

THESIS

THE EFFECT OF *CAWTHORNE-COOKSEY EXERCISES* AND *PROPRIOCEPTIVE EXERCISES* ON BALANCE IN THE ELDERLY AT RISK OF FALLS AT THE KUALA LEMPUING HEALTH CENTER, BENGKULU CITY



Compiled by:

FIRERY PUTRA ERLANZA

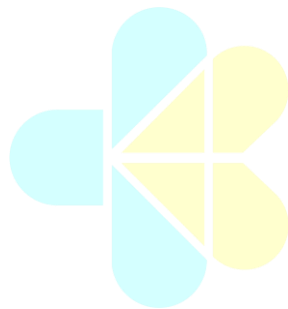
Student ID: P01720322017

**MINISTRY OF HEALTH OF THE REPUBLIC OF INDONESIA HEALTH
POLYTECHNIC OF THE MINISTRY OF HEALTH BENGKULU
DEPARTMENT OF NURSING APPLIED BACHELOR OF NURSING
STUDY PROGRAM IN 2026**

THESIS TITLE SHEET

THE EFFECT OF *CAWTHORNE-COOKSEY EXERCISES* AND *PROPRIOCEPTIVE EXERCISES* ON BALANCE IN THE ELDERLY AT RISK OF FALLS AT THE KUALA LEMPUING HEALTH CENTER, BENGKULU CITY

Submitted as one of the requirements to obtain an Applied Bachelor's Degree in Nursing (S.Tr.Kep) in the Applied Bachelor of Nursing Study Program
Department of Nursing Poltekkes, Ministry of Health Bengkulu



Compiled by:

FIRERY PUTRA ERLANZA

Student ID: P01720322017

**MINISTRY OF HEALTH OF THE REPUBLIC OF INDONESIA HEALTH
POLYTECHNIC OF THE MINISTRY OF HEALTH BENGKULU
DEPARTMENT OF NURSING APPLIED BACHELOR OF NURSING
STUDY PROGRAM IN 2026**

APPROVAL SHEET

THE EFFECT OF CAWTHORNE-COOKSEY EXERCISES AND PROPRIOCEPTIVE EXERCISES ON BALANCE AMONG ELDERLY INDIVIDUALS AT RISK OF FALLS AT KUALA LEMPUNG COMMUNITY HEALTH CENTER BENGKULU CITY

Written by

FIRERY PUTRA ERLANZA

Student ID: P01720322017

Thesis Has Been Examine by Examined Member of the Bachelor of Applied
Nursing Study Program, Department of Nursing Bengkulu Health
Polytechnic Ministry of Health of the Republic of Indonesia
Passed on June 02, 2026, With a grade of 90.8

Chair of the Board of Examiners

Ns. Septivanti, S.Kep., M.Pd
NIP. 197409161997032001

Examiner I

Sariman Pardosi, S.Kp., M.Si (Psi)
NIP. 196403031986031005

Examiner II

Ns. Hermansyah, S.Kep., M.Kep
NIP. 197507161997031002

Examiner III

Ns. Dwi Wulandari, S.Kep., M.A.N
NIP. 198903162025212064

Accepted and Approved in Partial of the Requirements for
the Degree of Bachelor of Applied Nursing

Acknowledge by:

Head of the Bachelor of Applied Nursing Study Program Bengkulu Health
Polytechnic Ministry of Health of the Republic of Indonesia

Ns. Hendri Herivanto, S.Kep., M.Kep
NIP. 198205152002121004

ORIGINALITY STATEMENT

The undersigned:

Name : Firery Putra Erlanza
Student ID : P01720322017
Thesis Title : *The Effect of Cawthorne-Cooksey Exercises and Proprioceptive Exercises on Balance in the Elderly at Risk of Falls at the Kuala Lempuing Health Center, Bengkulu City*

I hereby declare that this thesis is my own original work. The content of this thesis has not been submitted, either in whole or in part, by any other person for the purpose of obtaining an academic degree or qualification at any higher education institution. To the best of my knowledge and belief, this thesis contains no material previously written or published by another person without proper acknowledgment. Where the ideas, findings, or words of others have been used, they have been appropriately cited and referenced in accordance with accepted academic standards.

I make this statement in truth and honesty. Should this thesis subsequently be found to contain any form of plagiarism, I am willing to accept all consequences and assume full responsibility in accordance with the applicable regulations.

Bengkulu, July 28, 2026

Declared by,



Firery Putra Erlanza
Student ID. P01720322017

BIOGRAPHY



Name : Firery Putra Erlanza

Place and Date of Birth : Lubuklinggau, 08 May 2004

Religion : Islam

Gender : Male

Order of Birth : 4 (Four)

Education Background

1. Kindergarten PGRI Siring Agung (2009-2010)
2. SD Negeri 60 Lubuklinggau (2010-2016)
3. SMP Negeri 11 Lubuklinggau (2016-2019)
4. SMA Negeri 4 Lubuklinggau (2019-2022)

Address : Siring Agung Village, South Lubuklinggau II District, Lubuklinggau City, South Sumatra Province

Study Program : Bachelor of Applied Nursing

Institution : Bengkulu Health Polytechnic Ministry of Health

Year of Admission : 2022

E-mail : fireryerlanza854@gmail.com

Number of Brothers : 3 (Three)

MOTTO AND DEDICATION

بِسْمِ اللَّهِ الرَّحْمَنِ الرَّحِيمِ

(By mentioning the name of Allah the Most Merciful and the Most Merciful)

MOTTO:

"For God has promised, after narrow there is ease"

— Raim Laode

DEDICATION:

I did not go through this journey alone. Behind every process, revision, and struggle to complete this thesis, there were many prayers, support, and good hands that were present and accompanied my steps until this point. With gratitude and pride, I dedicate this simple work to those who have been an important part of this long journey:

- ❖ Allah SWT., on whom I lean in every fatigue and prayer, who always strengthens my steps in His own way, even when I feel unable to complete this thesis.
- ❖ The Prophet Muhammad SAW., who has brought mankind from the darkness of ignorance to the light of science, so that I can feel the beauty of seeking knowledge up to this point.
- ❖ My parents, the people who never stopped praying and fighting for me until this point. Thank you for all the love, prayers, and sacrifices you have given, Mama, Papa, if a second life is true, I will not hesitate to still choose to be born from Mama's womb and raised by Papa. I don't know what to describe Mama and Papa in what kind of words. Hopefully, through this simple writing, I have made you proud enough. To Mama, thank you for taking me so far and bringing me to be able to study at this campus. I still remember how Mama still accompanied me to travel to study science, even though Mama's situation was not as strong as it used to be. But Mama's struggle had to stop when I began to understand the world of this lecture, I'm sorry, Ma, I haven't had time to make Mama proud during Mama's life. Embrace Mama

in Your Heaven, O Allah. And for Papa, maybe the form of love that Papa gives is not present through many words or hugs, but Papa secretly loves through actions. Papa always tried everything I needed, worked and survived at a young age so that I could continue my education to this point. Thank you, Pa, for always being a home that has remained strong even though it rarely complains. I am proud to have been born as a child of Mama and Papa. Even though Mama and Papa have never experienced college, Mama and Papa are able to send their children to become scholars.

- ❖ Dear brothers and sisters that I admire very much, Mbik Ni, Mbik Pet and Kak Yank. You are the compass and guide in my life's journey, which has always made me want to continue to pursue your great steps. For Mbik Ni, as the first daughter in the family, thank you for always trying to be an example for her younger siblings, as well as with Kak Tom who never stops trying and giving the best for me. To Mbik Pet, thank you for fighting so sincerely for your sister, always sensitive to my situation, and continuing to give attention and affection with Kak Jali. For Kak Yank, your love and affection may not be shown through hugs or hugs, but it is always felt through the struggle and tenacity you show. Together with Ayuk Geby, thank you for continuing to fight so that your sister can achieve her goals. No matter how far we go, the house named brother will always have a way to get back to each other.
- ❖ Om Yi's cute and adorable nieces and nephews, Abang Arka, Ozil, Rendi, Arsyah, Gavi and Zea. Your jokes, laughter, and unwitting innocence are always encouragement in the midst of the process of preparing this thesis. Wait for Om Yi to become *a rich uncle* for you later.
- ❖ Mr. Ns. Hermansyah, M.Kep., my supervisor who always makes the process of preparing this thesis easier, who is so quick in responding and always present in every guidance process. You have not only guided me in compiling this research page by page, but also instilled many life values that I will continue to bring forward. Behind every direction and guidance, there is a lesson about patience, responsibility, and the confidence to finish what

has been started. When I felt that it was impossible to complete this thesis, the support, motivation, and trust that you gave me again ignited my enthusiasm to continue to move until I reached the point of completing this thesis. May every kindness and convenience that you give become a charity that continues to grow and return to you in the form of blessings and happiness that are multiplied.

- ❖ Mrs. Ns. Dwi Wulandari, M.A.N., who always looks at everyone from a different perspective and understands that every human being has a way to be treated well according to their respective portions. Thank you, Mom, for your gentleness, patience, and every guidance that Mam gave me so that I was able to complete this thesis on time. Mam not only guided me in the research process, but also taught me a lot about life, how to behave, speak the word, respect others, and put myself in a good position, as well as giving me space to grow and explore my potential. Thank you for the valuable lesson, moral values, and attention that Mam has given so far. May Mam always be blessed and made easier in every matter, just as Mam has made it easier and helped every process I go through. May every kindness that Mam instills be repaid with abundant blessings and happiness.
- ❖ Someone who took part in shaping my character during this lecture period, Mrs. Ns. Rahma Annisa, M.Kep, who was present to provide support, advice and life lessons that slowly forged me until I became as strong as I am now. Thank you for instilling the value of obedience, being a listener to every complaint I have, reprimanding without judgment, and teaching the meaning of compassion and care for others.
- ❖ Mrs. Dr. Nur Elly, S.Kp., M.Kes, a loving and affectionate figure who never tires of giving advice and attention. For me, Mam is not only an Academic Advisor in lectures, but also a "Mother" figure for her PA children. Thank you for always instilling the principle that college is like shopping, we have paid a lot for a trip, so don't leave the "basket" empty without meaningful knowledge and experience.

- ❖ My younger brother, Arif, my first brother overseas, who not only became friends to share stories about the campus world, but also about the harshness of life in the region. Thank you because through this togetherness, I can finally feel the meaning of being a "Big Brother", a role that has never really stopped by this youngest child before. For Andy and Afifah, who are slowly changing the boundaries of "younger siblings" into equal friends in this KP journey, thank you for the togetherness and learning process that we went through. For Dion, Fatim, Titan, Firman and Okta, even though they are present in different phases, you still give your own color and warmth in this journey. For Wawa, Zaldi, Desy, Deli and Intan, even though we have not been together for a long time, I hope you continue to grow into great individuals and are not afraid to try new things. And to my KP brothers, Fitrocin, Nasywa, and Anugra, thank you for going through this long process together. We have come to this point after going through many things that used to feel heavy. I'm proud to be a part of your journey.
- ❖ My KP brothers, who also guided and directed me when I didn't know where to go in this world of lectures. Thank you for patiently attending, receiving, guiding, and introducing me to many things during this journey process. Thanks to your direction and support, I was able to get to where I am today. Especially Almh. Kak Berliana Maury, who had to continue her struggle in His Heaven before she had time to complete this education. Sis, I continue the struggle that I haven't had time to finish. I've reached this stage, and hopefully one day you can see me holding the title that you used to want to fight for.
- ❖ Mr. Biruan Ali and Mrs. Ningsih, thank you for guarding, nurturing, and bringing attention through simple things such as food distributed, clothes that are lifted when it rains, and gates that are opened when I come home late at night. Those little attentions always felt warm and made this place not only a boarding house, but also a temporary home to go home to. From you, I learned that care does not always come from blood relations, but also from a sincere caring heart.

- ❖ 3 B**i Dusun (Duwek and Jakak), a small house in the form of a *WhatsApp* group that is more often filled with laughter and jokes, but secretly keeps a lot of hugs in the form of words. In between simple conversations, there are always sentences that make your eyes teary and your heart silent for a moment. Thank you for sticking to strengthen each other, even though we are both struggling with each other's lives. Even though they can't embrace each other directly, the hug and grasp feel present through every small tap in the process of preparing this thesis. The prayers and greetings you give always feel close, even from a distance. You guys make me believe that hugs don't always come through presence.
- ❖ Anak Rantau (Adam, Azza, Melin and Aul), you have taught me that quality is far more valuable than quantity. The older we get, the less often we have time to simply communicate or gather together, plus the distance and busyness of each other that makes meeting no longer easy. However, it is precisely because of this that every meeting feels so meaningful and valuable. Chatting, laughing, and simple jokes with you never feel boring. Thank you for being present as pieces of memory that slowly form beautiful memories in my life. You are the real embodiment of Tulus' song "Monochrome".
- ❖ Info Nongs (Febrian and Andy), your ridiculousness sometimes makes me angry, but behind all that you also make me forget for a moment the burden and fatigue of this college life. Your jokes, commotions and simple actions become small forms of *healing* in the midst of the hustle and bustle of life that is being lived.
- ❖ The 2024 Nursing Department Student Association (HMJ), a learning house that presents me with many stories, challenges, and growth, as well as a sense of family that slowly grows in it. Thank you to the people who have trusted me to steer the ship of this organization. With you, I learned that leadership is not about walking ahead, but about persevering, listening, and staying on the step in the face of pressure. Thank you for every criticism, difference of viewpoint, and struggle we went through together. In the midst

of organizational dynamics, you are not only fellow travelers, but also the people who make this process feel warm and meaningful. From you, I learned to become stronger without losing my heart to keep caring.

- ❖ *Boys RKI* (Febrian, Bima, Indo, Ichsan and Irfan), thank you for every story, togetherness, and process that we have gone through together during this lecture.
- ❖ Comrades-in-arms, Bachelor of Applied Nursing Class of 2022, thank you for fighting together, persevering, and staying strong in every process we go through.
- ❖ Kopi Kenangan, thank you for being a stopover place when you are tired of compiling a thesis at the boarding house. The cup after cup of coffee that accompanies me, day after day that passes, and the long nights until sunrise are silent witnesses to every step of my struggle in completing this thesis.
- ❖ The hardest of his struggles yet rarely appreciated, the one who secretly often solves his own problems, who is so himself and continues to force himself to survive, is none other than myself, Firery the Son of Erlanza. A human being who is always loyal to coffee, the spoiled youngest child, but finally able to overcome the harshness of this overseas land and the world of lectures. Thank you to me, who continues to fight endlessly, whose steps sometimes stutter, breath chokehold, tears fall, and slumber hours in pursuit of the dream title. Four years that were not easy, full of life lessons, meeting many people who gave meaning, and facing various circumstances that slowly shaped the way of thinking. Many times, he also struggled with his own head: "*Can you do it?*", "*What if it fails?*", and "*it doesn't feel possible*". But slowly, all those doubts were dispelled by the belief and courage to keep going. Thank you for completing this thesis, even though it was not an easy path, while hugging myself and saying, "*I finally made it through this*". Thank you for holding on to every doubt and not giving in to sometimes impartial circumstances. This journey is not just about succeeding or failing, but about every process that slowly shapes us to be stronger than ever. I'm proud of you.

FOREWORD

All praise and gratitude are prayed to God Almighty for His abundant blessings and grace, allowing the author to complete the writing of this thesis entitled “ The Effect of *Cawthorne-Cooksey Exercises* and *Proprioceptive Exercises* on Balance in the Elderly at Risk of Falls at the Kuala Lempuing Health Center, Bengkulu City”. The purpose of this thesis is to determine how the effect of *cawthorne-cooksey exercises* and *proprioceptive exercises* on balance in the elderly at risk of falls at the Kuala Lempuing Health Center, Bengkulu City. Furthermore, this thesis was written as one of the requirements to achieve the degree of Applied Bachelor's in Nursing.

In the process of writing this thesis, the author received various forms of support, both material and moral, from numerous parties. Therefore, the author would like to express the deepest gratitude and highest appreciation to:

1. Ms. Linda, SST., M.Kes, Director of Bengkulu Health Polytechnic, Ministry of Health.
2. Ns. Erni Buston, SST., M.Kes, Head of the Department of Nursing, Bengkulu Health Polytechnic, Ministry of Health.
3. Ns. Hendri Heriyanto, S.Kep., M.Kep, Head of the Bachelor of Applied Nursing Study Program, Bengkulu Health Polytechnic, Ministry of Health.
4. Ns. Hermansyah, S.Kep., M.Kep., as the First Supervisor who has patiently taken the time, energy and mind to guide, provide direction, motivation, and support to the author during the process of preparing this thesis until it can be completed properly.
5. Ns. Dwi Wulandari, S.Kep., M.A.N., as Supervisor the Second Supervisor who sincerely and patiently has provided guidance, direction, attention, and enthusiasm to the author in every process of preparing this thesis until it can finally be completed.
6. Ns. Septiyanti, S.Kep., M.Pd., as the Chair of the Board of Examiners who has taken the time and provided direction and input to the author in

the process of preparing this thesis.

7. Mr. Sariman Pardosi, S.Kp., M.Si (Psi), as the First Examiner who has taken the time and provided direction and input to the author in the process of preparing this thesis.
8. All educators and education staff of the Department of Nursing who have patiently educated and guided the author.
9. The two beloved parents and family who always accompany the author through prayer, affection, support, sacrifice, and unrelenting enthusiasm, both morally and materially, have given me the strength to survive and complete this thesis.
10. My comrades in law who have provided support and enthusiasm in the preparation of this thesis.

The author realizes that this thesis is not without limitations and imperfections due to the author's limited knowledge, experience, and capabilities. Therefore, the author sincerely welcomes constructive comments and suggestions from all parties to improve the quality of future academic work. May every comment and suggestion offered be rewarded by Almighty God.

The author sincerely hopes that this undergraduate thesis will provide meaningful contributions to readers, particularly to the author and future students of the Department of Nursing.

Bengkulu, July 28, 2026
The Author,

Firery Putra Erlanza
Student ID. P01720322017

THE EFFECT OF *CAWTHORNE-COOKSEY EXERCISES* AND *PROPRIOCEPTIVE EXERCISES* ON BALANCE IN THE ELDERLY AT RISK OF FALLS AT THE KUALA LEMPUING HEALTH CENTER, BENGKULU CITY

Firery Putra Erlanza¹, Hermansyah², Dwi Wulandari³

¹Students of the Applied Undergraduate Study Program in Nursing of the Ministry of Health of the Ministry of Health of Bengkulu, Bengkulu, Indonesia

^{2,3}Lecturer of the Department of Nursing of the Ministry of Health of Bengkulu, Bengkulu, Indonesia

Email Correspondence: fireryerlanza854@gmail.com

ABSTRACT

Background: Balance disorders are one of the problems that often occur in the elderly due to the aging process and can increase the risk of falling. The risk of falling in the elderly can cause injury, decreased independence, and decreased quality of life. One of the non-pharmacological efforts that can be made to improve balance is through the administration of *Cawthorne-Cooksey Exercises* and *Proprioceptive Exercises*. **Objective:** To determine the effect of *Cawthorne-Cooksey Exercises* and *Proprioceptive Exercises* on the balance of elderly at risk of falls at the Kuala Lempuing Health Center, Bengkulu City. **Methods:** Quantitative research with *quasi experiment pre-test and post-test control group* design. The sample consisted of 60 elderly people with balance disorders selected using *purposive sampling* techniques, consisting of 30 intervention group respondents given *Cawthorne-Cooksey Exercises* and *Proprioceptive Exercises* and 30 control group respondents given *Balance Exercises*. The intervention was carried out for 2 weeks, 3 times per week. The instrument used is *the Berg Balance Scale (BBS)*. **Results:** The results showed that the average balance value in the intervention group increased from 37.20 to 44.03, while in the control group it increased from 36.73 to 42.80. The results of *the Mann-Whitney test* showed that there was a significant effect of *Cawthorne-Cooksey Exercises* and *Proprioceptive Exercises* on improving balance in the elderly at risk of falling with a value of $p=0.009$ ($p \leq 0.05$). **Conclusion:** *Cawthorne-Cooksey Exercises* and *Proprioceptive Exercises* affect balance in the elderly at risk of falls at the Kuala Lempuing Health Center, Bengkulu City.

Keywords: *Cawthorne-Cooksey Exercises, Proprioceptive Exercises, Balance, Elderly, Risk of Falls*

THE EFFECT OF CAWTHORNE-COOKSEY EXERCISES AND PROPRIOCEPTIVE EXERCISES ON BALANCE AMONG OLDER ADULTS AT RISK OF FALLS AT KUALA LEMPUING PUBLIC HEALTH CENTER

BENGKULU CITY

Firery Putra Erlanza¹, Hermansyah², Dwi Wulandari³

¹Undergraduate Nursing Student, Polytechnic of the Ministry of Health Bengkulu
Bengkulu, Indonesia

^{2,3} Lecturers of the Department of Nursing, Polytechnic of the Ministry of Health
Bengkulu Bengkulu, Indonesia

E-mail: fireryerlanza854@gmail.com

ABSTRACT

Background: Balance disorders are common problems among older adults due to the aging process and may increase the risk of falls. Falls in older adults can result in injuries, decreased independence, and reduced quality of life. One of the non-pharmacological interventions that can be used to improve balance is the implementation of Cawthorne-Cooksey Exercises and Proprioceptive Exercises.

Objective: To determine the effect of Cawthorne-Cooksey Exercises and Proprioceptive Exercises on balance among older adults at risk of falls at Kuala Lempuing Public Health Center, Bengkulu City. **Methods:** This study employed a quantitative approach using a quasi-experimental pre-test and post-test control group design. The sample consisted of 60 older adults with balance disorders selected through purposive sampling, including 30 participants in the intervention group who received Cawthorne-Cooksey Exercises and Proprioceptive Exercises and 30 participants in the control group who received Balance Exercises. The intervention was conducted for two weeks, three times per week. Balance was measured using the Berg Balance Scale (BBS). **Results:** The findings showed that the mean balance score in the intervention group increased from 37.20 to 44.03, while the mean balance score in the control group increased from 36.73 to 42.80. The Mann-Whitney test demonstrated a significant effect of Cawthorne-Cooksey Exercises and Proprioceptive Exercises on improving balance among older adults at risk of falls, with a $p\text{-value}=0.009$ ($p \leq 0.05$). **Conclusion:** Cawthorne-Cooksey Exercises and Proprioceptive Exercises had a significant effect on balance among older adults at risk of falls at Kuala Lempuing Public Health Center, Bengkulu City.

Keywords: Cawthorne-Cooksey Exercises, Proprioceptive Exercises, Balance, Older Adults, Fall Risk

TABLE OF CONTENTS

THESIS TITLE SHEET	i
APPROVAL SHEET	ii
ORIGINALITY STATEMENT.....	iii
BIOGRAPHY	iv
MOTTO AND DEDICATION	v
FOREWORD.....	xi
ABSTRACT	xiii
<i>ABSTRACT</i>	xiv
TABLE OF CONTENTS	xv
LIST OF TABLES.....	xvii
LIST OF FIGURES	xviii
LIST OF DIAGRAMS	xix
LIST OF APPENDICES	xx
LIST OF ABBREVIATIONS	xxi

CHAPTER I INTRODUCTION

A. Background	1
B. Research Problem.....	5
C. Research Objectives	6
D. Significance of the Research	7

CHAPTER II LITERATURE REVIEW

A. The Concept of the Elderly	8
B. The Concept of Falling in the Elderly	14
C. The Concept of Body Balance in the Elderly.....	18
D. The Concept of <i>Cawthorne-Cooksey Exercises</i>	25
E. Concept of <i>Proprioceptive Exercises</i>	29
F. Balance Exercises Concept	33
G. Effect of <i>Cawthorne-Cooksey Exercises</i> and <i>Proprioceptive Exercises</i> on Balance in Elderly at Risk of Falls.....	36
H. Theoretical Framework	38

CHAPTER III CONCEPTUAL FRAMEWORK, RESEARCH HYPOTHESIS, AND OPERATIONAL DEFINITIONS

A. Conceptual Framework	39
B. Operational Definitions	40
C. Research Hypothesis	42

CHAPTER IV RESEARCH METHODS

A. Types of Research and Research Design.....	43
B. Research Variables	44
C. Research Location and Time	44
D. Population and Sample.....	44
E. Data Collection.....	47
F. Data Processing	48
G. Data Analysis.....	49
H. Research Flowchart	51
I. Research Ethics	52
J. Research Schedule.....	53

CHAPTER V RESEARCH RESULTS

A. Research Process	54
B. Univariate Analysis	56
C. Bivariate Analysis	59

CHAPTER VI DISCUSSION

A. Interpretation and Discussion of Findings	61
B. Research Limitations.....	71

CHAPTER VII CONCLUSION AND RECOMMENDATIONS

A. Conclusions	72
B. Recommendations	72

BIBLIOGRAPHY

APPENDICES

LIST OF TABLES

Table 2. 1	Berg Balance Scale (BBS).....	22
Table 3. 1	Operational Definition	40
Table 4. 2	Bivariate Test.....	50
Table 4. 3	Research Schedule	53
Table 5. 1	Distribution of Respondents by Age, Gender and Physical Activity in the Working Area of the Kuala Lempuing Health Center	56
Table 5. 2	Overview of the Average Balance Value of the Elderly Before Intervention in the Intervention Group and Control Group in the Working Area of the Kuala Lempuing Health Center	57
Table 5. 3	Overview of the Average Balance Value of the Elderly After Intervention in the Intervention and Control Group in the Working Area of the Kuala Lempuing Health Center	58
Table 5. 4	Difference in the Average Balance Value of the Elderly Before and After Being Treated in the Intervention Group in the Working Area of the Kuala Lempuing Health Center	59
Table 5. 5	Difference in the Average Balance Value of the Elderly Before and After Being Treated in the Control Group in the Working Area of the Kuala Lempuing Health Center	60
Table 5. 6	Average Difference in Balance Value of the Elderly Before and After Treatment in the Intervention and Control Group in the Working Area of the Kuala Lempuing Health Center	60

LIST OF FIGURES

Figure 2. 1 Center of Gravity (COG), Line of Gravity (LOG) and Base of Support (BOS)	20
---	----



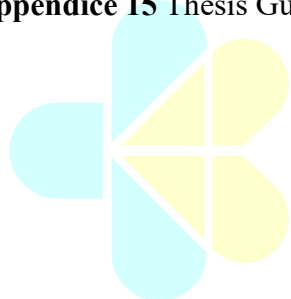
LIST OF DIAGRAMS

Diagram 2. 1 Theoretical Framework	38
Diagram 3. 1 Concept Framework	39
Diagram 4. 1 Research model	43
Diagram 4. 2 Research Flowchart	51



LIST OF APPENDICES

Appendice 1 Research Schedule	88
Appendice 2 Documentations	96
Appendice 3 Application Letter Respondents.....	99
Appendice 4 Letter Of Approval Respondents	100
Appendice 5 Informed Consent And Research Explanation	101
Appendice 6 Research Observation Sheet	102
Appendice 7 SOP Cawthorne-Cooksey Exercises	106
Appendice 8 SOP Proprioceptive Exercises	108
Appendice 9 SOP Balance Exercises	110
Appendice 10 Bengkulu City Health Office Letter.....	112
Appendice 11 Ethical Clearance Certificate.....	113
Appendice 12 Certificate Of Completion Of Research.....	114
Appendice 13 KESBANGPOL Letter.....	115
Appendice 14 Research Permit	116
Appendice 15 Thesis Guidance Sheet	117



Kemenkes

Poltekkes Bengkulu

LIST OF ABBREVIATIONS

ADL	:	<i>Activities of Daily Living</i>
ATP	:	Adenosine Triphosphate
BBS	:	<i>Berg Balance Scale</i>
BOS	:	<i>Base of Support</i>
BPS	:	Central Statistics Agency
COG	:	<i>Center of Gravity</i>
DNA	:	<i>Deoxyribonucleic Acid</i>
Elderly	:	Elderly
GTO	:	Golgi Tendon Organ
Health Office	:	Health Office
JPS	:	<i>Sense Position Seal</i>
KESBANGPOL	:	Nation and Political Unity Agency
LOG	:	<i>Line of Gravity</i>
PSR	:	<i>Person Separation Reliability</i>
ROS	:	<i>Reactive Oxygen Species</i>
VOR	:	<i>Vestibulo-Ocular Reflex</i>
WHO	:	<i>World Health Organization</i>