

The Causes of Ocular Defects and the Patients' Satisfaction with Ocular Prosthesis Treatment in Ghana; A Case of Teaching Hospital

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Abstract

The purpose of this study was to analyze the causes of ocular defect in a teaching hospital in Ghana and ascertain patients' satisfaction of its treatment. A retrospective cohort data of ocular defect cases which were reported and treated in the department over a 5-month period (January to May 2015) were purposively selected. From a sample of 248 participants findings from the study revealed a predominance of males being affected with ocular defects. It was also observed from the study that the right side was involved more when compared to the left- contralateral. In relation to age, patients between 21- and 40-years age group were involved the most whiles causes of ocular defect etiologically revealed a predominance of infection and trauma. The study also brings to the fore that most patients' time lag between loss of eye and treatment was more than ten years. Although our study indicated a high satisfaction level with the quality and treatment services provided by care givers, there were inconsistencies in the satisfaction reported on treatment costs in this study. The study concludes that injuries and infections in young adults (mostly males) were the main reason behind ocular bulb loss, and the time lag between eye loss and rehabilitation with ocular prosthesis was found to be very high. Moreover, the study concludes that as health care is becoming progressively costly in Ghana and patients' consciousness of rights evolving, a strong health system which focuses on patients' access to affordable rehabilitation centres is advocated.

Keywords: Ghana, causes, Patients' Satisfaction, Prosthesis, Ocular / Orbital disease

Background

The loss of an eye can be a very traumatic event in a person's life, not only medically, but also emotionally. For many, the face and eyes help represent who they are, and it is common for these patients to feel as if a part of them has been lost. Various methods of rehabilitating an ophthalmic socket include, stock eye prosthesis (Prefabricated) and custom-made ocular prosthesis. The stock prostheses that come in standard sizes, shapes, and color can satisfy the need for an artificial eye for such patient. No special skills or materials are required for fabrication. Stock prostheses are inexpensive and can be delivered quickly (Rahn et al, 1970; Welden, 1956; Cain 1992; Smith 1995).

The application of an ocular prosthesis is required to replace an eye following an enucleation, evisceration, orbital exenteration, or is applied over the phthisis bulbi or a discolored blind eye of near-normal size to improve the cosmetic appearance. Custom ocular prosthesis

has certain advantages which include improved adaptation to underlying tissues, increased mobility of the prosthesis, improved facial contours and esthetics gained from control over the size of the iris and pupil and color of the iris and sclera (Cain 1992; Smith 1995).

The earliest attempt at manufacturing an ocular prosthesis dates back to as early as 4800 years ago, and several further attempts have been made in the following centuries using materials ranging from precious stones to copper, bronze, and gold in the shrunken socket (Roberts, 1971). However, it was not until the sixteenth century that the first actual ocular prosthesis was designed by AmbroiseParé, a French doctor, who named it 'emblepharon'. His first prosthesis was made of gold and silver, but he later improved his first design using glass and porcelain, which was a great step forward and resulted in the use of shell-type prostheses instead of spheres (Gibson, 1955). Glass remained the most popular material until the introduction of synthetic materials in the twentieth century (Dyer, 1950).

Currently, the main causes for the need of ocular prosthesis include tumors, congenital defects and malformations, irreparable trauma, and end-stage eye diseases. The former is the most common etiologies in children, while the latter are more common in adults. Other common etiologies include severe ocular diseases leading to blindness associated with uncontrolled pain or unpleasant cosmetic appearance, such as intraocular infections or post-surgical complications (Artopoulou, 2006).

As indicated earlier, since the loss of an eye is an immediate trigger to the physical and emotional stress caused by personal, familiar, and societal reactions to the resulting facial disfigurement, replacing the lost eye with an ocular prosthesis aims at promoting physical and physiological healing, and improving social acceptance (Artopoulou, 2006).

Hence, in this study, the general objective was to evaluate causes of ocular defect among patients in Ghana by specifically focusing more on patients' satisfaction of ocular / orbital prosthesis rehabilitation / treatment in Ghana

Objectives of the study

Generally, the study focuses on causes of ocular defect and patient satisfaction; a case study of Teaching Hospital, Kumasi.

The specific objectives of the study are

1. To examine the causes of ocular defect among patients among different age groups, gender, anatomical side involved and etiology at the teaching hospital
2. To determine patients' satisfaction of ocular defect treatment / rehabilitation at the teaching hospital.

Methods

In this study, the cross-sectional study or design was considered the most appropriate for collecting data on the objects for this study. Cross-sectional studies, also known as one-shot studies, are designed to study a phenomenon by taking a cross-section of it at a time. They are comparatively cheaper to undertake and easy to analyze even though they cannot measure change. It necessitates processing of quantitative data and enables the researcher strive for breadth rather than depth towards making valid general observations (Barbie, 1989).

Also, the researchers' presumed maximum variability and hence we considered prevalence

of patient satisfaction as 50%. A retrospective cohort data of ocular defect cases which were reported and treated in the various hospitals over the period of study was from January 2015 to May 2015. Information regarding general identification, gender, and age at which patient lost the eye or diagnosis of atrophy was made, affected side and etiology, and time lag between eye loss and rehabilitation were gathered from the clinical records of patients. Based on the side affected, the loss/atrophies were classified as left, right, or bilateral. Etiology of the eye defect was considered under following categories: (i) Congenital (from birth), (ii) traumatic, (iii) pathologic (infection, tumor, or any other pathology), or (iv) not known.

On the sample, which is considered to be a representative sub-group of the population that meets the research's criteria (Leedy & Ormrod, 2005), a retrospective cohort data of ocular defect cases which were reported and treated in the department over a 5 month period (January to May 2015) were purposively selected.

Purposive sampling technique initially was used to select participants for the study. The selection was based on the researcher belief that the researcher 's knowledge about the population can be used to hand pick the cases to be included in the sample. This was done by selecting patients who met the inclusion criteria. Those who consented to be part of the study and could speak English and Twi were recruited in the study. This was due to the fact the researcher could speak and understand those dialects.

The data gathered and analyzed was obtained from the primary sources and this include patients at the Teaching Hospital.

In a research, it is important to use already existing validated scales or questionnaires when available because their validity has already been established. But in a situation where scales or questions are not readily available, it becomes imperative to design or generate appropriate questionnaires with considerable degree of content and construct validity and reliability (Punch, 2005). Questionnaire was used to collect data from the respondents because it is an appropriate tool that allows the respondent to give a self-report at free will. The questionnaire used comprised only close ended questions to capture as much information as possible. The questionnaire was divided into three sections: socio-demographic characteristics of the

respondents, prevalence of ocular defect and caregivers' satisfaction of its treatment.

Some statements regarding services of physical facilities, registration staff, doctor, nurse, pharmacy, and laboratory staff were asked to patients. Patients were asked to give ratings to these statements. Likert's 3 points rating scale was used. The rating was done as following-1= satisfied, 2= Not satisfied, 3= Not decided. On an average 20 minutes time was given for interview of each patient. The responses were expressed in proportions.

Results

Socio-demographic data

From table 1 below, a total of 398 patients had reported to the department in the past 5 months. However, detailed data were available for only 248 patients. The evaluated data of 248 patients included in this study revealed that the ocular defects in relation to gender were more frequently observed in the male population (75%). That is, 187 were males whiles 61 were females.

The findings above revealed a predominance of males being affected with ocular defects in the teaching hospital, which agrees with the finding of previous investigations (Côas et al, 2005; Mattosetal, 2005). These results may possibly be attributed to the fact that male population is usually more exposed to situations that can lead to eyeball injury and infections caused by a lack of hygiene and polluted environment. Males are still the majority of workers in areas of physical demand and are most commonly involved in road traffic accidents and cases of aggression or urban violence.

Regarding the prevalence in relation to the side involved, it was observed from the study that the right side was involved more (65%) when compared to the left side (25%) whiles (10%) had ocular defects in both eyes as indicated in table below. These findings were not in accordance with previous studies which found the left side was more involved (Côas et al, 2005). According to those authors, the findings were not statistically significant due to which they concluded that the side involved does not seem to be an important issue to be considered in preventive and educative campaigns.

In relation to age, caregivers between 21- and 40-years age group were involved the most

(45%), and the patients above 80 years of age were least involved (11%) among the age groups considered. However, the patients between 0–20 and 41–60 years age group showed almost equivalent prevalence, that is, 20% and 23% respectively. This predominance is probably attributed to the fact that individuals at age range of 21–60 have multiple activities and are therefore more exposed to situations that can lead to ocular defects. Age group of 0–20 is more reckless and explorative in nature leading to ocular defect. Similar results were observed in previous studies

Etiologically, causes of ocular defect revealed a predominance of trauma (50%) followed by the chronic cancers and malignant cancers (26% and 14%, respectively). However, hereditary (8%) and congenital causes were less (2%). This revealed the highest number was traumatic causes followed by pathologic causes. Coaset *al.* 2005 who examined 3008 patients and verified 58.77% of injuries of traumatic origin and 41.22% of pathogenic origin. Studies conducted by other authors were also in accordance with the present study (Saeed et al., 2006). Bearing in mind these results, it is imperative to adopt some preventive measures such as wearing protective eye glasses during activities that can lead to eyeball injury. Use of reinforced glass in vehicle windshields and building constructions, in addition to regular checkup by an ophthalmologist should be emphasized. To reduce the causes of ocular defects as a result of road traffic accidents or occupational hazards, wearing of the protective eyewear should be made compulsory (Neerja et. al., 2012).

Among the loss of an eye due to pathogenic origin, infectious reasons were more than neoplastic or any other pathogenic event. This observation signifies the level of hygiene and negligence of health on the part of the patients. This aspect has to be considered in community educative program.

For most patient's time lag between loss of eye and treatment was more than ten years (54%). This was proceeded by 5-10 years (22%) and 1-5 years (19%) respectively. However, only (5%) were less than a year. This finding is probably attributed to the fact that people from rural background have low awareness about prosthetic rehabilitation.

Table 1. Ocular defect as function of respondents' bio-data

	Frequency	Percent
Gender		
Male	187	75.4
Female	61	24.6
Side Involved		
Left	62	25.0
Right	161	64.9
Both	25	10.1
Age Group		
0–20 years	51	20.6
21-40 years	112	45.2
41–60 years	58	23.3
Above 60 years	27	10.9
Etiology		
Trauma	124	50.0
Chronic cancers	65	26.2
malignant cancers	35	14.1
Hereditary	19	7.7
Congenital	5	2.0
Time lag		
< 1 years	13	5.2
1-5 years	47	19.0
6-10 years	55	22.2
>10 years	133	53.6

Source: Authors Construct, 2016

Patients satisfaction of treatment

Patient perceptions of outcome and satisfaction with treatment are key elements in evaluating quality of care. On doctors' orientation as a source of patients' satisfaction, the study indicated that all patients (100%) were satisfied with the care and time spent with them as well as the advice on prescriptions. Majority of patients (85.5%) were satisfied with the

willingness of doctors to listen to their complaints, explaining their eye condition (80.6%), explaining their test results (71.8%) and discussing their condition (68.55%).

Therefore, in table 2, level of satisfaction ranged from 170 (68.55%) for doctors discussing patients' condition to 248 (100%) for doctors caring and spending time with patients and giving clear advice to patients about prescriptions.

Table 2. Doctor's service orientation

Category	S (%)	NS (%)	U (%)
Doctor was willing to explain my eye condition	200 (80.6)	48 (19.4)	0 (0)
Doctors showed willingness to listen to your complaints	212 (85.5)	35 (14.1)	1 (0.4)
Doctors explained the test results	178 (71.8)	68 (27.4)	2 (0.8)
Doctor gave clear advice to patients about the prescriptions	248 (100)	0 (0)	0 (0)
Doctor was caring and spent enough time with me	248 (100)	0 (0)	0 (0)
Doctor appropriately discussed my condition	170 (68.55)	77 (31.05)	1 (0.4)

Source: Authors Construct, 2016 (S= Satisfied, NS= Not satisfied, U= Undecided)

On nurses' orientation as a source of satisfaction, majority (98.8%) as indicated in table 3 below were satisfied with the way nurses communicated their needs to doctors while 96.4% of patients indicated they were satisfied

with the care and time nurses spent with them. That is, majority of patients were satisfied with nursing care. Only a modest number of (64.5%) were satisfied with the individual attention nurses gave them.

Table 3. Nurse service orientation

Category	S (%)	NS (%)	U (%)
Nurses were caring and spent enough time with me	239 (96.4)	9 (3.6)	0 (0)
Nurses communicated patients' needs to doctors	245 (98.8)	2 (0.8)	1 (0.4)
Nurses gave individual attention to patients	160 (64.5)	88 (35.5)	0 (0)
Nurses administered treatment in a timely manner	190 (76.6)	50 (20.2)	8 (3.2)

Source: Authors Construct, 2016 (S= Satisfied, NS= Not satisfied, U= Undecided)

In table 4 below, other sources of patients' satisfaction were sought. Results from the table below indicated that majority of patients were satisfied with the hospital (97.2%) and the

courteousness of their staff (99.6%). Nonetheless, patients expressed their dissatisfaction on cost. That is, cost in terms of lab tests fee (60.5%) and travel costs to the hospital (79.4%).

Table 4. Other sources of satisfaction

Category	S (%)	NS (%)	U (%)
Eye department was clean	241 (97.2)	7 (2.8)	0
Records were well kept	148 (59.7)	20 (8.1)	80 (32.2)
Consultation fee	124 50	100 (40.32)	24 (9.7)
Lab tests fee	187 75.4	53 21.4	8 3.2
Drug costs	92 37.1	150 60.5	6 2.4
Travel costs to hospital	61 24.6	197 79.4	0
Pharmacists and other staff were courteous	247 99.6	1 0.4	0

Source: Author's Construct, 2016 (S= Satisfied, NS= Not satisfied, U= Undecided)

Discussion

Eye problem remains one of the commonest public health problems. People's expectation toward eye care services is taking a different shape considering the development in technology and availability of competitive services. Eye care is a service industry and its uptake depend on the quality of services delivered. Evaluation of services usually focuses on the quality of medical care and the surgical outcomes. But satisfaction of patients is often forgotten.

This study was to understand patient's expectations toward eye care services at different levels and suggest the changes to be made accordingly. Findings from the study revealed a predominance of males being affected with ocular defects in the teaching hospital, which agrees with the finding of previous investigations (Rahn et al, 1970; Welden, 1956; Cain 1992; Smith 1995). It was also observed from the study

that the right side was involved more when compared to the left side regarding prevalence in relation to the side involved. In relation to age, caregivers between 21- and 40-years age group were involved the most while prevalence of ocular defect etiologically revealed a predominance of trauma. The study also brings to the fore that most patients' time lag between loss of eye and treatment was more than ten years.

Although our study indicated a high satisfaction level with the quality and treatment of services, there were inconsistencies in the satisfaction reported on treatment costs in this study. In the more affluent Western world, health care consumers have become much more sensitive to costs despite health insurance coverage (Afolabi & Erhin, 2003).

In the developing world, such as Ghana is a perennial concern among those seeking health care service given their low earnings. Such costs

include consultation fees, laboratory test charges, travel, drugs and accommodation. While basic health care service is supposed to be free in public hospitals, patients end up bearing the costs of medicine and laboratory tests, as well as some additional unseen costs. Although there is the existence of the National Health Insurance Scheme (NHIS) that insures patient, it does not cover full treatment cost especially the rehabilitation with prosthesis is not approved by the NHIS

Conclusion

The study concludes that frequent injuries and infections in young adults (mostly males) were the main reason behind ocular bulb loss, and the time lag between eye loss and rehabilitation was found to be very high. Moreover, the study concludes that as health care is becoming progressively costly in Ghana and patients' consciousness of rights evolving, a strong health system which is patient and affordable is advocated.

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