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Faculty of Graduate Studies

**Epidemiology of Compliance to Patching in the Treatment of
Amblyopia in An-Najah University Hospital**

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Dedication

To the source of inspiration, strength, and motivation. To the whitest hearts of my life... my beloved parents

To those who share the good and bad things with me, and I have never seen him sully ...my faithful & beloved husband.

To those who are eager to see their bright future, God willing.... My dear children.

To all my beloved sisters, brothers, and friends

To all of those who have advised and supported me.

I dedicate my research to you

Acknowledgement

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الاقرار

انا الموقعة ادناه مقدمة الرسالة التي تحمل العنوان:

Epidemiology of Compliance to Patching in the Treatment of
Amblyopia in An-Najah University Hospital.

أقر بأن ما اشتملت عليه هذه الرسالة إنما هي نتاج جهدي الخاص، باستثناء ما تمت الإشارة اليه
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علمي لدى أية مؤسسة تعليمية أو بحثية أخرى.

Declaration

The work provided in this thesis, unless otherwise referenced, is the
researcher's own work, and has not been submitted elsewhere for any other
degree or qualification.

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التاريخ: ٢٠٢١/٤/٢١

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List of Abbreviations

IRB	Institutional review board
ANNUH	An-Najah National University Hospital
SD	Standard deviation
SSPS	Statistical package for social sciences
ODM	Occlusion dose monitor

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**Epidemiology of Compliance to Patching in the Treatment of
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Abstract

Background: Amblyopia, ‘lazy’ eye is a unilateral or bilateral reduction in vision for which no organic cause is present by physical examination of the eye with a prevalence of approximately 5% of the childhood population. It is commonly associated with a strabismus, refractive error or both. The most common form of treatment is conventional occlusion (daily patching of the good eye). Clinical studies have attempted to investigate the optimal treatment of the disease and investigate compliance; however, an evidence-base for treatment is still incomplete.

Aim: To study the degree of compliance and explore factors affecting compliance in patients undergoing occlusion therapy for amblyopia in our practice.

Study design: Cross -sectional study design.

Methods: A total of 80 child (aged 3-9years), undergoing unilateral amblyopia treatment at the pediatric ophthalmology clinic of An-Najah University Hospital, Nablus, were recruited for this study. Parents were asked to estimate number of hours of patching for the previous month, and completed questionnaire. Clinical data, for each patient were collected from

the hospital chart and were entered in a data collection sheet. Compliance with patching therapy was assessed by self-report accounts of parents and was graded into adequate and inadequate. Adequate compliance was graded into, excellent, very good and good. Non-compliance was calculated as a ratio of the difference between prescribed and administered hours to prescribed hours. Association between various factors and degree of compliance was studied by using univariate analysis plan.

Results: The total number of the patients participated in the study was 80. The mean age was (5 ± 1.9), range (3-9 years), of those 52.5% was females which was higher than males (47.5%). Compliance rate was about (81%). About 16.2% of them experienced excellent compliance rate, 42.5% experienced very good compliance rate, and 41.3% experienced good compliance rate. About parents and their children perception, 97.5% of the parents believed that eye patching is important. 82.5% of them were always watching their child while wearing the patch. About 61.3% of the patients refused using the patch and 76.3% of them felt uneasy with the patch. Univariate analysis showed that there was no significant association (p -value > 0.05) between compliance and all the factors except for gender and place of residence which were statically significant, (p -value = 0.0172, 0.003) respectively. For gender factor, about 26.2% female experienced excellent compliance, compared with 5.3% of male patient's experience. About 31% of female patients experienced very good compliance compared with 55.3% of male patients. Also 42.9% of female patients experienced good compliance, compared with 39.5% of male patients. For

the place of residence, about 27.8% lived in the city had excellent compliance compared with 6.8% lived in the suburbs. About 50% lived in the city had very good compliance compared with 36.4% lived in the suburbs. While 22.2% patients lived in the city experienced good compliance compared with 56.8% of them lived in the suburbs ($p=0.003$).

Conclusion: Amblyopia is an understudied and neglected public health problem that can impair children's lives. Compliance is an important factor affecting the outcome. The more we understand the influencing factors, the greater the positive effect on treatment. In this study the average compliance rate was relatively high (81%) comparing to other studies. Gender and place of residence are the significant factors affecting the compliance.

Chapter One

Introduction

1.1 Definition

Amblyopia which is known lazy eye is inability to developed the visual system [1], so reduction of visual acuity and severe deficits in contrast sensitivity and stereopsis (3D)will occur[2], its begins during infancy and early childhood and only one eye is affected, but in some cases, reduced visual acuity can occur in both eyes[1].It is the most common visual impairment among children, and also the most common cause of monocular visual impairment among young and middle-aged adults[2].

1.2 The Pathophysiology and Etiology

The first light enters the eye. Cornea refract the light and moves towards the pupil, after passing the pupil, the light rays falls on the lens of the eye, the lens of the eye do like a cornea it refract the light and brings in focus, the lens focus light to the back of the eye in fovea, the photoreceptor nerve cells of the retina transforms the light into electrical impulses, then electrical impulses are collect to the optic nerve of the eye, which transmits the information to the brain, since both the eyes have different fields of vision, because of different visual fields, each eye gives

different information to the brain due to different angles of scene, along the way at the optic chiasma the nasal nerves from each optic nerve cross over to collect the information from the left and right side of the field of

vision in both eyes, the information is now received by the visual cortex, which interprets the image at this point [3-5].

Child with amblyopia will not be able to focus properly with one of their eyes. The other eye will make up for the problem, so much so that the affected eye suffers as a result. The eye with amblyopia will not receive clear images; the brain won't receive clear data, and will eventually start to ignore it. In many cases the brain and the good eye make up for the shortfall so well that the child does not notice he/she has a problem. That is why amblyopia is often first detected after a routine eye test [6-8].

1.3 Prevalence of Amblyopia

The prevalence of amblyopia is 1-5% in the total world population [2], and its affecting approximately 2 to 3 out of every 100 children[9], studies show that the prevalence of amblyopia is 3.9% in Qassim province, Kingdom of Saudi Arabic[10, 11], 1.88% in Iran[12], and 2.6% and 2.5% in west of Sydney/Australia [13].

1.4 Symptoms and signs

Symptoms of amblyopia to look for in a child include: poor vision in one eye or overall poor vision, squinting, tilting the head or closing one eye to see, poor depth perception that mean difficulty judging relative distances between objects, an inward- or outward-wandering eye, and headaches [6-8].

1.5 Types of amblyopia

Depending on the causes of amblyopia it is divided into four types: The first type is Strabismic amblyopia, when the eyes are not straight, and one eye may turn in, out, up or down, so the brain ignores the visual input from the misaligned eye, and this is the most common cause of amblyopia [14, 15]. The Second type is deprivation amblyopia caused by destruction the light that enters the eye, such as eyelid ptosis, cornea opacities, cataracts, vitreous hemorrhage among others [16-18]. The third type is refractive amblyopia, it is uncorrected refractive errors, there are two main types of refractive amblyopia, the first is anisometropic amblyopia refers to unilateral amblyopia caused by a distinct refractive error of each eye, (1.0–1.5) D or more anisohyperopia, (2.0) D or more anisoastigmatism, and (3.0–4.0) D or more anisomyopia, and the second type is isoametropic amblyopia occurs when both eyes are amblyopic from a significant yet similar refractive error, (5.0–6.0) D or more of myopia, (4.0–5.0) D or more of hyperopia, or (2.0–3.0) D or more of astigmatism [15]. The last type is reverse amblyopia, which is a result of the bad use of atropine or patching during amblyopia treatment, and this affect visual acuity, binocularity, contrast sensitivity, grating acuity, and central versus eccentric fixation[15, 19].

1.6 Diagnosis

There are many components for diagnostic procedures, such as visual acuity test like preferential looking techniques (Teller acuity cards), Kay

pictures, and Cardiff cards, tests of stereopsis and binocular vision to detect 3D, cover-uncover and alternate-cover testing to detect strabismic amblyopia, cycloplegic refraction and retinoscopy to detect refractive amblyopia[20, 21].

The diagnosis of unilateral amblyopia is made when the patient must have a condition that can cause unilateral amblyopia, such as strabismus, refractive, or a deprivational cause (ptosis, cataract, etc.), and then the patient have asymmetric acuity that expected in acuity tests or persists after treatment[20].

1.7 Treatment of Amblyopia

The modality of treat amblyopic patients consist of traditional occlusion treatment by occluding the dominant eye either by patching or atropine [22], or modern treatment like specific video games, perceptual learning, dichoptic training, and others [23, 24].

Amblyopia can be efficiently treated in children usually before the age around 8years[2]. In children the principle of treatment is occlusion therapy that targets the dominant eye by full-time or part-time occlusion or by using atropine drops [22].

While studies show that amblyopia treatment can improve visual acuity, stereo acuity, and/or contrast sensitivity in adult by modern treatment programs. There are specific video games that induce plasticity and stimulate neural changes leading to improvement in visual acuity

and contrast sensitivity, the amblyopic patients will play either action (Medal of Honor) or non_action (SimCity) video games, with both binocular or monocular tasks [23].

For strabismus and deprivation amblyopia, surgery for extra-ocular muscles and specific eye exam training may shows improvement[25].

1.8 Significance

Amblyopia is an understudied and neglected public health problem that can impair children's lives. Compliance is an important factor affecting the outcome.

Knowing the compliance rate to eye patching in the treatment of amblyopia and predicting significant factors affecting it is important to put plans and methods to overcome the problem .

Patients with poor compliance rate should be followed up, and taught about the importance of patching to their eye's health.

1.9 Objectives

- **General Aim:**

To determine the compliance rate to eye patching among amblyopic patients in NNUH.

- **Objective:**

To find out how patient compliance is affected by family and child demographic factors.

1.10 Literature Review

To our knowledge, there is no reported data available in the literature about the prevalence and etiology of low vision in children patients in West Bank.

But a study was conducted in Gaza in 2016. The main aim of the study was to find out the prevalence and etiology of low vision at Al-Noor center of the visually impaired, Gaza Strip, Palestine. This retrospective study depended on the observation of 423 cases, using a convenience sampling. The information gathered from the files included: date of first consultation, gender, age, systemic diseases, parental congruity, causes of visual impairment as diagnosed by an ophthalmologist and types of optical aids prescribed. The majority of patients 202 (47.7%) were from the age group between 6-12years old. Two hundred and twelve (50.1%) of the subjects were males and 211 (49.8%) females. The main causes of low vision were amblyopia among patients in the zero to five years age group, retinitis pigmentosa among the 6-12 years age group and cataract, macular dystrophies and ocular albinism among the 13-18 years of age[26].

Another several studies conducted to assess the compliance rate among affecting treatment of amblyopia at the global level.

In Oman, a nonrandomized clinical intervention pilot study was performed in 2009 to obtain data about the level of compliance and factors influencing compliance in patients undergoing therapy for amblyopia. The total number of families with a child (aged 2-12 years) was 31, and were treated for unilateral amblyopia at the pediatric ophthalmology clinic of Sultan Qaboos University Hospital, participated for one-month study. Parents were interviewed and filled a closed-ended questionnaire. Clinical data included, visual acuity, refraction, diagnosis and treatment, for each patient were collected from the hospital chart and was filled in a data collection sheet. Compliance with occlusion therapy was estimated by self-report accounts of parents and was divided into good, partial, or poor. Association between various factors and degree of compliance was tested using logistic regression modeling. Only 14 (45%) patients experienced good compliance to occlusion therapy. 17 (55%) patients were noncompliant. There was significant correlation between visual acuity and compliance. p -value (0.008). Factors affect the compliance were studied (age at onset of therapy, use of glasses, gender, types of amblyopia). (32%) of families expressed a desire for more information about the disease, (58%) of parents did not understand the meaning of amblyopia. [27].

Another retrospective cross- sectional study was conducted in 2012 in Saudi Arabia at Pediatrics Ophthalmology clinic at the King Abd ulaziz University Hospital (a tertiary eye hospital) and included 37 families with a child diagnosed with unilateral amblyopia (age range 3–16 years). Data were gathered through interviews and from hospital charts. In the

interviews included questions that sought information with regard to four domains; knowledge, attitude, insight and community's effect. A score representing each domain was given to every family then they correlated these scores with family's compliance percentage. Compliance rate was about 66.68%. The insight and attitude domains were statistically significant correlated with compliance; p-value 0.002 and 0.004, respectively. However, the knowledge and community's effect domains were not; p-value 0.084 and 0.114, respectively[28].

Another retrospective and prospective observational study was conducted in the pediatric ophthalmology clinic of Menelik 2 referral hospital in Addis Ababa, Ethiopia, in the period March 2015- June 2015, among children ages 4-8 year diagnosed with amblyopia. This study aimed to determine factors associated with higher compliance rate in amblyopia treatment.

Demographic and clinical data were gathered from charts. Parents were asked to estimate the number of hours of patching for the previous week, and then filled a questionnaire about compliance and factors affecting patching including social stigma and side effects of patching. Results revealed that 53 patients (25males, 28 female) of mean age (6.4+- 1.3 year) were involved in the study. Forty-one (77.3%) were resident of Addis Ababa, (73.6%) spoke Amharic. Strabismic amblyopia was identified in 68% of the patients, Anisometropic amblyopia was found in 11.3% of the patients, and a combined mechanism was found in 20.7% of them. Mean

period of treatment was 19 months. About one-third of the parents (28%) were non-compliant to the amblyopia treatment. There was significant association between parental educational level and compliance ($p=0.003$). Residual amblyopia also significantly associated with compliance to patching ($p=0.001$) [29].

Chapter Two

Methodology

2. Introduction

In this chapter we will discuss the methodology of the study. It includes the study design, study sampling and setting, inclusion and exclusion criteria, data collecting procedures and tools, data analysis plans, and ethical consideration of the study.

2.1 Study Design

The study we used was a cross-sectional design.

2.2 Sampling and study sitting

We decided to study all the cases attending the ophthalmology department at NNUH and undergoing occlusion therapy by using convenience sampling through the period 1st of October 2017 to the 1st of December 2018, and about 80 cases were collected and followed up during this period.

2.2.1 Inclusion criteria

- 1- Unilateral amblyopia
- 2- Attending the Pediatrics Ophthalmology clinic at An-Najah University Hospital (a tertiary eye hospital).
- 3- Male and female Individuals.

4- Age range 3–9 years.

2.2.2 Exclusion criteria

1. Patients with eye problems such as ocular trauma or surgery.
2. Patients having ocular cause for reduced visual acuity.

2.3 Data collection procedure

- IRB approval was obtained firstly.
- The required permissions from NNUH were taken.
- A pilot study was performed.
- The consent form was obtained from the parents of participant children according to inclusion and exclusion criteria,

2.4 Data collection tools

2.4.1 Questionnaire

In general, it was developed by the principal investigator, and then rechecked by the supervisors. Annex 3

2.4.1.1 Description

- Questions will be asked about the number of hours that parents accounted for their child's eye patching during one month before the follow up visit.

- Demographic questions for both the family and the child including (residence, family size, parent's level of educations, parent's occupation, child perception, gender, and child age).
- Questions concerning the ocular factors for the patient (type of amblyopia, amblyopic eye, duration of patching (hour/day), duration of treatment (months).

2.5 Plan of Data Analysis

Non-Compliance rate= prescribed hours- administrated hours / prescribed hours .

Then compliance rate calculated and graded into:

- Inadequate less than 50% of prescribed hours
- Adequate more than 50% of the prescribed hours

Adequate compliance divided into excellent $\geq 90\%$, very good 80-90%, and good 50-80%.

Factors tested for analysis

- Family size.
- Parent's Level of education.
- Residence.
- Parent's occupation.

- Child perception.
- Gender.
- School type.
- Age.
- Duration of treatment(months)
- Duration of eye patching (hour/day).

Data was entered to the computer and statistical analysis by using ssps (version 20).

- We used university analysis plan.
- We used Chi square testing to examine:
 - The association between the various risk factors (demographics, ocular) and the dependent variable compliance to eye patching.
 - The association between child and parent's perception and compliance to patching.
- We also used one way Anova testing to examine the association between compliance and various continuous variables demographic and ocular factor (age, family size, treatment duration, and duration of patching).

2.6 Ethical Consideration

- ☐ indeed, this research is deemed a minimal risk one, and the expected gain utility for both participants and scientific advantages exceeds any potential risks.
- ☐ Approval from the dean of faculty of graduate studies and IRB (Institutional Review Board committee) were obtained.
- ☐ Approval from the director of NNUH had been taken.
- ☐ The nature and the purpose of the study was clearly explained to the participants through a written consent form that was obtained from them prior to participation.
- ☐ Participants were assured that all gathered data were confidential and available for the researchers and supervisors only, and the questionnaires were kept in a secure place in addition to using codes instead of names during data analysis and presentation.
- ☐ It was explained to the participants that they had the right to withdraw from the research anytime.
- ☐ The consent form is available in annex2.

2.7 Pilot Study

The principal investigator was trained how to display the questions to the participants in a clear accurate way under the supervision of Dr.Yousef Shanti. Pilot study had the same data collection procedure that we used in conducting the entire research, except that the sample was drawn from accompanied patients with appointments to the eye centre at An-Najah National hospital. (20-30) participants were asked to complete the questionnaire to ensure the feasibility of the study and to test data collection tools, appropriateness of the study settings, format and clarity of the questions, the required time for every participant to complete the whole process. During the pilot study, face-to-face interviews were carried out. The main purpose was to ascertain that a similar manner used during study conduction. Gathered data also was included during this process.

Chapter Three

Results

3. Introduction

in this chapter results are introduced including the demographic characteristics of the participants, the degree of perception of the child and parents toward patching, and compliance rate and its grades. It also includes the univariate analysis for factors affecting the compliance rate.

3.1 Descriptive Analysis

Demographic and ocular characteristics of the participants (Table 1)

The total number of the patients participated in the study and who were met for the inclusion criteria was 80. The mean age of the participants was (5 ± 1.9) , range (3-9 years), of those 52.5% (42/80) was females and 47.5% (38/80) were males. About 57.5 % (46/80) of the participants had amblyopia in the left eye and 42.5 % (34/80) of them had in the right one. About the cause of amblyopia, anisometropia accounted for 37.5% (30/80) among the patients, strabismus accounted for 27.5% (22/80), stimulus-deprivation amblyopia accounted for 2.5(2/80), high ametropic type accounted for 15%(12/80), meridional type accounted for 3.8%(3/80), and combined type (anisometropic-strbismic) type accounted for 11.3%(9/80). The mean duration of treatment for amblyopia among the participants was (18.02 ± 14.50) . The mean duration of eye patching hour/day was (3.19 ± 1.82) . About 45% (46/80) of the patients were attending the

governmental schools, 17.5% (14/80) of them were attending the non-governmental school, and 37.5% (30/80) were attending kindergartens. The mean number of the individuals in the family was (5.62 ± 1.32). Most of the participant's fathers had school educational level 60% (48/80), and about 40% (32/80) had high educational level. While most of the participant's mothers had high educational level 57.5% (46/80) and about 42.5% (34/80) had school educational level. Most of the participant's fathers were working as laborers 38.8% (31/80), 11.3% (9/80) were employee, 11.3% (9/80) were dealers, 8.8% (7/80) were teachers, and 29.8% (24/80) were with different jobs. Most of the participant's mothers were housewives 80% (64/80), and 20% (16/80) were working. Most of the participant's families were living in the suburbs 55% (44/80), while 45% (36/80) were living in the city. (Table 1). About the perception of parents and their children, 97.5% (78/80) of the parents believed that eye patching is important while 2.5% (2/80) did not. About 61.3% (49/80) of the patients refused using the patch while 38.7% (31/80) did not. Also about 76.3% (61/80) of patients felt uneasy with the patch, while 23.7% (19/80) did not (Table 3). About 82.5% (66/80) of parents were always watching their child while wearing the patch, 13.8% (11/80) of them were often watching and 3.7% (3/80) of them were sometimes watching their children while wearing the patch. About compliance rate, all the participants experienced adequate compliance rate (81%). About 16.2% (13/80) of them experienced excellent compliance rate $\geq 90\%$, 42.5% (34/80) experienced very good

compliance rate 80-90%, and 41.3% (33/80) experienced good compliance rate 50-80 %. (Figure1).

3.2 Univariate Analysis

There was no significant association ($p\text{-value} > 0.05$) between compliance and all the factors except for gender and place of residence which were statically significant, ($p\text{-value} = 0.0172, 0.003$) respectively. For gender factor, about 26.2% (11/42) female experienced excellent compliance (compliance rate $> 90\%$), compared with 5.3% (2/38) of male patients. About 31% (13/42) of female patients experienced very good compliance (compliance rate 90-80%) compared with 55.3% (21/38) of male patients. Also 42.9% (18/42) of female patients experienced good compliance (compliance rate 50-80%), compared with 39.5 % (15/38) of male patients. For the place of residence, about 27.8% (10/36) of patients lived in the city had excellent compliance compared with 6.8% (3/44) lived in the suburbs. About 50% (18/36) of them lived in the city had very good compliance compared with 36.4% (16/44) who lived in the suburbs. While 22.2% (8/36) patients lived in the city experienced good compliance compared with 56.8% (25/44) of them lived in the suburbs ($p = 0.003$). (Table 2).

Table 1. Demographic & ocular characteristics of the participants.

Variable	Statistics
Gender	
Male	38 (47.5%)
Female	42(52.5%)
Age	5 \pm 1.9
Amblyopic eye	
Left	46(57.5%)
Right	34(42.5%)
Cause of amblyopia:	
Anisometropic	30(37.5%)
Strabismic	22(27.5%)
Stimulus -deprivation	2(2.5%)
High ametropic	12(15%)
Meridional	3(3.8%)
Compined (aniso-strabismic)	9(11.3%)
Duration of treatment (months)	18.02 \pm 14.5
Duration of eye patching (hr/day)	3.19 \pm 1.82
School type	
Governmental	36(45%)
Non-governmental	14(17.5%)
Kindergarten	30(37.5%)
Family size (number of individuals)	5.62 \pm 1.32
Father level of education	
School	48(60%)
College, University	32(40%)
Non literate	0(0%)
Mother level of education	
School	34(42.5%)
College, University	46(57.5%)
Non literate	0(0%)
Father occupation	
laborer	31(38.8%)
employee	9(11.3%)
teacher	7(8.8%)
dealer	9(11.3%)
others	24(29.8%)
Mother occupation	
Housewife	64(80%)
Working	16(20%)
Residence	
City	36(45%)
suburbs	44(55%)

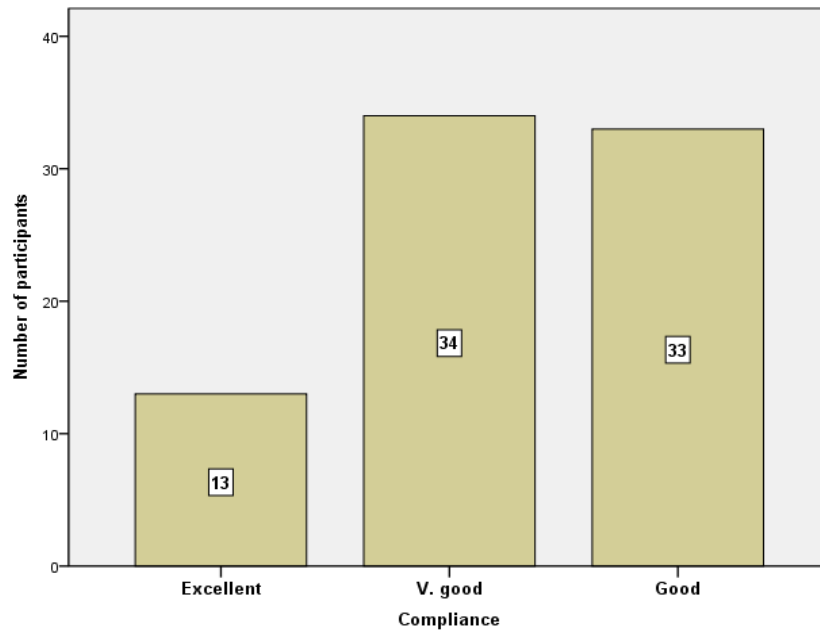


Figure 1. Distribution of compliance among participants

Table 2. Univariate analysis for compliance to patching

	Excellent compliance	Very good compliance	Good compliance	P value
Gender				
Male	2(5.3%)	21(55.3%)	15(39.5%)	0.0172
Female	11(26.2%)	13(31%)	18(42.9%)	
Age	5.7±1.57	5±1.76	4.8±2.2	0.346
Amblyopic eye				
Left	7(15.2%)	17(37%)	22(47.8%)	0.370
Right	6(17.6%)	17(50%)	11(32.4%)	
Cause of amblyopia				
Anisometropic	4(13.3%)	14(46.7%)	12(40%)	0.092
Strabismic	1(4.5%)	9(40.9%)	12(54.5%)	
Stimulus-deprivation	0(0%)	2(100%)	0(0%)	
High ametropic	5(41.7%)	5(41.7%)	2(16.7%)	
Meridional	0(0%)	2(66.7%)	1(33.3%)	
Compined (aniso-strabismic)	2(22.2%)	2(22.2%)	5(55.6%)	
Duration of treatment (months)	19.53±12.80	16.11±12.38	19.39±17.11	0.605
Duration of eye patching (hr/day)	2.96±1.05	3.08±2.04	3.39±1.85	0.703

School type				
Governmental	6(16.7%)	16(44.4%)	14(38.9%)	0.178
Non-governmental	5(35.7%)	5(35.7%)	4(28.6%)	
Kindergarten	2(6.7%)	13(43.3%)	15(50%)	
Family size (number of individuals)	5.6±1.19	5.03±1.15	5.81±1.53	0.513
Father level of education				
School	7(14.6%)	23(47.9%)	18(37.5%)	0.486
College,	6(18.8%)	11(34.4%)	15(46.9%)	
University	0(0%)	0(0%)	0(0%)	
Non literate				
Mother level of education				
School	3(8.8%)	18(52.9%)	13(38.2%)	0.161
College,	10(21.7%)	16(34.8%)	20(43.5%)	
University	0(0%)	0(0%)	0(0%)	
Non literate				
Father occupation				
Laborer	7(22.6%)	13(41.9%)	11(35.5%)	0.555
Employee	1(11.1%)	6(66.7%)	2(22.2%)	
Teacher	0(0%)	1(14.3%)	6(85.7%)	
Dealer	2(22.2%)	3(33.3%)	4(44.4%)	
Others	3(12.5%)	11(45.8%)	10(41.7%)	
Mother occupation				
Housewife	10(15.6%)	25(39.1%)	29(45.3%)	0.325
Working	3(18.8%)	9(56.3%)	4(25%)	
Residence				
City	10(27.8%)	18(50%)	8(22.2%)	0.003
Suburbs	3(6.8%)	16(36.4%)	25(56.8%)	

Table 3. Perception toward eye patching

Question	Yes	No
Do you believe that eye patching is important for your child?	78(97.5%)	2(2.5%)
Does your child refuse using the patch?	49(61.3%)	31(38.7%)
Does your child feel uneasy with the patch?	61(76.3%)	19(23.7%)

Chapter Four

Discussion

4.1 Main Findings

Amblyopia is classified as one of the most common cause of visual impairment in children. The mainstay type of therapy is patching of the good eye. Compliance with patching therapy is affected by several factors that many studies had explored as well as our study did so at NNUH. The findings in our study suggested that approximately 81% of children were found to be adherent to patching in the treatment of amblyopia. This rate was very high as we expected and much higher than other studies which assessed compliance rate to patching in amblyopia treatment. In Oman, a pilot nonrandomized clinical intervention study was conducted in 2009 in Sultan Qaboos hospital to assess the compliance rate to patching therapy and factors affect compliance of amblyopic children attending the ophthalmology clinic, in which about 45% of patients were adherent to patching therapy [27]. In Saudi Arabia, in 2012, also a similar study was conducted to determine the compliance rate to patching among children attending the ophthalmology clinic at the king Abdulaziz university hospital in which the compliance rates was 66.68% [30]. And another study was conducted in Ethiopia at Menelik 2 referral hospital in Addis Ababa in 2016 in which compliance rate was 72% [29]. The major differences between these studies in compliance rate could be due to variation in methodology adopted. And it may be due to differences in the sample size especially our study sample was the largest among these studies , also the

period given in our study for calculating the hours for patching is more than the studies mentioned. For example in the study conducted in Menilik 2 referral hospital in Ethiopia, the parents would calculate the prescribed hours for patching within one week [29], but in our study the period is within one month and this may lower the compliance rate because time is short for making the child used to patching. Another reason is the age range recruited. In our study the age range was 3-9 years but in other studies like the study conducted in the king Abdulaziz university hospital in Saudi Arabia was 3-16 which is higher than our age range, so this makes the parents not always forcing or circumventing or encouraging their children to put the patch. On the other hand, our study depended on parental self-report on calculating the hours of patching, thus may make the parents overestimate the hours more than their child actually did. But in fact in our study the doctor efforts in persuading and encouraging the child and his family to adhere to patching played a good role. Also the weekly follow up for some patients and doctor cooperation played another role in rising the compliance rate. Also Compliance with occlusion therapy for amblyopia can also be measured electronically by means of an occlusion dose monitor (ODM). Studies using ODMs have also revealed low compliance rates ranging 48–58%[31]. Other reason for high compliance rate is the availability and nature of the patches. The studies we compared with our study were conducted before our study, so the nature of the patches maybe more developed than those before 4-8 years, and in that time maybe the patches are not available all the time, but nowadays they are available and

not expensive. About the factors affecting the compliance, in our study, many factors were tested like gender, age, age at diagnosis, family size, residence, school type, parent's level of education, parent's occupation, child and parent's perception, type of amblyopia, amblyopic eye, Duration of treatment (months), duration of eye patching (hour/day). Only the gender and place of residence among all factors have a significant influence on compliance, $p\text{-value} = 0.0172, 0.003$ respectively. Other factors did not emerge as significant predictors of compliance. Regarding the gender, very good compliance percentage in females (55.3%) and 31% in males. This may be due to cultural difference, customs and traditions that are more concerned with the girl and her future. For the place of residence, about 27.8% of patients who lived in the city had excellent compliance compared with 6.8% lived in the suburbs. About 50% of them lived in the city had very good compliance compared with 36.4% lived in the suburbs. While 22.2% of patients lived in the city experienced good compliance compared with 56.8% of them lived in the suburbs. Thus may reflect that the follow up for patients among children live in the city is more than those in the suburbs which may due to the ability to reach the hospital is easier than in the suburbs. and as we know eye screening programs are recommended in schools, in both the city and suburbs areas, but these programs usually start in the city first, then the suburbs areas. It maybe not possible to reach all the remote areas, so early detection of any problem in their eyes will not be achieved. On the other hand, the study conducted In Saudi Arabia at the King Abdulaziz university hospital, the insight and attitude domains

showed significant correlation with compliance p-values were (0.002, 0.004) respectively [28]. In our study child and parental perception were studied. About 97.5% of the parents believed that eye patching is important while 2.5% of them did not. About 61.3% of the patients refused using the patch while 38.7 % of them did not. Also about 76.3% of patients felt uneasy with the patch, while 23.7% of them did not. About 82.5% of parents were always watching their child while wearing the patch, 13.8% of them were often watching and 3.7% of them were sometimes watching their children while wearing the patch. Thus may reflect that the degree of insight and attitude of parents play a significant role in rising the adherent rate in both studies. In the study conducted in Ethiopia at Menilik 2 hospital, parental education showed significant association with compliance (p value 0.003) [29], While our study did not show that, p-value>0.05. Also competing priorities and life stressors like busy work and home life accounted for 30.2% of noncompliance to treatment. Although this can be explained by the spatial or geographical dimension that may lead to cultural and educational level differences between the two countries. In Oman in 2009, at Sultan Qaboos hospital, the visual acuity showed strong association with compliance rate, (P-value 0.008). This would strengthen their study in which our study had not tested for. But about 32% showed need for more information about the disease, about 58% of parents did not understand that amblyopia means decreases vision and about 50% were confused by information given in the clinic, thus may make the compliance rate in our study more than their study in Oman [27].

4.2 Strength and Limitations

4.2.1.Strengths of the study

To the best of our knowledge, it is the first study that determined the compliance rate to patching in the treatment of amblyopia among children in Palestine.

4.2.2.Limitations of the study

1. The study was conducted in Nablus city only and this may not be representative to other places in Palestine. Although NNUH covers the northern region of the West Bank
2. This study does not cover all ophthalmology clinics in Palestine since it was conducted only in one hospital in Nablus.
3. The nature of self- reported accounts of parents of patching hours, which may lead to recall bias and may also leads to overestimation of hours by the parents yielded in high compliance rate.
4. Bad political and socio-economic situation
5. Very limited and unrelated studies were conducted about this topic in Palestine.
6. The use of cross sectional study design where there is no temporal relationship.

4.3 Conclusions

Amblyopia is an understudied and neglected public health problem that can impair children's lives. Compliance is an important factor affecting the outcome. The more we understand the influencing factors, the greater the positive effect on treatment. In this study the average compliance rate was relatively high (81%) comparing to other studies. Gender and place of residence are the significant factors affecting the compliance.

4.4 Recommendations

- We recommend large scale studies to be carried out to have accurate estimation of compliance rate at the national level.
- We also recommend to develop wide and regular eye screening programs especially the preschool level (children 4-5 years).
- More specialized staffs and medical centers for vision screening are needed to cover all the remote areas.
- We recommend more awareness programs about the importance of patching in treatment of amblyopia for the parents and their children and how reinforcement and reward systems work in increasing the rate of compliance for the children undergoing patching therapy.
- Holding of free medical days for vision screening for the children aging 3-9 years in the remote areas will help in early detection of the disease.

References

1. Elflein, H.M., et al., **The prevalence of amblyopia in Germany: data from the prospective, population-based Gutenberg Health Study.** Dtsch Arztebl Int, 2015. **112**(19): p. 338-44.
2. Sale, A. and N. Berardi, **Active training for amblyopia in adult rodents.** Front Behav Neurosci, 2015. **9**(281).
3. Yang, J., et al., **Quality Index for Stereoscopic Images by Separately Evaluating Adding and Subtracting.** PLoS One, 2015. **10**(12): p. e0145800.
4. Guo, C.X., et al., **Binocular treatment of amblyopia using videogames (BRAVO): study protocol for a randomised controlled trial.** Trials, 2016. **17**(1): p. 504.
5. Horridge, G., **The eye of the firefly Photuris.** Proceedings of the Royal Society of London B: Biological Sciences, 1969. **171**(1025): p. 445-463.
6. Chua, B. and P. Mitchell, ***Consequences of amblyopia on education, occupation, and long term vision loss.*** British Journal of Ophthalmology, 2004. **88**(9): p. 1119-1121.
7. Sanchez, I., et al., **Advantages, limitations, and diagnostic accuracy of photoscreeners in early detection of amblyopia: a review.** Clin Ophthalmol, 2016. **10**: p. 1365-73.

8. Simons, K., **Amblyopia characterization, treatment, and prophylaxis.** *Surv Ophthalmol*, 2005. **50**(2): p. 123-66.
9. *Amblyopia: etiology, diagnosis, and treatment.* American Academy of Ophthalmology. *J Ophthalmic Nurs Technol*, 1994. **13**(6): p. 273-5.
10. Yuksel, E., et al., **The Management of Refractory Dry Eye With Semi-Scleral Contact Lens.** *Eye Contact Lens*, 2016.
11. Aldebasi, Y.H., **Prevalence of amblyopia in primary school children in Qassim province, Kingdom of Saudi Arabia.** *Middle East Afr J Ophthalmol*, 2015. **22**(1): p. 86-91.
12. Hashemi, H., et al., **The prevalence of amblyopia in 7-year-old schoolchildren in Iran.** *Strabismus*, 2014. **22**(4): p. 152-7.
13. Attebo, K., et al., **Prevalence and causes of amblyopia in an adult population.** *Ophthalmology*, 1998. **105**(1): p. 154-159.
14. West, S. and C. Williams, **Amblyopia in children (aged 7 years or less).** *BMJ clinical evidence*, 2016. **2016**.
15. Siddiqui, A.H., et al., **Analysis of association between type of amblyopia and gender at a tertiary care hospital in Karachi.** *JPMMA*, 2016. **66**(5): p. 545-548.

16. Elflein, H.M., et al., **The prevalence of amblyopia in Germany: data from the prospective, population-based Gutenberg Health Study.** Deutsches Ärzteblatt International, 2015. **112**(19): p. 338.
17. Griepentrog, G.J., N. Diehl, and B.G. Mohnney, *Amblyopia in childhood eyelid ptosis.* American journal of ophthalmology, 2013. **155**(6): p. 1125-1128. e1.
18. Rajavi, Z. and H. Sabbaghi, **CONGENITAL CATARACT SCREENING (PERSPECTIVE).** 2016.
19. Kirandi, E.U., et al., **Risk factors for treatment failure and recurrence of anisometropic amblyopia.** International ophthalmology, 2017. **37**(4): p. 835-842.
20. Holmes, J.M. and M.P. Clarke, **Amblyopia.** The Lancet, 2006. **367**(9519): p. 1343-1351.
21. Yared, A.W., et al., **Prevalence of refractive errors among school children in gondar town, northwest ethiopia.** Middle East Afr J Ophthalmol, 2012. **19**(4): p. 372-6.
22. Sachdeva, V., et al., **"Combined Occlusion and Atropine Therapy" Versus "Augmented Part-Time Patching" in Children with Refractory/Residual Amblyopia: A Pilot Study.** Middle East Afr J Ophthalmol, 2016. **23**(2): p. 201-7.

23. Tsirlin, I., et al., **Behavioral Training as New Treatment for Adult Amblyopia: A Meta-Analysis and Systematic Review** *Meta-Analysis of Behavioral Training for Amblyopia*. Investigative ophthalmology & visual science, 2015. **56**(6): p. 4061-4075.
24. Li, J., et al., **Dichoptic training improves contrast sensitivity in adults with amblyopia**. Vision Res, 2015. **114**: p. 161-72.
25. Rutstein, R.P., **Management of Strabismus and Amblyopia**. 2001, LWW.
26. Awad, K.S., et al., *The Prevalence and Major Causes of Low Vision among Children in Gaza strip, Palestine*. IUG Journal of Natural Studies, 2017.
27. Al-Zuhaibi, S., et al., *Compliance of amblyopic patients with occlusion therapy: a pilot study*. Oman journal of ophthalmology, 2009. **2**(2): p. 67.
28. Al-Yahya, A., et al., *Compliance to patching in the treatment of amblyopia*. Saudi Journal of Ophthalmology, 2012. **26**(3): p. 305-307.
29. Mekonnen, B.D., **Characterizing Parental Adherence To Amblyopia Therapy At Menelik II Referral Hospital In Addis Ababa, Ethiopia**. 2016.

30. Al-Yahya, A., et al., *Compliance to patching in the treatment of amblyopia*. **Saudi Journal of Ophthalmology**, 2012. **26**(3): p. 305-307.
31. Stewart, C., et al., *Design of the monitored occlusion treatment of amblyopia study (MOTAS)*. **British Journal of Ophthalmology**, 2002. **86**(8): p. 915-919.

Annex 1

Institutional review board(IRB) approval the study protocol

An-Najah
National University
Faculty of medicine
& Health Sciences
Department of Graduate
Studies



جامعة النجاح
الوطنية
كلية الطب وعلوم الصحة
دائرة الدراسات العليا

IRB Approval Letter

Study Title:

"Epidemiology of Compliance to Patching in the Treatment of Amblyopia in AN-Najah University Hospital, Palestine. A cross sectional study"

Submitted by:

Rawan Absah., Dr. Yusef Shanti , Dr Waleed Sweileh

Date Reviewed:

22nd April 2018

Date Approved:

2nd July 2018

Your Study titled: "Epidemiology of Compliance to Patching in the Treatment of Amblyopia in AN-Najah University Hospital, Palestine. A cross sectional study" with archived number (2) June ,2018 was reviewed by An-Najah National University IRB committee and was approved on 2nd July 2018.

Hasan Fitian, MD

IRB Committee Chairman
An-Najah National University



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Annex2

Consent Form



جامعة النجاح الوطنية

قسم الابحاث العلمية

قسم الصحة العامة

مستشفى جامعة النجاح

نموذج موافقة مسبق للاشتراك في بحث علمي

هذا نموذج اقرار موافقة للاشتراك في البحث المدرج ادناه حيث سيتم تعبئته من قبل المرضى الذين أبدوا استعدادهم للمشاركة في البحث العلمي.

عنوان البحث: نسبة الالتزام بالعلاج لمرض كسل العين والعوامل المؤثرة في علاجه في مستشفى جامعة النجاح.

الباحثة: روان عبسة

المشرفون: د. يوسف الشنطي و د. وليد صويلح.

الجهة المشرفة على البحث: كلية الدراسات العليا - قسم الصحة العامة.

هذا النموذج يتكون من ثلاثة اقسام:

- القسم الاول: يعرض طبيعة البحث مع اعطاء تفاصيل عن المرض.
- القسم الثاني: يحتوي على نموذج اقرار مسبق للمشاركة في البحث.
- القسم الثالث: استبيان يتم من خلاله الاستفسار عن معلومات شخصية، ديموغرافية، والعوامل التي تلعب دورا في حدوث المرض، يتم تعبئته بمساعدة الباحث.

مقدمة:

عزيزي المشارك/ة:

انا الباحثة (روان عبسة) في جامعة النجاح الوطنية، اود منك ان تقوم بالمشاركة في بحثنا المتعلق بمعرفة نسبة الالتزام بتغطية العين في علاج مرض كسل العين في مستشفى جامعة النجاح والعوامل المساعدة على ذلك.

ان مشاركتك في هذا البحث تعتبر طوعية ولك الحق في ابداء موافقتك او رفضك للمشاركة في البحث بعد اخذ الوقت الكافي من التفكير، مع العلم انه سوف يتم التعامل مع بياناتك بسرية تامة واستخدامها فقط في اغراض البحث العلمي، ولك الحق في الاستفسار عن اي جزء غير مفهوم الان او فيما بعد، حيث انه بإمكانك الاحتفاظ بورقة المعلومات المتعلقة في البحث معك، وستجد الوقت الكافي من قبل الباحثين للإجابة عن جميع استفساراتك.

المعلومات المتعلقة بالمشاركين:

- ان مشاركتك في البحث اختياريه تماما، بإمكانك الانسحاب من البحث بعد اعلامنا عن ذلك في اي وقت وانت غير مضطر لإبداء اسباب انسحابك ولا يترتب على انسحابك اي تبعات.
- لن يدفع لك للمشاركة في هذا البحث.
- سيتم اجراء الفحوصات وتعبئه الاستبيان في مكان مغلق يراعى فيه خصوصيه المشاركين.
- سوف يتم التعامل بالمعلومات المتعلقة بك وبناتج الفحوصات الخاصة بك بسريه تامة، ولضمان حماية خصوصيتك سوف يتم تعبئه المعلومات باستخدام رمز سري.
- لا يعرف على هويتك الشخصية وسيتم عرض نتائج البحث من دون ذكر اسماء المشاركين.
- كل مريض له الحق في الاضطلاع على المعلومات ونتائج الفحوصات الخاصة به فقط.

القسم الثاني يحتوي على اقرار الموافقة على المشاركة في البحث:

اقرار من قبل المشارك في البحث:

انا الموقع ادناه (الاسم الثلاثي):.....

وافق بمحض ارادتي على المشاركة في البحث بعد اخذ الوقت الكافي لقراءة المعلومات المتعلقة بالبحث في الورقة السابقة وقد تلقيت نسخة للاحتفاظ بها , وقد تم اجابتي على جميع استفساراتي وتوضيح جميع المعلومات المبهمة بالنسبة لي واتي افوض طببي لإعطاء جميع المعلومات اللازمة لفريق البحث لأغراض البحث العلمي بشرط الحفاظ على السرية التامة , وانا اعلم ان توقيعني على هذا النموذج يعتبر تعبيراً صريحاً على موافقتي على المشاركة في البحث , واستطيع الانسحاب في اي وقت دون ابداء الاسباب .

التوقيع:..... التاريخ:.....

(ملاحظة: سوف يتم اخذ موافقة ولي الامر - القرابة من الدرجة الاولى _ في حال كان عمر المشارك اقل من 18 سنة).

اقرار من قبل الباحث:

أؤكد ان موافقة المريض على المشاركة في البحث كانت بمحض اختياره ولم يتعرض لأي ضغوطات للموافقة على الانضمام. وأؤكد انني بذلت قصارى جهدي لشرح جميع التفاصيل المتعلقة بطبيعة البحث والاهداف المرجوة من اجرائه بحيث يتسنى للمشارك فهم الموضوع على أكمل وجه من جميع النواحي، كما أؤكد انني اعطيت الوقت الكافي لكل مريض للإجابة عن التساؤلات التي دارت في ذهنه عن الموضوع.

الباحث:.....التوقيع:.....التاريخ:.....

Annex 3

استبيان

المعلومات التي سيتم جمعها من ملفات المستشفى

•الاسم:

•رقم الهاتف او الجوال:

•الجنس:

•العمر وقت التشخيص:

•التاريخ المرضي:

•التاريخ الجراحي(العين):

•العين المصابة بالكسل:

•سبب الاصابة بكسل العين:

•مدة العلاج حتى اللحظة(بالشهر):

•مدة تغطية العين(ساعة/اليوم):

نسبة الالتزام بالعلاج = مجموع عدد الساعات المطلوبة من قبل الطبيب شهريا -- مجموع عدد الساعات التي تم فعليا تغطية العين شهريا / مجموع عدد الساعات المطلوبة من قبل الطبيب شهريا

المعلومات التي سيتم جمعها من خلال المقابلة الشخصية:

المعلومات الديموغرافية للطفل:

•العمر (وقت الدراسة):

•الجنس: ذكر او انثى

•نوع المرسى: حكومية او غير حكومية

المعلومات الديموغرافية لعائلة الطفل:

•عدد افراد العائلة:

•المستوى التعليمي للأبوين:

•مهنة الأب

•مهنة الأم

•مكان السكن: مدينة، قرية، مخيم

معلومات عن إدراك الطفل والابوين عن اهمية تغطية العين بالعلاج

0هل تراقب طفلك وهو يضع الغطاء على عينه؟ دائما، غالبا، احيانا، ابدا

0هل تعتقد ان تغطية العين مهمة في العلاج؟ نعم، لا

0هل يرفض طفلك وضع الغطاء على عينه؟ نعم، لا

0هل يشعر طفلك بعدم الارتياح وهو يضع الطاء على عينه؟ نعم، لا

Annex 4

Data collection sheet (questionnaire)

Data will be collected from hospital charts:

- Name:
- Contact number:
- Sex:
- Age at the time of diagnosis & commencement of therapy:
- Past medical history:
- Past surgical “ocular surgery”:
- Amblyopic eye: (OD, OS)
- Cause of amblyopia:
- Duration of treatment (months):
- Duration of eye patching (hour/day):
- Compliance to treatment (the number of ophthalmologist’s prescribed hours per month –administrated patching hours per month /ophthalmologist’s prescribed patching hours per month)

Data will be collected through interview either in the clinic or over the phone:

- Child demographic information
 - Age at the time of the study.
 - Gender: male or female.
 - School type: governmental or non-governmental.
- Family demographic information
 - Family size: number of individuals.
 - Educational level:
 - Occupation of the mother, father.
 - Residence: city, village, camp.
- Parent's and child's perception:
 - Do you watch your child wearing the patch (always, often, sometimes, never)?
 - Do you believe that eye patching is important for your child? (Yes or No).
 - Does your child refuse use the patch? (Yes or No).
 - Does your child feel uneasy with the patch? (Yes or No).

جامعة النجاح الوطنية

كلية الدراسات العليا

نسبة الالتزام بالعلاج لمرض كسل العين والعوامل المؤثرة في علاجه في مستشفى جامعة النجاح

نابلس-فلسطين دراسة مقطعية

اعداد

روان عبسة

إشراف

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قدمت هذه الأطروحة استكمالاً لمتطلبات الحصول على درجة الماجستير في الصحة العامة بكلية الدراسات العليا في جامعة النجاح الوطنية في نابلس-فلسطين

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ب

نسبة الالتزام بالعلاج لمرض كسل العين والعوامل المؤثرة في علاجه في مستشفى جامعة النجاح نابلس-فلسطين دراسة مقطعية

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الملخص

مقدمة

مرض كسل العين هو عبارة عن انخفاض في حدة الرؤية في احدى العينين او كلاهما وهو من اهم اسباب ضعف النظر عند الاطفال ومعدل انتشاره في العالم حوالي 5%. عادة ما يرتبط مرض العين الكسولة بوجود حول او مشكلة في الانكسار في الصورة او وجود كليهما. تغطية العين السليمة لعدد معين من الساعات التي يصفها الطبيب هي الطريقة التقليدية والمثلى في علاج كسل العين، مع العلم ان الدراسات العلمية والسريية لم تثبت حتى الان وجود اي طرق علاجية اخرى. الهدف من الدراسة هو تقييم نسبة الالتزام بالعلاج لمرض كسل العين ودراسة العوامل المؤثرة في علاجه.

طريقة البحث: هذه الدراسة مقطعية. تم اخذ الحالات ما يقارب (80) طفلا تتراوح اعمارهم ما بين (3-9) سنوات من عيادة العيون في مستشفى جامعة النجاح ويعانون من مرض كسل العين، حيث يخضعون للعلاج هناك من قبل الدكتور يوسف الشنطي. تم تعبئة استبيان احتوى على معلومات ديموغرافية وطبية للطفل ومعلومات عن مدى إدراك الطفل واهله للمشكلة واهمية علاجها وتم حساب نسبة الالتزام بالتغطية كالتالي:

نسبة الالتزام بالعلاج = مجموع عدد الساعات المطلوبة من قبل الطبيب شهريا-- مجموع عدد الساعات التي تم فعليا تغطية العين شهريا / مجموع عدد الساعات المطلوبة من قبل الطبيب شهريا. وقد تم دراسة العوامل المؤثرة على نسبة الالتزام.

النتائج: بلغ اجمالي عدد المرضى الذين شاركوا في الدراسة وعلى استعداد ملء الاستبيان ما يقارب 80 طفل. توزعت الخصائص الديموغرافية كالتالي: كان معدل عمر الأطفال (1.5 ± 5) سنة. (52.5%) منهم اناث و(47.5%) ذكور. وبلغت نسبة الالتزام حوالي (81%). حوالي (16.2%) منهم شهدوا معدل التزام ممتاز، (42.5%) حققوا معدل التزام جيد للغاية، (41.3%) شهدوا معدل التزام جيد. فيما يتعلق بتصور الآباء وأطفالهم، اعتقد (97.5%) من الآباء أن تغطية العين أمر مهم. فيما (61.3%) من المرضى رفضوا استخدام اللصقة. (76.3%) من المرضى شعروا بعدم الارتياح مع اللصقة. واخيرا (82.5%) من الآباء كانوا يراقبون أطفالهم دائما أثناء ارتداء اللصقة. أظهر التحليل الاحصائي عدم وجود ارتباط بين نسبة الالتزام وجميع العوامل (p-value أكبر من 0.05) باستثناء الجنس ومكان الإقامة والتي كانت ذات دلالة إحصائية (p-value = 0.0172، 0.003) على التوالي. بالنسبة لعامل الجنس، شهدت (26.2%) من الإناث التزاما ممتازا، مقارنة بـ (5.3%) من المرضى الذكور. حوالي (31%) من المرضى من الإناث شهدن التزاما جيدا للغاية مقارنة بـ (55.3%) من المرضى الذكور. كما أن (42.9%) من المرضى الإناث أظهروا التزاما جيدا مقارنة بـ 39.5% من المرضى الذكور. بالنسبة لمحل الإقامة، كان حوالي (27.8%) يعيشون في المدينة يتمتعون بالالتزام ممتاز مقارنة بـ (6.8%) من الذين يعيشون في الضواحي. حوالي (50%) من الذين يعيشون في المدينة يتمتعون بالالتزام جيد للغاية مقارنة بـ (36.4%) من الذين يعيشون في الضواحي. بينما (22.2%) من المرضى الذين في المدينة عانوا من الالتزام الجيد مقارنة بـ (56.8%) من الذين يعيشون في الضواحي (p_value = 0.003).

الخلاصة: كسل العين هو مشكلة صحية عامة، ويمكن أن تضر بحياة الأطفال. الالتزام بالعلاج عامل مهم يؤثر على نتيجة الشفاء. إن معرفة معدل الالتزام لتغطية العين في علاج كسل العين والتنبؤ بالعوامل المهمة التي تؤثر عليه يساعد في الحد أو التقليل من المشكلة. من المهم وضع خطط وطرق للتغلب على المشكلة. تعد برامج فحص الرؤية في مرحلة ما قبل المدرسة ضرورية ويجب متابعة المرضى الذين يعانون من ضعف معدل الالتزام، وتعليمهم أهمية تغطية العين من أجل نتائج أفضل.