The benefits of low vision aids on visual acuity of low vision patient

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Abstract

Aim: to Know the benefits of low vision aids on visual acuity of low vision patients. **Material and Methods:** This longitudinal hospital based study, was carried out at Makkah eye complex at low vision clinic. Records of 100 patients with low vision attended in the period from January 2017 to December 2018 to Makkah eye complex were collect. Refraction was done objectively by retinoscope (RISTER), and subjective verification was performed using trial lenses and frame for distance and near, monocular and binocular. Visual acuity was tested for distance by Log mar chart and near by Sudan test. Suitable low vision aid was prescribed for each patient. The measures of each patient were recorded in first visit and at follow up appointment after 6 months. **Results**: Two hundred eyes of patients with low vision were included in this study. Females were more frequent than males (67% and 33%, respectively). 100% improve vision at baseline, with range <0.3 64% (0.4 – 0.8) 25% >0.8 11% (P value 0.00). Distance visual acuity with low vision aid at baseline was better that after 6 months. The majority of low vision patients were patients were aged 21 to 40 year (38%). The causes similar to that found in most developing countries. Optic atrophy 15%, Glaucoma 11%, retinitispigmentosa 11%, nystagmus 10%. The power of distance low vision aids <3.0 57%, (3-4) 25%, >4.5 18%. Binocular telescope was frequently used as distant correction 38%. **Conclution**: This study found that there were benefit of low vision aids. So awareness of low vision clinics is necessary.

Key words: low vision, Low vision aid, Visual Acuity, Visual Function

Introduction

Signs of low vision interfering with normal activities can be subtle at first. People may notice that even with glasses or contact lenses, they have difficult with tasks like recognizing familiar faces, reading, cooking, matching clothes, writing checks and watching TV lights may seem dimmer and glare harsher. These could be thought of as early warning signs of eye disease. These problems often lead to a gradual loss of independence and the ability to enjoy leisure activities like playing cards or hobbies.it is not uncommon to develop feelings of confusion, frustration, avoidance, isolation, fear and even depression. These feelings can debilitate people and prevent them from seeking out and utilizing low vision care, leaving them to further spiral downward.[1]

LOW VISION is one who has impairment of visual functioning even after treatment, for example and operation and, or standard refractive correction has been given glasses or lenses and has visual acuity of less than6/18 to light perception, or visual field of less than10 degree from the point of fixation (I,e20 degree across) but who uses or is potentially able to use, vision for the planning and or execution(doing it!) of a task AJAY KUMAR

The common causes of low vision such as diapeticretinopathy, optic atrophy, nystgamus, Glaucoma, cataract, toxoplasmosis, age related macular degeneration, choroioretinal degeneration, toxoplasmosis, retinal detachment Retenitispigmentosa, choroidal degeneration, macular dystrophy, coloboma. AJAY KUMAR

Problem statement of this research is about the penfits of low vision aids of Sudanese follow up low vision patients at Makkah eye complex.

The distribution of low vision varies considerably with age, and gender but the majority of vision impaired people are aged50 years and over (world health organization2004). Various studies have consistently shown that vision impairment is more prevalent in females than males (Attebo et al 1996; Elliott et al1997; Tylor et al 1997). The main causes of vision loss in developed countries are cataract, age related macular degeneration (AMD), glaucoma, and diabetic retinopathy, with AMD being the most

common cause of permanent vision loss (Tylor et al 2005).

In developed countries, the prevalence of low vision among children is low, but the length of time they live with low vision is longer and the cost to society is higher than for adult with low vision, children aged 0-15 years constitute between about 3%and7% of the world's total low vision population (Resnikoff et al 2004).

Low vision aids are devices help people use their sight to better advantage these aid may be Optical such as, telescope, magnifiers or non-optical such as advisors, filters, and large print.

Low vision aids may make things larger, brighter, clearer, and they may improve contrast; some may do more than one thing by magnifying it to the level one can see. MONICA CHAUDHRY.

The general objective is to low vision aids on the visual acuity of the low vision follow up patients.

The specific objective is to draw attention of specialists to wards this problem and to improve the quality of life of low vision patients towards the confidence and independently.

This study supposed that Is the visual acuity is change according to refraction changeable if refraction of low vision patients is change at the next follow up and if the visual acuity is change according to stage of disease and treatment, and if the near device improves near vision more than distance devices for distance visual acuity.

Material and Methods

This longitudunal hospital based study, was carried at Makkah eye complex at low vision clinic.Record of100 patients with low vision attended in the period from january2017 todecember2018to Makkah eye complex was taken as asample of this study.

-Refraction was done objectively by retinoscope, the refraction and subjective verification was performed using trial lenses and frame for distance and near, monocular and binocular. Visual acuity was tested for distance by log mar chart and near by Sudan test. Suitable low vision aid was briscribed for each patient, these parameters had taken before and after six months, Data was analyzed using spss23.

Results

A total of 100 subjects of low vision sixty seven were female, and thirty three male,their age was ranged from 7 to 77 years (mean36.2720±18.26084) Before six month the vision mean was1.4359±0.61693,the mean of vision after six month1.4635+_0.64731 with p value 0.009, range (1.4-1.9) (2.0-4.0) which insignificant decrease in vision wasfound. Apaired sample t-test was used to compare between vision before and after six month.

Table 1 Destribution of gender:

Gender	Frequency	Percent
Female	67	67%
Male	33	33%
Total	100	100

Table 2 Distribution of age

Age (Years)	Frequency	Percent
less than 20	23	23%
21 - 40	38	38%
41 - 60	28	28%
Above 60	11	11%
Total	100	100

Table 3 Distribution of Vision before six month

vision		
Percent	Frequency	
65.5%	131	>1.30
25%	50	1.40 -1.90
9.5%	19	2 - 4.00
100.0	200	Total

Table 4. Distribution of vision after six month

Vision		
Percent	Frequency	
58.5%	117	>1.30
30%	60	1.40 - 1.90
11.5%	23	2 -4.00
100.0	200	Total

Table 5 distribution of visual acuity with distance low vision aid before six month:

Total	Befor e VA D LVA					
	. <80	.40. - 80	. >30			
61	2	14	45	Count	>1.3	Before vision
100.0%	3.3%	23.0%	73.8%	%		
31	5	8	18	Count	1.4 - 1.9	
100.0%	16.1%	25.8%	58.1%	%		
8	4	3	1	Count	2 – 5	
100.0%	50.0%	37.5%	12.5%	%		
100	11	25	64	Count	Total	
100.0%	11.0%	25.0%	64.0%	%		

Table 6 distribution of visual acuity with distance low vision aid after six month:

After vision * after VA D LVA Crosstabulation						
Total	after VA D LVA					
	12.00	. <80	. >30			
52	2	24	26	Count	>1.3	After vision
100.0%	3.8%	46.2%	50.0%	%		
38	0	25	13	Count	1.4 - 1.9	
100.0%	0.0%	65.8%	34.2%	%		
10	0	3	7	Count	2 - 5	
100.0%	0.0%	30.0%	70.0%	%		
100	2	52	46	Count	Total	
100.0%	2.0%	52.0%	46.0%	%		

Discution: the target of this study was to show the benifits of low vision aids on visual acuity of low vision patients. The range of subject's age was 7 to 77 years, with mean (36.2720+18.26064). The distribution of low vision varies considerably with age, and gender but the majority of vision impaired people are aged50 years and over (world health organization2004), majority of vision impaird patient was aged between 21-40 in this study,. This is disagree with the resultsOf world health organization 2004) various studies have consistently shown that vision impairment is more prevalent in females than males (Attebo et al 1996; Elliott et al1997; Tylor et al 1997). This agree with this study because majority of patients were female 67% from the Total.\
the mean of vision before six months was(1.4359) and after six months was (1.4635) with P value (.009) which is insignificant

different of vision impaired between before and after six month .there was significant improvement between the vision before low vision aid and visual acuity a fter low vision aid at first session ,this agreewith withD Atif Babiker study,DAtif Statistical analysis had shown significant improvement of visual acuity was achieved by LVDs(0.001).. After six month there was insignificant improvement between vision before low vision aid and visual acuity after low vision aid at second session.

the mean of visual acuity of near low vision aid before six month was0.2170+0.24939,and the mean of visual acuity of near low vision aid after six month was.1590+21096 with pvalu0.077 there is insignificant improvement in near visual acuity after six month .

Conclution: The distribution of low vision varies considerably with age, and gender but the majority of vision impaired people are aged21-40 and over,the visual impairment is more prevalent in females than males, the most frequently prescribed optical distance low vision aid is 2xbinocular telescope distance low vision aid. .Statistical analysis had shown significant improvement of visual acuity was achieved by LVDs (0.001) and insignificant improvement after six month ,

Recommendations: regular follow up every six month for low vision patients

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