

UNIVERSITI TEKNOLOGI MARA

**THE VARIATION OF ACCOMMODATION
RESPONSE AT NEAR AMONG NON-
PRESBYOPES AND PRESBYOPES.**

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JULY 2015

DECLARATION

I declare that the work in this dissertation was carried out in accordance with the regulations of University Teknologi MARA. It is original and is the results of my own work, unless otherwise indicated or acknowledgement as referenced work. This topic has not been submitted to any other academic institution or non- academic institution for any degree or qualification.

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TABLE OF CONTENT

	Page
DECLARATION	ii
SUPERVISOR'S SIGNATURE	iii
ACKNOWLEDGEMENT	iv
TABLE OF CONTENT	v
LIST OF TABLES	viii
LIST OF FIGURES	ix
LIST OF FORMULA	x
LIST OF ABBREVIATION	xi
LIST OF SYMBOLS	xii
ABSTRACT	xiii
ABSTRAK	xiv
CHAPTER 1	INTRODUCTION
1.1	Introduction 1
1.2	Problem statement 3
1.3	Research Question
1.4	Objectives 4
1.5	Hypothesis 4
CHAPTER 2	LITERATURE REVIEW
2.1	Accommodation 5
2.2	Variation of accommodation response at near 11
2.3	Presbyopia and accommodation response 13
	2.3.1 Non presbyopia and presbyopia 13
	2.3.2 Prevalence of presbyopia 15
	2.3.3 Accommodation response on presbyopia 16

CHAPTER 3	METHODOLOGY	
3.1	Research Design	18
3.2	Sampling	
3.2.1	Sampling design	18
3.2.2	Subjects/ Sample	18
3.2.3	Sample size calculation	19
3.3	Inclusion and exclusion criteria	20
3.4	Ethical approval	20
3.5	Research protocol	21
3.6	Research instrument	21
3.7	Data measurement	22
3.8	Data collection	28
3.9	Data analysis	30
3.10	Limitation of the study	30
CHAPTER 4	RESULT	
4.1	Demographic data	31
4.1.1	The number of gender	32
4.1.2	The refractive error	33
4.2	Mean and Standard deviation	34
4.3	Root mean square	36
CHAPTER 5	DISCUSSION	
5.1	Variation of accommodation response at near between non-presbyopia and presbyopia	39
5.2	Physiology component in the variation of accommodation at near	41
5.3	Minimization of the factors affecting the variation of accommodation response	43
CHAPTER 6	CONCLUSION	46

ABSTRACT

The purpose of this study to assess the variation on the accommodation response at near among the non-presbyopia and presbyopia and to determine the difference in the variation of accommodation response at near. The sampling design that be used in this research was convenience sampling design. Twenty participants for each non-presbyopia and presbyopia were volunteered to participate in this research and pass all screening test, however only 18 participants on presbyopia were eligible the reading of variation accommodation response at near between the range -2.00D to -5.00D. The range of age of non-presbyopia was 20 to 40 years old (mean age: 26.95 ± 5.191 years). For the range of age on presbyopia was 41 to 55 years old (mean age: 47.85 ± 7.473 years). The variation readings of the accommodation response at near being taken by using infrared autorefractor. Root mean square method had being used to analyze the variation on the accommodation response over times on sinusoidal graph. In addition , the variation of accommodation response at near can be statistically processed and described through the mean and standard deviation of accommodation index error as descriptive analysis from parametric test. The mean and standard deviation reading was taken by removed the blink reading from the data automatically using Microsoft excel macro capabilities to get the actual reading of accommodation response. The mean \pm standard deviation value of the accommodation index error on non-presbyopia and presbyopia were 1.031 ± 0.376 and 1.025 ± 0.365 . The Independent T-test had being used by using SPSS for statistical method to compare the root mean square of the accommodation index error among the non-presbyopia and presbyopia. From the result, there was no significant difference ($p > 0.05$) on the root mean square on non-presbyopia and presbyopia with $p = 0.623$ and $t = 2.365$. The p-value indicated the evidence was the null hypothesis. From this study, it can be concluded the non-presbyopia and presbyopia had similar level of variation on accommodation response at near with the target at 25cm with the accommodation demand range between -2.00D to -5.00D.