices 7 Master Table

NO	NAME	GROUPS	OLD	JK	HISTORY DISEASES	EDUCATION	SHOES PRE	SHOES POST	DIFFERENCES
1	Tn.A	1	62	1	3	2	23	27	4
2	Mrs. N.	1	60	2	3	2	24	27	3
3	Tn.S	1	58	1	3	2	24	27	3
4	Mrs. R	1	64	2	1	2	16	21	5
5	Tn.W	1	59	1	3	1	12	19	7
6	Tn.S	1	60	1	1	2	21	25	4
7	Tn.G	1	58	1	3	1	13	18	5
8	N.Y.	1	61	2	3	2	18	21	3
9	Mrs. H	1	60	2	3	1	16	21	5
10	Mrs. N.	1	65	2	3	1	17	23	6
11	Tn.A	1	58	1	1	2	24	28	4
12	Ny.M	1	61	2	3	1	17	22	5
13	Mrs. L	1	59	2	1	2	24	27	3

14	Ny.D	1	58	2	1	2	22	23	1
15	Mrs. U	1	59	2	3	2	14	19	5
16	Mrs. S.	1	64	2	3	2	23	26	3
17	Tn.T	1	62	1	1	2	15	18	3
18	Mrs. S.	1	65	2	3	3	26	28	2
19	NY.I	1	59	2	3	2	23	26	3
20	Tn.D	1	56	1	1	3	25	27	2
21	N.Y.	1	60	2	3	1	12	18	6
22	Mrs. H	1	57	2	3	2	24	27	3
23	Tn.Y	2	60	1	3	2	16	19	3
24	Mrs. J.	2	55	2	1	3	24	28	4
25	Mrs. G	2	59	2	3	3	20	24	4
26	Tn.Z	2	56	1	3	2	24	24	0
27	Mrs. E.	2	61	2	3	2	15	19	4
28	Tn.N	2	59	1	3	2	22	25	3
29	N.Y.	2	58	2	3	2	17	18	1
30	Ny.T	2	65	2	1	1	22	23	1
31	Mr. H	2	60	1	3	2	19	20	1

32	Tn.F	2	61	1	3	2	19	21	2
33	Mrs. L	2	63	2	3	1	18	19	1
34	Mrs. W	2	60	2	1	2	24	26	2
35	Mrs. S.	2	58	2	1	2	23	23	0
36	Tn.A	2	64	1	3	2	25	27	2
37	Mrs. J.	2	61	2	1	2	13	17	4
38	Tn.M	2	59	1	3	2	13	19	6
39	Tn.D	2	62	1	3	2	20	25	5
40	NY.I	2	60	2	3	1	13	18	5
41	N.Y.	2	58	2	1	1	12	12	0
42	Tn.S	2	65	1	3	2	21	22	1
43	Ny. A	2	60	2	3	2	23	23	0
44	Mrs. E.	2	59	2	1	1	25	26	1

Appendices 8 Research Schedule

RESEARCH SCHEDULE

NO	NAME	OLD	GROUPS	S	S	R	K	J	S	M		S	S	R	K	J	S	M
				16	17	18	19	20	21	22		23	24	25	26	27	28	29
1	Tn.A	62	1															
2	Mrs. N.	60	1															
3	Tn.S	58	1															
4	Mrs. R	64	1															
5	Tn.W	59	1															
6	Tn.S	60	1															
7	Tn.G	58	1															
8	N.Y.	61	1															
9	Mrs. H	60	1															
10	Mrs. N.	65	1															
11	Tn.A	58	1															
12	Ny.M	61	1															

13	Mrs. L	59	1															
14	Ny.D	58	1															
15	Mrs. U	59	1															
16	Mrs. S.	64	1															
17	Tn.T	62	1															
18	Mrs. S.	65	1															
19	NY.I	59	1															
20	Tn.D	56	1															
21	N.Y.	60	1															
22	Mrs. H	57	1															
23	Tn.Y	60	2															
24	Mrs. J.	55	2															
25	Mrs. G	59	2															
26	Tn.Z	56	2															
27	Mrs. E.	61	2															
28	Tn.N	59	2															
29	N.Y.	58	2															
30	Ny.T	65	2															

31	Mr. H	60	2															
32	Tn.F	61	2															
33	Mrs. L	63	2															
34	Mrs. W	60	2															
35	Mrs. S.	58	2															
36	Tn.A	64	2															
37	Mrs. J.	61	2															
38	Tn.M	59	2															
39	Tn.D	62	2															
40	NY.I	60	2															
41	N.Y.	58	2															
42	Tn.S	65	2															
43	Ny. A	60	2															
44	Mrs. E.	59	2															

Appendices 9 SOP Memory Training

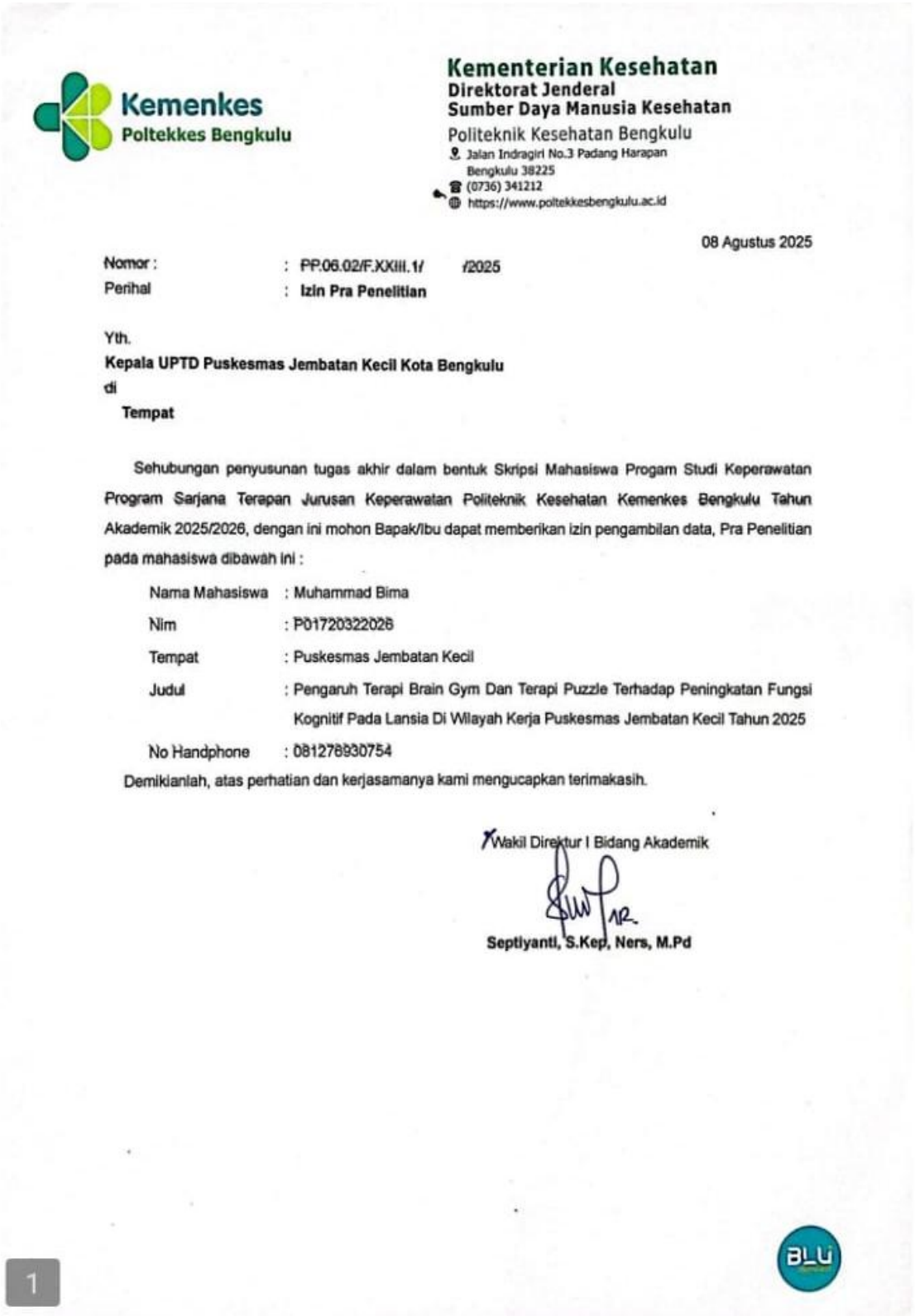
	STANDARD OPERATING PROCEDURES (SOP) ***Memory training* (teknik Mnomonic)**
Definition	*Memory training* is a practical exercise designed to help the elderly improve their ability to remember newly received information. Not only memory skills, *memory training* is also useful for increasing concentration, creativity, training the elderly to think positively, and not giving up easily. *This memory training* is used to improve memory skills by teaching mnemonic techniques. Mnemonic is a strategy or technique learned to help memory performance that can be optimized with practice.
Purpose	1. Delays or slows cognitive decline 2. Improves short-term and long-term memory 3. Improving quality of life 4. Stimulates brain activity
Researcher preparation	Create a comfortable environment for respondents, maintain respondents' privacy and condition respondents in a relaxed state
Respondent preparation	Contract topics, time, and objectives are carried out *Memory training*

Implementation stage	**1. Onboarding stage** b. Therapeutic greetings and introductions c. Evaluation and validation d. Informed concent **1. Stages of work** **A. Acronym Technique (Abbreviation)** Objective: Remember the order of activities or lists by creating abbreviations. Steps: 1. Take the first letter of each word. 2. Organize it into words or abbreviations that are easy to remember. Example: • Eat - Drink - Medicine → MMO • Day – Sports – Wednesday and - Friday →HORE **B. Acrostic Technique (Funny Sentence)** Objective: Remember the sequence by making sentences from the first letter of each word. Steps: 1. Take the first letter of each word. 2. Create funny or meaningful sentences from the letters. Example: • Shower – Toothbrush – Breakfast – Take medicine→M – S – S – M → ***"Mama likes sweet breakfast."*** • Sweeping – Mopping – Washing → M – M – M→ ***"Mama tidied up the table."*** **2. Termination Stage**

	a. Subjective evaluation: Patient statements about feelings and benefits after doing *Puzzle therapy*. b. Objective evaluation: The results of the nurse's observations related to the patient's cognitive, motor, and response abilities. c. Follow-up plan d. Upcoming contracts

Source : (Ani et al., 2020)

Appendices 10 Pre-Research Permit



Kementerian Kesehatan
Direktorat Jenderal
Sumber Daya Manusia Kesehatan
Politeknik Kesehatan Bengkulu
Jalan Indragiri No.3 Padang Harapan
Bengkulu 38225
(0736) 341212
https://www.poltekkesbengkulu.ac.id

Kemenkes
Poltekkes Bengkulu

08 Agustus 2025

Nomor : PP.06.02/F.XXIII.1/ /2025
Perihal : **Izin Pra Penelitian**

Yth.
Kepala UPTD Puskesmas Jembatan Kecil Kota Bengkulu
di
Tempat

Sehubungan penyusunan tugas akhir dalam bentuk Skripsi Mahasiswa Progam Studi Keperawatan Program Sarjana Terapan Jurusan Keperawatan Politeknik Kesehatan Kemenkes Bengkulu Tahun Akademik 2025/2026, dengan ini mohon Bapak/Ibu dapat memberikan izin pengambilan data, Pra Penelitian pada mahasiswa dibawah ini :

Nama Mahasiswa	: Muhammad Bima
Nim	: P01720322026
Tempat	: Puskesmas Jembatan Kecil
Judul	: Pengaruh Terapi Brain Gym Dan Terapi Puzzle Terhadap Peningkatan Fungsi Kognitif Pada Lansia Di Wilayah Kerja Puskesmas Jembatan Kecil Tahun 2025
No Handphone	: 081278930754

Demikianlah, atas perhatian dan kerjasamanya kami mengucapkan terimakasih.

Wakil Direktur I Bidang Akademik

Septiyanti, S.Kep, Ners, M.Pd

1

Appendices 11 Pre-Research Permit

PEMERINTAH KOTA BENGKULU
DINAS KESEHATAN

Jl. Letjen Basuki Rahmat No. 8 Kel. Belakang Pondok Kec. Ratu Samban
Kota Bengkulu Telp. 085216000810 Email dinkeskotabengkulu1@gmail.com.
www.dinkes.bengkulukota.go.id Kode Pos 34223

REKOMENDASI

Nomor : 000.9.2/ 1764 /D.Kes/2025

Dasar Surat Wakil Direktur I Bidang Akademik Poltekkes Kemenkes Bengkulu Nomor: PP.06.02/F.XXIII.1/6248/2025 Tanggal 5 Agustus 2025 Perihal : Permohonan Izin Pengambilan data untuk penyusunan tugas proposal skipsi atas nama

Nama	:	**Muhammad Bima**
NPM	:	**P01720322026**
Program Studi	:	Sarjana Terapan Keperawatan
Judul/Data		Pengaruh Terapi Brain Gym dan Terapi Puzzle Terhadap Penurunan Fungsi Kognitif Pada Lansia Dengan Demensia Di Kota Bengkulu
Tempat penelitian	:	1. Dinas Kesehatan Kota Bengkulu 2. Puskesmas Jembatan Kecil
Lama Kegiatan	:	08 Agustus 2025 s/d. 19 Agustus 2025

Pada prinsipnya Dinas Kesehatan Kota Bengkulu tidak berkeberatan diadakan pra penelitian/kegiatan yang dimaksud dengan catatan ketentuan :

a. Tidak dibenarkan mengadakan kegiatan yang tidak sesuai dengan penelitian yang dimaksud.
b. Harap mentaati semua ketentuan yang berlaku serta mengindahkan adat istiadat setempat.
c. Apabila masa berlaku Rekomendasi Pra Penelitian ini sudah berakhir, sedangkan pelaksanaan belum selesai maka yang bersangkutan harus mengajukan surat perpanjangan Rekomendasi Pra Penelitian.
d. Setelah selesai mengadakan kegiatan diatas agar melapor kepada Kepala Dinas Kesehatan Kota Bengkulu (tembusan).
e. Surat Rekomendasi Pra Penelitian ini akan dicabut kembali dan dinyatakan tidak berlaku apabila ternyata pemegang surat ini tidak mentaati ketentuan seperti tersebut diatas.

Demikianlah Rekomendasi ini dikeluarkan untuk dapat dipergunakan sebagaimana mestinya.

Bengkulu, 08 Agustus 2025

a.n.Kepala Dinas Kesehatan
Kota Bengkulu
Kabid Kesehatan Masyarakat

Nelli Hanah, SKM, MM
Pembina, IV/a
NIP.197204191991012001

Tembusan :
1.Yth. Sdr.Ka.UPTD. Puskesmas ..Jembatan Kecil
2.Yang Bersangkutan

Appendices 12 A letter of ethics

Kementerian Kesehatan
Poltekkes Bengkulu
Jalan Indragiri No. 3 Padang Harapan
Bengkulu 38225
(0736) 341212
https://poltekkesbengkulu.ac.id

KETERANGAN LAYAK ETIK
DESCRIPTION OF ETHICAL EXEMPTION
"ETHICAL EXEMPTION"

No.KEPK.BKL/088/01/2026

Protokol penelitian versi 1 yang diusulkan oleh :
The research protocol proposed by

Peneliti utama : Muhammad Bima
Principal In Investigator

Nama Institusi : Poltekkes Kemenkes Bengkulu
Name of the Institution

Dengan judul:
Title

"Pengaruh Terapi Brain Gym dan Terapi Puzzle Terhadap Peningkatan Fungsi Kognitif Pada Lansia di Wilayah Kerja Puskesmas Jembatan Kecil Tahun 2026"

"Pengaruh Terapi Brain Gym dan Terapi Puzzle Terhadap Peningkatan Fungsi Kognitif Pada Lansia di Wilayah Kerja Puskesmas Jembatan Kecil Tahun 2026"

Dinyatakan layak etik sesuai 7 (tujuh) Standar WHO 2011, yaitu 1) Nilai Sosial, 2) Nilai Ilmiah, 3) Pemerataan Beban dan Manfaat, 4) Risiko, 5) Bujukan/Eksploitasi, 6) Kerahasiaan dan Privacy, dan 7) Persetujuan Setelah Penjelasan, yang merujuk pada Pedoman CIOMS 2016. Hal ini seperti yang ditunjukkan oleh terpenuhinya indikator setiap standar.

Declared to be ethically appropriate in accordance to 7 (seven) WHO 2011 Standards, 1) Social Values, 2) Scientific Values, 3) Equitable Assessment and Benefits, 4) Risks, 5) Persuasion/Exploitation, 6) Confidentiality and Privacy, and 7) Informed Concent, referring to the 2016 CIOMS Guidelines. This is as indicated by the fulfillment of the indicators of each standard.

Pernyataan Laik Etik ini berlaku selama kurun waktu tanggal 25 Januari 2026 sampai dengan tanggal 25 Januari 2027.

This declaration of ethics applies during the period January 25, 2026 until January 25, 2027.

January 25, 2026
Chairperson,

apt. Zamharira Muslim, M.Farm

Appendices 13 Research Permit

Kementerian Kesehatan
Direktorat Jenderal
Sumber Daya Manusia Kesehatan
Politeknik Kesehatan Bengkulu
Jalan Indragiri No.3 Padang Harapan
Bengkulu 38225
(0736) 341212
https://www.poltekkesbengkulu.ac.id

02 Maret 2026

Nomor : : PP. 01.01/F.XXIII.1/1069 /2026
Perihal : **Izin Penelitian**

Yth,
Kepala Dinas Kesehatan kota Bengkulu
di
Tempat

Sehubungan penyusunan tugas akhir mahasiswa dalam bentuk Skripsi Progam Studi Keperawatan Program Sarjana Terapan Jurusan Keperawatan Politeknik Kesehatan Kemenkes Bengkulu Tahun Akademik 2025/2026 , dengan ini kami mohon Bapak/Ibu dapat memberikan izin pengambilan data untuk penelitian kepada:

Nama	: Muhammad Bima
NIM	: P01720322026
Tempat Penelitian	: Wilayah kerja puskesmas Jembatan Kecil
Waktu Penelitian	: 2 bulan
Judul	: Pengaruh terapi Braingym dan Terapi Puzzel terhadap peningkatan fungsi kognitif pada lansia di wiliyah puskesmas Jembatan kecil kota Bengkulu
No Handphone	: 081376930754

Demikianlah, atas perhatian dan kesediaan Bapak/Ibu diucapkan terimakasih.

a.n. Direktur Poltekkes Kemenkes Bengkulu
Wakil Direktur I Bidang Akademik

Septiyanti, S.Kep, Ners, M.Pd

Appendices 14 Research Permit

Kementerian Kesehatan
Direktorat Jenderal
Sumber Daya Manusia Kesehatan
Politeknik Kesehatan Bengkulu
Jalan Indragiri No.3 Padang Harapan
Bengkulu 38225
(0736) 341212
https://www.poltekkesbengkulu.ac.id

02 Maret 2026

Nomor : : PP. 01.01/F.XXIII.1/1070 /2026
Perihal : **Izin Penelitian**

Yth,
Kepala UPTD Puskesmas Jembatan kecil kota Bengkulu
di
Tempat

Sehubungan penyusunan tugas akhir mahasiswa dalam bentuk Skripsi Progam Studi Keperawatan Program Sarjana Terapan Jurusan Keperawatan Politeknik Kesehatan Kemenkes Bengkulu Tahun Akademik 2025/2026 , dengan ini kami mohon Bapak/Ibu dapat memberikan izin pengambilan data untuk penelitian kepada:

Nama	: Muhammad Bima
NIM	: P01720322026
Tempat Penelitian	: Wilayah Kerja puskesmas Jembatan kecil
Waktu Penelitian	: 2 bulan
Judul	: Pengaruh terapi Braingym dan Terapi Puzzel terhadap peningkatan fungsi kognitif pada lansia di wiliyah puskesmas Jembatan kecil kota Bengkulu
No Handphone	: 081376930754

Demikianlah, atas perhatian dan kesediaan Bapak/Ibu diucapkan terimakasih.

a.n. Direktur Poltekkes Kemenkes Bengkulu
Wakil Direktur I Bidang Akademik

Septiyanti, S.Kep, Ners, M.Pd

Appendices 15 Health Office Research Recommendation Letter

PEMERINTAH KOTA BENGKULU
DINAS KESEHATAN
Jl. Letjen Basuki Rahmat No. 8 Kel. Belakang Pondok Kec. Ratu Samban Kota Bengkulu
Email dinkeskotabengkulu1@gmail.com / www.dinkes.bengkulukota.go.id Kode Pos 34223

REKOMENDASI
Nomor : 000.9.2 / 951 / D.Kes / 2026

Dasar Surat
1. Wakil Direktur I Bidang Akademik Poltekkes Kemenkes Bengkulu Nomor : PP.01.01/F.XXIII.1/2069/2026 Tanggal 02 Maret 2026.
2. Kepala Badan Kesatuan Bangsa dan Politik Bengkulu Nomor : 000.9.2/445/KESBANGPOL-REK/2026 Tanggal 20 Februari 2026, Perihal : Penelitian untuk penyusunan tugas akhir mahasiswa Atas nama :

Nama	:	**Muhammad Bima**
NIM	:	P01720322026
Program Studi	:	Sarjana Terapan – Keperawatan
Judul	:	Pengaruh Terapi Braingym dan Terapi Puzzel Terhadap Peningkatan Fungsi Kognif pada Lansia di Wilayah Jembatan Kecil Kota Bengkulu.
Lokasi Penelitian	:	Puskesmas Jembatan Kecil Kota Bengkulu
Lama Kegiatan	:	23 Februari 2026 s/d 30 April 2026
No Hp / Email	:	0813-7693-0754

Pada prinsipnya Dinas Kesehatan Kota Bengkulu tidak berkeberatan diadakan penelitian/kegiatan yang dimaksud dengan catatan ketentuan :
a. Tidak dibenarkan mengadakan kegiatan yang tidak sesuai dengan penelitian yang dimaksud.
b. Harap mentaati semua ketentuan yang berlaku serta mengindahkan adat istiadat setempat.
c. Apabila masa berlaku Rekomendasi Penelitian ini sudah berakhir, sedangkan pelaksanaan belum selesai maka yang bersangkutan harus mengajukan surat perpanjangan Rekomendasi Penelitian.
d. Setelah selesai mengadakan kegiatan diatas agar melapor kepada Kepala Dinas Kesehatan Kota Bengkulu (tembusan).
e. Surat Rekomendasi Penelitian ini akan dicabut kembali dan dinyatakan tidak berlaku apabila ternyata pemegang surat ini tidak mentaati ketentuan seperti tersebut diatas.

Demikianlah Rekomendasi ini dikeluarkan untuk dapat dipergunakan sebagaimana mestinya.

Bengkulu, Maret 2026
Plt. Kepala Dinas Kesehatan
Kota Bengkulu

Nelli Hartati ,SKM,MM
Pembina - IV/a
Nip. 19720419 199101 2 001

Tembusan :
1. Yth. Sdr. Ka. UPTD Puskesmas Jembatan Kecil Kota Bengkulu
2. Yang Bersangkutan

Appendices 16 Kesbangpol Research Recommendation Letter

PEMERINTAH KOTA BENGKULU

BADAN KESATUAN BANGSA DAN POLITIK

Alamat : Jl. Melur No.1 Kelurahan Nusa Indah
Email : bkesbangpolkotabengkulu@gmail.com

REKOMENDASI PENELITIAN

Nomor : 000.9.2/445/KESBANGPOL-REK/2026

Dasar : Peraturan Menteri Dalam Negeri Republik Indonesia Nomor 7 Tahun 2014 tentang Perubahan Atas Peraturan Menteri Dalam Negeri Republik Indonesia Nomor 64 Tahun 2011 tentang Pedoman Penerbitan Rekomendasi Penelitian

Memperhatikan : Surat dari Wakil Direktur I Bidang Akademik Poltekkes Kemenkes Bengkulu Nomor : PP.01.01/F.XXIII.1/1674/2026 Tanggal 11 Februari 2026 perihal Izin Penelitian

DENGAN INI MENYATAKAN BAHWA

Nama	:	Muhammad Bima
NIM	:	P01720322026
Pekerjaan	:	Mahasiswa/i
Prodi/ Fakultas	:	Sarjana Terapan Keperawatan
Judul Penelitian	:	Pengaruh Terapi Braingym Dan Terapi Puzzel Terhadap Peningkatan Fungsi Kognitif Pada Lansia Diwilayah Kerja Puskesmas Jembatan Kecil Kota Bengkulu Tahun 2026
Tempat Penelitian	:	Pukesmas Jembatan Kecil Kota Bengkulu
Waktu Penelitian	:	23 Februari 2026 s.d 30 April 2026
Penanggung Jawab	:	Wakil Direktur I Bidang Akademik Poltekkes Kemenkes Bengkulu

Dengan Ketentuan :

1. Tidak dibenarkan mengadakan kegiatan yang tidak sesuai dengan penelitian yang dimaksud.
2. Harus mentaati peraturan perundang-undangan yang berlaku serta mengindahkan adat istiadat setempat.
3. Apabila masa berlaku Rekomendasi Penelitian ini sudah berakhir, sedangkan pelaksanaan belum selesai maka yang bersangkutan harus mengajukan surat perpanjangan Rekomendasi Penelitian.
4. Surat Rekomendasi Penelitian ini akan dicabut kembali dan dinyatakan tidak berlaku apabila ternyata pemegang surat ini tidak mentaati ketentuan seperti tersebut diatas.

Demikianlah Rekomendasi Penelitian ini dikeluarkan untuk dapat dipergunakan sebagaimana mestinya.

Bengkulu, 20 Februari 2026

a.n. WALI KOTA BENGKULU
Kepala Badan Kesatuan Bangsa dan Politik Kota Bengkulu,

Syofyan Tosoni, SE, MM
Pembina Utama Muda (IVc)
NIP. 197009021993031006

Dokumen ini telah ditandatangani secara elektronik menggunakan sertifikat elektronik yang diterbitkan oleh Balai Besar Sertifikasi Elektronik (BSrE), Badan Siber dan Sandi Negara (BSSN).

Appendices 17 Research Completion Letter

PEMERINTAH KOTA BENGKULU
DINAS KESEHATAN
UPTD PUSKESMAS JEMBATAN KECIL
{Badan Layanan Umum Daerah}
Alamat: Jalan Rinjani RT XI Kel. Jembatan Kecil, Telp : 085609770840 Email : puskesmasjembatankecil@gmail.com

SURAT KETERANGAN
NOMOR : 400.7.22.1/26/PKM-JK/SKET/2026

Yang bertanda tangan di bawah ini :

Nama	:	drg.Ayu Silvia Norita
NIP	:	198209112009032010
Pangkat/golongan	:	Penata TK I-III/d
Jabatan	:	Kepala Puskesmas Jembatan Kecil

dengan ini menerangkan bahwa :

Nama	:	Muhammad Bima
NPM	:	P01720322026
Program Studi	:	Sarjana Terapan - Keperawatan
Judul penelitian	:	Pengaruh Terapi Braingym dan Terapi Puzzel Terhadap Peningkatan Fungsi Kognitif pada Lansia di Wilayah Jembatan Kecil Kota Bengkulu

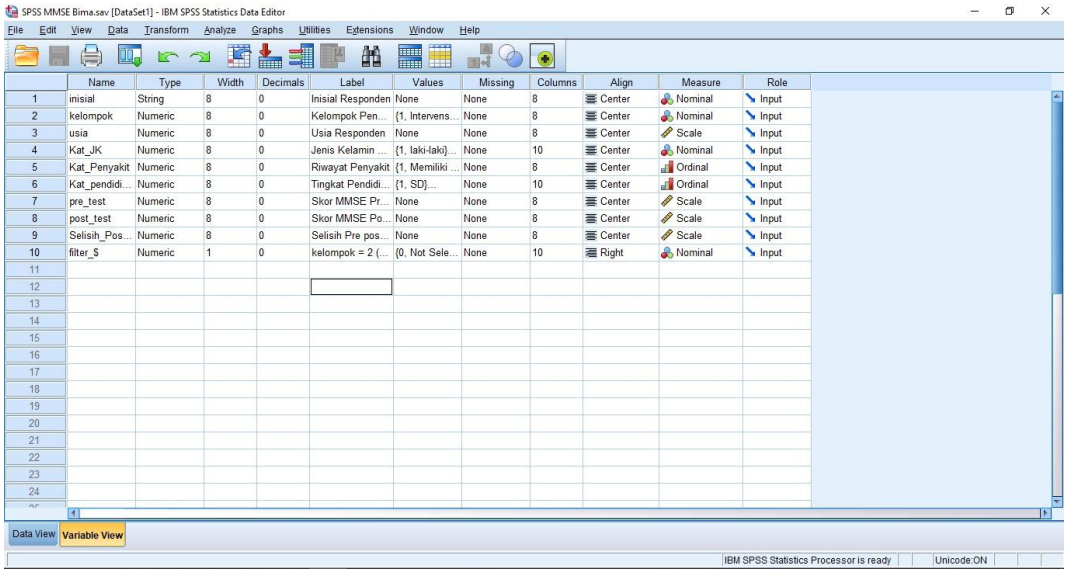
Dengan ini menerangkan bahwa nama yang tersebut diatas memang benar telah melakukan Penelitian dalam wilayah kerja Puskesmas Jembatan Kecil Kecamatan Singaran Pati Kota Bengkulu sesuai dengan Surat Permohonan Penelitian dari Direktur Poltekkes Kemenkes Bengkulu Nomor : PP.01.01/F.XXIII.1/2069/2026 Tanggal 02 Maret 2026 dan Rekomendasi Badan Kesatuan Bangsa dan Politik Kota Bengkulu Nomor :000.9.2/445/KESBANGPOL-REK/2026 Tanggal 20 Februari 2026 dan Rekomendasi Dinas Kesehatan Kota Bengkulu Nomor : 000.9.2/ 997 /D.Kes/2026 bulan Mei 2026, yang mana penelitiannya dilaksanakan terhitung mulai 23 Februari 2026 s.d 30 April 2026

Demikian Surat Keterangan ini dibuat agar dapat dipergunakan sebagaimana mestinya.

Bengkulu, 4 Juni 2026
Pimpinan BLUD Puskesmas Jembatan Kecil
Kota Bengkulu

drg. AYU SILVIA NORITA
Pembina TK. I (III.d)
NIP. 198209112009032010

Appendices 18 Definition of Operational Variables in SPSS Statistic



Appendices 19 Results of the Normality Test of the Age of Intervention Group Respondents

Explore univariat kel intervensi karakteristik

Kelompok Penelitian

Case Processing Summary

		Cases					
		Valid		Missing		Total	
	Kelompok Penelitian	N	Percent	N	Percent	N	Percent
Usia Responden	Intervensi	22	100.0%	0	0.0%	22	100.0%

Descriptives

	Kelompok Penelitian			Statistic	Std. Error
Usia Responden	Intervensi	Mean		60.23	.542
		95% Confidence Interval for Mean	Lower Bound	59.10	
			Upper Bound	61.36	
		5% Trimmed Mean		60.19	
		Median		60.00	
		Variance		6.470	
		Std. Deviation		2.544	
		Minimum		56	
		Maximum		65	
		Range		9	
		Interquartile Range		4	
		Skewness		.561	.491
		Kurtosis		-.454	.953

Tests of Normality

		Kolmogorov-Smirnov[a]			Shapiro-Wilk		
	Kelompok Penelitian	Statistic	df	Sig.	Statistic	df	Sig.
Usia Responden	Intervensi	.172	22	.090	.934	22	.146

a. Lilliefors Significance Correction

```
FREQUENCIES VARIABLES=Kat_JK Kat_Penyakit Kat_pendidikan
  /ORDER=ANALYSIS.
```

Frequencies

Statistics

		Jenis Kelamin Responden	Riwayat Penyakit	Tingkat Pendidikan
N	Valid	22	22	22
	Missing	0	0	0

Appendices 20 Frequency Distribution of Intervention Group Response Characteristics

Frequency Table

Jenis Kelamin Responden

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	laki-laki	8	36.4	36.4	36.4
	perempuan	14	63.6	63.6	100.0
	Total	22	100.0	100.0	

Riwayat Penyakit

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Memiliki 1-2 Penyakit	7	31.8	31.8	31.8
	Tidak Memiliki Riwayat Penyakit	15	68.2	68.2	100.0
	Total	22	100.0	100.0	

Tingkat Pendidikan

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	SD	6	27.3	27.3	27.3
	SMP_SMA	14	63.6	63.6	90.9
	Perguruan_Tinggi	2	9.1	9.1	100.0
	Total	22	100.0	100.0	

Appendices 21 Results of the Normality Test of the Age of Control Group Respondents

Explore univariat karakteristik kelompok kontrol

Kelompok Penelitian

Case Processing Summary

		Cases					
		Valid		Missing		Total	
	Kelompok Penelitian	N	Percent	N	Percent	N	Percent
Usia Responden	Kontrol	22	100.0%	0	0.0%	22	100.0%

Descriptives

	Kelompok Penelitian			Statistic	Std. Error
Usia Responden	Kontrol	Mean		60.14	.548
		95% Confidence Interval for Mean	Lower Bound	59.00	
			Upper Bound	61.28	
		5% Trimmed Mean		60.15	
		Median		60.00	
		Variance		6.600	
		Std. Deviation		2.569	
		Minimum		55	
		Maximum		65	
		Range		10	
		Interquartile Range		3	
		Skewness		.242	.491
		Kurtosis		.130	.953

Tests of Normality

		Kolmogorov-Smirnov[a]			Shapiro-Wilk		
	Kelompok Penelitian	Statistic	df	Sig.	Statistic	df	Sig.
Usia Responden	Kontrol	.158	22	.165	.955	22	.394

a. Lilliefors Significance Correction

```
FREQUENCIES VARIABLES=Kat_JK Kat_Penyakit Kat_pendidikan
  /ORDER=ANALYSIS.
```

Frequencies

Statistics

		Jenis Kelamin Responden	Riwayat Penyakit	Tingkat Pendidikan
N	Valid	22	22	22
	Missing	0	0	0

Appendices 22 Frequency Distribution of Repondent Characteristics of Control Group

Frequency Table

Jenis Kelamin Responden

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	laki-laki	9	40.9	40.9	40.9
	perempuan	13	59.1	59.1	100.0
	Total	22	100.0	100.0	

Riwayat Penyakit

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Memiliki 1-2 Penyakit	7	31.8	31.8	31.8
	Tidak Memiliki Riwayat Penyakit	15	68.2	68.2	100.0
	Total	22	100.0	100.0	

Tingkat Pendidikan

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	SD	5	22.7	22.7	22.7
	SMP_SMA	15	68.2	68.2	90.9
	Perguruan_Tinggi	2	9.1	9.1	100.0
	Total	22	100.0	100.0	

Appendices 23 Results of the Age Characteristics Equivalency Test with the Independent T-test

T-Test Uji kesetaraan karakteristik usia (numerik)

Group Statistics

	Kelompok Penelitian	N	Mean	Std. Deviation	Std. Error Mean
Usia Responden	Intervensi	22	60.23	2.544	.542
	Kontrol	22	60.14	2.569	.548

Independent Samples Test

		Levene's Test for Equality of Variances		t-test for Equality of Means						
									95% Confidence Interval of the Difference	
		F	Sig.	t	df	Sig. (2-tailed)	Mean Difference	Std. Error Difference	Lower	Upper
Usia Responden	Equal variances assumed	.059	.810	.118	42	.907	.091	.771	-1.465	1.646
	Equal variances not assumed			.118	41.996	.907	.091	.771	-1.465	1.646

```
CROSSTABS
  /TABLES=Kat_JK Kat_Penyakit Kat_pendidikan BY kelompok
  /FORMAT=AVALUE TABLES
  /STATISTICS=CHISQ CC
  /CELLS=COUNT
  /COUNT ROUND CELL.
```

Appendices 24 Category Characteristics Equivalency Test Results with Chi-Square

Crosstabs uji kesetaraan karakteristik katagori (JK, Riwayat Penyakit, Tingkat Pendidikan)

Case Processing Summary

	Cases					
	Valid		Missing		Total	
	N	Percent	N	Percent	N	Percent
Jenis Kelamin Responden * Kelompok Penelitian	44	100.0%	0	0.0%	44	100.0%
Riwayat Penyakit * Kelompok Penelitian	44	100.0%	0	0.0%	44	100.0%
Tingkat Pendidikan * Kelompok Penelitian	44	100.0%	0	0.0%	44	100.0%

Jenis Kelamin Responden * Kelompok Penelitian

Crosstab

Count

		Kelompok Penelitian		
		Intervensi	Kontrol	Total
Jenis Kelamin Responden	laki-laki	8	9	17
	perempuan	14	13	27
Total		22	22	44

Chi-Square Tests

	Value	df	Asymptotic Significance (2-sided)	Exact Sig. (2-sided)	Exact Sig. (1-sided)
Pearson Chi-Square	.096[a]	1	.757		
Continuity Correction[b]	.000	1	1.000		
Likelihood Ratio	.096	1	.757		
Fisher's Exact Test				1.000	.500
Linear-by-Linear Association	.094	1	.760		
N of Valid Cases	44				

a. 0 cells (,0%) have expected count less than 5. The minimum expected count is 8,50.

b. Computed only for a 2x2 table

Symmetric Measures

		Value	Approximate Significance
Nominal by Nominal	Contingency Coefficient	.047	.757
N of Valid Cases		44	

Appendices 25 Chi-Square Test for Disease History Equivalency

Riwayat Penyakit * Kelompok Penelitian

Crosstab

Count

		Kelompok Penelitian		
		Intervensi	Kontrol	Total
Riwayat Penyakit	Memiliki 1-2 Penyakit	7	7	14
	Tidak Memiliki Riwayat Penyakit	15	15	30
Total		22	22	44

Chi-Square Tests

	Value	df	Asymptotic Significance (2-sided)	Exact Sig. (2-sided)	Exact Sig. (1-sided)
Pearson Chi-Square	.000[a]	1	1.000		
Continuity Correction[b]	.000	1	1.000		
Likelihood Ratio	.000	1	1.000		
Fisher's Exact Test				1.000	.627
Linear-by-Linear Association	.000	1	1.000		
N of Valid Cases	44				

a. 0 cells (,0%) have expected count less than 5. The minimum expected count is 7,00.

b. Computed only for a 2x2 table

		Value	Significance
Nominal by Nominal	Contingency Coefficient	.000	1.000
N of Valid Cases		44	

Appendices 26 Chi-Square Test for Disease History Equivalency

Tingkat Pendidikan * Kelompok Penelitian

Crosstab

Count

		Kelompok Penelitian		
		Intervensi	Kontrol	Total
Tingkat Pendidikan	SD	6	5	11
	SMP_SMA	14	15	29
	Perguruan_Tinggi	2	2	4
Total		22	22	44

Chi-Square Tests

	Value	df	Asymptotic Significance (2-sided)
Pearson Chi-Square	.125[a]	2	.939
Likelihood Ratio	.126	2	.939
Linear-by-Linear Association	.070	1	.791
N of Valid Cases	44		

a. 2 cells (33,3%) have expected count less than 5. The minimum expected count is 2,00.

Symmetric Measures

		Value	Approximate Significance
Nominal by Nominal	Contingency Coefficient	.053	.939
N of Valid Cases		44	

Appendices 27 Normalits Test and Descriptive Statistics of MMSE Pre Test Scores

Kelompok Penelitian

Case Processing Summary

		Cases					
		Valid		Missing		Total	
	Kelompok Penelitian	N	Percent	N	Percent	N	Percent
Skor MMSE Pre test	Intervensi	22	100.0%	0	0.0%	22	100.0%
	Kontrol	22	100.0%	0	0.0%	22	100.0%

Descriptives

	Kelompok Penelitian			Statistic	Std. Error
Skor MMSE Pre test	Intervensi	Mean		19.68	1.001
		95% Confidence Interval for Mean	Lower Bound	17.60	
			Upper Bound	21.76	
		5% Trimmed Mean		19.76	
		Median		21.50	
		Variance		22.037	
		Std. Deviation		4.694	
		Minimum		12	
		Maximum		26	
		Range		14	
		Interquartile Range		8	
		Skewness		-.357	.491
		Kurtosis		-1.459	.953
	Kontrol	Mean		19.45	.913
		95% Confidence Interval	Lower Bound	17.56	

		Kurtosis		-1.459	.953
	Kontrol	Mean		19.45	.913
		95% Confidence Interval for Mean	Lower Bound	17.56	
			Upper Bound	21.35	
		5% Trimmed Mean		19.56	
		Median		20.00	
		Variance		18.355	
		Std. Deviation		4.284	
		Minimum		12	
		Maximum		25	
		Range		13	
		Interquartile Range		8	
		Skewness		-.413	.491
		Kurtosis		-1.138	.953

Tests of Normality

		Kolmogorov-Smirnov[a]			Shapiro-Wilk		
	Kelompok Penelitian	Statistic	df	Sig.	Statistic	df	Sig.
Skor MMSE Pre test	Intervensi	.215	22	.010	.884	22	.015
	Kontrol	.133	22	.200*	.918	22	.069

*. This is a lower bound of the true significance.

a. Lilliefors Significance Correction

Appendices 28 MMSE Pre Test Score Equivalence Test with Mann-Whitney

NPar Tests Kesetaraan Skor MMSE Pre tes >< Post test

Mann-Whitney Test

Ranks

	Kelompok Penelitian	N	Mean Rank	Sum of Ranks
Skor MMSE Pre test	Intervensi	22	23.02	506.50
	Kontrol	22	21.98	483.50
	Total	44		

Test Statistics[a]

	Skor MMSE Pre test
Mann-Whitney U	230.500
Wilcoxon W	483.500
Z	-.271
Asymp. Sig. (2-tailed)	.786

a. Grouping Variable: Kelompok Penelitian

Appendices 29 UJi Normality and Descriptive Statistics MMSE Post Test Score

Kelompok Penelitian

Case Processing Summary

		Cases					
		Valid		Missing		Total	
	Kelompok Penelitian	N	Percent	N	Percent	N	Percent
Skor MMSE Post test	Intervensi	22	100.0%	0	0.0%	22	100.0%
	Kontrol	22	100.0%	0	0.0%	22	100.0%

Descriptives

	Kelompok Penelitian			Statistic	Std. Error
Skor MMSE Post test	Intervensi	Mean		23.55	.781
		95% Confidence Interval for Mean	Lower Bound	21.92	
			Upper Bound	25.17	
		5% Trimmed Mean		23.61	
		Median		24.00	
		Variance		13.403	
		Std. Deviation		3.661	
		Minimum		18	
		Maximum		28	
		Range		10	
		Interquartile Range		7	
		Skewness		-.316	.491
		Kurtosis		-1.525	.953
	Kontrol	Mean		21.73	.830
		95% Confidence Interval for Mean	Lower Bound	20.00	
			Upper Bound	23.45	
		5% Trimmed Mean		21.90	
		Median		22.50	
		Variance		15.160	
		Std. Deviation		3.894	
		Minimum		12	
		Maximum		28	
		Range		16	
		Interquartile Range		6	
		Skewness		-.503	.491
		Kurtosis		.201	.953

Tests of Normality

		Kolmogorov-Smirnov[a]			Shapiro-Wilk		
	Kelompok Penelitian	Statistic	df	Sig.	Statistic	df	Sig.
Skor MMSE Post test	Intervensi	.203	22	.019	.868	22	.007
	Kontrol	.128	22	.200*	.958	22	.458

*. This is a lower bound of the true significance.

a. Lilliefors Significance Correction

Appendices 30 Pre-Post Differential Test of MMSE Score for the Intervention and Control Group

NPar Tests Uji Perbedaan pre test >< post test MMSE Kelompok Intervensi

Wilcoxon Signed Ranks Test

Ranks

		N	Mean Rank	Sum of Ranks
Skor MMSE Post test - Skor MMSE Pre test	Negative Ranks	0[a]	.00	.00
	Positive Ranks	22[b]	11.50	253.00
	Ties	0[c]		
	Total	22		

a. Skor MMSE Post test < Skor MMSE Pre test

b. Skor MMSE Post test > Skor MMSE Pre test

c. Skor MMSE Post test = Skor MMSE Pre test

Test Statistics[a]

	Skor MMSE Post test - Skor MMSE Pre test
Z	-4.137[b]
Asymp. Sig. (2-tailed)	.000

a. Wilcoxon Signed Ranks Test

b. Based on negative ranks.

T-Test Uji Perbedaan pre test >< post test MMSE Kelompok Kontrol

Paired Samples Statistics

		Mean	N	Std. Deviation	Std. Error Mean
Pair 1	Skor MMSE Pre test	19.45	22	4.284	.913
	Skor MMSE Post test	21.73	22	3.894	.830

Paired Samples Correlations

		N	Correlation	Sig.
Pair 1	Skor MMSE Pre test & Skor MMSE Post test	22	.901	.000

Paired Samples Test

		Paired Differences					t	df	Sig. (2-tailed)
		Mean	Std. Deviation	Std. Error Mean	95% Confidence Interval of the Difference Lower	Upper			
Pair 1	Skor MMSE Pre test - Skor MMSE Post test	-2.273	1.856	.396	-3.096	-1.450	-5.743	21	.000

Appendices 31 Test of the Difference in MMSE Score Improvement Hypothesis

NPar Tests Uji Hipotesis Terapi Untuk MMSE

Mann-Whitney Test

Ranks

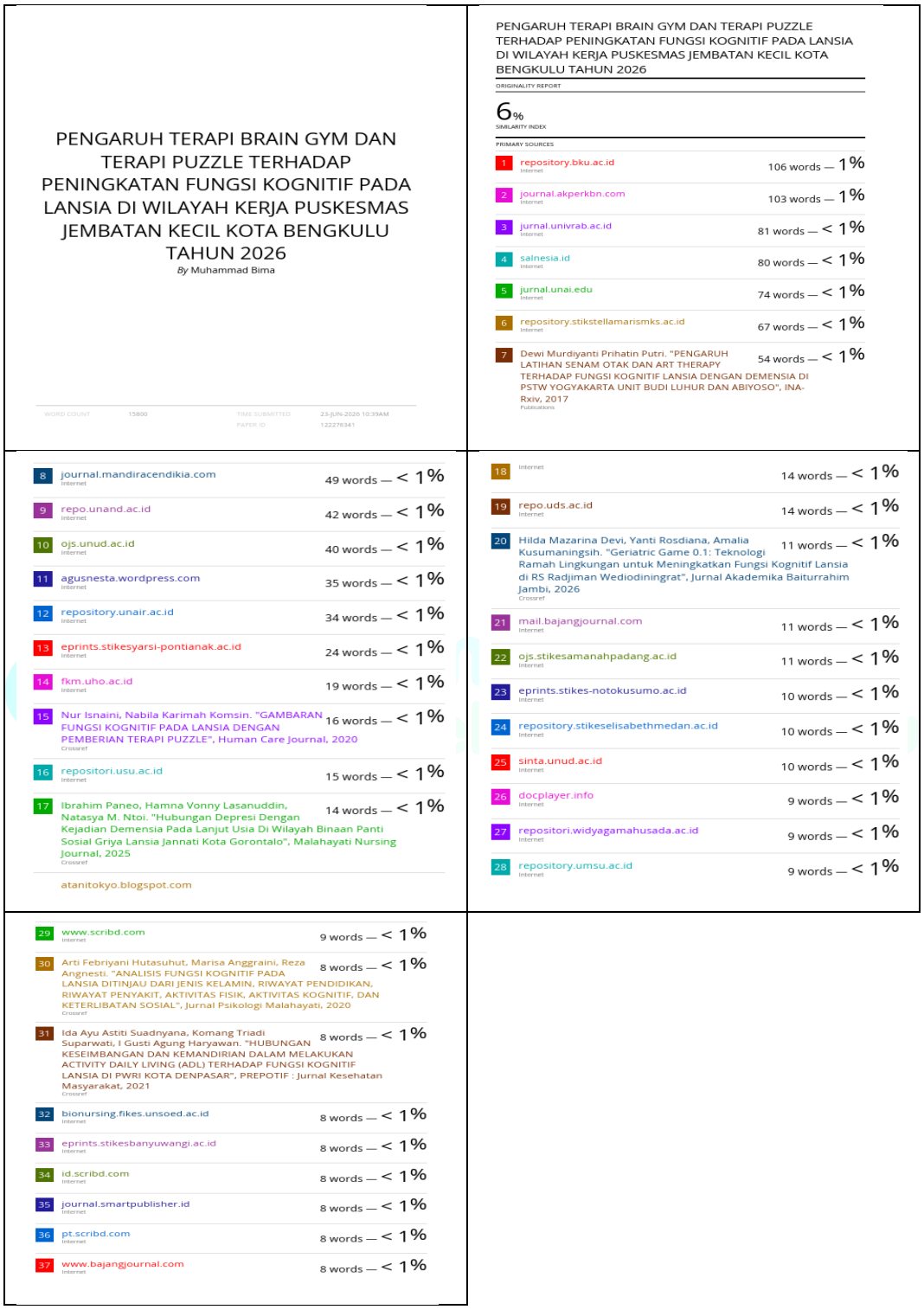
	Kelompok Penelitian	N	Mean Rank	Sum of Ranks
Selisih Pre post Skor MMSE	Intervensi	22	27.77	611.00
	Kontrol	22	17.23	379.00
	Total	44		

Test Statistics[a]

	Selisih Pre post Skor MMSE
Mann-Whitney U	126.000
Wilcoxon W	379.000
Z	-2.759
Asymp. Sig. (2-tailed)	.006

a. Grouping Variable: Kelompok Penelitian

Appendices 32 Turnitin



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By Muhammad Bima

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