Incidence of Environmental & Metabolic Factors Causing Congenital Cataract in Children of Lahore
CONTENTS

EDITORIAL

------------------------------------------------------------------------------------------------------------ii

1. Pediatric Ocular Trauma in Quetta with Preventable Recommendations

   Shaban K. Kakar ........................................................................................................................................174

2. Frequency of Success after Phaco-Trabeculectomy in Patients with Primary Open & Closed Angle Glaucoma

   Iftikhar ul Haq Tareen ............................................................................................................................178

3. Visual Outcome after Early & Late Pars Plana Vitrectomy in Patients with Advanced Diabetic Eye Disease

   Iftikhar ul Haq Tareen ............................................................................................................................183

4. Assessment of Trachoma Awareness in General Population of Sahiwal

   Hassam Rehim ..........................................................................................................................................189

5. A Retrospective Study on final Visual Outcome of Ocular Trauma in Department of Pediatric Ophthalmology in a Tertiary Care Hospital.

   Rabia Chaudhry ........................................................................................................................................193

6. Understanding Barriers for Diabetes Awareness in South Asian Populations in the Uk

   Nizam M. Darwesh ..................................................................................................................................199

7. The Importance of Pre-Diabetes Risk Assessment to Identify Undiagnosed Diabetes

   Nizam M. Darwesh ..................................................................................................................................204

8. Factors Affecting Awareness & Knowledge of Glaucoma amongst Patients

   M. Jafar Iqbal .........................................................................................................................................208
Age-related macular degeneration is one of the most common causes of visual loss in people over the age of 60, affecting 30-50 million people worldwide and more than 600,000 in the UK; the numbers are expected to rise with an ageing population. About 90 percent of the cases are dry AMD, which exhibit breakdown or thinning of retinal pigment epithelial layer (RPE) supporting the light sensitive photoreceptor cells. In AMD, the RPE cells stop performing their support functions, resulting in death of rods and cones and loss of central vision.

There is no treatment at present for the dry AMD. People take vitamin supplements, but dry AMD is progressive and over time the central vision worsens. However, there are drugs and surgical techniques that are effective in treating wet AMD. Since there is no cure for wet AMD, but it can be treated by injecting drugs into the eye to stop the growth of the abnormal blood vessels. These injections are needed regularly to preserve vision.

Now Macula, a small area about 5.5 millimeters in diameter is responsible for reading, driving and facial recognition. It is a densely packed with photoreceptor cells called rods and cones that react to light and send electrical impulses to the optic nerve and to the brain. Behind the photoreceptors there is retinal pigment epithelium (RPE), which support the rods and cones by delivering nutrients from the bloodstream and removing waste that the rods and cones generate. Now the stem cell research is helping the scientists to understand how the different cell types in the retina function together, exploring ways to replace both rods and cones and the supporting RPE to regain vision. In fact, eye is a good target for stem cell treatment.

Replacing rods and cones is a challenging task, as these cells have to establish connections with nerve fibers that feed signals into the optic nerve and to the brain to interpret. Researchers are actively working on this approach, but ensuring new rods and cones to integrate with nerve fibers alongside the patient’s existing rods and cones is extremely complex process. Wet AMD occurs when abnormal blood vessels appear underneath the macula and is damaged by a deposit of fatty protein. The pioneering treatment is involved implanting an engineered patch of retinal pigments from the epithelium in the retina to replace those that are damaged. In this new approach, researchers took a stem cell - which is a single cell – and reproduced it many times, turning them into a perfect copy of RPE layer and placed onto a patch being inserted under the retina to replace the damaged cells of the patient with due to AMD. The study was published in Nature Biotechnology journal describing how the stem cell therapy can restore sight.

Two people received stem cell treatment in Moorefield’s Eye Hospital London. First patient aged 86 with severe wet AMD, after 3 months of the surgery, his eyesight improved and he could read the newspaper. The 2nd patient was a woman in her 60s who also had wet AMD, was operated and monitored for 12 months. She reported improvement for her vision. After the operation she was able to read with her normal reading glasses.

The RPE cells don’t need to connect with nerve fibers and to integrate with the existing retinal cells. New RPE cells could replace diseased RPE cells and take on some of their supportive functions. If the transplant is done before rods and cones are lost, new RPE cells may be able to prevent them from dying thus stopping the progression of the disease. RPE cells are also easier to make as a uniform cell type from stem cells, reducing problems associated with the generation of a uniform population of cells for transplantation.
Since, it was the first experience of using an engineered tissue successfully, the results have given a real hope to the patients who suffer from AMD and other retinal degenerative disorders that the stem cells replacement therapy may be a reality in the near future. It was only an early clinical trial and the results have shown that the technology is moving in the right direction which represents the real progress in regenerative medicine and open the door to new treatment options for age-related macular degeneration. Moreover, it is a major milestone to cure blindness through implantation of a specially engineered patch of retinal pigment epithelium cells derived from stem cells. The results suggest that this new therapeutic approach is safe and provides good visual outcomes enhancing their quality of life.

This project was established by a philanthropic donation from an anonymous American donor and the UK Medical Research Council (MRC) under the auspices of London Project to Cure Blindness, University College London (a best place in the world for Ophthalmic research) and Moorefield’s Eye Hospital, London.

In Summary, the stem cell researchers are making great progress in their efforts to replace the RPE layer, which they believe will halt or even reverse the vision loss associated with AMD. Some researchers are using induced pluripotent stem (iPS) cells—tissue-specific cells (usually skin cells, but sometimes other tissue cells) that are re-programmed in the lab to behave like embryonic stem cells—to grow rods and cones or RPE cells. Some groups are using human embryonic stem cells while others are exploring RPE-specific stem cells that can be grown from the adult RPE, for example, from eyes donated to eye banks. Researchers are also working to determine that less mature cells have more self-renewal properties and possibly more potential to integrate and repair the rods and cones. Researchers are also exploring different methods to deliver stem cells from human embryo in the lab to be inserted into the diseased eye.

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ABSTRACT:
Objectives: To assess frequency and complication of pediatric ocular trauma followed by education of masses for prevention.
Material & Methods: This retrospective study was conducted in Bolan University of Medical & Health Sciences (BUMHS) in the department of pediatric ophthalmology. We analyzed the 5-year data of patients treated at Helper’s Eye Hospital Quetta from Jan 2014 to Dec 2018.
Results: There were total of 15,824 children having pediatric ocular trauma aging 05 months and maximum age 15 years with mean of 8 years out of total 12620 children were male and 3214 were female. The male to female ratio was 4:1. The most frequently observe mode of injury among children was projectile 7912 (50%), including body parts (finger, fist) 3204(20%) blunt objects 1602(10%), motor vehicles 801(5%), sharp objects 1602(10%) and vegetative materials 801(5%). Majority of children receiving trauma were in the age more than 6 year. The most common causes of visual disability were disorganized globe and corneal opacity.
Conclusion: Pediatric ocular trauma is a common cause of visual impairment majority of patients were young boys (above 8 years) there is a need for education and awareness in the society particularly the parents.

INTRODUCTION.
Beside direct damage to the ocular structure, prolonged deprivation due to refractive errors leading to amblyopia. Due to the outdoor activities the boys above the age of 8 years are more prone to traumatic accidents as compare to the infants and female children less than three years of age are mostly supervised by adults at home, therefore they suffer less than the boys. Older children injure themselves by pencils arrows, needles, stones, and thorns, balls, and bats.

Sports related injuries are common in children from five to fifteen years of age injuries by toys are common on Eid and other ceremonial occasion.

Pediatric ocular trauma can be a devastating injury causing a life time disability in children which can be significantly reduced up the 90% or even avoided completely with proper education of parents, caretakers and teachers who have an important role to prevent these accidents.

In rural areas the more common injury is by agriculture related work that is vegetative materials, wood, Sticks, animal tail, birds and others. We conducted this study for documenting the preventable cause of visual deterioration.

Inclusion criteria: The age included in this study ranges the children from 05 months to 15 years.

Exclusion Criteria: The Patients having neurological disorder like cerebral palsy, mentally handicapped children were excluded from the study of hospital record. About 15824 patients were treated as revealed the data of hospital record for the 5 years period (Jan 2014 to Dec 2018)
Ophthalmologists and other eye care personnel have enormous opportunity to educate patients on the proper prescription and use of protective eyewear. Since infants are well supervised and protected by parents, masses of our society are required to be educated to take compulsory measures such as using proper child seatbelt which has significantly diminished damages leading to visual impairment. Analyzing the mindset of the people.

**MATERIALS AND METHODS:**

This retrospective study was conducted at the department of pediatric ophthalmology Bolan university of medical and health sciences/ helpers eye hospital Quetta deptt. of pediatric ophthalmology from Jan, 2014-Dec,2018 from the hospital records.

We observed male to female ratio was 4:1, becoming higher with age and the place of injury changing according to the age; younger children suffered accidents at home, whereas older children were more prone to experience trauma while practicing sports. While the agriculture related trauma was faced by the children of the low socio-economic status.

According to the hospital record accident of trauma was observed to increase almost by 15% every year. The types of trauma we found in study:

1. Foreign body in the eye ball and cornea
2. Ruptured globe from fire and explosives
3. Ruptured choroid
4. Traumatic cataract
5. Retinal hemorrhage
6. Detached retina
7. Blood in the anterior chamber (Hyphema)
8. Burns of the cornea from chemicals

Infection of the cornea from contact lenses, wood sticks in agriculture work data analyses was performed using SPSS version 18.2, frequency of age, gender and eye involved calculated with mean ± standard deviation.

<table>
<thead>
<tr>
<th>Table 1) Gender distribution</th>
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<tbody>
<tr>
<td><strong>Years</strong></td>
</tr>
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<tr>
<td>2015</td>
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<tr>
<td>2016</td>
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**RESULTS:**

Ocular trauma in children has remained as one of the major area of focus, since there is an immediate cure required for the prevention of ocular trauma. This study represents both gender distribution of ocular trauma leading from the year 2014 to 2018 however, there has always been a difference observed between the male and female ratio of injury. 15,320 children with ocular trauma were studied from the hospital record with the minimum age was 5 months, whereas the maximum age was 15 years with the mean of 8 years. Out of these 15,834 children 12620 (79.7%) were males and 3,214 (20.29%) were females (able 1.) The minimum percentage of ocular trauma retained was 502 in females in the years 2014, 552, 600, 700 and 800 in the year 2015, 2016, 2017, and 2018, respectively. On the other hand, year 2014 represented male patient with minimum number of injury of about 2010 with an approximate increase of 15% each year. Additionally, table no 2 of the study elaborating age distribution represents the maximum number of injury found in the children of age above 6 years i.e. 2250 in the year 2018; however, children under the age of 2 years represented minimum number of ocular trauma of around 10-15% in the preceding years as compared to children.

<table>
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<th>Table 2) Age distribution</th>
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<td><strong>Years</strong></td>
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<th>Table 3) Causative distribution</th>
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<td><strong>Sr. NO</strong></td>
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Ophthalmology Update Vol. 17 No.4, Oct - Dec 2019
children above than 2 years. Meanwhile, the finding of the present study shows a continuous increase in the injuries of eyes in consonant with the ages of children.

Several causes have been identified from the history sheet, one of the major causes of ocular trauma is projectile (50%) and body parts (finger, fist), (20%) blunt object (10%) motor vehicles (5%), sharp object (10%) vegetative material (5%), however, there could be several other unusual causes ocular trauma such as rooster attack, pencil tips, exploding of boiling eggs, door-handles, chopsticks and dishwasher detergent. Since children’s activities are quite unfamiliar or abnormal and they are sometimes unpredictable, besides, all these injuries which may lead to a serious visual impairment, apparently non-dangerous to adults or parents. (Sadia, PS, Umair, Israr, & Abdul, 2011)

This study found higher number of male children affected i.e (79%) as compared to female i.e (27%) according to estimates, it has been outlined that 90% of ocular trauma is preventable since children can be supervised and prevent at home; estimates showed between 44% and 76% of pediatric ocular injuries occur at home.

**DISCUSSION:**

Young patients are more prone to the Ocular trauma because of their curious nature and childish motor skills. Visual impairment is the preceding cause of acquired monocular blindness in young patients.

Edmondson et al. of ATV accidents highlighted eye and adnexal injuries involving orbital fractures (60%), eye lid laceration (25%) and traumatic optic neurological damage as well as permanent vision loss in patients. However, the incidence of pediatric injuries varies with age, sex, socio-economic states, season and geography besides, more than 20% ocular injuries take place at home. List Man explained the rising number of incidents of paintball injuries in children, which gets inserted in the orbit. Furthermore, the estimate Brophy et al. examined pediatric eye related hospitalization and figured out that there were more than 7500 admissions in the United States as outcome of eye injuries in 2000. Similar to that Serrano et al. examined similar data in Columbia, disclosing the world wide issues with similar epidemiology established as previously conducted research data of at least a two to one incidence of male to female in ocular trauma; almost all of the injuries fall out at home or motor vehicle accidents, however the place in injury changes significantly with age. The accidents or mishaps associated with work tend to be infrequent in developed countries, however, developing countries where the tradition of child labor exists and according to the estimates 32% children lost their eye and 53% of then lost light perception during work.

**Prevention:**

Prevention is extremely significant component of an ideal life, children in a very young age are more probable to suffer with visual impairment because of their lack of motor skills and inadequate attentions of adults, this study aims at describing the awareness of masses in order to cope with ocular trauma, since adult supervision is essential in the prevention of injuries to children bur necessary measures are not very popular. A few measure such as the use of face mask protection in sports has overcome eye trauma up to nearly zero.

In Quetta, traditionally, guns and air rifles are often given to children on specific occasions or festivals. Besides that children are more curious in making elastic devices rubber bands, balloons and different weapons to construct slingshots and other types of and projectile launching artifacts. Most parents and adults do not consider these toys are dangerous. Male children are comparatively more affected than females, since boys are more inclined to outdoor activities and they have been granted more liberty than female in our context.

**Recommendations:** Proper education of parents, school and madras teacher and counseling role of media is mandatory along with Social mobilization by volunteers to join the crusade of awareness of the society. Legislations to ban the sale and supply of hazardous toys and use of safety glasses while playing games like hockey baseball, tennis and other sports are to undertaken by the Government. Use of protective glasses in rural areas while dealing with vehicles battery, acids, and other chemicals should ne mandatory.

**CONCLUSION:**

Ocular trauma can be a devastating injury causing a life time disability in children’s, the poor out-
comes of these injuries can be significantly minimized up to 90% or even can be avoided completely with proper education of the parents, caretakers and teachers who have an important role to prevent these injuries. Education with compulsory measures for eye protection have not been very popular. However, parental supervision is not enough to prevent these injuries.

REFERENCES:
ABSTRACT

Introduction: Globally cataract and glaucoma are the top two causes of blindness and in the most cases they occur simultaneously in the same eye. Glaucoma is a progressive optic neuropathy, with characteristic visual field defects, for which a rise intraocular pressure is a key modifying factor. The primary treatment of glaucoma is intraocular lowering medications which are used for both primary open angle (POAG) and primary close angle glaucoma (PCAG). This study can generate positive impact on the quality of life of the patient because through this treatment the patient will only have to undergo one surgery and that will reduce patient’s stress and save time and cost.

Objective: To determine the frequency of success in patients with primary open and close angle glaucoma after phaco-trabeculectomy. To compare the frequency of success after phaco-trabeculectomy between primary angle closure glaucoma and primary open angle glaucoma. This descriptive case series was conducted at Helper’s Eye Hospital Quetta, the duration of the study was six months from September 2017 to Feb 2018.

Subject and Methods: There were 363 patients with posterior subcapsular cataract for the Phaco-trabeculectomy were included in this study. Same procedure of Phaco-trabeculectomy was performed and intraocular pressure was assessed after one month. Also data on important effect modifiers is collected and was analyzed in analysis.

Results: The average age of the patients was 52.53±9.20 year. Frequency of success in patients with primary open and close angle glaucoma after phaco-trabeculectomy was 98.9% (259/363). Success rate was high in both group but it was significantly high in primary angle closure glaucoma as compare to primary open angle glaucoma [100% vs. 97.7% p=0.049].

Conclusion: In conclusion, postoperative success rates and IOP levels after phaco-trabeculectomy were found to be very high in primary angle glaucoma patients.

Key Words: Glaucoma, Phaco-trabeculectomy, Close angle glaucoma

INTRODUCTION

Globally cataract and glaucoma are the top two causes of blindness and in the most cases they occur simultaneously in the same eye [1]. World Health Organization, in 2010, reported that 51% of the world blindness is due to cataract, in terms of number this represents 20 million people, while another 4.5 million and 3.9 million people are blind due to open-angle and angle-closure glaucoma respectively [2].

Postoperative success rates and IOP levels after phaco-trabeculectomy were found to be very high in primary angle glaucoma patients.

Glaucoma is a progressive optic neuropathy, with characteristic visual field defects, for which a rise intraocular pressure is a key modifying factor [3]. The primary treatment of glaucoma is intraocular lowering medications which are used for both primary open angle (POAG) and close angle glaucoma (PCAG). When medical therapy becomes ineffective in controlling intraocular pressure than laser and surgical options are used.
During surgery, by making an artificial outflow pathway to ocular surface, trabeculectomy has become the basic surgical procedure for intraocular reduction in both primary open angle and close angle glaucoma. If cataract coexists with glaucoma than a combined procedure phaco-trabe culectomy is performed \[4\]. Combined phaco-trabe culectomy has its advantages. First, it reduces risks of additional intra-ocular surgeries, because frequently after trabeculectomy, there is rapid progression of lens opacities into visually significant cataracts that require cataract surgery. Secondly, sequential cataract surgery is associated with increased risk of trabeculectomy failure which may be minimized by combined phaco-trabe culectomy.

A study done in Taiwan “Comparison of surgical outcomes after phaco trabeculectomy in primary angle closure glaucoma versus primary open angle glaucoma” in 2014, with 61 patients, shows that the success rate of phaco-trabe culectomy was 74% in primary angle closure glaucoma and 62% in primary open angle glaucoma \[5\]. An other study in Pakistan done by Ch. Javaid Iqbal in Mayo Hospital, Lahore which shows phaco-trabe culectomy is more effective for treating primary angle closure glaucoma patients \[6\].

There are few studies that have documented outcomes, or have done comparison for outcomes amongst patient with Angle-closure glaucoma versus Open-angle glaucoma. Through this study we will generate important evidence of effectiveness of this procedure in Ophthalmological Specialized settings in Pakistan. In addition to contributing academic field the evidence generated from this study will also have a positive impact on the quality of life of the patient because through this treatment the patient will only have to undergo one surgery and that will reduce patient stress and save time and cost.

**MATHODOLOGY**

The primary objective of this study was to determine the frequency of success in patients with primary open/close angle glaucoma after phaco trabeculectomy. Secondarily to compare the frequency of success after phacotrabeculectomy between primary angle closure glaucoma and primary open angle glaucoma.

Success was labelled as positive if intraocular pressure was less than 21 mmHg and grade 2 or <2 of angle on Shaffer Grading on gonioscopy. Primary open angle glaucoma: intraocular pressure greater than 21 mmHg and grade 3 or >3 of angle on Shaffer Grading on gonioscopy. Posterior subcapsular cataract: opacities located in the most posterior cortical layer, directly under the lens capsule on slit lamp examination.

**MATEREAL AND METHODS**

This descriptive case series was conducted at Helpers Eye Hospital, Quetta (This is a Clinical Ophthalmological specialized care setting). The duration of the study was six months from Sep 2017 to Feb 2018. Sample size was based on WHO sample size calculator (reference no \[5\]) \( P = 62\%,\ d = 5\%,\ n = 363 \). Non probability consecutive sampling technique was applied. Following cases were included in the study:

1. Either gender with age ranging from 40 years to 80 years.
2. Patients of primary open angle glaucoma as per operational definition.
3. Patients of primary angle closure glaucoma as per operational definition.
4. The duration of glaucoma to be considered for the Phaco-trabe culectomy was greater than one year.
5. Patient with posterior sub capsular cataract on slit lamp with duration/maturity of more than one year.

Following cases were excluded from study,

1. Patients with secondary glaucoma (rule out on history and slit lamp examination).
2. Patients with history of diabetes and hypertension.
3. Patients with history of previous ocular surgery and history of glaucoma.

After approval from the ethical review committee, patients were enrolled from the OPD who match the inclusion and exclusion criteria. The purpose, procedure, risk and benefits of the study was explained and written informed consent obtained from the patients information on other important socio demographic variables, like age, gender, ethnicity, socio economic status, smoking status will also be calculated. Same procedure of Phaco trabeculectomy was performed by a single surgeon, intraocular pressure was assessed after one month. The potential biases in the study is limited, as all the patients in the hospital belong to similar socio demographic strata of population. Surgery was done by single surgeon on only for all
the patients so the treatment quality was similar for all patients. Also data on important effect modifiers is collected and was analyzed in analysis.

Data was analyzed on SPSS 20-0. Mean and SD was calculated for quantitative variables like age duration of cataract, duration of primary angle closure and open angle glaucoma and intraocular pressure. Frequency and percentage was calculated for gender, success (yes or no), ethnicity, socioeconomic status and smoking status. Effect modifiers like age, gender, duration of cataract, duration of primary open and closure angle glaucoma, ethnicity, socioeconomic status, smoking was controlled through stratification post stratification chi square test was apply by keeping p value less than and equal to 0.05 as significant.

RESULTS

There were 363 patients with posterior sub-capsular cataract and glaucoma for the Phaco-trabeculectomy, were included in this study. The average age of the patients was 52.53±9.20 year's similarly average duration of cataract was 2.37±0.63 months and glaucoma was 2.30±0.60. Male to female ratio was 1:1.4. Regarding ethnicity, most of the patients were Blochi and Pashtun, 92.02% belonged to lower and middle class. Out of 363 patients 19.83% (72/363) were smokers and male. 52.62% cases were diagnosed as primary angle closure glaucoma and 47.38% were primary open angle glaucoma as shown in figure 1. Pre-operative mean IOP of the patients was 35.87±6.02 (mmHg) and post-operative mean IOP of the patients noted were 13.78±3.01(mmHg) as shown in table 1.

Frequency of success in patients with primary angle glaucoma after phaco-trabeculectomy was 98.9% (259/363) as presented in figure 6. Success rate was high in both group but it was significantly high in primary angle closure glaucoma as compare to primary open angle glaucoma [100% vs. 97.7% p=0.049] as shown in table 3.

Stratification analysis was performed and observed that rate of success in patients after phaco trabeculectomy was high in all age groups but there were no significant difference among different age group (p=0.96) while rate of success was significantly high in male as compare to female patients (p=0.037) . Similarly rate of success was also observed with respect to duration of cataract, duration of open and closed angle glaucoma, ethnicity, economic class and smoking status .

Comparing the frequency of success after phaco trabeculectomy between primary angle closure glaucoma and primary open angle glaucoma for age groups, gender, duration of cataract, duration open and closed angle glaucoma, ethnicity, economic class and smoking was also observed but there were no significant finding except female in which success rate was high in both group but it was significantly high in primary angle closure glaucoma as compared to primary open angle glaucoma (p=0.046).

FIG 1 Diagnosis of the patients (n=363)

PACG = Primary angle closure glaucoma
POAG= Primary open angle glaucoma

TABLE 2. Pre and post operative IOP of the study patients

<table>
<thead>
<tr>
<th></th>
<th>Pre-operative IOP (mmHg)</th>
<th>Post-operative IOP (mmHg)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Mean</td>
<td>35.87</td>
<td>13.78</td>
</tr>
<tr>
<td>Std. Deviation</td>
<td>6.02</td>
<td>3.01</td>
</tr>
<tr>
<td>95% Confidence Interval for Mean</td>
<td>Lower Bound 35.25</td>
<td>Upper Bound 36.5</td>
</tr>
<tr>
<td>Median</td>
<td>35</td>
<td>13</td>
</tr>
<tr>
<td>Inter quartile Range</td>
<td>8</td>
<td>5</td>
</tr>
<tr>
<td>Minimum</td>
<td>20</td>
<td>9</td>
</tr>
<tr>
<td>Maximum</td>
<td>55</td>
<td>24</td>
</tr>
</tbody>
</table>

FIG 6 Frequency of success in patients with primary angle glaucoma after phaco trabeculectomy n=363
Frequency of Success after Phaco-Trabeculectomy in Patients with Primary Open & Closed Angle Glaucoma

### TABLE 3: Frequency of success after phaco-trabeculectomy between primary angle closure glaucoma and primary open angle glaucoma

<table>
<thead>
<tr>
<th>Success</th>
<th>Primary angle glaucoma</th>
<th>Primary angle closure glaucoma</th>
<th>Primary open angle glaucoma</th>
<th>P-Value</th>
</tr>
</thead>
<tbody>
<tr>
<td>Yes</td>
<td>191 (100%)</td>
<td>191 (100%)</td>
<td>168 (97.7%)</td>
<td>0.049</td>
</tr>
<tr>
<td>No</td>
<td>0 (0%)</td>
<td>0 (0%)</td>
<td>4 (2.3%)</td>
<td></td>
</tr>
</tbody>
</table>

Fisher Exact Test applied

TABLE 4: Frequency of success in patients with primary angle glaucoma after phaco-trabeculectomy with respect to age groups n=363

<table>
<thead>
<tr>
<th>Age Groups (Years)</th>
<th>Success In Patients With Primary Angle Glaucoma</th>
<th>Total</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Yes</td>
<td>No</td>
</tr>
<tr>
<td>≤ 50 Years</td>
<td>176 (98.9%)</td>
<td>2 (1.1%)</td>
</tr>
<tr>
<td>51 to 60 Years</td>
<td>109 (99.1%)</td>
<td>1 (0.9%)</td>
</tr>
<tr>
<td>61 to 70 Years</td>
<td>64 (98.5%)</td>
<td>1 (1.5%)</td>
</tr>
<tr>
<td>71 to 80 Years</td>
<td>10 (100%)</td>
<td>0 (0%)</td>
</tr>
</tbody>
</table>

Chi-Square = 0.26    p = 0.96

DISCUSSION:

Trabeculectomy has been the gold standard in controlling IOP in glaucoma patients, irrespective of the angle status or the baseline IOP. Due to the advantage of being able to treat coexisting cataracts and glaucoma in one surgery, phacotrabecelectomy has gained popularity among ophthalmic surgeons over the past decade.[7, 8, 9] One of the major pitfalls of trabeculectomy is the deterioration in visual acuity[10] and the increased incidence of cataract formation after surgery,[11] which can be overcome in combined cataract extraction and glaucoma surgery. Furthermore, despite being a more complex surgery, phacotrabecelectomy has been shown to achieve a favorable visual and refractive outcome that is comparable to phacoemulsification alone.[12,13]

With growing aging populations and an increase in cases of glaucoma and glaucoma blindness worldwide, aging populations are particularly at higher risk of glaucoma. It is estimated that glaucoma cases worldwide will increase from 60 million in 2010 to 80 million in 2020. [14] Women bear a larger burden than men because not only do women outlive men, but women also outnumber men and represent 60% of all glaucoma cases combined.[14] As such, awareness of the gender differences might increase attention towards populations at risk. In our study we included 363 patients of either gender with age ranging from 40 years to 80 years. The average age of the patients was 52.53±9.20 years and male to female ratio was found to be 1:1.4

Smoking also has adverse ocular effects. It has been shown to be a risk factor for many common and severe eye diseases, such as Graves’ ophthalmopathy, age related macular degeneration, glaucoma, and cataract. Many of these diseases lead to irreversible blindness. There is also evidence for a dose-response effect of smoking on eye morbidity.[15] In our study out of 363 patients 19.83% (72/363) were smoker all were male. A case-control study has shown that cigarette smokers are more prone to glaucoma than are non-smokers (OR=2.9; 95% CI, 1.3-6.6). [16] On the contrary, another population-based study of 4926 subjects has revealed no difference in the frequency of glaucoma, based on cigarette-smoking status.[17]

We found frequency of success in patients with primary angle glaucoma after phaco-trabeculectomy was 98.9% (259/363). Success rate was high in both group but it was significantly high.
in primary angle closure glaucoma as compared to primary open angle glaucoma which is consistent with the previous comparative studies\(^\text{[8,18]}\). In a study by Lai et al.,\(^\text{[9]}\) the PACG group had observed a mean IOP reduction of 12.7 ± 8.3 mmHg, whereas the POAG group showed a mean IOP reduction of 5.0 ± 5.7 mmHg (p < 0.05). Rao et al.,\(^\text{[18]}\) reported a mean IOP reduction of 8.1 ± 8.4 mmHg in PACG and 5.5 ± 7.3 mmHg in POAG (p \(\frac{1}{4} 0.03\)) after phaco-trabeculectomy. In consistency with the previous comparative studies, Phaco-Trabeculectomy can reduce IOP significantly in primary angle closure glaucoma compared with primary open angle glaucoma.\(^\text{[11]}\)

**Reference:**

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Visual Outcome after Early & Late Pars Plana Vitrectomy in Patients with Advanced Diabetic Eye Disease

Iftikhar ul Haq Tareen1, Shaban Khan Kakar2, Sira Bano3, Saifullah Tareen4, Prof Dr Abdul Qayum5.

ABSTRACT
Aim: Advanced diabetic eye disease, as a complication of proliferative diabetic retinopathy (PDR), is the potential and most serious cause of blindness among the patients with diabetes mellitus (DM). Functional results of vitrectomy for diabetic retinopathy were analyzed in to two groups with early and late vitrectomy, to improve our estimation of timing and risk of early and late vitreous surgery. It was a Quasi-experimental study; the primary objective of the study was to compare the visual outcome in patient with advanced diabetic eye disease after early and late pars-plana vitrectomy.

Methods: Total of 64eyes of 61 patients were included. Patients were divided in two groups. Those with history of deterioration of vision less than 6 month were included in Group A (early vitrectomy) and those with more than 6 month were included in group B (late vitrectomy). Final post operative visual acuity after pars plana vitrectomy were analyzed using SPSS 13.0 at the end of 6 month follow up.

Results: Visual acuity of 6/18 or better "(near) normal vision" was achieved by 27% eyes in group A (early vitrectomy) patients and 6.45 % eyes in group B (late vitrectomy) patients. Visual acuity of 6/24 to 6/50 "Moderately impaired vision" was achieved by 42.42% eyes of group A patients as compared to 32.25% eyes in group B patients. While visual acuity of 6/60 to 3/60 "severely impaired vision" was achieved by 58% eyes of group B patients as compared to 27% eyes in group A patients.

Conclusion. The visual prognosis after early vitrectomy is better than late vitrectomy in patients with advanced diabetic eye disease.

Key Words. Diabetes Mellitus, Pars Plana Vitrectomy, Diabetic Retinopathy, Vitreous Hemorrhage.

INTRODUCTION
Diabetes mellitus (DM) is a major health problem throughout the world. In Pakistan data are lacking, but the prevalence ranges from 8.6% to 13.9%3. It causes an array of long term systemic complications, which have considerable impact on both the patient and society because it typically affects individuals in their most productive years of life2. Ophthalmic complications of diabetes include corneal abnormalities, glaucoma, iris neo-vascularization, cataract and neuropathies. However, the most common and potentially most blinding of these is diabetic retinopathy3.

The visual prognosis after early vitrectomy is better than late vitrectomy in patients with advanced diabetic eye disease.

Photocoagulation and other treatment modalities are available for the treatment of proliferative diabetic retinopathy (PDR). The Diabetic Retinopathy Study (DRS) demonstrated that scatter photocoagulation with argon laser was effective in reducing visual loss from the complications of
PDR. However, several patients continued to suffer the consequences of PDR, either because vitreous hemorrhage and/or severe proliferation of neo-vascularization and fibrous tissue developed before any intervention could be offered. In others, photocoagulation failed to prevent progression to these stages leading to advanced diabetic eye disease, which is characterized by: 1. Persistent intra-vitreal hemorrhage, 2. Tractional Retinal Detachment (TRD), 3. Epiretinal membrane formation.

In 1971, Machmer first reported successful vision restoration to patients with pars plana vitrectomy (PPV). It is a closed intraocular microsurgery which is to ensure that all ocular tissue and structure are in the correct anatomic location and proper configuration at the end of procedure. The surgical objective for diabetic retinopathy includes: 1. Removal of vitreous opacities (i.e. hemorrhage). 2. Release of vitreoretinal (antero-posterior) traction. 3. Pre-retinal fibrovascular membrane (tangential) traction. 4. Endolaser Photocoagulation.

As the procedure became more technically refined, it was offered to increasing number of patients. There are both anatomic and physiologic goals of vitrectomy for PDR. The anatomic goals are to remove vitreous opacities and to remove fibro vascular traction so that detached retina can become reattached. The physiologic goal of fibrovascular membrane removal is to control proliferation. Successful vitreous surgery hats the process of further fibrovascular proliferation.

The opposing argument is that surgery posed too, great risk in these severely affected eyes. Despite success in many eyes, operated patients had higher rate of complications and significant percentage lost all light perception. Critics of pars plana vitrectomy contended that risks of surgery are so high that an extended period of observation in eyes with these severely affected eyes should be allowed before surgery is considered.

The aim of this study was to determine whether early vitrectomy is more effective in persevering useful vision in eyes with severe active proliferative disease as compared to the conventional strategy of surgical intervention only after severe visual loss had occurred as a result of complications of PDR. It is also aimed to evaluate the natural course and effect of surgical intervention on these severely affected eyes.

**METHODOLOGY**

This prospective study was carried out at Eye Unit–I Helper’s Eye Hospital, Bolan Medical College, Quetta. The duration of the study was nine months (from November 2017 to July 2018), and total of 61 patients were included in this study. Patients were divided into two groups on non-probability bases, Group A and group B. Group A: This group includes patient with advanced diabetic eye disease with history of marked deterioration of vision less than 6 months. Group B: Patients with advanced diabetic eye disease with history of marked deterioration of vision more than 6 months were included in this group. The primary objective of this study was to compare the visual outcome in patients with advanced diabetic eye disease after early and late pars plana vitrectomy.

Any betterment (at least one line in snellen type) or decrease in visual acuity of the patient, after surgery (vitrectomy). The principal outcome variable was the final best corrected visual acuity of the patient after six months’ follow up.

The following classification of visual acuity (according to Visual standards reported by International Council of Ophthalmology at the 29th international congress of opthalmology Sydney Australia April 2002) was used.

- Visual acuity of 6/7.5 or batter (Range of normal vision)
- Visual acuity of 6/9 to 6/18 (near) Normal vision
- Visual acuity of 6/24 to 6/50 (mild visual impairment)
- Visual acuity of 6/60 to 3/60 (moderate visual impairment)
- Visual acuity of 2/60 (sever visual impairment)
- Visual Acuity of 1/60 (near blind)
- No perception of light (NPL) (near blindness)

**Following cases were included in the study.**

Age at least 20 years or more. Diabetes Mellitus diagnosed by physician (both type I and type II). Outlook good for survival and return for follow up for at least 6 months.
Visual Outcome after Early & Late Pars Plana Vitrectomy in Patients with Advanced Diabetic Eye Disease

Following cases were excluded from the study.
Previous vitrectomy. Intraocular pressure greater than 29mmHg. Severe iris neovascularization or neovascular glaucoma. Insufficient clarity of the cornea or lens which can affect the visual acuity.

Data was collected regarding the demographic characteristics of the patient i.e. age, sex, and address. The regime followed was; Preoperative evaluation. Surgical procedures. Follow up visits.

The surgical objectives for diabetic retinopathy include removal of vitrous opacities (hemorrhage) and release of vitreoretinal (anterior-posterior) and pre-retinal fibrovascular membrane (tangential) traction. En bloc dissection can often remove all membranes that are causing traction. Some times segmentation or trimming of the broad sheets of paramacular fibrous tissue (pre-retinal fibrovascular proliferation tightly adherent to the dense, fibrotic posterior vitreous surface) often allows the retina to relax enough so that retinal reattachment is possible. Internal drainage of sub retinal fluid can be performed through a retinal tear, inadvertent retinotomy, or intentional relaxing or drainage retinotomy. Intraocular tamponad with gas or silicone oil is then employed where ever needed. If hemorrhage occurred intraoperatively it can be controlled by intraocular diathermy, increasing intraocular pressure or possibly by fluid-air exchange. Argon Laser endophotoagulation was used where ever needed.

Patients were admitted and were examined on first and second post operative day. On 3rd postoperative day patients were discharged and prescribed post operative medications of steroid-antibiotic combination with cycloplegic as per need, oral antibiotics and analgesic were given for 5 days. For follow up visits patients were examined fortnightly for 2 months and then after one month interval for 6 months. Visual acuity was noted on every follow up visit and at 6th month postoperatively. All data were analyzed using the SPSS 20.0 statistical software (SPSS Inc. Chicago, IL, USA). Chi-square test (df=1) and unpaired t test (df=3) were applied where ever needed.

RESULTS
One patient in group A and two patients in group B lost follow up so they were excluded from the study. Total of 64 eyes of 61 patients were analyzed. Male to female ratio was 1.5:1. The average age of the patients was 49.34 years with a range of 28 to 75 years. The ratio of patients with type I DM (IDDM) to type II DM (NIDDM) was 1:2. 18(29.59%) patients were with type I DM and 43(70.49%) patients were diagnosed by physician as type II DM.

In group A preoperative best corrected visual acuity in the eyes to be operated were 3/60 in 3(9.09%) eyes, in 5(15.15%) eyes was 2/60, in 15(45.45%)eyes was 1/60and in 10(30.30) eyes was perception of light (PL+). While the visual acuity recorded in the fellow eye rang from 6/6 to 1/60 with median value of 6/36.

Preoperative visual acuity in the eyes to be operated in group B patients were 2/60 in 9(29.03%) eyes, 1/60 in 13(41.93%) and Perception of light (PL+) in 9(29.03%) eyes while the visual acuity of fellow eyes had a median value of 6/36 with range of 6/6 to perception of light (PL+). After 6 months follow up the final best corrected visual acuity recorded in group A patients, 9(27.27%) eyes were placed in category “(Near) Normal Vision” (6/18 or better), while 10(32.25%) eyes achieved “Moderately impaired vision” (6/24 to 6/50), and 18(58.06%) eyes had “severely impaired vision” (6/60 to 3/60). 1 (3.03%) eye has achieved only Light Perception and was placed in “Near Blind” category.

To compare the visual out comes in patient of group A and group B “(Near) normal vision” was achieved by significantly higher number of patients in group A than group B. 9(27.27%) eyes in group A patients achieved “(Near) normal” as compared to 2(6.45%) eyes in group B patients (P=>0.05). “Impaired vision” was achieved by 14(42.42%) eyes in group A patients and 10(32.25%) eyes in group B patients (P=>0.05). 18(58.06%) eyes in group B patients as compared to 9(27.27%) eyes in group A got “severely Impaired vision” (P=>0.05).

Overall in our study we achieved (Near) normal vision in 11(17.18%) eyes (t=0.36), “Moderately impaired vision” in 24(37.5%) eyes (t=0.105) and in 27(42.18%) eyes (t=0.205) only ambulatory vision (severely impaired vision) was achieved.
Table 1. Final best corrected visual acuity of patients in group A (Early Vitrectomy) n=33

<table>
<thead>
<tr>
<th>Pre-operative Best Corrected V/A</th>
<th>Post operative Best corrected V/A</th>
<th>Total</th>
</tr>
</thead>
<tbody>
<tr>
<td>(Near) Normal Vision</td>
<td>Moderately impaired vision</td>
<td></td>
</tr>
<tr>
<td>(6/18 or better)</td>
<td>(6/24 to 6/50)</td>
<td></td>
</tr>
<tr>
<td>3/60</td>
<td>2</td>
<td>3(9.09%)</td>
</tr>
<tr>
<td>2/60</td>
<td>2</td>
<td>5(15.15%)</td>
</tr>
<tr>
<td>1/60</td>
<td>4</td>
<td>15(45.45%)</td>
</tr>
<tr>
<td>PL+ve</td>
<td>1</td>
<td>10(30.30%)</td>
</tr>
<tr>
<td>Total</td>
<td>9(27.27%)</td>
<td>33(100%)</td>
</tr>
</tbody>
</table>

Table 2. Final best corrected visual acuity of patients in group B (Late Vitrectomy) n=31

<table>
<thead>
<tr>
<th>Pre-operative Best Corrected V/A</th>
<th>Post operative Best corrected V/A</th>
<th>Total</th>
</tr>
</thead>
<tbody>
<tr>
<td>(Near) Normal Vision</td>
<td>Moderately impaired vision</td>
<td></td>
</tr>
<tr>
<td>(6/18 or better)</td>
<td>(6/24 to 6/50)</td>
<td></td>
</tr>
<tr>
<td>3/60</td>
<td>0</td>
<td>0</td>
</tr>
<tr>
<td>2/60</td>
<td>1</td>
<td>9(29.03%)</td>
</tr>
<tr>
<td>1/60</td>
<td>1</td>
<td>13(41.93%)</td>
</tr>
<tr>
<td>PL+ve</td>
<td>0</td>
<td>9(29.03%)</td>
</tr>
<tr>
<td>Total</td>
<td>2(6.45%)</td>
<td>31(100%)</td>
</tr>
</tbody>
</table>

Table 3 Overall visual outcome of 64 eyes of patients

<table>
<thead>
<tr>
<th>Visual Outcome</th>
<th>Group A (n=33)</th>
<th>Group B (n=31)</th>
</tr>
</thead>
<tbody>
<tr>
<td>(Near) Normal Vision (6/18 or better)</td>
<td>9(27.27%)</td>
<td>2(6.45%)</td>
</tr>
<tr>
<td>Moderately Impaired Vision (6/24 to 6/50)</td>
<td>14(42.42%)</td>
<td>18(58.06%)</td>
</tr>
<tr>
<td>Severely Impaired Vision (6/60 to 3/60)</td>
<td>9(27.27%)</td>
<td>18(58.06%)</td>
</tr>
<tr>
<td>(Near) Blindness (1/60 to PL+ve)</td>
<td>1(3.03%)</td>
<td>1(3.22%)</td>
</tr>
<tr>
<td>Total</td>
<td>33(99.99%)</td>
<td>31(99.99%)</td>
</tr>
</tbody>
</table>
DISCUSSION

Several complication of advanced diabetic retinopathy can be treated surgically. Vitrectomy can clear media opacities, relieve traction on the retina possible. Removal of pre-macular vitreous may also improve diabetic macular edema. Instrumentation, understanding of patho-physiology and surgical skills has improved surgical results. As vitrectomy became safer indications and timing for surgery have considerably changed. The Diabetic Retinopathy Vitrectomy Study (DRVS) has recommended that vitrectomy should be advised for eyes with vitreous hemorrhage, which fails to resolve spontaneously within 6 months. Early vitrectomy (<6mo, mean 4mo) may result in a slightly greater recovery of vision in type 1 diabetics. This study was conducted with the objectives that either early vitrectomy is proportionally more effective in restoring of vision in patients with complications of diabetic eye disease or vitrectomy in later dates, that a significant time has been elapsed after the onset of complications of diabetic eye disease.

Helbig, H stated that indication and timing for diabetic vitrectomy was increasingly important as the treatment of complications of diabetic retinopathy continue undergo modification and redefinition. He concluded that the most common indication for diabetic vitrectomy include: i) severe non clearing vitreous hemmorrhage; ii) tractional retinal detachment; iii) progressive fibro-vascular proliferation; v) Rubeosis iridis with vitreous hemmorrhage. The improvement in visual acuity may be less satisfactory with longer duration of visual loss due to the complication of diabetic eye disease. DRVS reported that after removal of longstanding vitreous hemorrhage, significant traction retinal detachment (sometimes in-operable) often was discovered. Surgeons had noted that once proliferative tissue was successfully removed and the posterior vitreous was completely excised, proliferation did not recur. Once the macula became detached by tractional forces, attempts at surgical re-attachment often failed to restore good vision. Therefore, where proliferation was severe and vision was still not significantly impaired, early vitrectomy had the potential to stop the proliferative process and preserve vision. Machmer and Blankship (1981) reported visual improvement could be achieved in 59% of the cases where the posterior retina was attached but only in 25% where it was detached resulting in an overall major visual improvement in 46% of the cases. In this study 6/18 or better vision was achieved by 9(27.27%) eyes of group A (early vitrectomy ) patients as compared to 2(6.45%) eyes of group B (late vitrectomy ) patients (P=>0.05). In DRVS, after 2years of follow up, 25% of early vitrectomy group had visual acuity of 10/20 (6/12) or better compared with 15% in late vitrectomy group.

Ishida and Takenchi (2001) evaluated the long term results of vitrectomy for complications of proliferative diabetic retinopathy, in patients with no macular detachment (group 1), macular detachment (group2) and tractional macular detachment (group 3). After five years follow up examination they found retinal re-attachment in 100% of eyes. The final visual acuity obtained was , 75% of the eyes had acuity of 0.1(6/60) or better in group 1, 24% in group 2 and 14% in group 3; 44% had acuity of 0.05 (3/60) or better in group 1, 2% in group 2 and 14% in group 3; and 1% had acuity of 0.05(3/60) or worse in group 1, 18% in group 2 and 0% in group 3.

In this study postoperative visual acuity of 6/24 to 6/60 (moderately impaired vision) was achieved by 42.42% eyes in group A patients and 32.25% eyes in group B patients. Visual acuity of 6/60 to 3/60 was achieved by 58.06% eyes in group B patients and 27.27% eyes of group A patients.

In this study considering the overall visual outcome 6/18 or better, visual acuity was achieved in 11(17.18%) eyes. Visual acuity of 6/24 to 6/60 was achieved in 24(37.5%) eyes and 27(42.18%) eyes achieved visual acuity of 6/60 to 3/60. Helbig and Kellner (1998) evaluated the functional results, risk factor and complication in 389 eyes, that had undergone vitrectomy. They found that after median follow up time of six months of surgery, 25% of the eyes had a visual acuity of 20/60 (6/18) or better, a vision less than 5/200 (1/60)was found in 25% of the eyes. Only 16% of the eyes with tractional detachment of macula had postoperative vision of 20/200(6/60) or better. They concluded that eyes with advanced stages of long standing tractional detachment of macula the functional prognosis was very poor due to the underlying micro vascular disease. In less advanced stages with vitreous hemorrhage and flat retina the risk of vitreous surgery was lower.

Diabetic person with severe vision loss from severe proliferative diabetic retinopathy are candidates for vitrectomy after vitreous hemorrhage and severe fibrous changes in retina.
Visual Outcome after Early & Late Pars Plana Vitrectomy in Patients with Advanced Diabetic Eye Disease

during the rapidly evolving proliferative and retraction process did not adversely affect the visual success rate when compared to previous reports on longstanding vitreous haemorrhage19. In cases where vision loss occurred, pars Plana vitrectomy frequently can restore useful vision and reduce the risk of vision loss from traction retinal detachment 18. As discussed above in present study the result (in terms of visual outcome) of early vitrectomy were proportionally better in patients with complicated proliferative diabetic retinopathy as compared to the results of patients with vitrectomy done in later dateas.

CONCLUSION

Vitrectomy for complications of proliferative diabetic retinopathy is valuable in improving the patient’s visual acuity. Any delay in surgery for complications of diabetic retinopathy can cause such complications which are difficult to treat. Even after treatment, good results cannot be obtained as with early vitrectomy. Earlier the presentation, better options for treatment and better visual outcome.

Conflict of Interest: The authors have no conflict of interest and is not supported or funded by any Drug company or any other source.

REFERENCES
1. Al Quraan 2:29
Western type whitefish

INTRODUCTION:

Trachoma is a pathological condition caused by the trachoma organism Chlamydia trachomatis. It begins with a self-limiting keratoconjunctivitis followed by immune mediated fibrogenous breakdown of the cornea, leading to ultimate blindness. Trachoma has affected at least 1.9 million people around the globe[14]. The disease has known to belong to ancient times as old as 15 B.C. It was first reported in Egypt, but in eventual centuries the disease was also reported in China, Mesopotamia and African peninsula. During the Napoleonic wars, the disease was a major cause of blindness in Europe.

In areas where hygiene is poor, person to person contact is the cause of transmission of infection. These results herald a need to establish measures for better awareness among the population to combat the disease and eliminate it by 2020 as recommended by WHO.

The signs and symptoms at an early stage remain concealed while at the latter staged the patient presents with swelling of bulbar and palpebral conjunctivae associated with purulent discharge followed by trichiasis and follicular hypertrophy. [Ref: Lancet 2003 July 19:362:239][Chin Microbial Revision 2004 Oct 17[4] Studies reveal that trachoma is highly associated with lack of adequate hygiene and poverty[17]. Besides, overcrowding in slums play a major role in spreading as it is a contagious disease. The disease also spreads through personal contact i.e. usage of clothes,
Assessment of Trachoma Awareness in General Population of Sahiwal

utensils, cosmetics of affected person. Besides the above factors, house fly plays an important role being a vector. The disease is more prevalent in humid and tropical regions\[8]\[12].

Despite continuous efforts to control this disease, trachoma still remains an important cause of irreversible blindness around the globe\[3]\[7]\[12]. In a recent study conducted during 1999-2000, trachoma accounts for 5.2% of visual loss in sub-Saharan Africa.

Unfortunately, Pakistan falls in the category of countries which have high prevalence of all the factors contributing to the disease. Hence, the sole purpose of this study is to gather knowledge from common masses in Sahiwal about what they know about the disease, its causes and most importantly the preventive measures that must be taken to prevent the disease in order to raise awareness and promote prevention.

MATERIAL AND METHOD:

This is a cross sectional study carried out on people visiting the outpatient department of Civil Hospital Sahiwal and Sahiwal Medical College, using self-administered survey questionnaires. It was conducted from the 15th of July to 15th August. OPD was chosen to include a wide range of social classes and residential diversity as the hospital is the main primary care provider for the people of Sahiwal city and its suburbs. Convenience sampling was used to select a sample of 100 people. The sample incorporated both male and female genders, above 20 years of age. In the sample, the selected subjects were both patients and the people accompanying them. It was not asked whether they were patients or not. The administered questionnaire had two sections, section A being about the demographical details and section B asking specific questions about trachoma. The questions were asked after informed consent. SPSS was used to fill in the responses from patients. The questions focused on the awareness regarding the cause and spread of trachoma in the population. It aimed at finding the reasons for acquiring the disease and its mode of spread.

Questions also incorporated the use of practices of hygiene and sanitation among the sample population. The use of mythical treatments and visits to quacks was also asked from the people to know the misconceptions about trachoma. People were also asked whether they were aware of the treatment and complications of trachoma.

RESULTS:

In a sample of 100 people 51 were females and 49 were males. Assessment of socio-economic status of respondents was based on the following questions and their responses: 66% of the respondents belonged to urban setting and 19% to rural whereas 19% lived in semi urban area. Out of these, 57% lived in a kachha house while 26% in pakka ones and 17% in modern houses. The frequency of people within income range of Rs. 6000-10,000 per month was 29 out of 100. 36 people had income range of Rs. 10,000-30,000 per month and 35 people had income above Rs. 30,000. This shows that majority of the people belonged to a lower middle class family. As the main focus of our research was to learn about knowledge of trachoma, and its mode of prevention among the population of Sahiwal, the second section of the questionnaire focused on specific questions regarding knowledge of disease and its causative factors. The results were formulated in the form of bar charts, pie charts and frequency tables:

Bar chart 1: knowledge about trachoma

Yes = 38%  No = 58%  Maybe = 4%

Pie chart 2: knowledge about preventive measure
Yes = 37%  No = 59%  Maybe = 4%

The results showed that only 38% of the respondents knew what trachoma is, 58% people did not have any idea about trachoma and 4% knew a little about trachoma. Of the people who had an idea about trachoma, only 37% knew about the prevention of the disease, while 59% did not and 4% people weren’t sure. The results showed that more than 58% people had complaint of many house flies in their homes, the most common vector for trachoma, while 29% people did not and 13% people had house flies at. 35% of the general population suffered from trachoma in spite and despite of their lifestyle, residence and hygiene routine, 51% people had not suffered from the disease and 14% people weren’t sure whether the disease they had was trachoma. 23% people visited hakeems for the treatment of eye disease, 76% did not and 1% paid an occasional visit for treatment. 20% people had misconception regarding treatment by home remedies like rose water and surma, etc. while 79% did not practice mythological home remedies and 1% did it sometimes.

**DISCUSSION:**

The result shows that 35% of the people had knowledge about trachoma while 51% had not and 14% weren’t sure if they knew the disease or not. 37% people had some idea about prevention while 59% were those who did not and 4% weren’t sure. 77% were those who maintain good personal hygiene while 28% do not. 77% are those who have the habit of sharing eye cosmetics like with others while 28% do not. Despite maintaining hygiene 57% percent of population has flies in their home while 43% do not have flies. 23% of population has the habit of visiting “hakeems” for the treatment while 76% do not. 21% of population is in the habit of using home remedies for the treatment while 79% do not.

According to a study conducted in schools of Pakistan by Ather.C in 2017 to assess perception of eye disease in children and teachers, eyes are healthy as long as they can see well, have no pain, discharge and do not itch[13]. This perception also seems to be common among the population of Sahiwal. A study conducted in upper Sindh by Hamza.U in 2018 reported that trachoma was primarily a disease of childhood, infection started in early life and complications began to appear in adulthood[18]. Detailed history and complete eye examination of anterior and posterior segments were performed. The results obtained from patients suffering from trachoma clearly showed that people had very little awareness about the disease they were suffering from. These people belonged to a poor socioeconomic class deprived of basic facilities of health and nutrition.

Another study conducted in Tharparkar, Sindh showed that prevalence of trachoma was more in females (47.76%) as compared to males (34.95%). Possible reasons for it may be that in Tharparkar area, people are living in a very unhygienic atmosphere and women also have more contact with their children as compared to males. Overcrowding, lack of water supply and scarce amount of water used for washing purposes are the major sources for trachoma infection[15][18]. These findings correlate with our study about the higher prevalence among females.

Personal hygiene plays an important role in the prevention of trachoma, which is affected by the literacy and individual habits of a person. Trachoma is a contagious disease so sharing eye products like surma, kajal or even use of affected person’s towel may also facilitate its spread. In quite a good number of studies performed elsewhere, it has been shown that the prevalence of trachoma decreases in those areas where people are trained to acquire the habit of proper face and hands washing and eliminating trachoma as a blinding disease should be the goal of community ophthalmologists through increasing the awareness of population by means of continued and related health education. The concerned health staff of community ophthalmology centers should also be trained properly to diagnose the disease and ensure provision of timely treatment [9][19]. House flies are also termed as carriers or vectors for the spread of trachoma disease as they carry a number of organisms. So the survey also covered the statistics regarding presence of flies in homes and found higher rate of prevalence in houses where more flies are present. Religion plays an important role in prevention as offering prayers includes ablution with water which improves hygiene.

The above presented results depict before us the fact that indeed trachoma is highly associated to poverty, poor personal hygiene and careless attitude regarding its spread. General population of Sahiwal, except people belonging to health profession, has very low awareness regarding the disease or its treatment and prevention. But interestingly, and rather fortunately those who have the awareness or those who have suffered the disease at least have the idea not to fall in the hands of
quacks or hakeems or not to use home remedies for its treatment.

If we compare our results with the previous researches carried out in Pakistan and other regions of the world we come across the fact that active trachoma is still an avoidable vision threatening challenge not only in upper Sindh in Pakistan but also in tropical regions of the world like Nigeria, parts of African peninsula even in sub-Saharan regions [3][5][6][9][10][11]. If we take a look around the tropical part of the world we come to know that in 2003 WHO estimated 84 million cases of active trachoma worldwide [7]. Six million people have trachoma induced blindness or severe visual loss worldwide [7][8]. This accounts for 2.9% of world’s blind people [4]. The World Health Organization (WHO) made a call in 1997 for a Global Elimination of Blinding Trachoma by 2020 (GET: 2020) and endorsed a strategy – SAFE strategy [19]. It includes 22 African and 2 Asian countries i.e. Pakistan and India, providing free medical facilities, medicine and treatment and raising awareness. It also includes provision of basic nutrition and water supply in remote areas more prone to endemic cases.

CONCLUSION:

The awareness amongst the respondents regarding trachoma was found to be very low among the general population visiting DHQ Teaching Hospital Sahiwal, although it was higher than found in other studies conducted across Pakistan and in the developing third world countries. People had even less idea about its mode of spread and general maintenance of hygiene was found low. Even in areas where hygiene was better, person to person contact was the cause of transmission of infection. These results herald towards a need to establish measures for better awareness among the population to combat the disease and eliminate it by 2020 as recommended by WHO.

REFERENCES:

ABSTRACT:
Purpose: To analyze final visual outcome of ocular trauma in Department of Pediatric Ophthalmology in a Tertiary Care Hospital.
Methods: 240 cases of ocular trauma treated in Department of Pediatric Ophthalmology from December 2018 till June 2019 were retrospectively reviewed. Data included age, gender, type of injury, source of injury, time of presentation, initial and final visual acuity, anterior segment and fundus examination, appropriate management and follow ups.
Results: This study contained 240 patients with age between 1 month to 16 years. Most of them were between 7-12 years (41%), with 172 (71.7%) boys and 68 (28.3%) girls. The most common type of injuries were Domestic 157 (65.4%) followed by road traffic accident 47 (19.6%). 133 (55.4%) cases presented within 12 hours of injury while 52 (21.7%) presented between 12-24 hours, rest of them presented after more than 24 hours of trauma. Closed globe injury occurred in 145 (60.4%) with (NOTE:-) majority of contusion 71 (29.6%) while open globe injury occurred in 95 (39.6%) with majority of penetrating injuries 67 (27.9%). Visual acuity was better than 6/12 in 245 (53.0%) children. Surgical management was required in 147 (61.3%) patients, with majority of ocular sclera/corneal primary repair 67 (27.9%) and most of them were caused by sharp objects 68 (28.3%). The final visual acuity was better than 6/12 in 105 eyes (43.8%), 6/18-6/60 in 64 eyes (26.7%), 5/60-1/60 in 41 eyes (17.1%), less than 1/60 in 15 eyes (6.3%) and 15 (6.3%) eyes had final visual outcome of no light perception.
Conclusions: The leading two types of ocular injury in our pediatric ophthalmology department were domestic followed by road traffic accident with most of the injuries were in 7-12 years of age with greater number in boys. Significant predictive factors of final visual acuity in pediatric ocular trauma include initial visual acuity, type of injury, source of injury, duration of presentation and management.

INTRODUCTION:
It has been estimated that in 2006 there were 52 thousand children in Pakistan that were visually impaired or blind. Among acquired causes of blindness in childhood, Ocular trauma is on the top. Following amblyopia the second most prevalent cause of preventable monocular visual deterioration is ocular trauma. About 8%-14% of actual childhood Injuries are Ocular Trauma, with greater numbers of boys due to their aggressive and heroic nature and their involvement in activities without care and incapacity to understand the essence of hazardous objects.

Significant predictive factors of final visual acuity in pediatric ocular trauma include initial visual acuity, type of injury, source injury, duration of presentation and management. Children need more parental care and supervision at home and they should know regarding ocular injuries, their impact on vision safety measures while driving, with supervision while playing. Hazardous objects should be out of reach of children. In case of any ocular early trauma medical attention is mandatory.

With rough estimation more than 55mil-
lionocural trauma occurs annually and about 2.3 million people bilaterally and 19 million people unilaterally blind or visually impaired.\(^{(6)}\) Pediatric ocular trauma causes for up to 1/3 of all cases of visual loss in the 1st decade of life and have an age-specific pattern, that is children lesser than 3 years of age suffer less trauma due to close parental care.\(^{(10,11)}\) According to a research about 25.4% of ocular injuries occurred before 18 years of age.\(^{(12)}\) About 42.9 percent of these ocular trauma occurs in school going age.\(^{(13)}\) Ocular injury is related with high levels of mental stress, regular visits to hospitals and increased financial burden.\(^{(14)}\)

The Aim of this study is to analyze visual outcomes, contributing factors, clinical features and strategies for the prevention, management plan in post ocular trauma. This study will also help in assessing the numbers of the childhood avoidable blindness and much information to reduce incidence of pediatric ocular trauma.

**METHOD AND MATERIAL:**

In this retrospective study in department of pediatric ophthalmology, all patients with ocular trauma age between 1 month to 16 years presenting to the hospital from December 2018 to June 2019 included. Data included age, gender, residence, type of injury, source of injury, duration of presentation, anterior segment, fundus examination, and examination under anesthesia (EUA) for un-cooperative children with appropriate management (medical or surgical intervention) and follow ups. Initial and final visual outcome in preverbal children were measured using fixation and following or central steady maintenance or Sheridian Gardner cards and rest with using Snellen’s fractions or Illiterate E-chart. Best-corrected visual acuity achieved after a complete cycloplegic refraction and prescribing spectacles. Ocular trauma were classified as Birmingham eye trauma terminology system (BETTS) which doesn’t includes adnexa injuries(fig.1). A new classification of ocular trauma that suggested “ocular trauma” include trauma of globe as well as structures of ocular adnexa such as the lids, conjunctiva and lacrimal apparatus.\(^{(15,16)}\)

Statistical analysis was performed using SPSS version 24.0 statistical software.

**RESULTS:**

The study was conducted in a tertiary care hospital in department of pediatric ophthalmology from December 2018 to July 2019 in 240 patients which presented to us with ocular trauma history from outpatient department and emergency. Most of those injuries occurred in children of 7-12 years (41%) followed by age group of 2-6 years (32.1%). Among all cases boys 172 (71.7%) were more prone to these injuries due to their heroic nature and 68 (28.3%) of these patients were girls. (Table 1)

<table>
<thead>
<tr>
<th>Age (Year)</th>
<th>Boy</th>
<th>Girl</th>
<th>Total</th>
<th>Percentage</th>
</tr>
</thead>
<tbody>
<tr>
<td>0–1</td>
<td>6</td>
<td>5</td>
<td>11</td>
<td>4.6%</td>
</tr>
<tr>
<td>2–6</td>
<td>56</td>
<td>21</td>
<td>77</td>
<td>32.1%</td>
</tr>
<tr>
<td>7–12</td>
<td>66</td>
<td>34</td>
<td>100</td>
<td>41.7%</td>
</tr>
<tr>
<td>13–16</td>
<td>44</td>
<td>8</td>
<td>52</td>
<td>21.7%</td>
</tr>
<tr>
<td><strong>Total</strong></td>
<td>172</td>
<td>68</td>
<td>240</td>
<td>100.0%</td>
</tr>
</tbody>
</table>
A Retrospective Study on final Visual Outcome of Ocular Trauma in Department of Pediatric Ophthalmology in a Tertiary Care Hospital

Table 1(Distribution of cases by age and gender)
The most common type of injuries were Domestic 157 (65.4%) followed by road traffic accident 47 (19.6%) among most of them caused by sharp objects 68 (28.3%) followed by blunt object 45 (18.8) and 48 (20%) injuries occurred during road traffic accident. Table(2), Figure (1)

<table>
<thead>
<tr>
<th>Source of injury</th>
<th>n</th>
<th>Percentage</th>
</tr>
</thead>
<tbody>
<tr>
<td>Sharp object</td>
<td>68</td>
<td>28.3%</td>
</tr>
<tr>
<td>Blunt object</td>
<td>45</td>
<td>18.8%</td>
</tr>
<tr>
<td>Fall</td>
<td>34</td>
<td>14.2%</td>
</tr>
<tr>
<td>Traffic accidents</td>
<td>48</td>
<td>20.0%</td>
</tr>
<tr>
<td>Chemical</td>
<td>4</td>
<td>1.7%</td>
</tr>
<tr>
<td>Fire works</td>
<td>5</td>
<td>2.1%</td>
</tr>
<tr>
<td>Wood</td>
<td>16</td>
<td>6.7%</td>
</tr>
<tr>
<td>Metallic object</td>
<td>7</td>
<td>2.9%</td>
</tr>
<tr>
<td>Sport equipment</td>
<td>13</td>
<td>5.4%</td>
</tr>
<tr>
<td>Total</td>
<td>240</td>
<td>100%</td>
</tr>
</tbody>
</table>

Table 2 (Distribution of Cases by Source of Injury)

Of the patients, 133 (55.4%) presented within 12 hours of injury while 52 (21.7%) presented between 12-24 hours, rest presented after more than 24 hours of trauma. Closed globe injury occurred in 145 (60.4%) with majority of contusion 71 (29.6%) and accounting 57 (23.8%) adnexa injuries, 13 (5.4%) lamellar laceration and 4 (1.7%) chemical injuries. Open globe injury occurred in 95 (39.6%) of patients with majority of penetrating injuries 67 (27.9%), followed by rupture of globe 21 (8.8) and intra ocular foreign bodies 7 (2.9%). (Table 3).

In term of managing 93 (38.7%) patients were treated conservatively with eye padding, bed rest, oral and ocular antibiotic with steroids. Surgical management was required in 147 (61.3%) patients, with majority of ocular wall primary repair 67 (27.9%), followed by 30 (12.5%) cases of adnexa repair in trauma to lids. Lens aspiration was done in patients with traumatic cataract while pars plana lensectomy was done in patients with subluxated, dislocated lens or patients with zonular dehiscence secondary to blunt trauma. Primary ocular wall repair followed by traumatic cataract lens was aspiration done in 20 (8.3%) patients.

Rest of interventional procedures were removal of intra ocular foreign body, anterior chamber washout and vitreoretinal surgeries. (Table 4)

<table>
<thead>
<tr>
<th>Type of injury</th>
<th>N</th>
<th>Percentage</th>
</tr>
</thead>
<tbody>
<tr>
<td>Open globe injuries</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Penetrating</td>
<td>67</td>
<td>27.9%</td>
</tr>
<tr>
<td>Rupture</td>
<td>21</td>
<td>8.8%</td>
</tr>
<tr>
<td>IOFB</td>
<td>7</td>
<td>2.9%</td>
</tr>
<tr>
<td>Total</td>
<td>95</td>
<td>39.6%</td>
</tr>
<tr>
<td>Closed globe injuries</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Contusion</td>
<td>71</td>
<td>29.6%</td>
</tr>
<tr>
<td>Lamellar laceration</td>
<td>13</td>
<td>5.4%</td>
</tr>
<tr>
<td>Chemical Injuries</td>
<td>4</td>
<td>1.7%</td>
</tr>
<tr>
<td>Adnexa injuries</td>
<td>57</td>
<td>23.8%</td>
</tr>
<tr>
<td>Total</td>
<td>145</td>
<td>60.4%</td>
</tr>
</tbody>
</table>

Table 3 (Distribution of Cases by Type of Injury)
A Retrospective Study on final Visual Outcome of Ocular Trauma in Department of Pediatric Ophthalmology in a Tertiary Care Hospital

<table>
<thead>
<tr>
<th>Management</th>
<th>n</th>
<th>Percentage</th>
</tr>
</thead>
<tbody>
<tr>
<td>Non-Surgical</td>
<td>93</td>
<td>38.7%</td>
</tr>
<tr>
<td>Surgical</td>
<td>147</td>
<td>61.3%</td>
</tr>
<tr>
<td>Ocular wall repair</td>
<td>67</td>
<td>27.9%</td>
</tr>
<tr>
<td>Adnexa Repair</td>
<td>30</td>
<td>12.5%</td>
</tr>
<tr>
<td>Removal of foreign body</td>
<td>5</td>
<td>2.1%</td>
</tr>
<tr>
<td>Anterior chamber washout</td>
<td>5</td>
<td>2.1%</td>
</tr>
<tr>
<td>Vitreoretinal surgery</td>
<td>12</td>
<td>5.0%</td>
</tr>
<tr>
<td>Lens aspiration(LA)/PPL</td>
<td>8</td>
<td>3.3%</td>
</tr>
<tr>
<td>Ocular wall repair + LA</td>
<td>20</td>
<td>8.3%</td>
</tr>
<tr>
<td>Total</td>
<td>240</td>
<td>100%</td>
</tr>
</tbody>
</table>

Table 4 (Distribution of cases by management)

Visual acuity

<table>
<thead>
<tr>
<th>Visual acuity</th>
<th>N</th>
<th>Percentage</th>
</tr>
</thead>
<tbody>
<tr>
<td>6/12 or Better</td>
<td>105</td>
<td>43.8%</td>
</tr>
<tr>
<td>6/18-6/60</td>
<td>64</td>
<td>26.7%</td>
</tr>
<tr>
<td>5/60-1/60</td>
<td>41</td>
<td>17.1%</td>
</tr>
<tr>
<td>HM,LP</td>
<td>15</td>
<td>6.3%</td>
</tr>
<tr>
<td>No perception of light</td>
<td>15</td>
<td>6.3%</td>
</tr>
<tr>
<td>Total</td>
<td>240</td>
<td>100%</td>
</tr>
</tbody>
</table>

Table 5 (Distribution of Cases by final visual outcome)

DISCUSSION:

In our study, it was found that most common age group prone to pediatric ocular trauma was 7-12 years of age, due to their involvement in activities without care and incapacity to understand the essence of hazardous objects. Age limit below this has a good parental care but they can suffer in injuries most likely from mother or sibling finger nail and sewing needles while age above this limit it has a better essence of hazards, but they could also suffer injuries from sharp objects accidently like pen, pencil, thorn, and toy’s spikes and at this age they are also prone to road traffic accident and fall supported by other studies. (17,18) Boys had a higher rate of ocular trauma than girls similar to a few other studies which also stated a higher rate in males.(19–23) This could be due to aggressive and heroic nature in boys and more to be expected to contribute in sports and dangerous activities.

133 (55.4%) cases presented within 12 hours of injury while 52 (21.7%) presented between 12-24 hours, others presented after more than 24 hours of trauma. A study done in China which suggested that delayed presentation matters a lot in final visual outcome.(24) So medical awareness matters a lot and should be improved.

In our study, home-related injuries (65.4%) were most common which is similar with various studies(5,8,25) but differ from those of people to peo-
Mechanical eye injuries are classified into open and closed globe injuries. Closed globe injuries includes contusion, lamellar laceration, chemical injuries, and adnexa injuries. In our study among all these, blunt trauma was on the top with percentage of 29.6% having similarity with a study(27). Figure (2)

In etiology of ocular trauma there is wide diversity in different study population that is stone by Takwam and Midelfart in Norway, metallic object by Soylu et al. in Turkey ,toys by MacEwen et al. in UK(27–29) and sharp objects (28.3%) like knives, scissors, pens and broken glass were leading source in our study, having similarity with another study done in India(18). Figure(4)

The aim of early surgical management is restoration of integrity of structures and prevention of infection. In our study 147 (61.3%) patients were managed surgically, with majority of ocular wall primary repair 67 (27.9%), followed by adnexa repair 30 (12.5%) and then those in which Primary ocular wall repair with traumatic cataract lens aspiration was done 20 (8.3%). Figure(4,5)

In our study, 74 eyes with initial VA of Light perception, among them 60% ended up with final visual outcome of better than 6/60. In 15 patients there were initial visual acuity of no perception of light which ended with no further improvement and most of them were due to optic nerve injury. Final Visual acuity was better than 6/12 in 105 eyes (43.8%), 6/18-6/60 in 64 eyes (26.7%), 5/60-1/60 in 41 eyes (17.1%), less than 1/60 in 15 eyes (6.3%) and 15 eyes (6.3%) had a visual outcome of no perception of light.

CONCLUSION:
In Conclusion leading two types of pediatric ocular trauma were domestic followed by road traffic accident with most of them occurred in children with age group of 7-12 years and boys were in greater number. Significant predictive factors of final visual acuity in pediatric ocular trauma include initial visual acuity, type of injury, source injury, duration of presentation and management. Thus at the end of the study it was concluded that children need more parental care and supervision at home and they should know regarding ocular injuries, their impact on vision safety measures should be used while driving, with supervision while playing. Hazardous objects should be out of reach of children. In case of any ocular early trauma medical attention is mandatory.
REFERENCES:

ABSTRACT
Objective: To explore the barriers in diabetes education to South Asian populations in the UK.
Methods: This qualitative study was conducted using in-depth interviews and a focus group approach.
Results: This study found the following barriers as language and communication; only following their GP’s guidance; not knowing where to access help and who to contact for assistance; barriers to enhancing knowledge; least or no information required; in convenient time for South Asian populations; diabetic diet barriers; exercise barriers; lack of trust in diabetic medications; all these were significant barriers to understand diabetes education.
Conclusion: In order to provide good care, to enhance diabetes education and a good outcome from an education programme for diabetes self-care, it is very important for diabetes educators, health professionals and health providers to understand the barriers to diabetes education in South Asian populations.
Keywords: Barriers to diabetes education; South Asian populations; cultural barriers to diabetes.

INTRODUCTION
The South Asian population is the second largest ethnic group in the UK (1), and they are the most likely to develop diabetes (2,3,4). Studies estimated that the prevalence of diabetes in South Asian communities in England in 2010 was 14.0%, compared with 6.9% in the general population (5,6). Worldwide, diabetes education is considered very important for diabetes self-management, which would reduce 53–63% of diabetes complications and also the 46% mortality rate (7,8). However, due to many barriers to diabetes education in South Asian communities, knowledge of diabetes still remains low (9). With better understanding, healthcare providers could help to develop effective diabetes education and management programs to improve both diabetes care and education programme outcomes to reduce the risk of diabetes-related complications in South Asian populations.

The barriers include language difficulty, lack of communication, health facilities, literacy levels, diabetes education, diabetic diet and exercise with a lack of trust in diabetic medications and beliefs about health, all of which can alter the quality and outcome of the diabetes education programmes and affect the life of the South Asian population with diabetes. A comprehensive diabetes education programme is required for the South Asian population of the UK in order to minimise the risk of diabetes complications.
MATERIAL AND METHOD

This study was designed as an exploratory qualitative study using in-depth interviews and a focus group approach method; the data was analysed thematically. The study was conducted in the Institute of Diabetes for Older People (IDOP), University of Bedfordshire, UK. The participants for the study were recruited between 4th September and 4th November 2014, a total of 16 participants aged 50+ with no upper age limit, diagnosed with diabetes, who were randomly chosen with the help from health professionals, and general practitioners of the Bedfordshire region. All the participants were given details of the study, and their questions about the study were answered. The potential participants were then given one week to read and sign the consent form.

<table>
<thead>
<tr>
<th>Demographic information of the participants</th>
<th>Gender</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>6 Participants for focus group</strong></td>
<td></td>
</tr>
<tr>
<td>Age 50+, no upper age limit, diagnosed with diabetes, were randomly chosen with help from health professionals</td>
<td>Female 1 Male 5</td>
</tr>
<tr>
<td><strong>8 Participants for in-depth interviews</strong></td>
<td></td>
</tr>
<tr>
<td>Age 50+, no upper age limit, diagnosed with diabetes, were randomly chosen with help from health professionals</td>
<td>Female 6 Male 2</td>
</tr>
</tbody>
</table>

Full ethical approval was granted by the Institute of Diabetes for Older People (IDOP), University of Bedfordshire, UK.

RESULT

In this article we only considered those sub-categories which are quoted regarding barriers to diabetes education. The following sub-categories were identified on the subject:

It is very important to understand the full conversation, communication between the health professionals and people with diabetes, as they may miss important advice from the health professionals.

This is the key factor in collecting the information needed before making suggestions or imparting information to encourage the people with diabetes to engage in diabetes care. People with diabetes who have language and communication difficulties needed someone to help them when they visit their doctor. The following quoted extract illuminates these thoughts:

“I can’t speak English very well and I don’t understand sometimes what the doctor wants me to do, I always taking my daughter or my son to go with me to the doctor, it is very difficult for me to go to see my doctor in the morning as my children are going to school” (Interviewee 6)

“Communication is very important. Some medical words, I still don’t understand as some words are Greek to me, maybe it’s a totally different language. I don’t understand medical terminology, I can miss something or say something different to what the doctor wants me to say. It is important for me to understand and doctor need to explain my problems, but as they are very busy and cannot explain everything.” (Interviewee 7)

Poor communication could be one of the barriers to diabetes education in South Asian populations as they may find it difficult to understand or share their personal concerns. Evidence suggests that the role of communication is extremely important to positively influence diabetes care. The following quotations are representative of the impact experienced by the participants regarding following guidance from their doctor:

“I don’t want to mess up with my diabetes, that’s why I am only trusting on my doctor and what he advise to me I am following that”. (Interviewee 1)

“See that’s true I can’t choose for myself, what medicine is good or bad for me, this is not my job I am a patient not a doctor”. (Interviewee 3)

Most of the participants reported that they didn’t know where to access help or who to contact. Participants showed their concern in the following quotes:

“Last time my doctor told me about the diabetes education, I asked her (doctor) where I can get the information, she told me to consult Google it, I didn’t comment that I can’t use the computer”. (Interviewee 8)
“It is very difficult, my diabetes nurse told me the same thing, she gives me the number to call them and they will explain to you what to do. My son called on that number, someone took my details and they said to my son they will call us back. After one week my son called again and somebody said the same thing. This has been 2 months but no one called us, my son is working I can’t ask him all the time to ring them for me”. (Interviewee 2) 

Belief that there is no need for more information  
“I don’t think that I need to learn much about my diabetes. My children look after me and they know what to do with my diabetes”. (Interviewee 7) 

“To be very honest I don’t have the energy to learn as I know nothing can cure my diabetes so what is the point of learning new things”. (Interviewee 5) 

“(laughing) I don’t care to learn, my son paying to someone (health care assistant) and they come every week to check my diabetes”. (Interviewee 9) 

Diabetes training and education times: “My doctor told me about the diabetes education course for two weeks, but the time was not convenient for me as I am doing other things (cleaning, cooking) at my home”. (Interviewee 10) “I am a taxi driver if I am doing these diabetes trainings, who will pay my bills? I am free after 6pm but there is no one to train me about my diabetes after that time”. (Interviewee 12) 

South Asians are less likely to exercise or follow a healthy diet compared to the general population (12): Participants showed their concern in the following quotes: 
“I know sweet and other things are not good for me, but I love halwa, barfee, samosa and biryani - I can’t stop myself to eat”. (Interviewee 4) 

“At home my wife and my daughter do not let me eat anything which is not good for my diabetes, but when I am out with friends, then I can’t say no to them and I eat anything including those foods which is not good for my diabetes (laugh)”. (Interviewee 11) 

“I am cooking foods for my family, it is difficult to make separate food for myself due to other commitments at home, also my doctor told me about the low cholesterol diet, but I still don’t know what I am allowed and not allowed to eat.” (Interviewee 13) 

Exercise 
“I can’t exercise, even if I walk or use stairs to go up to my room, I am becoming breathless.” (Interviewee 9) 

“I asked by my doctor for exercise, which I started, but after 2 days my body starts to hurt, I just stopped.” (Interviewee 7) 

“When I am coming home from my work then I am feeling very tired, I even do not get time to exercise on weekends as doing shopping, seeing friends and family members.” (Interviewee 4) 

Trust in diabetic medication 
“I tried all type of medications and I know nothing can cure me so what is the point to taking these medications or learning about my diabetes. I know when I am not feeling well I need to go to see my doctor.” (Interviewee 7) 

“My friend told me, if once I started diabetes medications then I have to take it for the rest of my life. Also most of my friends taking diabetes medications but there are no changes between them and me so I don’t trust these medications will make any changes.” (Interviewee 9) 

“I believed that all medicines are chemicals and if every day these medicines going into our body, so what will happen to us, and I know is not working for my diabetes so I just stopped all my medications, only I am taking it when I needed.” (Interviewee 10) 

Fear of diabetes. The impact of the meaning of diabetes and the ‘fear of diabetes’ seems to be quite remarkable; it can become the reason for absence from diabetes education classes. The participants showed their concern: 
“I really think sometimes I don’t want to know about my diabetes any more, as the more I know about diabetes it makes feel frightening, this is the reason I don’t go to the diabetes educator.” (Interviewee 3) 

“Sometimes I am thinking just don’t want to tell anyone about my diabetes because it make me feel embarrass”. (Interviewee 7) 

DISCUSSION 
South Asian communities are at a higher risk of developing Type 2 diabetes (6) and the limited
Understanding Barriers for Diabetes Awareness in South Asian Populations in the UK

resources available may have affected the learning processes so that the participants behaved timid-
ly, thus leading to a lack of social support, which caused a negative impact on their lives. The information they needed at the start was not forthcoming, from diagnosis, or even afterwards; it is only to be expected that they were stressed. Many negative perspectives from society seem to indicate that diabetes bears a bad name, and the fact of having diabetes alone can be stressful enough to disturb the patients’ lives\textsuperscript{(13,9)}. Accordingly, concealing the condition from the public seemed to allow the patients to live with less stress until the disease becomes more acceptable to society.

Reading diabetes-related books would be a positive step, to get more motivation towards their health issues, and also that the knowledge from books would be informative and they could set up their own learning scheme based on their individual needs\textsuperscript{(14)}. The media is one of the more accessible resources, and their family would be alerted to any information regarding diabetes. However, some of the media only advertise the products, which are not necessarily positive resources. If patients are then reluctant to consult health professionals, it might become a negative impact.

“I try lots of medicine reported in the newspaper, and spend my money on it but the result was nothing.” (Interviewee 6)

In summary, information is needed at the onset as it is important to control diabetes. Due to pessimistic approach, people with diabetes were sensitive to diabetes-related information, and it made them vulnerable to accept certain harmful suggestions. They need information in many formats as it is a big challenge to satisfy patients’ needs\textsuperscript{(15)}. The fear of disclosing the disease to the public might be another reason which is discouraging to the patients from accepting diabetes education\textsuperscript{(16)}, as revealed in our study.

This study found that knowledge and awareness of diabetes is very important and communication problems between individuals and health professionals can create more barriers towards diabetes education, which was also reported by Charles\textsuperscript{(17)}. After data analysis, it was found that if people didn’t understand the information regarding diabetes and its complications, or if their knowledge was incomplete, they found it hard to control their diabetes properly; this is also been reported in previous studies\textsuperscript{(18,19)}.

CONCLUSIONS

This study found that it was important for the healthcare professionals and healthcare providers (including policy makers), to understand the barriers to diabetes education in South Asian populations in the UK. The barriers found in this study included language, communication, health literacy levels, lack of knowing where to access help and whom to contact, inconvenient times for diabetes education, diabetic diet and exercise barriers, and a lack of trust in diabetic medications and beliefs about health and illness - all of which can alter the quality and outcome of the diabetes education programmes which affect the life of the South Asian population with diabetes. Due to a higher risk of developing diabetes, the South Asian population of the UK should be an important target group for diabetes education. A comprehensive diabetes education programme is required for the South Asian population of the UK in order to decrease the risk of diabetes complications. However, when educating the South Asian population regarding diabetes, the above specific considerations should be kept in mind, including diabetes education programmes which should be organised in the appropriate place and at a convenient time for this specific sector of the population.

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The Importance of Pre-Diabetes Risk Assessment to Identify Undiagnosed Diabetes

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ABSTRACT

Objectives: To identify undiagnosed diabetes and its complications in local South East Asian communities in Aylesbury, Buckinghamshire, UK.

Materials and methods: We, the public health organisation with the collaboration of Diabetes UK, organised six diabetes awareness events from May 2015 to July 2016, for the local South East Asian communities in Aylesbury, Buckinghamshire, UK. The Diabetes UK comprehensive pre-diabetes risk assessment was performed by a Diabetes UK qualified team.

Results: A large number of individuals participated in these events; most of the participants were diagnosed, diabetic or pre-diabetic as new cases.

Conclusion: Organizing diabetes awareness events, including pre-diabetes risk assessments, were found to be a very useful approach to identify people with undiagnosed diabetes.

Key words: Diabetes awareness; diabetes risk assessment; diabetes in South Asian communities.

INTRODUCTION

Worldwide, the prevalence of diabetes is high. According to the International Diabetes Federation (1), diabetes is a major health problem, and globally: “... every 7 seconds, 1 person dies from diabetes, 1 in 11 people are living with diabetes and 1 in 2 people with diabetes don’t know they have diabetes.” Figures from the International Diabetes Federation (1) estimated that the diabetes prevalence for 2015 worldwide was approximately 415 million individuals aged between 20 to 79 and above; it is expected that these numbers will increase to 592 million people by 2035. It is also estimated that 179 million people have undiagnosed Type 2 diabetes (2,3,4,5). Globally, 64% of these cases are in urban areas and 36% in rural areas (6). There is an increased risk of diabetes among South East Asian communities in the UK (7,5). In the United Kingdom, approximately 700 people a day are diagnosed, which is the equivalent of one individual every two minutes, and more than one in 16 people has diagnosed or undiagnosed diabetes (5,8).

There is an increased risk of diabetes among South East Asian communities in the UK. Good diabetes education, awareness and screening programs, as well as early diagnosis and good management, will be very helpful.

There are very serious complications associated with diabetes, including heart and kidney disease, stroke, amputation, premature mortality and blindness (9,4,1). These complications may start 5 to 10 or more years before the diagnosis of dia-
The Importance of Pre-Diabetes Risk Assessment to Identify Undiagnosed Diabetes

betes \(^{(5,10)}\), as approximately half the people with Type 2 diabetes do not know that they have diabetes \(^{(6,5)}\).

MATERIALS AND METHODS

We, the public health organization with the collaboration of Diabetes UK, organized six diabetes awareness events, with pre-diabetes risk assessments, from May 2015 to July 2016, for the local South East Asian communities in Aylesbury, Buckinghamshire, UK.

To reach a significant number of participants for the event, increased publicity was needed to raise awareness of the event. As a result, we organized meetings with the NHS communications team to utilize the media to raise awareness of diabetes to reach the local South East Asian community. A meeting with the local radio station (Mix96) was held to organize a radio advertisement, which ran for 1 month. An advertisement on the BCCGs NHS and the Diabetes UK Aylesbury Vale Group websites, and also posters and banners in multiple languages, were displayed around the local libraries, surgeries, mosques, bus stations, taxi stands, shops and hospitals to inform the community about the diabetes event, in order to reach as many participants as possible.

The events were held at the Quarrendon and Meadowcroft Community Centre, Aylesbury. The Diabetes UK comprehensive protocol was followed and a pre-diabetes risk assessment was performed by the Diabetes UK qualified team. Further medical check-ups for diabetes-associated diseases included: cardiovascular disease, kidney disease, neuropathy or nerve damage, depression, diabetic retinopathy screening and examination, which were performed by the National Health Service (NHS) qualified team.

RESULTS

During these six diabetes awareness events and pre-diabetes risk assessments, a total of 1247 individuals participated; 536 individuals were referred to their GPs and hospital for further detailed medical investigations and check-ups related to diabetes. Figure 1 shows that 43% cases were referred to their GPs and hospital, and 57% individuals were found to be healthy. Figure 2 shows that of the total who participated in the pre-diabetes risk assessment events, 63% were female and 37% male. Figure 3 shows that, from the total referred cases, 56% of the females and 44% of the males aged 30 to 65 were referred to their GPs and hospital for further check-ups. Figure 4 shows that of the total, 24% were people with diabetes, 44% had pre-diabetes, and 32% were at high risk of diabetes, who were diagnosed as new cases.

DISCUSSION

Many ethnic communities are living in the United Kingdom and they all hold different views and opinions regarding diabetes, as well as other diseases. South Asian people are at more risk of diabetes than Caucasians, which is mainly due to religious and cultural differences \(^{(9,4,1,5)}\), for example fasting in the Muslim community. There
needs to be more education to raise awareness of the condition of diabetes and how to maintain sugar levels during fasting \(7,11,12\). People should be encouraged to carry out regular activities such as exercise, even though this may seem a difficult task for some, but awareness campaigns can help promote such activities. Awareness can be in the form of regular meetings, speeches and information events for all communities, and for people with or without diabetes. Awareness events, with pre-diabetes risk assessments, are very important to identify people with undiagnosed diabetes and to reduce the burden of diabetes.

**CONCLUSION**

The ratio of undiagnosed diabetes is very high, as 1 in 2 people with diabetes do not know they have diabetes. This is becoming a growing problem, with the increasing burden imposed on individuals, families and society. It is highly important to improve diabetes education and awareness events with pre-diabetes risk assessments in order to reduce the consequences of diabetes and to identify people with undiagnosed diabetes.

To reduce the occurrence rate of the consequences, a HbA1c value of less than 7% is recommended for diabetes care \(5,13\). However, to achieve this goal, pharmacological treatment alone is insufficient; education and awareness are also needed as the absence of knowledge and awareness of diabetes-related health complications further worsens the issue. This study confirms that approximately 24% of people are diabetic, 44% of people are pre-diabetic and 32% of people are at high risk of diabetes. Organizing diabetes awareness events with pre-diabetes risk assessments was found to be a very useful approach to help identify people with undiagnosed diabetes.

**General recommendations:** Below are some recommendations that can help to identify undiagnosed diabetes in order to prevent its complications in advance:

- **The media** is a powerful tool that can deliver the awareness message and therefore should be involved in awareness campaigns. The awareness message can also be delivered in the form of print and electronic media. Regular slots on mainstream TV can be scheduled to provide guidance.
- **Counseling** can be beneficial and should be provided to all high risk people and people with diabetes in diabetes clinics and surgeries. Counseling sessions can include dietary plans, exercise plans and diabetes management.

- **Diabetes screening** is being rolled out in many parts of the UK to try to reach those that need support, guidance and medical care. However, according to this research \(5,14,15\), some people do not continue with their regular check-ups due to lack of awareness and knowledge regarding diabetes. Policies should be formed that ensure all people with diabetes can attend the screening programmes and continue with their regular check-ups and follow-up appointments.

- **Local leaders** – many ethnic communities are living in the United Kingdom, and they all have different views and opinions regarding diabetes, as well as other diseases. South Asian people are at more risk of diabetes than Caucasians \(16,17\), which is mainly due to religious and cultural differences, for example fasting in the Muslim community. There needs to be more education to raise awareness of diabetes and how to maintain sugar levels during fasting \(12,18,19\). Local leaders and health professionals need to get more involved with their local communities and teach them about diabetes. Education can be in the form of regular meetings, speeches and awareness events for people with or without diabetes.

- **Booklets and guides** can be published and distributed across Buckinghamshire via diabetes clinics and surgeries. Booklets and guides should be written in a simple and understandable form, and in different languages to accommodate multi-cultural societies, and should also be provided in audio and video for individuals who are unable to read.

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The Importance of Pre-Diabetes Risk Assessment to Identify Undiagnosed Diabetes

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ABSTRACT
Background: Glaucoma is one of the leading cause of blindness in all over the world. For early diagnosis, patients may need to be aware of it and seek assessment regularly. People who have risk factors for glaucoma may have a greater awareness of the disease.

Methods: A cross sectional study was conducted in patients presenting to General Hospital Ophthalmic department were surveyed with a brief questionnaire to assess their knowledge of glaucoma. Data was collected about their gender, age, family history of glaucoma.

Results: The result showed that Women (Odds ratio 2.7; 95% CI 1.4−3.7; \( P <0.02 \)), people 40 years or older (Odds ratio 2.5; 95% CI who were 40 1.1−4.4; \( P <0.05 \)) and those who were aware of a family history of glaucoma (Odds ratio 17.7; CI 5.5−45.3; \( P <0.00 \)) knew significantly more about the disease than others. People with other risk factors did not demonstrate significantly greater knowledge despite 70% of all participants having had a previous eye examination.

Conclusion: It is concluded that this information may be useful to predict which patients may know about glaucoma when they present for an eye examination and who should be targeted in public health campaigns.

Key words: Glaucoma, Odd ratio, knowledge, demonstrate,
gy regarding diagnosis. Consequently, national guidelines were developed in rapid succession in various countries using evidence based references standardizing clinical requirements and aiding in the diagnosis of glaucoma. Some risk factors may encourage increased awareness. A family history for instance, might provoke a search for more information and assessment. With a predisposing condition a patients’ primary clinician may refer them for evaluation of an associated secondary illness. Older subjects might be more receptive to public awareness campaigns relating to the illness.

Whatever assumptions we might make about people’s knowledge, there is still a large discrepancy between what people do and what people should do.

MATERIAL AND METHOD:

A cross sectional study was conducted in General Hospital Lahore. The survey was held over a period of 4-months. The sample size was to be the number of patients could be obtained by one interviewer in the time period available, which would be approximately 250 subjects with no distress physical or emotional/psychological that may impair participation and had no previous diagnosis of glaucoma. In order to select a sample that would reflect the population at risk or older patients were selected and within 30 km radius of the hospital so that the to live within the local area. Univariate analysis of the first 30% and 50% of questionnaires showed a significant association between knowledge and family history. A brief questionnaire comprising six questions were used.

To assess the participants in face to face interviews (Appendix first three questions examined a participant’s awareness of glaucoma. They were asked each question and were not permitted to progress to the next unless they had successfully answered the last. An incorrect answer ended this part of the interview. If a participant successfully answered the first three questions, they then progressed to the next three which examined their knowledge about glaucoma. Participants were allowed to complete this part of the questionnaire regardless of errors and a total knowledge score out of six was then calculated. SPSS was used for statistical analysis including Student’s t-test, Mann–Whitney U-test, simple and multiple linear regression and ordinal logistic regression. Age and time since last ophthalmic examination were used as continuous variables and questionnaire score was used as a non-parametric ordinal variable. In ordinal logistic regression, sex, systemic hypertension, diabetes, migraine history, Raynaud’s phenomenon, family history, wearing glasses, myopia, having years were used had a previous eye examination and age greater than 40 as dichotomous variables. Odds ratios and 95% confidence intervals were presented.

RESULTS:

There were 240 participants in the survey, with 132 (55%) men and 108 (45%) women. The mean age was 52%. There were 196 (82%) participants who had heard of glaucoma, 150 (63%) who knew glaucoma affected the eye and 84 (35%) who could identify glaucoma through symptoms. However, of those who knew glaucoma affecting the eye, 13 (9%) confused glaucoma with the description of infection, 38 (25%) confused it with the description of cataract and 15 (10%) did not know how to describe it. Of 84 participants who were fully aware of glaucoma, 44 (52%) knew one or more treatments, 30 (36%) knew that glaucoma was an asymptomatic disease and 84 (100%) knew that without treatment glaucoma was a blinding disease. Of 44 who knew one or more treatments, 31 (71%) could only name one, 12 (27%) could name two and one (2%) could name three. Amongst our sample, 28 (12%) had diabetes mellitus, 77 (32%) had systemic hypertension, 73 (30%) suffered migraines, 32 (13%) had Raynaud’s phenomenon, 16 (7%) knew they had a family history of glaucoma, 190 (79%) wore glasses or contact lenses for any reason and 26 (14%) of these were myopic. Furthermore, 213 (89%) previously had their eyes examined with the last person to see them being an optometrist, for 147 (69%) and an ophthalmologist 66 (31%). After analyzing the effect of risk factors on the participants’ questionnaire score out of 6, the following results were obtained. Questionnaire scores for women were significantly higher than men, with a median score 3 for females and 2 for males (P <0.001).

In comparing age groups among the participants it was found that younger had a median score of 1; those aged 39 years this was significantly lower than those aged between 40 and 59 (P0.009) and those greater=years (than 60 P0.001). For those with diabetes mellitus, migraine and Raynaud’s phenomenon, scores were not significantly different from those without the disease. For those with systemic hypertension, the
median score was 4 compared with 2 for those without hypertension. This difference was significantly different \((P<0.001)\). However, after multivariate analysis (ordinal logistic regression) adjusting for confounding variables, this difference lost significance (Table 1).

**Table 1:** A univariate and multivariate (ordinal logistic regression) analysis showing the likelihood of those with risk factors for glaucoma having a higher score of awareness and knowledge of the disease.

<table>
<thead>
<tr>
<th>Risk factor</th>
<th>Univariate odds ratio (95% CI)</th>
<th>Multivariate odds ratio (95% CI)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Sex</td>
<td></td>
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<tr>
<td>Male</td>
<td>1.0</td>
<td>1.0</td>
</tr>
<tr>
<td>Female</td>
<td>2.5 (1.6−4.0)</td>
<td>2.3 (1.4−3.7)</td>
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<tr>
<td>Age</td>
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<tr>
<td>&lt;years 40</td>
<td>1.0</td>
<td>1.0</td>
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<tr>
<td>years 40–59</td>
<td>2.3 (1.2−4.2)</td>
<td>2.1 (1.0−4.3)</td>
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<tr>
<td>years 60 ≥</td>
<td>3.2 (1.7−6.0)**</td>
<td>2.4 (1.4−5.8)*</td>
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<tr>
<td>Diabetes mellitus</td>
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<tr>
<td>No</td>
<td>1.0</td>
<td>1.0</td>
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<tr>
<td>Yes</td>
<td>1.6 (0.8−3.2)</td>
<td>1.2 (0.6−2.4)</td>
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<tr>
<td>Hypertension</td>
<td></td>
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<tr>
<td>No</td>
<td>1.0</td>
<td>1.0</td>
</tr>
<tr>
<td>Yes</td>
<td>2.3 (1.4−3.8)**</td>
<td>1.4 (0.8−2.4)</td>
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<tr>
<td>Raynaud’s phenomenon</td>
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<td>No</td>
<td>1.0</td>
<td>1.0</td>
</tr>
<tr>
<td>Yes</td>
<td>0.9 (0.5−1.7)</td>
<td>0.6 (0.3−1.2)</td>
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<tr>
<td>Family history</td>
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<tr>
<td>No</td>
<td>1.0</td>
<td>1.0</td>
</tr>
<tr>
<td>Yes</td>
<td>18.8 (6.7−52.6)</td>
<td>15.7 (5.5−45.3)*</td>
</tr>
<tr>
<td>Wearing glasses</td>
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<tr>
<td>No</td>
<td>1.0</td>
<td>1.0</td>
</tr>
<tr>
<td>Yes</td>
<td>2.1 (1.2−3.7)**</td>
<td>0.8 (0.4−1.9)</td>
</tr>
<tr>
<td>Previous eye examination</td>
<td></td>
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<tr>
<td>No</td>
<td>1.0</td>
<td>1.0</td>
</tr>
<tr>
<td>Yes</td>
<td>2.9 (1.4−6.0)**</td>
<td>2.0 (0.8−4.9)</td>
</tr>
</tbody>
</table>

\* \(P <0.05\); \** \(P <0.01\).

**Multivariate analysis** was adjusted for sex, age group, diabetes, systemic hypertension, migraine, Raynaud’s phenomenon, family history and eye examination. For those who knew of a family history of glaucoma, the median score was 5 compared with 2 for those who did not have or did not know of a family history. This was a significant difference, which remained so after adjustment \((P<0.001)\).

The median score for those who wore glasses or contact lenses was 2, compared with 1 for those who did not \((P=0.009)\). Of those who had previously had an eye examination their median score was 2, compared with 1 for those who had never been examined, which achieved significance \((P=0.002)\). Again, these differences lost significance after multivariate analysis. Furthermore, of those who wore glasses or contact lenses, being myopic did not have increased knowledge \((P=0.49)\). There was also no significant difference in score if the last person to see the participant was an optometrist or an ophthalmologist \((P=0.20)\). Lastly, we could not demonstrate any difference in awareness and knowledge when time since previous eye examination was analyzed.

**DISCUSSION:**

Researchers have described the process of behavior changes which affect the awareness and knowledge as its starting point.\(^{[17]}\) For glaucoma diagnosis, this starting point may be the key for motivating someone to seek assessment.\(^{[18]}\) A study was conducted in Australia by SEE. L in 2016 in which Seventy per cent of the sample had heard of glaucoma. However, only 22% provided a description that demonstrated a reasonable understanding of the disease. A lack of awareness and knowledge of glaucoma appeared to be negatively related to self-care practices.

Serious deficiencies in the basic knowledge of glaucoma in the community was demonstrated. This has significant public health implications as only a small percentage of the at-risk population may present themselves for assessment and treatment. Informing the community about glaucoma is an important step in promoting preventative ophthalmic care and reducing visual impairment and blindness.\(^{[19]}\)

Another study was conducted by b Alice.T in Nigeria in 2017 in which Glaucoma awareness overall (72%) approached that found in the subgroup self-reporting a diagnosis of glaucoma (80%). Survey attributes associated with an increased likelihood of being unaware of glaucoma...
were African American race (OR = 1.69 [1.28–2.20], Hispanic ethnicity (OR = 2.13 [1.46–3.02]), they had less than a college education (OR = 1.67 [1.37–2.05]). Age was also a determinant of glaucoma awareness (for ages 50–64 years, OR = 0.60 [0.44–0.80] and for ages 65–79 years, OR = 0.56 [0.41–0.75] compared with the ages less than 35 years). A self-report of glaucoma was not a determinant of glaucoma awareness (OR = 0.63 [0.33–1.17]), although there was a trend toward enhanced glaucoma awareness in this subgroup. Finally, respondents with a history of employment in the health field (OR = 0.63 [0.49–0.82]) myopia (OR = 0.68 [0.56–0.82]), glaucoma in a first-degree relative (OR = 0.68 [0.53–0.87]), and respondents who reported having a dilated eye examination (OR = 0.53 [0.42–0.66]) were less likely to be unaware of glaucoma than those who did not have these attributes.[20]

A German survey was conducted in 2019 by Pfefiier. U in which Fifty-one percent of the population had an active knowledge of the term “glaucoma” and 75% had a poor knowledge of the term. Of those interviewees with a passive knowledge, glaucoma was thought to be associated with raised intraocular pressure (IOP) by 28% and loss of visual field (14%) but also with corneal (14%) or lens disease (10%). Only 8.4% correctly recognized a basic glaucoma definition. Suspected symptoms were blurred vision (39%), pain (28%), or reading difficulties (22%). Twenty-nine percent of respondents believed that one is able to feel increased IOP. Prevention of visual loss was believed to be possible by reading (16%) or smoking less (11%). Therapeutic measures known were surgery (63%), laser treatment (26%), and medical treatment (23%). Information about glaucoma was mainly obtained from friends (44%), and less often from doctors (13%).[21]

CONCLUSION:

It is concluded that this information may be useful to predict which patients may know about glaucoma when they present for an eye examination and who should be targeted in public health campaigns.

REFERENCES:


Acanthamoeba Keratitis

An old woman presented with a 2-month history of intermittent pain, blurry vision, and sensitivity to light in one eye, which revealed redness of the conjunctiva. She wore soft while swimming and showering. She was unable to open her eye open during the physical examination. The visual acuity was 20/20 in one eye and 20/200 in the other eye. A large, ring-shaped infiltrate was present along with corneal haze with epithelial defect and positive fluorescein staining. Cultures from corneal scrapings grew Acanthamoeba polyphaga diagnosed acanthamoeba keratitis, a vision-threatening infection most commonly associated with contact lens wear. The patient was treated with topical polihexanide and propamidine isethionate. Although the infection resolved, the vision in her eye could not be restored, owing to a dense, central corneal scar and cataract. Twelve months after the initial presentation, the patient underwent deep anterior lamellar keratoplasty, which resulted in a postoperative visual acuity of 20/80 with no discomfort.

Curtesy: Lanxing Fu, Manchester Royal Eye Hospital, Manchester, UK & Ahmed Gomaa, Blackpool Victoria Hospital, Blackpool, UK

Aqueous-deficiency dry-eye syndrome
**Orbital Metastasis in Breast Carcinoma**

A 60-year-old woman presented to Ophthalmic Department with history of blurry vision for 2 months in her left eye. She had breast cancer treated 3 years earlier with lumpectomy, axillary-node dissection, radiation, and hormonal therapy. Physical exam demonstrates upward gaze.

D.D. Orbital metastasis, Unilateral Grave’s ophthalmopathy, Partial cranial 3rd nerve palsy, Orbital cellulitis, Idiopathic orbital inflammatory disease

(Curtsey. NEJM –UK)
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