



Factors influencing non-attendance to scheduled eye surgery in rural Swaziland



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Background: Blindness in low-income countries has significant negative impacts on patients and their communities. The World Health Organization's 'Vision 2020' target requires increased numbers of ophthalmic surgeries targeting avoidable blindness to overcome this. There have been studies on barriers preventing uptake of surgical services; however, no such study has been conducted in Swaziland, sub-Saharan Africa.

Aim: To investigate factors influencing disengagement with surgical services, specifically non-attendance to scheduled eye surgery in the low-income setting.

Setting: Rural ophthalmology department, Good Shepherd Hospital, Siteki, Swaziland.

Methods: A retrospective observational study using a structured questionnaire after literature review. A list of non-attending patients was generated from a 6-month period in the ophthalmology department of the hospital. Telephone interviews were used to collect data.

Results: The average attendance of 311 patients over 21 lists was 86.8% (standard deviation [SD] ± 10.37). Of the 41 non-attending patients, 23 (56.1%) consented to take part in the study. The reasons given for not attending included expense of the procedure (52.2%), forgetfulness (17.4%), fear (8.7%), illness (8.7%), belief that surgery was not required (4.3%) and bereavement (4.3%). Contributing factors on closed questioning included forgetfulness (30%), fear (22%) and seeking surgery elsewhere (17%). Review for future surgery was accepted by 93.3% of participants.

Conclusion: The findings of this study are consistent to some extent with previous studies carried out in other low-income countries, but also illustrate some key differences. These data provide useful information regarding potential interventions to reduce non-attendance rates, guiding future clinical practice and research.

Introduction

Social value: Global context

Blindness and sight loss have a significant negative impact on patients and the wider community in which they live. At an individual level, patients lose their mobility, activities of daily living, communication, financial security and job opportunity, as well as their independence, self-esteem and means of recreation. At a societal level, costs are high, with necessary provision of informal and family care, loss of productivity in the workforce as well as premature retirement and death. These costs are true of both developed and developing countries; however, the disproportionately large prevalence of blindness and sight loss in low-income countries¹ means that the developing world suffers to a greater extent.

The most common cause of blindness globally is cataract.² A cataract can often be treated successfully by intraocular lens implantation, an extremely cost-effective procedure.^{1,3} Following a cataract surgery in a developing country, the quality of life and productivity of an individual is increased in 75% – 90% of cases.^{4,5} In response to the significant global health burden of visual impairment, the World Health Organization released 'Vision 2020', which pledged to eliminate avoidable blindness by 2020.⁶

Since the Vision 2020 launch, there have been many improvements to ophthalmic care in developing countries; however, surgical delivery services are not on track to meet the Vision 2020 target.¹ In addition to the backlog of patients who already needed cataract surgery, there is an increasing population of patients developing cataracts each year; therefore, the number of surgeries must continue to grow. To increase the number of cataract surgeries, it is important to consider both patient and surgical factors. It is essential to overcome the barriers that

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patients face, which discourage service use as well as making specific changes in the department to encourage cost-effectiveness and productivity.⁷ This study focuses predominantly on the patient factors influencing disengagement with surgical services, specifically non-attendance to scheduled eye surgery.

Scientific value: Barriers to attendance

The reasons for non-attendance together with the barriers for a patient accessing surgery in developing countries will now be considered. In terms of the wider determinants of health, poor governance and health infrastructure in developing countries lead to lack of resources, facilities, equipment and expertise for hospitals to provide optimal healthcare.^{8,9,10,11,12} There is often a lack of local resources and expertise as surgical services are readily available in the urban centres, whilst the majority of patients in need reside in the rural homesteads.¹

Cost of surgery^{1,13,14} is a very important consideration in populations where poverty is rife and health systems are not able to subsidise the cost for the poorest of society. A study reported that financial concern was the most significant barrier preventing access to care for cataract.¹⁵ There are both direct and indirect costs related to surgical care: direct costs include the cost of consultation and surgery; indirect costs are far more complex and can include factors such as transport to the hospital, lack of employment during the perioperative period¹ and cost of accommodation for an accompanying family member.¹ In contrast, other arguments suggest that cost is not as important as it seems at first glance.¹⁶ One study suggested that patients use expense as a convenient excuse that they know health workers will not challenge.¹⁵ Other studies reported that even when affordable and high quality services were available, sub-Saharan African patients still did not present to hospital,⁷ suggesting that a less obvious, underlying reason exists.

Accessibility is another major contributor to uptake of ophthalmic surgical services.^{1,17,18,19,20} Patients are much more likely to agree to surgery if transport to the hospital is provided.^{15,21} Important factors leading to this include long travel distances, poor road condition and lack of a suitable vehicle. Other logistical problems that act as patient barriers include work commitments,^{1,13,22,23} childcare²⁴ and ill health.^{13,22,25,26}

The way in which appointments are organised has been shown to have a bearing on service uptake. Administrative errors¹³ as well as long waiting times^{27,28} and delays between scheduling and the date of an appointment²⁴ have been documented as barriers. Reputation of a department has also been shown to be significant to patients; Rotchford et al.¹⁶ found that poor outcomes from previous patients actively dissuaded several potential patients from having eye surgery. In the same way, good reports from family, friends and acquaintances encouraged new patients to have surgery.²⁹ Patients living in rural communities, who knew very few

people who had undergone eye surgery, were also likely to avoid having surgery themselves.^{2,16}

Patients' immediate surroundings also play a part in the decisions that they make. Lack of family support and approval are frequently cited by researchers^{1,15,16} as surgical barriers for patients in developing countries. Patients are dependent on their families not only for financial support but also for caring for the homestead during their absence, or to travel with them to hospital.^{16,30,31} One study suggested that elderly patients in particular would rather let their vision deteriorate than take on the sick role.³⁰ Gender roles and social status^{32,33} also play a part in patients deciding to go ahead with surgery; despite women having the highest prevalence of cataract,¹ they are least likely to engage with surgical treatment, often because they are less likely to gain family support.³⁰

The beliefs, cultures and traditions which exist within a community impact decisions surrounding health, but are often underappreciated as barriers to care. A culture revolving around fatalism and destiny is common amongst the developing countries and encourages acceptance of the idea that blindness is a natural, inevitable and untreatable³⁴ aspect of ageing.¹⁶ It is therefore not surprising that patients believe that their blindness has a supernatural component and that surgery will not improve their vision and may even make it worse.^{1,2} Combined with the fact that local, traditional healers are less expensive, it is clear why visits to clinics and hospitals are deferred.¹⁵

The intrinsic thoughts of a patient impact the decision to engage, but these are influenced by the wider determinants of health that have been discussed above. One overriding theme in the literature is fear,^{15,16,17,18,20,24} whether that be of pain, dying, unknown factors, surgery itself, anaesthesia or recovery period.

The importance of patient understanding and education in health and the health system is also documented.¹ Patients may consider that they do not need surgery because they are not aware of the consequences or seriousness of their condition and therefore do not see their surgery as a priority.¹³ This may explain why forgetfulness and lack of patient motivation is reported as being the main reason for non-attendance in some studies.^{1,13}

Study population context: Swaziland

After considering the global clinical problem of blindness and sight loss, as well as the barriers that prevent patients accepting eye surgery, focus will now be upon the context of the study: rural Swaziland. There is relatively little published data on this topic specific to Swaziland, demonstrating a need for further research. It is important to consider the factors that may influence patients to have eye surgery, which are very specific to the Swazi culture, and in the same way, set aside the factors that are relatively insignificant in comparison to other similar communities.

Swaziland is the smallest country in Southern Africa. The majority of the population are native Swazis who speak primarily SiSwati and English. Of the population, 63% live below the poverty line.³⁵ Swaziland's population is burdened by the highest prevalence of HIV, with 26% estimated to be infected.³⁶ Non-communicable diseases such as diabetes, hypertension and malignancy are also of high concern. In terms of the burden of blindness and sight loss in Swaziland, much of this affects the children in the community. Orphaned children, as a result of the HIV and AIDS epidemic, often become the main care givers for their grandparents who suffer from blindness and poor sight.³⁶

Good Shepherd Hospital Eye Clinic

Good Shepherd Hospital Eye Clinic (GSHEC) is located in Siteki, one of the poorest rural centres in Swaziland. Despite its small size, it provides services to roughly 250 000 people predominantly from rural communities. GSHEC was set up in 1998 by Dr Jonathan Pons, a South African trained ophthalmologist, with funding from Christian Blind Mission (CBM). Many improvements to GSHEC in the last 20 years have reduced barriers to patients³⁷ and improved cost-effectiveness and productivity, in line with the objectives of Vision 2020. Strategies adopted include prioritisation of training and research, case identification and creation of subsidies for those who cannot pay, as well as implementation of a patient database and lowered overhead costs. The clinic waiting times continue to improve with better medical record-keeping, whilst wasted surgery time is reduced through the use of multiple mobile operating tables³⁷ and standardisation of procedures.³⁸

Currently, GSHEC arranges a surgery date with a patient requiring a surgical procedure whilst they are in clinic. The waiting time is nearly always less than 4 weeks, and more often within 2 weeks. A theatre list booking folder in the clinic has all upcoming theatre lists. When a patient's name is written in this folder, they are booked onto a theatre list. A calendar is used to show the patients the date of their list. Good Shepherd Hospital Eye Clinic runs an outreach clinic once a week at St Theresa's Clinic in Manzini, Swaziland. Patients are booked onto a theatre list in an identical means, with additional direction to GSHEC in Siteki. In addition, GSHEC runs a 'come to hospital' reminder call scheme, whereby patients input a phone number into their mobile, naming the contact 'Come to Hospital'. A computer automatically telephones the patients' number the evening before they have an appointment booked.

Despite this, non-attendance to scheduled eye surgery continues at GSHEC. Patients who do not attend appointments are documented to have poorer outcomes^{13,28} as they do not receive the healthcare needed. Patients who attend are also disadvantaged by longer waiting times because of the unanticipated turnout of patients attending on a different date than the one scheduled. The efficiency of the clinic is also decreased as administrative and clinical staff prepare for a patient who does not arrive and allocated

resources specific to a patient are not utilised.¹³ These effects of non-attendance are especially significant in Swaziland, where resources are already extremely limited.

Aims

The objectives of the article were the following:

- to identify factors that influence patient non-attendance of scheduled surgical procedures at the rural ophthalmology clinics in Swaziland
- to suggest future planning at rural ophthalmology clinics in Swaziland
- to provide information for future research on patient non-attendance to be repeated in sub-Saharan African healthcare provision.

Methods

Study design

A retrospective observational study was designed to acquire qualitative data on patient-perceived causes of non-attendance to scheduled surgery. Non-attending patients were defined as patients who did not attend one or more booked surgical procedures. This definition includes those that attended for surgery at a later date than the one scheduled.

Sampling strategy: Patient identification

In the ophthalmology theatre at GSHEC, a book containing records of every patient operated on provides a definitive list of patients who have attended theatre lists on a particular date. By comparing the theatre list booking folder in clinic with the theatre attendance book in theatre, a list of non-attending patients was generated for each theatre date. This cross-referencing was carried out by one author and then again by the second author before checking any differences. Patient name, identification number, date of birth, mobile number and procedure missed were detailed on the non-attendance documentation. All patient paper files were checked for confirmation of patient personal details and procedure missed, as well as for any evidence of attendance to the eye clinic.

All ophthalmological surgery lists over a period of 5 months from 14 January 2016 until 12 May 2016 were included in the study. All patients who were classified as non-attending were included in the study. Patients excluded from the study were those booked in for pan-retinal photocoagulative laser and YAG laser. This was not counted as a surgical procedure; additionally, less reliable attendance records were kept for these lists and missing one of these treatments has lesser negative impacts on the ophthalmology clinic and community.

Data collection: Questionnaire protocol

A structured questionnaire was produced after consultation with senior medical and nursing staff at GSHEC (see Appendix 1). Telephone interviews were used to collect data. The questionnaire was laid out in a flow-diagram

format to increase the ease of use; a transcript relevant to a telephone call was included on the questionnaire. All questionnaires had a section that, prior to the telephone call, was filled in using data from the clinic's computer system and paper note. This section included the patient's age, gender (if documented), what procedure was missed and the date of the said procedure. This section enabled personalised conversation during phone calls.

The questionnaire asked for the patient's main reason for not attending in an open manner, therefore not lead responses. Subsequent questions addressed a number of other issues that the literature on non-attendance has highlighted in the past. In addition, there were questions on specific aspects of GSHEC, such as reputation.

Phone calls were carried out by a select number of administrative and nursing staff briefed on the use of the questionnaire and able to fluently speak both English and Siswati (native language of Swaziland). A Portuguese-speaking individual could have been arranged if it was felt necessary to communicate with Mozambican patients or family members. All patients were telephoned during clinic staff working hours (08:00–16:00), with a maximum of three times at different times of different days over a period of 2 weeks to carry out the structured telephone questionnaire. If the patient was not able to answer the questionnaire, a family member who attended the eye clinic with the patient answered the questionnaire on his or her behalf. An author was always present or contactable whilst phone calls were taking place. Verbal consent was gained from each patient during the phone call.

Data analysis

All questionnaire responses were analysed and data were inputted to a Microsoft Excel spreadsheet. From this, tables and figures displaying data were produced.

Ethical considerations

Ethical approval was obtained from Good Shepherd Hospital committee including the Chief Medical Officer and Ophthalmology Clinic founder. The study was discussed with the Swaziland Ministry of Health Scientific and Ethics Committee (SEC).

Results

Attendance

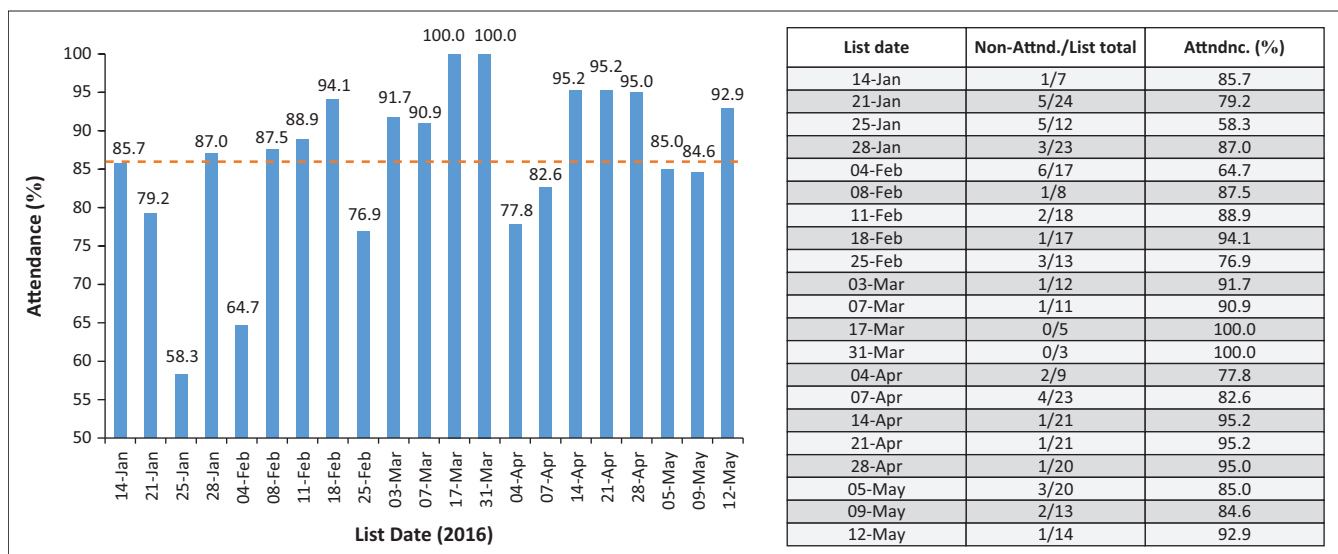
Over the 5-month study period at GSHEC, the ophthalmologists booked 311 patients for surgical procedures over 21 separate lists. Of these procedures, 270 went ahead as scheduled, with the patients attending. In 41 cases, patients did not attend, meaning that these surgical procedures did not go ahead. The average list attendance was 86.8% (standard deviation [SD] ± 10.37), ranging from 58.3% to 100% (Figure 1).

Telephone questionnaire

Of the 41 non-attending patients, four were non-contactable because of having no phone number or an incorrect phone number recorded. A further 14 patients did not answer on the three occasions they were telephoned; therefore, 23 patients (57% of non-attending patients) consented to take part in the study and completed the structured telephone questionnaire. Of the patients who completed the questionnaire, 14 (61%) completed it themselves, whilst nine (39%) had a family member, who attended the eye clinic with the patient, complete the questionnaire on their behalf.

Patient characteristics

Table 1 shows the recorded characteristics of the non-attending 23 patients who completed the telephone questionnaire, including the mean age, 53.35 years (SD



Note: Dotted line represents average attendance = 86.8% (standard deviation [SD] 10.37).

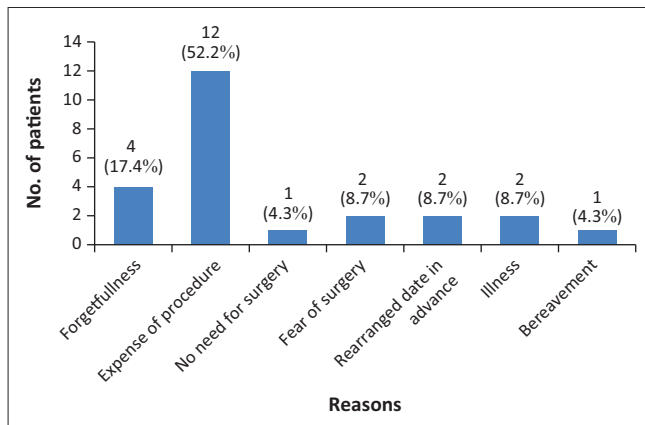
non-attn./list total, number of non-attending patients/total number of patients booked onto list; attn dnc., attendance percentage.

FIGURE 1: Percentage attendance for each surgical list at Good Shepherd Hospital Eye Clinic between 14 January 2016 and 12 May 2016 ($n = 311$; 23 lists, 311 patients booked onto a list, 41 non-attenders).

TABLE 1: Recorded characteristics of all non-attending patients who completed a telephone questionnaire ($n = 23$).

Demographic	Number	Percentage
Under 18	3 patients	13.0
Aged 18–65	12 patients	52.2
Aged > 65	7 patients	30.4
Female	13 patients	56.5
Male	10 patients	43.5

Mean age, 53.4 years (SD 26.2).
SD, standard deviation.



Note: Absolute number with percentage in brackets. Answers given in response to the open question 'what was the main reason you did not attend?' are grouped into the x-axis labels.

FIGURE 2: Number of non-attending patients who gave each main reason for not attending ($n = 23$).

± 26.23 , age range 1–99). Thirteen (56.53%) were females and three (13.04%) were paediatric patients.

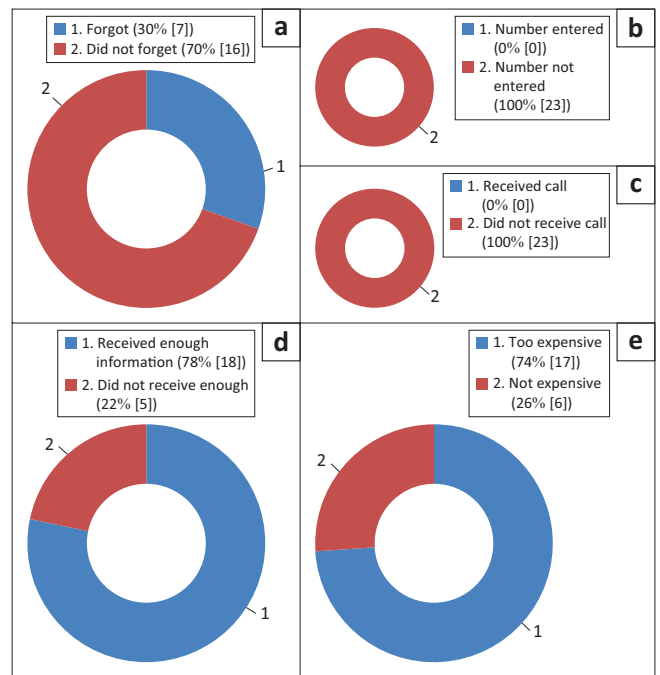
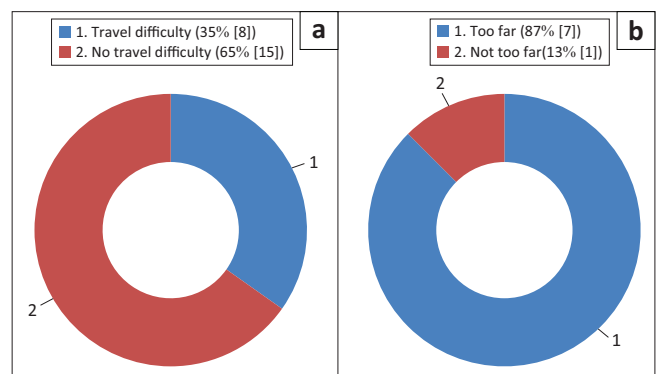
Questionnaire data

Figure 2 shows that the main reason given for not attending scheduled surgery was the expense of the procedure, with 52.2% (12 patients) giving this response. A number of patients gave additional information on this question, for example, waiting for their income to be paid, or their pension to be paid, unemployment, being owed money from friends and/or family, or searching elsewhere for a cheaper price.

The second most common reason was forgetfulness, with 17.4% (4 patients). Other less common reasons included fear of surgery, illness, a belief that the surgery was no longer required and bereavement, and two patients reported having rearranged the date of their surgery in advance.

Figure 3 shows some factors discussed in the questionnaire that may contribute to non-attending patients' absence. On direct questioning about the cost of the surgery, 17 patients (74%) believed that the surgery was too expensive (Figure 3e), and five patients (22%) felt that they did not receive enough information (Figure 3d), indicating that had more information been given, attendance would have been more likely.

Five (30%) patients admitted that forgetting the surgery date played a part in non-attendance (Figure 3a), and three of them did not give this as their main reason, suggesting other reasons for forgetting to attend. No patients recalled entering

**FIGURE 3:** Percentage (and number) of non-attending patients who believed whether each factor contributed to their non-attendance: (a) forgetting to attend surgery, $n = 23$; (b) reminder phone number entered into patient phone, $n = 23$; (c) receiving reminder call, $n = 23$. (d) Informing patients adequately, $n = 23$. (e) Surgery expense, $n = 23$.**FIGURE 4:** Percentage (and number) of non-attending patients who believed whether each factor contributed to their non-attendance: (a) travel was too difficult, $n = 23$; (b) travel difficulty – relation to distance, $n = 8$. Only those who had travel difficulty were asked if it was because of the distance required to be travelled.

the reminder 'come to hospital' contact into their phone (Figure 3b) and no patients apparently received a reminder call (Figure 3c).

Although no patients reported travel difficulty as the main reason of their non-attendance, 8 (35%) patients suggested it made attending their surgery less likely (Figure 4a). Of those eight patients, seven reported that this difficulty was because of the distance they had to travel to reach GSHEC (Figure 4b). The remaining patient reported high cost of transport as the reason.

Figure 5a shows that the vast majority of patients (96%) believed that their surgical procedure was necessary and therefore this was not a contributory factor for non-attendance. Five patients (22%) were fearful of surgery, representing another related influence on attendance (Figure 5b). Figure 5d illustrates that all patients in this study

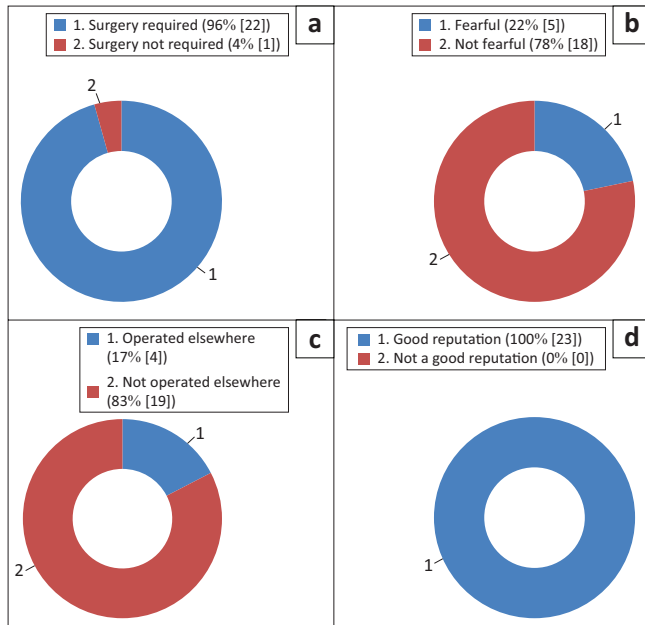


FIGURE 5: Percentage (and number) of non-attending patients who believed whether each factor contributed to their non-attendance: (a) belief that surgery was not necessary, $n = 23$; (b) fear of surgery, $n = 23$; (c) undertaking surgery elsewhere, $n = 23$; and (d) Good Shepherd Hospital Eye Clinic reputation, $n = 23$.

believe GSHEC has a good reputation; therefore, a bad reputation having adverse effects on attendance would appear not to be relevant.

Four additional patients had undertaken surgery at somewhere other than GSHEC (Figure 5c). Of the 15 patients who had yet to undergo surgery, 14 (93.33%) still expressed an ongoing desire for surgery at the eye clinic. All patients were warmly invited to attend clinic; those requiring surgery were encouraged to attend as soon as possible.

Discussion

Key findings

This study sought to identify the reasons for patient non-attendance for scheduled eye surgery at GSHEC and to assist in future planning at the clinic to improve outcomes. The main reason given for non-attendance was financial concern, followed by forgetting the appointment, fear of surgery, illness, belief that the surgery was not needed and bereavement. These findings are consistent, to some extent, with previous studies carried out in other low-income countries but also illustrate some key differences.

Cost

Cost was found to be the main reason that patients gave for not attending their eye surgery. This is important because sponsorship exists at Good Shepherd Hospital (GSH) to support those who cannot afford it. Many studies focussing on low-income countries also found that financial concern was the most significant barrier to uptake of services.^{39,40} One paper suggested that despite this being a very common response, it is not a true representation of the problem, as many patients continue to disengage even when services are free of charge, of high quality and are accessible.¹⁵ It goes

onto describe financial barriers as an 'acceptable and convenient explanation which will not be challenged by healthcare workers'.¹⁵

Overcoming true financial limitations is not straightforward, especially in a country such as Swaziland where there are little financial resources and a poor health infrastructure. It may be necessary to advertise more widely that sponsorship is available whilst ensuring that the service is not exploited. This would require assessment of the financial circumstances of patients. Other solutions which have been suggested include patient education on budgeting⁴¹ and exploring rural health insurance.¹⁵

Forgetfulness

Forgetfulness was also a barrier for patients attending surgery at GSHEC. This is significant because reminder calls which are already in place to improve non-attendance rates would appear to be currently ineffective. Several papers describe forgetfulness as an influence for non-attendance.^{1,13} Difficulties with using phone communication as a means of contacting patients are also well documented because of the high turnover of phone numbers, lack of access to a phone or providing the contact details of a family member.¹³ However, call reminder systems have been demonstrated to be the most common and effective method to improve attendance rates²⁴ and, therefore, GSHEC should review its current system to ensure maximum functionality. It is also suggested that patients should be encouraged to update their personal contact details at each appointment as well as being educated about the importance of providing reliable contact information.¹³

Lack of information

An alternative explanation to forgetfulness may be lack of information sharing. Patients may not realise the seriousness of their condition and, therefore, do not prioritise their surgery, making them vulnerable to forgetting the appointment. A proportion of patients in this study suggested that although lack of information was not the sole reason for their non-attendance, it may have made their attendance more likely. It may be necessary to provide further information for patients about GSHEC scheduling system, their health condition and the surgery needed to treat it.¹ The most effective, but least cost-efficient, method is to embark upon individual educational services at a patient's home^{21,29,42}; however, other methods such as media outreach, providing posters in waiting rooms and using past patients as motivators in communities have been shown to be effective.¹

Fear

Patient fear surrounding eye surgery was a predictable barrier to treatment in this study and is reflected in studies conducted in rural South Africa.¹⁶ Methods to combat fear include improving patient education surrounding surgery¹ as well as commissioning patients who have undergone surgery with positive experiences to share these with their communities. Some studies suggest having a dedicated

counsellor so that patients and their families have a chance to have their questions answered at length by non-threatening personnel.⁷

Travel difficulty

None of the patients gave travel difficulty as their main reason for non-attendance, which contradicts previous studies.^{1,7,15} However, a proportion of patients believed that travel difficulty influenced their non-attendance to a lesser extent. One reason for this contradiction with previous literature may be because travel and financial costs are intrinsically linked and it is difficult to separate them as separate components. Although the distance travelled by patients to GSHEC and the road infrastructure cannot be changed, suggestions such as providing transport for patients within the overall cost may improve the problem.^{7,15}

Other

Some reasons for non-attendance in our study are difficult to optimise, such as feeling too unwell to have surgery or an unexpected bereavement. However, it is important to encourage patients to inform the clinic so that they can be invited to have surgery in the future. Another reason for non-attendance was that some patients sought surgery elsewhere. This response represents a culmination of barriers that resulted in an action of the patient and cannot be considered separately.

Belief that surgery was unnecessary was not a contributing factor to non-attendance at GSHEC. This is contradictory to the findings of a number of studies.^{13,16} This may be explained by the fact that patient education is good at GSHEC or that patients felt they could not disclose this response to a member of staff working at the eye clinic. Reputation of GSHEC was also not influential in the uptake of surgical services in this study, suggesting that systems already implemented are effective.⁴³ The good reputation of GSHEC is important to maintain in order to not see a rise in non-attendance rates to surgical services.

Other general measures that could be taken to improve attendance include providing a means of incentive or disincentive to patients and overbooking lists by the expected no-show rates.^{24,44,45} In addition, for those patients who rearrange their scheduled surgery in advance, a system of updating the list and ensuring they are added to a new one would avoid much disruption to services.

Study limitations

Limitations of this study include those regarding telephone interviews. Patients who were non-contactable may have been individuals who could not afford a phone and therefore would struggle with the expense of surgery mostly. Additionally, they may have been employed individuals, unable to answer the phone at work, as telephone interviews were only completed during working hours. This could theoretically have introduced bias.

Eye clinic staff were often completing telephone interviews in non-English; it was not checked that the translation of questions was entirely accurate. In some cases where a family member answered the questionnaire on the patient's behalf, such as for paediatric patients, the patient's views may not have been accurately represented. Telephone interviews also limited the number of factors that could be specifically discussed regarding non-attendance because of time constraints.

Further limitations of this study include the small sample size. This, along with the wide patient demographic and lack of available data on patient socio-economic factors, limits the applicability of conclusions on a specific population.

Future recommendations

The method used in this study should be applied in future research. It provides a relatively cheap and easy means of collecting large amounts of useful data which can be used to improve healthcare outcomes in any setting. With an increased sample size and more data gathered on patient socio-economic factors, more detailed analysis of differences between patient groups could provide even more useful conclusions.

Additional recommendations would include investigating hypotheses such as how the booked surgical procedure affects perceived severity of disease and, therefore, subsequent attendance rates. Importantly, whilst generating lists of non-attending patients, those who have time-critical eye disease noted should be identified and actively encouraged to return for further management.

Conclusion

The non-attendance of scheduled eye surgery has negative effects on healthcare provision and patient outcomes. Patients have reduced opportunities to receive surgery because of longer waiting times and wasted resources, both in the form of surgical equipment and healthcare professionals' time. This study investigated factors that influence patient non-attendance; in doing so, it is believed that interventions to reduce absence rates can be discovered and trialled. Minimising waste of resources is applicable to any location, but no more so does it impact the lives of patients than rural Africa.

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Competing interests

The authors declare that they have no financial or personal relationships that may have inappropriately influenced them in writing this article.

Authors' contributions

A.J.S.N. and C.E.N. completed the work in equal share under each other's supervision at all times, including project design, data collection, analysis and discussion.

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Appendix starts on the next page →

Appendix 1

Created May 2016 for Good Shepherd Hospital Eye Clinic by A. Norris & C. Norris

Questionnaire - Non-Attending Eye Theatre Patient
Circle the most relevant answer for each patient response and detail further if requested

PROCEDURE MISSED: **PATIENT NAME:**
PROCEDURE DATE: **PATIENT ID NUMBER:**
Age: Sex: M / F

Phone Answered? YES NO No phone.

Hello, I am calling from Good Shepherd Hospital Eye clinic regarding [patient name]. Are they available to talk?

Q1 Who am I speaking to?

A. Patient. B. Family Member (please detail). C. Friend. D. Carer/establishment. E. Other (detail)

We notice that you/they did not attend for a scheduled eye surgery on [insert date]. We are calling to find out the reason for this, to see if we can help our patients more in the future. It will take 2 minutes.

Q2 Can we ask you a few questions? YES NO

Q3 What was the main reason you did not attend?

A. Forgot/confusion. B. Cost. C. Travel/logistics. D. No need for surgery. E. Scared of surgery.
F. Bad reputation GSH eye clinic. G. Other (detail).

Q4 Did you attend on a different date for surgery to that scheduled?

YES NO Don't Know

Q5 Did you get confused about date or forget to attend the surgery?

YES NO Don't Know

Q6 Did you get a missed call from "Come To Hospital" before your surgery?

YES NO Don't Know Have not heard of this

IF YES

IF NO/DON'T KNOW

Q8 Did you receive enough information from the eye clinic?

YES NO Don't Know

Q7 Was the "Come To Hospital" phone number put into your phone at the eye clinic?

YES NO Don't Know

Q9 Was the surgery going to be too expensive for you?

YES NO Don't Know

TURN OVER

FIGURE 1-A1: Questionnaire – Non-attending eye theatre patient.

Figure 1-A1 continues on next page →

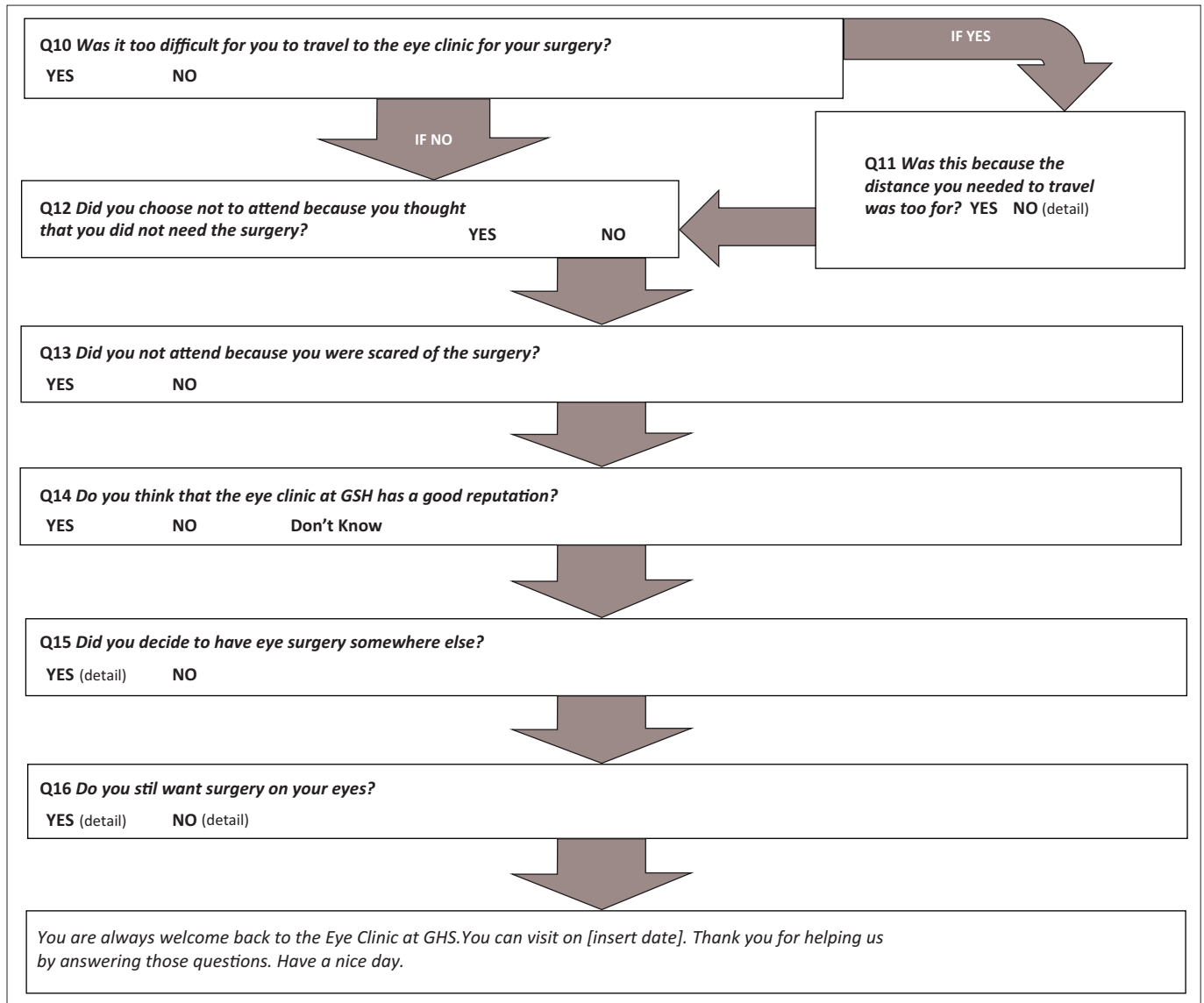


FIGURE 1-A1(Continues...): Questionnaire – Non-attending eye theatre patient.