# FACTORS INFLUENCING THE PREVALENCE OF AMBLYOPIA IN CHILDREN WITH ANISOMETROPIA

Thesis

*Submitted for Partial Fulfillment of Master Degree in Ophthalmology*

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# العوامل المؤثرة في تفشى الكسل البصرى عند الأطفال مع تفاوت الإنكسار

رسالة

رسالة توطئة للحصول على درجة الماجستير في طب وجراحة العين

مقدمة من

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# Summary

Amblyopia is a common disorder of the visual system without any structural anomaly.

Anisometropic amblyopia is a difficult type of amblyopia to be diagnosed, since the sound eye overlaps the visual defect of the amblyopic eye.

This randomized study included 60 children from the age of 6 – 12 years including 36 males, and 24 females with anisometropia and no structural ocular abnormalities including strabismus , previous ocular surgery, ocular trauma, neurologic disorders which could influence visual acuity, or with BCVA of the sound eye <20/40. The patients were selected from the outpatient clinic of Memorial institute of ophthalmological research.

The patients were classified into 4 groups:

**Group I:** Spherical anisometropic group: in which the difference in the spherical equivalent between the eye was >2 D (30 patients). This group will be subdivided into:

*Myopic group*: spherical power difference was >2 D (15 patients).

*Hypermetropic group:* spherical power difference was >2 D (15 patients).

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# List of Abbreviations

**BCVA**..... Best Corrected Visual Acuity

**PL**..... Preferential Looking

**TACs**..... Teller Acuity Cards

**UCVA**..... Un-Corrected Visual Acuity

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# Introduction

Amblyopia is a disorder of the visual system that is characterized by a decrease in the best corrected visual acuity (BCVA) in an eye with no organic pathology ***(Shimko, 2001)***, anisometropia is a well-known cause of amblyopia ***(Sjostrand J and Abrahamsson M, 1990)***.

Unequal refractive error between the two eyes produces abnormal binocular interaction and/or visual deprivation. Patients with anisometropic amblyopia usually have no identifiable ocular defects and the visual acuity of the sound eye is normal, which makes it difficult to diagnose the symptoms, and thus early treatment is often delayed. Because improvement in visual acuity with amblyopia treatment depends on the age at which treatment begins, earlier detection of children with anisometropic amblyopia is desired ***(Shaw et al., 1988).***

According to ***Weakley (1999) ,***there is an increased risk of amblyopia with myopic anisometropia >2 diopters (D), hyperopic anisometropia >1 D, and astigmatic anisometropia >1.5 D.

***Hussein et al. (2004)***, in a study of amblyopic children older than six years of age, found that the risk factors for anisometropic amblyopia treatment failure were age >6 years at the onset of treatment, the presence of astigmatism of >1.5 D in

the amblyopic eye, poor compliance with treatment, and initial visual acuity in the amblyopic eye of ≤20/200.