

Emotional, Psychosocial And Economic Aspects Of Anophthalmos And Artificial Eye Use

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Abstract

Aim: To report the emotional, psychosocial and economic aspects of anophthalmos and artificial eye use among patients who had destructive eye surgeries. **Methods:** A survey of 15 anophthalmic patients on artificial eye (AE) for demography, emotional, psychosocial and economic aspects. **Results:** Nine men and 6 women aged between 18 and 75 years were studied. Twelve patients (80%) had evisceration and 3 (20%) had enucleation. Seven patients (47%) regretted the removal of the eyes and use of AE, 2 (13%) were depressed, 12 (80%) affirmed that AE could not see, 4 (27%) reported that people could detect their AE use. Two patients (13%) reported that lost eyes affected their work, 3 (20%) felt that AE was expensive. All patients would recommend the use of AE. The patients level of education and gender have no influence on patients expressed regrets ($p>0.5$). **Conclusion:** There is the need for holistic care for anophthalmic patients using AE.

INTRODUCTION

The eye is such a vital organ that its loss evokes emotional and psychosocial responses in affected individuals and society, the cause of the loss notwithstanding.⁽¹⁾ Absence of the eyeball, or anophthalmos, can be congenital or acquired. Destructive eye surgeries including evisceration and enucleation are common acquired causes of anophthalmos. Medically, an eye is only removed with specific indications, such as ocular tumours, severe ocular infection not amenable to other treatment, irreparably damaged globe and painful blind eye.^(2, 3, 4)

Medically indicated eye removal is a procedure which both the eye surgeon and the patient may dread. Surgically removed eyes leave orbital defects (anophthalmic socket) with significant facial asymmetry and important cosmetic implications. The artificial eye and orbital implant (at present, a luxury in many resource limited communities) ameliorate this cosmetic embarrassment.

An artificial eye or ocular prosthesis or glass eye does not provide vision, unlike a functional visual prosthesis or bionic eye (neural prosthesis that partially restore lost vision or amplify residual vision). It takes the shape of a convex shell and replaces an absent eye following destructive eye surgeries, such as evisceration or enucleation and it is of high cosmetic value. Usually, it is made of cryolite glass or

medical grade plastic acrylic.⁽¹⁾ Over the years, eye care providers have been concerned with the rehabilitation of anophthalmic sockets/orbits simulating mirror image symmetry of the eye and lids. This practice appears to guarantee a return to normal appearance. The oculoplastic surgeons and ocularists (paramedical technician who fabricates and fits custom made artificial eyes) specialize in anophthalmic cosmesis.⁽¹⁾

The human mind is complex and responsive to traumatic experiences, such, as the loss of vital organs. What are anophthalmic patients' responses following destructive eye surgery and subsequent artificial eye use? Changes in emotions, mental and behavioral responses (psychological), relationships with society (social) and cost implications (economy) can adversely affect the lives of these patients. Despite the importance of emotional, psychosocial and economic challenges to the optimal management of the anophthalmos, it rarely attracts the attention of eye care providers.^(1, 5, 6) This report on the emotional, psychosocial and economic aspects of anophthalmos and the artificial eye use following destructive eye surgeries was an attempt to bridge this important gap. It is believed that this study will assist eye care providers in improving the management of these patients.

MATERIALS AND METHODS

Patients who have had destructive eye surgeries (including evisceration and enucleation) and were using artificial eyes were sampled for this study. The study was conducted following the guidelines of the ethical review committee of the University of Ilorin Teaching Hospital. A structured questionnaire was administered to 15 patients in 3 different eye clinics in Ilorin, Nigeria between June and December 2007. The questionnaire bordered on patients' socio-demographic characteristics, emotional, psychosocial and economic aspects of the destructive eye surgery and the artificial eye use. The 3 eye clinics have the capacity to perform the destructive eye operation and dispense the artificial eye. They are: University of Ilorin Teaching Hospital, The Civil Service Hospital and Ajisafe Eye clinic. The patients' folders containing clinical notes were also referred to for additional information.

There was initial sensitization of the nursing staff of the selected eye clinics. This was carried out to convey the objective of the study and seek assistance on the expected role in facilitating the author to meet with the patients to administer questionnaire as well as making patients' clinical notes available for further information.

The questionnaire was pretested and validated. Informed consent was obtained from each patient. In addition, each patient was assured that the information was for research purposes that would provide better understanding and improved management of the anophthalmic patients with the artificial eyes. Each patient was interviewed in a room in the presence of a chaperon (nurse). Verbal appreciation was conveyed to each patient at the close of the interview.

The responses were collated and analyzed using SPSS 15.0. The statistical test was carried out using Chi square test and statistical significance was taken at $P < 0.005$.

RESULTS

Socio-demography: Fifteen patients including 9 men and 6 women aged between 18 and 75 years were studied. The mean age of the subjects was 43 years ($SD=20$). The marital status indicated that 11 patients (73%) were married, 3 (20%) were single and 1 (7%) was widowed. Ten patients (67%) were managed at the University of Ilorin Teaching Hospital, 3 (20) at Ajisafe eye clinic and 2 (13%) at the Civil service hospital, all in Ilorin, Nigeria. The occupation distribution of the patients is shown Table 1.

Figure 1

Table 1: Occupation distribution of patients

Occupation	No	%
Trading	3	20
Teaching	1	7
Retiree	2	13
Civil servant	2	13
Student	4	27
House wife	1	7
Artisan	1	7
Cattle rearing	1	7
Total	15	100

Eight patients (53%) had used the Artificial Eye (AE) for less than one year, 5 (33%) for between 1 to 6 years and 2 (14%) for more than 6 years. Twelve patients (80%) underwent evisceration while 3 (20%) underwent enucleation (Figure 1).

Figure 2

Figure 1: A patient with anophthalmic socket (above), with artificial eye in situ (below).



The indications for the destructive eye surgeries included ocular trauma in 8 (53%), panophthalmitis in 4 (27%), ocular tumors in 2 (13) and painful blind eye in 1 (7%). The 4 patients who had panophthalmitis (consequent of complicated microbial keratitis) had no formal education and presented late in the eye clinics.

Selected aspects of anophthalmos following destructive surgeries and artificial eye use

Emotional aspect: Seven patients (47%) expressed regrets over the removal of their eyes and the needs to use the AE.

Two patients (13%) were depressed. Only one patient (7%) expressed happiness over the removal of the painful blind eye and the use of an AE [Table 2 (i & ii)].

Figure 3

Table 2: Emotional and psychosocial aspects of destructive eye surgery and artificial eye use.

	No	%
(i) Initial response on being informed of the need to use artificial eye		
Accepted in good faith	8	53
Became depressed	2	13
Initial rejection but later accepted	4	27
Was happy	1	7
Total	15	100
(ii) Feeling after destructive eye surgery and before artificial eye use		
Depressed	9	60
Was normal self	4	27
Embarrassed	2	13
Total	15	100
(iii) Challenges associated with artificial eye use		
Discrimination by the people	2	13
Associated socket infection	4	27
Falling off artificial eye	3	20
Need to remove, clean and insert	4	27
No challenge	2	13
Total	15	100

Psychosocial aspect: Regarding the problems encountered with the use of the AE, 12 patients (80%) still complained that they could not see while 1 (7%) observed that an AE was lighter than normal eye and 2 (13%) claimed that the AE caused orbital discomfort. Considering how the AE has helped the patients, 8 (53%) admitted that the AE concealed orbital defects and 7 (47%) considered it as saving them from embarrassment. The majority of the patients, 11 (73%), believed that people do not know that they use the AE while 4 (27%) believed that people are aware. Ten patients (67%) felt unnatural using the AE while 5 (33%) felt natural. A higher proportion of the patients, 10 (80%), had never been embarrassed as a result of using the AE while 3 (20%) had been embarrassed. The majority of the patients, 14 (93%), reported having been trained by eye care providers on how to insert, remove and take care of the AE while one (7%) was not. Other social challenges associated with the AE use are shown in table 2 (iii).

Economic aspect: Regarding the economic impact of the eye

loss and the AE use, 2 patients (13%) reported that it affected their work while 13 (87%) claimed it did not. A higher percentage of the patients, 12 (80%), reported that the AE cost between \$9 and \$17 while 3 (20%) procured it for less than \$9. The majority of the patients, 12 (80%), considered that the AE was not expensive while 3 (20%) believed that it was expensive.

All the patients were of the opinion that they would recommend the use of the AE to anybody who needed it. Although a higher proportion of men than women expressed regrets for giving consent for removal of the eye, this difference was not statistically significant ($p=0.833$) (Table 3). Similarly, there was no statistical difference between male and female patients concerning initial response on being informed of the need to use the AE ($p=0.315$) (Table 4). Furthermore, there was no statistically significant difference among the various educational levels regarding regrets in giving consent to remove the eyes and the use of the AE ($p=0.733$) (Table 3).

Figure 4

Table 3: Association of patients' demography with regrets in having eye removed and use artificial eye

Demography	Regrets having to remove eye and use artificial eye		
	Yes	No	Total
Gender			
Men	4	5	9
Women	3	3	6
Total	7	8	15
Pearson $\chi^2 = 0.045$, df = 1, P = 0.833			
Education level			
None	3	4	7
Primary	0	1	1
Secondary	1	1	2
Tertiary	3	2	5
Total	7	8	15
Pearson $\chi^2 = 1.282$, df = 3, P = 0.733, Fisher exact test = 1.555, p = 1.000			

Concerning the initial response of patients on being informed of the need to use the AE, there was no statistically significant differences among the various educational levels ($p=0.588$) (Table 4).

Figure 5

Table 4: Association of patients' demography with initial response on being informed by eye care giver on the need to use artificial eye

Demography	Initial response on being informed by eye care giver on the need to use artificial eye				
	Accepted in good faith	Became depressed	Initial rejection and later accepted	Felt happy	Total
Gender					
Men	4	2	3	0	9
Women	4	0	1	1	6
Total	8	2	4	1	15
Pearson $\chi^2 = 3.542$, df = 3, P = 0.315, Fisher exact test = 3.084, p = 0.446					
Education level					
None	5	1	0	1	7
Primary	0	0	1	0	1
Secondary	1	0	1	0	2
Tertiary	2	1	2	0	5
Total	8	2	4	1	15
Pearson $\chi^2 = 7.471$, df = 9, P = 0.588, Fisher exact test = 10.541, p = 0.429					

DISCUSSION

More attention is required in some aspects of the management of anophthalmic patients who have had destructive eye surgery and subsequently use an Artificial Eye (AE). This will ensure better care for these patients. This would guarantee patient's confidence in the eye care being received. The loss of a vital bodily organ such as the eye is not only traumatic but produces grief and irreversible loss of function. This study demonstrated the emotional, psychosocial and economic challenges faced by anophthalmic patients following destructive eye surgeries and AE use. Increased understanding and sensitivity to these challenges on the part of the eye care providers would result in improved management of these patients.

It appeared that lack of formal education contributed to the late presentation in all of the patients with panophthalmitis. There is a need to intensify public ocular health information (2, 3, 4) to reduce avoidable ocular loss and associated challenges. Also, ocular loss due to trauma is of concern and requires preventive measures (2, 3, 4) to reduce the magnitude as it accounts for more than half (53%) of the indications for the destructive surgeries among the cohort.

Most patients (80%) had evisceration involving keratectomy and removal of the ocular contents leaving behind the scleral shell with its intact muscular attachments unlike enucleation (20%) where the entire globe was removed and muscle attachments were severed.(7) Evisceration, unlike enucleation, provides better ocular motility and is a delight considering cosmesis post surgery. On the other hand,

enucleation is preferred to evisceration in cases of intraocular tumor.(4, 8)

The emotional reactions to the loss of an eye and the AE use could be in the form of depression as revealed by this study. Though, this was not unexpected it could be distressing and needs the support of the eye care providers to elevate the patient's mood. Those patients that initially rejected and later accepted the offer of the destructive eye surgery were shocked at the planned procedure. However, they were able to recover, following further counseling from the eye care providers. The mode of presenting information to the prospective patients for the destructive eye surgery and the need to use the AE subsequently should be with empathy and sympathy.

The cohort who took the information in good faith was properly counselled by the eye care providers and was informed by their belief in the decision as the best available option to manage their ocular conditions. Despite the traumatic experience of destructive eye surgery some of the cohorts were able to remain their normal self. It is likely this was borne out of previous life experiences and past counseling. This essentially resulted in a stable emotional state. The only patient who was happy following the offer of the destructive eye surgery had a painful blind eye that had been causing insomnia and associated headache. The patient, having tried various unsuccessful means of relieving the pains, had prepared for any possible option, including the destructive eye surgery as the eye was functionless and painful.

The experience of discrimination from society by the anophthalmic patients was an indication that the AE did not provide sufficient cosmesis to make it difficult for people to notice the eye defect. This might be related to the destructive eye surgery, the size imbalance between the anophthalmic socket and the AE or the imbalance between the AE and the patient's normal (fellow) eye. The AE falling off indicated improperly AE fitting into the socket. This might be related to the size imbalance between the anophthalmic socket and the AE, the eye lid defects or both. The embarrassment caused to the patient as a result of insufficient cosmesis and falling off AE could be prevented by the eye care providers envisaging these problems and taking the necessary precautions.

It is commendable that almost every patient confirmed being trained on how to remove, clean and re-insert the AE. This is an essential aspect of the AE use.

The reported orbital infections among the cohort underscore the need to emphasize to the patients the hygienic handling of the AE and the socket. This is in view of the fact that an AE, though inert, is a foreign body. In addition, to some extent the orbital natural defensive mechanisms had been breached. The patients should be advised to report all orbital infections to the eye care providers at the earliest time to prevent possible intracranial spread and sepsis.

The ocularist, where available, provides a number of services to the anophthalmic patients using an AE. These services may include cleaning, polishing, enlargement, reduction, and replacement. The patient who reported no challenges had required cosmesis.

It is remarkable that, despite the identified challenges associated with the use of the AE, all patients would recommend the use of the AE to anyone that might need it. This underscores the importance of the AE in improving defective facial appearance following the destructive eye surgery. This was further strengthened by patients admitting that the AE concealed the orbital defect, and prevented embarrassment. In addition, people who were unaware of the patient's condition did not recognize that the patient was using the AE.

Occupational rehabilitation should be discussed during the course of managing these patients as the lost eye may necessitate a change in occupation, especially, in work that requires binocular vision. The eye care providers should strive to provide an affordable AE to the patients as it is a very essential component of the rehabilitation process.

The study revealed that the patients' gender and educational levels have no statistically significant association with emotions, such as regrets in having the eye removed and the use of the AE. Similarly, patients' gender and educational levels were not significantly associated with an initial response of the patients on being informed by the eye care giver on the need for the destructive eye surgery and subsequent use of the AE. However, this should be interpreted with caution in view of the sample size of the studied cohort.

In conclusion, anophthalmos, due to destructive eye surgeries and the artificial eye use, have emotional,

psychosocial and economic impacts on the patient. The holistic care including these components in the management of the cohort by the eye care providers is advocated.

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