MINIMUM THRESHOLD OF NEAR VISUAL ACUITY OF DIFFERENT CORRELATED COLOUR TEMPERATURE IN PRESBYOPIA

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Project submitted in partial fulfilment of the requirements for the Bachelor of Optometry (Hons)

Faculty of Health Science

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AUTHOR’S 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 acknowledged as referenced work. This topic has not been submitted to any other academic institution or non-academic institution for any degree or qualification.

In the event that my dissertation be found to violate the conditions mentioned above, I voluntarily waive the right of conferment of my degree and agree be subjected to the disciplinary rules and regulations of Universiti Teknologi MARA.

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TABLE OF CONTENTS

Title                                                                 Page
AUTHOR’S DECLARATION                                               ii
SUPERVISOR SIGNATURE                                               iii
ACKNOWLEDGEMENT                                                    iv
TABLE OF CONTENTS                                                  v
LISTS OF TABLES                                                     viii
LIST OF FIGURES                                                     ix
LIST OF EQUATIONS                                                   x
LIST OF SYMBOLS                                                     xi
LIST OF ABBREVIATIONS                                               xii
ABSTRACT                                                            xiii
ABSTRAK                                                            xiv

CHAPTER 1: INTRODUCTION

1.1 Introduction                                                    1
1.2 Problem statement                                              3
1.3 Objectives                                                     4
1.4 Research question                                              4
1.5 Research hypotheses                                            4
1.6 Significance study                                             5

CHAPTER 2: LITERATURE REVIEW

2.1 Age-related Physical Changes of Eye in Older Adults             6
2.2 Human’s Visual Function                                        7
2.3 Demand of Near Vision in Presbyopia                             8
2.4 Suitable Design Lighting in Presbyopia Environment              9
2.5 Correlated Colour Temperature                                  9
2.6 Near Acuity Chart                                               10
2.7 Effect of CCT on Near Visual Acuity                            11
CHAPTER 3: METHODOLOGY

3.1 Research Design 14
3.2 Research Protocol 14
   3.2.1 Screening Test 16
3.3 Subject Selection 20
   3.3.1 Sample Size Calculation 20
   3.3.2 Subject Criteria 21
3.4 Setting of Light 23
3.5 Specification of Near VA Chart 24
3.6 Scoring of Near VA 25
3.7 Testing Procedure 26
3.8 Ethical Approval 31
3.9 Statistical Analysis 31

CHAPTER 4: RESULT

4.1 Demographic Data 32
4.2 Normality Test 32
4.3 Threshold of near visual acuity (logMAR) under different correlated colour temperature (CCT) 33
4.4 The relationship of CCT and illumination level on VA performance 35

CHAPTER 5: DISCUSSION

5.1 Mean VA of Presbyopia under three Levels of CCT 37
5.2 Factors that affected near VA acuity score 38
   5.2.1 Effect of VA related with Age Related Change of Eye in Older People 38
   5.2.2 Letter Identification of ETDRS chart 39
ABSTRACT

**Introduction:** The correlated colour temperature (CCT) of light is important factor that can affect near visual acuity (VA) in presbyopia. Within the normal near VA, it is possible that under different level of CCT of light, the minimum threshold acuity that can be achieved in presbyopia could be different compared to other ages. **Objective:** To determine the minimum threshold of near VA that can be achieved by presbyopia under different level of CCT using 2856 K, 4100 K and 6500 K of light and whether there is any difference of minimum threshold of near VA between three levels of CCT light. **Materials and methods:** This study involved subject aged between 35-65 years old (3 male, 11 female) with mean refractive error of -0.75DS and mean addition power of +2.04 DS. The subject was asked to read the letter acuity using Early Treatment Diabetic Retinopathy Screening (ETDRS) chart under three different levels of CCT light which are 2856 K, 4100 K and 6500 K. All the testing was done in the light booth (GTI LITE MODEL CMB 3064). For each CCT light, it required at least one day gap. **Results:** The mean of minimum threshold of near VA in 6500 K have highest mean value compared to 2856 K and 4100 K. The result from repeated measure ANOVA showed there was no statistically significant difference between the means of minimum threshold of near visual acuity that can be achieved by presbyopia and different level of CCT of light (p > 0.05) **Conclusion:** The highest CCT light 6500 K give better mean minimum of threshold near VA (logMAR) compared to 4100 K and 2856 K based on the mean result of minimum threshold of near VA (logMAR).

Keywords: Threshold, Near Visual Acuity, Correlated Colour Temperature, Presbyopia