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

HANOM ARYANI BINTI HASHIM

BACHELOR OF OPTOMETRY (HONS) FACULTY OF HEALTH SCIENCE

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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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Name of candidate : Hanom Aryani binti Hashim
Candidate I.D No : 2011859308
Programme : Bachelor of Optometry (Hons).
Faculty : Health Science
Thesis title : The variation of accommodation response at near among the non-presbyopia and presbyopia

Signature of candidate :
Date : 13 JULY 2015
ABSTRACT

The purpose of this study was to assess the variation in the accommodation response at near among non-presbyopia and presbyopia and to determine the difference in the variation of accommodation response at near. The sampling design 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 tests, however only 18 participants on presbyopia were eligible for reading variation accommodation response at near between the range of -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 were taken by using infrared autorefractor. Root mean square method had been 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 removing the blink reading from the data automatically using Microsoft excel macro capabilities to get the actual reading of accommodation response. The mean ± standard deviation value of the accommodation index error on non-presbyopia and presbyopia were 1.03 ± 0.376 and 1.025 ± 0.365. The Independent T-test had been used by using SPSS for statistical method to compare the root mean square of the accommodation index error among 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.
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