

UNIVERSITI TEKNOLOGI MARA

**COMPARISON OF CONTRAST SENSITIVITY
BETWEEN FACT SCREEN TEST,
ILLUMINATED AND NON-ILLUMINATED
CSV-1000 AMONG UNIVERSITY STUDENTS**

NURUL HANANI OZALI

**Project submitted in the fulfillment of the requirements
for the degree of**

**Bachelor (Hons.) of Optometry
Faculty of Health Science**

JULY 2015

AUTHOR'S DECLARATION

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

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

Name of Candidate : Nurul Hanani Binti Ozali

Candidates's ID No : 2010833086

Programme : Bachelor (Hons.) of Optometry

Faculty : Faculty of Health Science

Thesis Title : Comparison of Contrast Sensitivity Between FACT Screen Test, Illuminated and Non-illuminated CSV-1000 Among University Students

Signature of Candidate

Date

TABLE OF CONTENTS

CONTENTS	PAGES
AUTHOR'S DECLARATION	ii
APPROVAL	iii
ACKNOWLEDGEMENT	iv
TABLE OF CONTENTS	v
LIST OF TABLES	ix
LIST OF FIGURES	xi
LIST OF ABBREVIATION	xii
ABSTRACT	xiii
ABSTRAK	xiv
 CHAPTER 1 INTRODUCTION	
1.1 Introduction	1
1.2 Justification of research	2
1.3 Objectives	2
1.3.1 General objectives	2
1.3.2 Specific objectives	3
1.4 Hypothesis	3
 CHAPTER 2 LITERATURE REVIEW	
2.1 Contrast sensitivity	4
2.2 Functional Acuity Contrast Test (FACT) screen test	5
2.3 CSV-1000	6

2.4	Factors affecting contrast sensitivity	7
2.5	Uses of contrast sensitivity	8
CHAPTER 3 RESEARCH METHODOLOGY		
3.1	Study design and settings	10
3.2	Sample size	10
3.3	Subjects	11
3.3.1	Inclusion criteria	11
3.3.2	Exclusion criteria	11
3.4	Data collection	12
3.5	Research Instruments	13
3.5.1	FACT screen test	13
3.5.2	CSV-1000	14
3.6	Statistical analysis	15
CHAPTER 4 RESULTS		
4.1	Demographic information	16
4.2	Descriptive information of the data	18
4.2.1	Age and refractive error	18
4.2.2	Mean and standard deviation	18
4.2.3	Median and interquartile range	19
4.2.3.1	FACT screen test	20
4.2.3.2	Non-illuminated CSV-1000	20

ABSTRACT

Contrast sensitivity is described as the ability of visual system to distinguish between an object and its background. There are various clinical tests that measure contrast sensitivity, among those are the Vistech versions (VCTS 6500 and MCT-8000), Vector Vision CSV-1000 and the widely used Functional Acuity Contrast Test (F.A.C.T.). Thus, chart with different illumination may have different effect in measuring contrast sensitivity. Hence, the aim of this study to find the differences of luminance effect by FACT screen test, illuminated CSV-1000 and non-illuminated CSV-1000. A total of 38 subjects with habitual visual acuity of 6/6 were included in this study. Visual acuity and refraction were taken using Snellen Chart. While the measuring of contrast sensitivity were done with three types of charts; FACT chart, non-illuminated CSV-1000 and illuminated CSV-1000. There were statistically significance differences in the measuring contrast sensitivity for 6 cycles per degree of spatial frequencies using non-illuminated CSV-1000 and for 18 cycles per degree of spatial frequencies using illuminated CSV-1000 that showed a level significance $p < 0.50$. However, there WAS no significant difference for FACT screen test for measuring all spatial frequencies level. Next, there is major significant difference between the charts in measuring contrast sensitivity. Hence, this show the presence of illuminance of the charts also affecting the results of contrast sensitivity levels.