



*Original Research Article*

# Rapid assessment of avoidable blindness at district buner of Khyber Pakhtunkhwa

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Abstract

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Rapid assessment of avoidable blindness at district buner of Khyber Pakhtunkhwa. It was community based, cross sectional study, standard RAAB methods were applied. The data was collected at district buner Khyber Pakhtounkhwa. Total of 280 individual were examined during 2 months of the study. Out of 280 individuals 200(71.4 %) were male and 80(28.6%) were female. Categorizing patients on the basis of age, 39 (13.5%) were children (0-14 years), 133(47.5%) were age group of 15-49, while 108(38.6%) were age 50 and above. Regarding wearing of spectacles 49(17.5%) were using distance corrections only, 24(8.6%) were using near vision glasses only, while 40(14.3%) were using bifocals. The prevalence of blindness in district buner is 1.6 % in right eye while 2.0% in left eye. The prevalence of visual impairment in district buner due to refractive error was almost 25% in both eyes while considering 27% in right eye, 28% in left eye, Prevalence of un operated cataract was 13% in each eye. The major reasons of refusals or not doing cataract surgery were 25 (56%) cannot afford surgery, 7(2.5%) patients treatment denied by provider, 3(1.1%) were that of need not felt for cataract surgery, 1(.4%) patient give a reason of fear of surgery or poor result, 1 (.4%) patient given reasons of unawareness that treatment is possible, while 1 (.4%) given optional reason. Based on this study it was concluded that high prevalence (13 %) of unoperated cataract is there at district Buner. The major reason is that people could not afford the surgery cost. Other studies show that cataract is the most cost effective intervention of the health care intervention in the world; therefore by creating awareness in the communities and advocacy to government and other nongovernmental institutions, policies and procedures would be developed to overcome this treatable cause of blindness.

**Keywords:** Avoidable blindness, Bifocals, Cataract, KPK, Spectacles.

## INTRODUCTION

Blindness is defined as visual acuity of less than 3/60, or a corresponding visual field loss to less than 10°, in the better eye with the best possible correction. Visual impairment includes both low vision and blindness ([www.who.int/blindness/Vision2020\\_report](http://www.who.int/blindness/Vision2020_report)). Blindness is categorized by WHO into 3 stages. These stages are mild, moderate and severe there classifications are as follows; Mild: less than 3/60 to 1/60 or visual field between 5 and 10 degree. Moderate: less than 1/60 to light perception or visual field less than 5 degree. Severe: No light perception (Khurana, 2013). Normal lens is a

transparent biconvex structure of crystalline appearance during cataract the lens become opaque (Shafi, 2013). A refractive error is a very common eye disorder. It occurs when the eye cannot clearly focus the images from the outside world. The result of refractive errors is blurred vision, which is sometimes so severe that it causes visual impairment (<http://www.who.int/features/qa/45/en>, 2013). According to recent estimates of WHO, the major global causes of moderate to severe vision impairment are uncorrected refractive errors 53%, un-operated cataract 25%. The

major causes of blindness are un-operated cataract 35 %, uncorrected refractive error 21 % (<http://www.who.int/features/qa/45/en>, 2013; <http://www.who.int/mediacentre/factsheets/fs282/en/>).

According to WHO survey of 2002 of Pakistan total of 289 participants were blind with cataract as the cause. The prevalence of cataract blindness was higher in Punjab province, in rural areas and among illiterate participants (Jadoon et al., 2008). The prevalence of cataract blindness was higher in women than men. There are estimated to be 570 000 adults (225 000 men, 345 000 women) who are blind from cataract in Pakistan, projected to increase to 1 210 000 by the year 2020. The prevalence of cataract causing <math><6/60</math> in eyes was 5.0%, which projects to an estimated 3 560 000 eyes with a visual acuity of <math><6/60</math> caused by cataract in Pakistan (year 2003). This number is projected to increase to 7 380 000 by the year 2020 (<http://www.mayoclinic.org/diseasesconditions/cataracts/symptoms-causes/dxc-20215129>; Rabiou and Muhammad, 2007).

The Buner Valley lies on the Peshawar valley border of the Khyber Pakhtunkhwa. It is a small mountain valley, dotted with villages and divided into four sub-divisions. The Mora Hills and the Ilam range divide it from the Swat Valley, the Sinawar range from Yusufzai, the Guru Mountains from the Mardan Valley, and the Duma range from the Puran Valley. During the 19th century the inhabitants rose twice against the British, but submitted in 1897. In April 2009, the Taliban seized control of Buner, after a brief battle with local residents. Strict rules were reportedly being enforced, including the elimination of video stores, bans on cutting beards, and the prevention of women from appearing in many public places (Wadud et al., 2006). On 29 April the government responded to the Taliban by sending the army to the region and dropping parachutists by helicopter. By the end of May 2009, almost all of Buner was cleared of the Taliban. TEC Buner (Buner Eye Hospital) is a secondary level eye care center located in the center of Buner of district Buner. The center was established by CHEF international in the year 2016 keeping in mind scarcity of eye care services in the district. The hospital is providing secondary level inclusive eye care services in the form of eye OPD, refraction, cataract surgeries and outreach community free eye camps. In the last two years of services the hospital has achieved reasonable targets reaching the scattered populations in the outskirts of district Buner (Tabin et al., 2008).

## METHODOLOGY

It was community based, cross sectional study, standard RAAB methods were applied. The data was collected at district Buner Khyber Pakhtunkhwa. Multi-stage stratified cluster random sampling, with probability

proportional-to-size (PPS) procedures, was used. Enumeration and initial screening, using the random walk method, was undertaken until the target number of adults was attained in each cluster. All enumerated individuals with VA <math><6/12</math> were asked to attend the survey station, set up in their community, for ophthalmic examination on the same day. Two visits were made to homes before marking the subject as a non-responder. Based on an assumed prevalence of blindness of 1.8%, a random sampling error precision of 0.3%, a design effect of 2.0 and a 10% increase for non-response, the total sample size was calculated as 280. Data collection was done through Performa that was approved internationally already designed tool, internationally accepted. Starting from demographic data of every individual in tehsil on cluster base, The sample performance is attached as examination Annexure.

Visual acuity was performed using Snellen chart at 6 meter, also asked about using glasses. Noting the reason of why VA less than 6/12. To assess the lens status lens examination was done by using direct ophthalmoscope in a semi dark room. We were also performing retinoscopy for patients for whom we want to check their refractive states. If cataract detected in any individual we were asking about the reason why cataract surgery had not been done. Patients who need to a detail examination were referred to nearby camp of TEC Buner. If any individual is absent then we were asking about him/her visual status. We were also asking about if the cataract surgery is performed then asking about age. (Tables 1, 2, 3, 4 and 5)

## DISCUSSION

Cataract derives from Latin word cataracta meaning (water fall). In Greek words ketarrahtes meaning (down rushing) or (to dash down) as rapidly running water turns white. Cataract can affect the life of individual when the vision of a person is worse than 6/36 or more. Up to this limit patient is bearing the vision problems. This survey was carried out in one of the disaster affected areas of Khyber Pakhtunkhwa i.e. district Buner. Buner has three tehsils and the sample and clusters were taken from all the three tehsils of the district (Dineen et al., 2007). From each cluster an average of 40 sample was taken. In this study we concluded that the overall blindness is 1.6% in right eye while 2.0% in left eye (Jadoon et al., 2007). The prevalence of visual impairment due to refractive error was 28 % and 13 % due to un-operated cataract was in left eye while it was confined that the prevalence of refractive error in right eye was 27% and the prevalence of un-operated cataract was 13% cataract un-operated in right eye (Wadud et al., 2006). This study was different from the study of B Dineen, R A Bourne et al. because in recent study the sample size was low while in the study B Dineen, R A Bourne the sample size was quite large

**Table 1.** Cluster distribution of research.

	Frequency	Percent	Valid percent	Cumulative percent
Toppi	40	14.3	14.3	14.3
Tawodacheena	40	14.3	14.3	28.6
Sorro	40	14.3	14.3	42.9
Nawagai	40	14.3	14.3	57.1
Balokhan	40	14.3	14.3	71.4
Jowarr	40	14.3	14.3	85.7
Sowarri	40	14.3	14.3	100.0
Total	280	100.0	100.0	

**Table 2.** Gender wise distribution of individuals.

	Frequency	Percent	Valid percent	Cumulative percent
Male	200	71.4	71.4	71.4
Female	80	28.6	28.6	100.0
Total	280	100.0	100.0	

**Table 3.** Age wise categorizing of individuals.

	Frequency	Percent	Valid percent	Cumulative percent
0-14	39	13.9	13.9	13.9
15-49	133	47.5	47.5	61.4
50+	108	38.6	38.6	100.0
Total	280	100.0	100.0	

**Table 4.** Measured the prevalence of glasses users.

		Frequency	Percent	Valid percent	Cumulative percent
Valid	Distance glasses	49	17.5	19.5	19.5
	Near glasses	24	8.6	9.6	29.1
	Bifocals	40	14.3	15.9	45.0
	Not using	138	49.3	55.0	100.0
	Total	251	89.6	100.0	
Missing	System	29	10.4		
Total		280	100.0		

**Table 5.** Why cataract surgery was not done.

		Frequency	Percent	Valid percent	Cumulative Percent
Valid	Need not felt	3	1.1	7.9	7.9
	Fear of surgery or poor Result	1.1	.4	2.6	10.5
	Cannot afford operation	25	8.9	65.8	76.3
	Treatment denied by provider	7	2.5	18.4	94.7
	Unaware that treatment is Possible	1	4	2.6	97.4
	Local reason(optional)	1	4	2.6	100.0
	Total	38	13.6	100.0	
	System	242	86.4		
Missing total			100.0		

(Dineen et al., Provide year).

In recent study it was also concluded the prevalence of patients who have done there cataract surgery which was pseudophakia without PCO 7( 2.5%) pseudophakia with PCO 1(.4%) no view of lens 3 (1.1%) in right eye while pseudophakia without PCO 9(3.2%), pseudophakia with PCO 3(1.1%) and no view of lens 2 (.7%) in left eye (Clare et al., 2008; Dineen et al., 2008). This study was different from the study of Rabiun Mansur M and Muhammad Naser because the recent study was done in Pakistan while the other study was done at Nigeria.xvi The main cause faced during this study was that the literacy rate was very low, people were not aware about common eye problems and also they have no idea about the good health. During this research question was asked that why you have not done the cataract surgery the main reason were that we cannot afford operation. Its means that in their health problems there financial problem also play a main role (Rabiun et al., 2007; Clare et al., 2008).

According to performa it has been noted that the history of patients who were psuedophakic. From these patients asking about surgery place, type, cost and IOL implantation. Mostly patients were IOL implanted. Cost were mostly totally free 78 % left eye and 77.8 % right eye surgery were totally free because mostly patients have surgery place of 77.6 % and 64.3 % in left eye surgery was done in charitable hospital. In this research study the glasses users was quite different 17.5% were only distance glasses users,8.6% were using only near glasses,14.3% were using bifocals and 49.3% were not using glasses and they have no need of glasses but another study which was conducted on „Poverty and blindness in Pakistan: results from the Pakistan national blindness and visual impairment survey“ which was concluded by Clare E Gilbert, S P Shah,M Z Jadoon,R Bourne, B Dineen, M A Khan, G J Johnson,M D Khan. Of the adults living in affluent groups, 10.2% were sent to checkpoints with glasses, 6.7% for medium-sized groups and 4.4% for poor groups. In glasses users this study area was good if compare this data with previous data (Clare et al., 2008). In recent study which was conducted, in this study it was founded that IOL implantation and cataract surgery was done in charitable hospitals. 78% right eye and 64% left eye surgeries was done at charitable hospitals but in previous study of Clare E Gilbert, S P Shah, M Z Jadoon, R Bourne, B Dineen, M A Khan, G J Johnson, M D Khan in "Poverty and blindness in Pakistan: results from the Pakistan national blindness and visual impairment survey" is different. In their study

the sample size was large than recent study sample size but they have noticed that the hospital facilities were more for rich people but for poor community the facilities were not so enough in recent study it had been noticed that health facility were equal for poor and rich community.

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