



The economic impacts of cataract surgery on sustainable vision and quality of life in Katsina state

Mansur M. Rabi¹  | Manal O. Taryam¹ | Muhammad Yusuf² | Ibrahim Kabiru Maji³ 

¹Department of Programmes and Research, Noor Dubai Foundation, Dubai, UAE

²Department of Economics, Air Force Institute of Technology, Kaduna, Nigeria

³Department of Economics, Nigerian Army University, Biu, Nigeria

Correspondence

Ibrahim Kabiru Maji, Department of Economics, Nigerian Army University, Biu, Nigeria.
Email: keibimaji@gmail.com

Funding information

Noor Dubai Foundation,
Grant/Award Number: CAC/IT/131441

Abstract

Background: This study investigates the economic impacts of eye care interventions on the quality of life in Katsina state. Eye care intervention is a requirement for equitable and inclusive development in the state.

Methods: The study used a survey method and 5-point Likert scale questionnaire to collect data. A multistage sampling strategy was employed to select 300 beneficiaries from the existing beneficiaries of Noor Dubai Foundation (NDF) eye care interventions.

Results: The findings show that cataract surgery interventions improve economic benefits and quality of life of beneficiaries in Katsina state. The results show that productivity, income, employability, dignity and skills of beneficiaries have improved significantly after the cataract surgery. Precisely, 96.2% of the beneficiaries agree that their productivity has improved; 99.6% of the beneficiaries revealed that their income has improved; 99% of respondents evidence that their employability has improved; 90% of beneficiaries have experienced an improvement in their dignity; while 97% agreed that their skills have improved.

Conclusion: The implication of these findings is that poor eye health is negatively related to economic benefits and quality of life while good eye health is a vital determinant of standard of living. Without good eye health, it is hard to participate in the labour force, produce goods and earn income. Thus, the Katsina state government should further improve awareness of good eye health to mitigate preventable cases of blindness for equitable and inclusive development.

KEYWORDS

cataract, economic effects, surgery, sustainability, vision

Abbreviations: NDF, Noor Dubai Foundation; ODK, Open Data Kit; SDGs, Sustainable Development Goals; SPSS, Statistical Package for the Social Sciences; WHO, World Health Organisation.

This is an open access article under the terms of the Creative Commons Attribution-NonCommercial-NoDerivs License, which permits use and distribution in any medium, provided the original work is properly cited, the use is non-commercial and no modifications or adaptations are made.

© 2023 The Authors. *Health Care Science* published by John Wiley & Sons, Ltd. on behalf of Tsinghua University Press.

1 | INTRODUCTION

There are more than one billion people with preventable vision impairments worldwide [1]. Addressing preventable vision impairments is an important requirement to achieving sustainable development goals (SDGs) by 2030. Cataracts which is one of these vision impairments, affect adults especially people above 50 years. This vision impairment, if not detected and addressed early, can have long-term personal and economic implications [1]. The economic impact is reflected in low economic benefits and quality of life measured by low productivity, low employability, income vulnerability, and less access to knowledge and skill acquisition. Poor eye health care limits access to just and equitable quality of life [2]. Hence, eye health care is instrumental in reducing economic exclusion and the achievement of SDGs.

Consequently, the Noor Dubai Foundation (NDF) which is a charitable organisation in collaboration with the state government has embarked on providing cataract eye care interventions in Katsina. Katsina state is one of the 36 states in Nigeria. Cataract is a vision impairment caused by the accumulation of cloud patches on the eye's lens which leads to blurred vision and subsequent blindness. Cataract surgery is among the most common surgical operation in the world. As the ageing population of the world increases, the number of people requiring cataract surgery is expected to increase [3]. Low vision arising from cataract can lead to tremendous economic impact on individuals and households [4]. This can be seen in the vicious cycle of poverty induced by vision impairment, where cataract and related eye problems reduce the chances of productivity, employability, income, and access to affordable treatments. Addressing these challenges is a requisite to achieving equitable, affordable, inclusive and sustainable development for all in Katsina state.

In line with SDGs and the NDF to have a world free from preventable forms of blindness, this paper is inspired by the following reasons: The need to measure the economic benefits and quality of life arising from their eye care intervention in Katsina state; the alarming rate of preventable cataract impairments in the state which constitute one of the reasons for choosing Katsina state. The presence of suboptimal eye health indicators in the state is also among the reasons for choosing the state; the need for sustainability of the eye care program towards achieving SDGs in the state; and finally, the gap in the extant contemporary studies that failed to examine the economic impact of cataract intervention services by NDF in Katsina state. Figure 1 presents the extent of vision impairment challenges in the state with cataracts as the main cause of preventable blindness [5, 6].

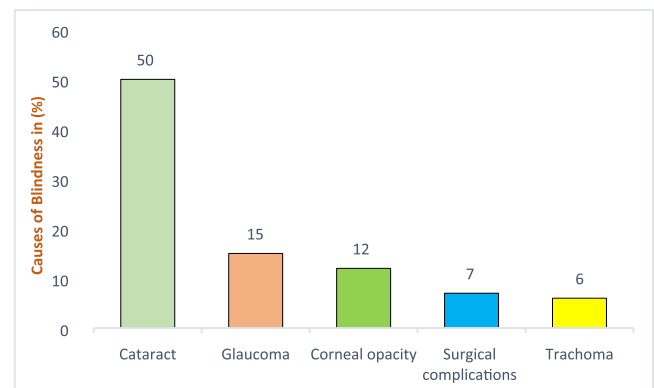


FIGURE 1 Projected major causes of blindness in Katsina state. Source: NDF [5].

The economic consequences of cataract vision impairment can be enormous due to lack of access to affordable healthcare interventions [4]. This is exacerbated by the poor nature of social security safety nets that depends on out-of-pocket expenditure for cataract treatments in most rural communities in Katsina. However, improving the quality of life through eye care interventions is one of the cardinal objectives of goal 3 of SDGs [7], which aims to ensure a healthy life and enhance the well-being of people. The Lancet global health commission conceived eye health as optimum vision and ocular health that contribute to human well-being and improved quality of life. Thus, cataract impairments limit the opportunity and access to acquire knowledge and skills and, thus, the opportunity for employment and productivity.

The reasons for choosing Katsina state is that there is a high rate of avoidable cataract and vision-impaired related problems and the presence of suboptimal eye health care indicators in the state. At present, the state has only three ophthalmologists, no optometrist and limited eye health facilities [5]. It was found that women are 30% more vulnerable to blindness while cataract account for 70% causes of blindness in Katsina [6]. Despite the paucity of professional eye health experts in developing countries, the case of Katsina in Nigeria requires collaboration with nonprofit and charitable eye care organisations like NDF. Equally, there is the need for a gender-inclusive, affordable, reliable and sustainable eye care program in the state that will improve the quality of life and exit cataract impaired population from economic vulnerabilities and accelerate their inclusiveness toward achieving the SDGs by 2030. The gap in extant contemporary studies has also informed this investigation. For instance, studies [3, 6, 8–16] have examined related areas, including cataract and quality of life, but specific study on the economic effect of surgery

on sustainable vision and improved quality of life in Katsina state has eluded existing studies.

Hence, this study contributes to the extant debate in the following respects. First, it employs a 5-point Likert scale questionnaire to collect first-hand information on the economic impact of NDF eye care intervention from 2019 to 2022. The information on the questionnaire was transformed into Open Data Kit (ODK) to ensure transparency and monitoring. Second, the impact of the intervention in terms of quality-of-life indicators like employability, productivity, income and dignity are examined. Three, the study contributes to creating an economic database of eye care services in the state and Nigeria. Finally, the outcomes of the enquiry provide a benchmark for policymaking.

2 | METHODS

2.1 | Data collection procedure

This study aims to investigate the economic impact of cataract surgery intervention of NDF on the quality of life and sustainability. A survey method using a 5-point Likert scale structured questionnaire was adopted. A 5-point Likert scale is a psychometric answer scale which shows the respondent's level of agreement to a statement in five points as follows: strongly agree, agree, indifferent, disagree and strongly disagree [17]. The main content of the survey is demographic information and information used to measure the quality of life, which include productivity, employability, income, dignity and skills. The eye care intervention for more than 5000 beneficiaries by NDF serves as the population of the study. The designed questionnaire following similar studies [6, 12, 18] with modifications was first vetted by experts. The questionnaire was translated into native language. The principal investigators train nine experience research assistants for data collection. These research assistants are fluent in both the native and English languages, thus, competent enough to detect and prevent biased responses of beneficiaries. Ethical approval for the study was obtained from the Katsina state Ministry of Health while beneficiaries' consent to participate was obtained through their signature or thumb before administering the questionnaire.

2.2 | Sample size and technique

The study follows Taryam et al. [6] sampling technique to select 6% of samples from the population of the study. Thus, a minimum sample size of 300 which

approximately represents 6% of the beneficiary's population (about 5000) was obtained. The sample of the beneficiaries was obtained from the NDF's existing list of eye care beneficiaries for the three senatorial zones (Katsina, Daura, and Funtua). The sample share selected from each senatorial zone was based on the number of beneficiaries.

The sample is drawn using multistage cluster randomised sampling employing probability proportionate to the cluster size sample. In the first sampling phase, 80 communities were randomly selected. In the second sampling stage, each cluster was divided into segments comprising the beneficiaries. All those selected within the segments were enumerated until the desired cluster sample size was finally obtained. The inclusion criterion is all beneficiaries that can communicate in Hausa or English Language. Equally, an additional 15 beneficiaries which represent approximately 5% of the initial sample of 300, was proportionally selected at standby in the event of the absence or refusal of participants.

2.3 | Techniques of data analysis and hypothesis

All collected data were electronically captured with the aid of Open Data Kit (ODK) software on an Android phone to enable principal investigators to monitor the location and data collection process. ODK-captured data are sent to a central server from where the data is accessed, cleaned, organised and categorised for analysis. The collected data were analysed using descriptive statistics employing the measures of central tendency and measures of dispersion. Equally, inferential statistics is used to test the hypothesis. A combination of software such as SPSS and STATA was used for the descriptive statistics and hypotheses testing. The hypothesis tested is as follows:

- H1:** Economic benefits and quality of life can be potentially improved from cataract surgery interventions in Katsina state.

3 | RESULTS

This work examines the economic impact of cataract surgery on quality of life in Katsina state. Out of the 321 questionnaires administered, 300 were retrieved, cleaned, coded and analysed with the help of Microsoft Excel, SPSS and STATA. The result presentation commenced with the presentation of demographic

information of the respondents. These include gender, age, marital status, education and number of years with impairment. The demographic data presented in Table 1 revealed that about 43% of the respondents are male while 57% are female. The significance of this outcome is that the NDF's eye care interventions in Katsina state are gender-sensitive, balanced and inclusive, as such, in line with the objective of SDGs.

Second, the demographic information also shows that 16.3% of the beneficiaries fall within the age of 46–55, 50.7% fall within the age of 56–65, 17% have an age greater than 65 while the remaining 16% fall within the age of 18–39. The age between 56 and 65 constitutes majority of the beneficiaries, followed by age greater than 65 which represents those in the retirement age. This outcome is not surprising as

cataract vision impairment is more common among people -above 45 years. Similarly, the demographic data evidenced that about 69% of the beneficiaries are married, 22% are widows while the remaining 9% are either single or divorced. The educational level suggests that 69% of the respondents did not attend conventional schools, 22% of them attended either primary or secondary school, and 7% obtained tertiary education. This finding suggests that cataract vision impairment is prominent among people that did not attend conventional schools in Katsina state. Moreover, 86% of the respondents which is the dominant have stayed with the vision impairment between 1 and 5 years while the remaining 16% are beneficiaries that have lived with the impairment for more than 5 years.

TABLE 1 Demographic information of eye care intervention's beneficiaries.

Demographic variables	Categories	Frequencies	Percentage (%)
Gender			
1	Male	128	42.67
2	Female	172	57.33
Age (years)			
1	18–25	6	2.00
2	26–35	9	3.00
3	36–45	33	11.00
4	46–55	49	16.33
5	56–65	152	50.66
6	>65	51	17.00
Marital status			
1	Married	206	68.67
2	Single	15	5.00
3	Divorced	13	4.33
4	Widowed	66	22.00
Educational level			
1	Primary	32	10.67
2	Secondary	35	11.67
3	Tertiary	22	7.33
4	Postgraduate	3	1.00
5	None	208	69.33
No. of years with impairment (years)			
1	1–5	258	86.00
2	6–10	33	11.00
3	11–15	3	1.00
4	>15	6	2.00

4 | DISCUSSIONS

4.1 | Impact of cataract surgery on economic benefits and quality of life

Table 2 presents the result of the relationship between cataract surgery and quality of life which help to provide answer to the hypothesis (H1) that economic benefits and quality of life can be potentially improved through cataract surgery interventions in Katsina state. The indicators for measuring economic benefits are productivity, income, employability, and skill sets. First, the study assessed the respondents to find out whether their productivity increased after receiving the cataract surgery interventions. The result as presented in Table 2 and Figure 2 revealed that 64.6% ($n = 194$) of the respondents strongly agree that their productivity has increased after the surgical intervention, 31.6% ($n = 95$) agree that their productivity has increased while the remaining 3.7% ($n = 11$) are either indifferent or disagreed. Overall, 96.2% of the respondents that agreed suggest that productivity measure has improved economic benefits and quality of life.

Further, to measure economic benefits, the study evaluates whether the respondents' income has increased after receiving surgical interventions. The findings as presented in Table 2 and Figure 2 reveals that about 58% ($n = 175$) of the respondents strongly agree and about 30.6% of the respondent agree that the interventions have increased their income. About 11% ($n = 33$) of the respondents are indifferent while no respondents disagree with the statement. Overall, about 99.6% of the beneficiaries agreed that NDF intervention has increased their income.

Additionally, the study examines whether the employability of respondents has improved after cataract surgery to further measure the economic benefit. The outcome as presented in Table 2 and Figure 2 evidence that 63.6% ($n = 191$) of the respondents strongly agree that their employability has improved. About 25.7%

($n = 77$) of the respondents agree, 10.6% are indifferent while no respondents disagree. Overall, about 99% of the beneficiaries agree that their economic benefits have increased due to improved employability arising from the interventions. Thus, participation in the labour force is a measure of economic benefits and quality of life that is highly connected to productivity and subsequent monetary income.

Again, the research assessed whether the dignity of respondents has improved resulting from the eye care interventions. The finding suggests that 45.6% ($n = 137$) of the respondents strongly agree, 44.3% ($n = 133$) of the beneficiaries agree, 10% ($n = 30$) are indifferent while none of the respondents disagree. The 90% agreement suggests that this measure of economic benefits and quality of life has been improved. Thus, the NDF interventions have contributed towards achieving the SDGs of Katsina state. Furthermore, the enquiry assessed whether the knowledge and skill set acquired by the beneficiaries has improved after the interventions. The outcome as presented in Table 2 and Figure 2 shows that about

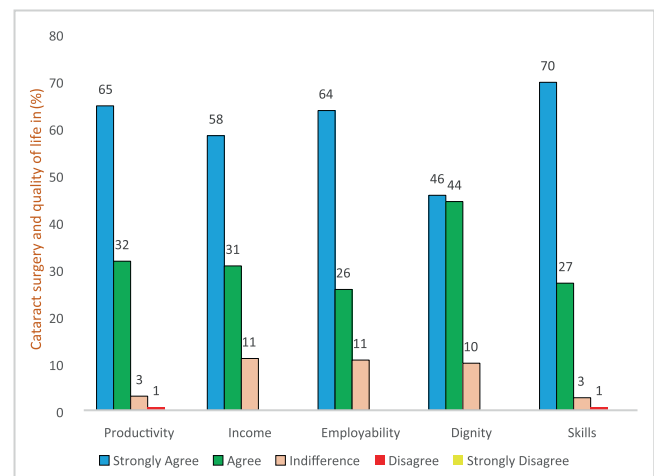


FIGURE 2 Cataract surgery, economic benefits and quality of life.

TABLE 2 Cataract surgery, economic benefits and quality of life.

	Productivity		Income		Employability		Dignity		Skills	
	Freq.	%	Freq.	%	Freq.	%	Freq.	%	Freq.	%
Strongly agree	194	64.6	175	58	191	63.6	137	45.6	209	70
Agree	95	31.6	92	30.6	77	25.7	133	44.3	81	27
Indifference	9	3	33	11	32	10.6	30	10	8	3
Disagree	2	0.7	–	–	–	–	–	–	2	1
Strongly disagree	–	–	–	–	–	–	–	–	–	–
	300	100	300	100	300	100	300	100	300	100

70% ($n = 290$) of the respondents strongly agree, 27% agree while the remaining 4% are either indifferent or disagree. Overall, 97% of the respondents agreed that vision recovery has increased their economic benefits through skill acquisition. Thus, economic benefits of

the interventions are measured by improved skills, employability, productivity and income.

Moreover, Table 3 presents the hypothesis tests using a chi-square method. To achieve gender-balanced and inclusive outcomes, all five indicators of economic

TABLE 3 Chi-square tests of the impact of eye care interventions on quality of life.

Indicators	Quality of life vs. gender							Test statistics	
	Gender	SA	A	I	D	SD	Total	χ^2	<i>p</i>
Productivity	Male	91	33	4	–	–	128	5.368	0.047
	Female	103	62	5	2	–	172		
Income	Male	77	39	12	–	–	128	0.666	0.017
	Female	98	53	21	–	–	172		
Employability	Male	86	32	10	–	–	128	2.178	0.036
	Female	105	45	22	–	–	172		
Dignity	Male	59	58	11	–	–	128	0.498	0.079
	Female	78	75	19	–	–	172		
Skills	Male	95	29	2	2	–	128	5.932	0.015
	Female	114	52	6	–	–	172		
Indicators	Quality of life vs No. of years with impairment							Test statistics	
	No. of years with impairment (years)	SA	A	I	D	SD	Total	χ^2	<i>p</i>
Productivity	1–5	175	75	7	1	–	258	20.53	0.015
	6–10	16	15	1	1	–	33		
	11–15	1	1	1	–	–	3		
	>15	2	4	–	–	–	6		
Income	1–5	159	70	29	–	–	258	12.918	0.044
	6–10	14	16	3	–	–	33		
	11–15	1	2	–	–	–	3		
	>15	1	4	1	–	–	6		
Employability	1–5	167	63	28	–	–	258	6.341	0.103
	6–10	18	13	2	–	–	33		
	11–15	2	–	1	–	–	3		
	>15	4	1	1	–	–	6		
Dignity	1–5	125	105	28	–	–	258	16.999	0.009
	6–10	8	24	–	1	–	33		
	11–15	–	2	1	–	–	3		
	>15	4	2	–	–	–	6		
Skills	1–5	178	72	6	2	–	258	7.007	0.636
	6–10	24	8	1	–	–	33		
	11–15	2	1	–	–	–	3		
	>15	5	–	1	–	–	6		

Note: χ^2 , Chi-square tests; *p*, probability values; SA–SD, the 5-point Likert scale.

benefits and quality of life i.e., productivity, income, employability, dignity and skills were tested against gender. The finding revealed that all five indicators of quality of life are significantly associated with gender. This is evidenced by the probability values of each estimated indicator which is less than 5% level. The implication of this result for policy making is that the cataract intervention of Noor Dubai Foundation has significantly improved the quality of life of people with vision impairment in Katsina state. Furthermore, since about 57% of the beneficiaries are female (see Table 1), the finding implies that gender balance is instrumental to improving economic benefits and quality of life arising from improved skills, employability, productivity and income due to interventions. Thus, the finding is gender balanced and inclusive.

Furthermore, the lower part of Table 3 presents the hypothesis tests between a number of years with impairment and indicators of economic benefits and quality of life. The finding shows that except for employability and skills, all other indicators of economic benefits and quality of life are significantly associated with number of years with impairment. This is proven by the probability values of two measures of economic benefits (productivity and income) at 5% level of significance and the dignity indicator at 1% level of significance. The implication of this finding is that as the number of years with impairment increases, the economic effect of vision impairment will be more pronounced on productivity and income.

5 | CONCLUSION

This study examines the economic impacts of eye care interventions in Katsina state. The specific goal of the study is to measure the economic benefits of cataract surgery on quality of life for equity, gender balance, and inclusive development. A survey method using a structured 5-point Likert scale questionnaire was used. The sample size was selected from a list of beneficiaries of NDF eye care interventions and a multistage sampling method was used to administer the questionnaires. The findings revealed that cataract surgery has improved economic benefits and quality of life of beneficiaries in Katsina state. Findings have shown that the indicators measuring economic benefits such as productivity, income, employability, and skills have improved significantly after the cataract surgery. Precisely 96.2% of the respondents agreed that the economic benefit has increased through productivity, 99.6% of the respondents revealed improvement in economic benefits

through an increase in their income, 99% of respondents showed that their economic welfare has improved through employability, 97% of them experienced an improvement in economic welfare through improved skills after the interventions, while 90% has experienced an improvement in their dignity after the intervention.

The implication of these findings is that economic benefits and quality of life are inversely related to poor eye health while good eye health is an important determinant of high standard of living compared to per capita gross domestic product (GDP). This is because, without good vision, it is difficult to acquire new skills, participate in the labour force, be productive, and earn income. Therefore, the Katsina state government need to improve its awareness on the importance of good eye health and the need to report cases of preventable blindness for equity and inclusive development.

AUTHOR CONTRIBUTIONS

Mansur M. Rabi: Conceptualisation (equal); Funding acquisition (equal); Investigation (equal); Project administration (equal); Resources (equal); Supervision (equal); Validation (equal). **Manal O. Taryam:** Conceptualisation (equal); Funding acquisition (equal); Investigation (equal); Project administration (equal); Resources (equal); Validation (equal). **Muhammad Yusuf:** Conceptualisation (equal); Data curation (equal); Funding acquisition (equal); Investigation (equal); Methodology (equal); Software (equal); Supervision (equal); Writing—original draft (equal); Writing—review & editing (equal). **Ibrahim Kabiru Maji:** Conceptualisation (equal); Data curation (equal); Formal analysis (lead); Methodology (equal); Software (equal); Visualisation (lead); Writing—original draft (lead); Writing—review & editing (lead).

ACKNOWLEDGMENTS

The authors thank the reviewers and the editor for their constructive comments. This research is funded by Noor Dubai Foundation (CAC/IT/131441).

CONFLICT OF INTEREST STATEMENT

The authors declare no conflict of interest.

DATA AVAILABILITY STATEMENT

The data that support the findings of this study are available on request from the corresponding author. The data are not publicly available due to privacy or ethical restrictions.

ETHICS STATEMENT

Ethical approval for the study was obtained from the Katsina state Ministry of Health (Approval No. 662).

INFORMED CONSENT

Beneficiaries' consent to participate in the study was obtained through their signature or thumb before administering the questionnaire.

ORCID

Mansur M. Rabiū  <http://orcid.org/0000-0002-1311-5507>

Ibrahim Kabiru Maji  <http://orcid.org/0000-0001-8988-8357>

REFERENCES

1. WHO. Eye care, vision impairment and blindness (2022). <https://www.who.int/health-topics/blindness-and-vision-loss>
2. Burton MJ, Ramke J, Marques AP, Bourne RRA, Congdon N, Jones I, et al. The Lancet Global Health Commission on global eye health: vision beyond 2020. *Lancet Global Health*. 2021;9(4):e489–551. [https://doi.org/10.1016/S2214-109X\(20\)30488-5](https://doi.org/10.1016/S2214-109X(20)30488-5)
3. Shekhawat NS, Stock Mv, Baze EF, Daly MK, Vollman DE, Lawrence MG, et al. Impact of first eye versus second eye cataract surgery on visual function and quality of life. *Ophthalmology*. 2017;124(10):1496–503. <https://doi.org/10.1016/j.ophtha.2017.04.014>
4. Essue BM, Li Q, Hackett ML, Keay L, Iezzi B, Tran KD, et al. A multicenter prospective cohort study of quality of life and economic outcomes after cataract surgery in Vietnam. *Ophthalmology*. 2014;121(11):2138–46. <https://doi.org/10.1016/j.ophtha.2014.05.014>
5. NDF. Noor Dubai Foundation (2020). <https://noordubai.ae/>
6. Taryam MO, Rabiū MM, Muhammad N, Oladigbolu K, Abdurrahman H. Prevalence and causes of blindness and visual impairment; and cataract surgical services in Katsina state of Nigeria. *Br J Ophthalmol*. 2020;104(6):752–6. <https://doi.org/10.1136/bjophthalmol-2019-314572>
7. United Nations. 2017 Sustainable development goals report. New York.
8. Agaoglu MN, Sheehy CK, Tiruveedhula P, Roorda A, Chung STL. Suboptimal eye movements for seeing fine details. *J Vis*. 2018;18(5):8. <https://doi.org/10.1167/18.5.8>
9. Adio Adedayo Omobolanle O, Onua AA. Economic burden of glaucoma in rivers state, Nigeria. *Clin Ophthalmol*. 2012;6:2023–31. <https://doi.org/10.2147/OPHTH.S37145>
10. Fong CS, Mitchell P, Rochtchina E, de Loryn T, Tan AG, Wang JJ. Visual impairment corrected via cataract surgery and 5-year survival in a prospective cohort. *Am J Ophthalmol*. 2014;157(1):163–70. <https://doi.org/10.1016/j.ajo.2013.08.018>
11. Onwubiko SN, Eze BI, Udeh NN, Arinze OC, Onwasigwe EN, Umeh RE. Dry eye disease: prevalence, distribution and determinants in a hospital-based population. *Contact Lens Anterior Eye*. 2014;37(3):157–61. <https://doi.org/10.1016/j.clae.2013.09.009>
12. Rabiū MM, Taryam MO, Bashir E, Muhammed N, Zidan MA. Assessment of patients satisfaction with cataract surgical services in katsina state, Nigeria. *J Ophthalmol Visual Sci*. 2022;7(1):1–6.
13. Samuelson TW, Singh IP, Williamson BK, Falvey H, Lee WC, Odom D, et al. Quality of life in primary open-angle glaucoma and cataract: an analysis of VFQ-25 and OSDI from the iStent inject pivotal trial. *Am J Ophthalmol*. 2021;229:220–9. <https://doi.org/10.1016/j.ajo.2021.03.007>
14. Schmier, JK, Halpern MT, Jones ML. The economic implications of glaucoma A literature review. *Pharmacoeconomics*. 2007;25(4):287–308. <https://doi.org/10.2165/00019053-200725040-00003>
15. Shen M, Shi Y, Wang L, Russell JF, Jiang X, Laiginhas R, et al. Impact of cataract surgery on low luminance visual acuity deficit measurements. *Ophthalmol Sci*. 2022;2(3):100170. <https://doi.org/10.1016/j.xops.2022.100170>
16. Wong B, Singh K, Khanna RC, Ravilla T, Kuyyadiyil S, Sabherwal S, et al. Strategies for cataract and uncorrected refractive error case finding in India: costs and cost-effectiveness at scale. *The Lancet Regional Health-Southeast Asia*. 2022;7:1–12. <https://doi.org/10.1016/j.lansea.2022.100089>
17. Ansari AA. Outpatient parenteral antimicrobial therapy (OPAT) in the kingdom of Bahrain: efficacy, patient satisfaction and cost effectiveness. *Open Infectious Diseases J*. 2013;7:90–5. <https://doi.org/10.2174/1874279301307010090>
18. Welling J, Newick E, Tabin G. The economic impact of cataract surgery in a remote Ghanaian village three years after surgical intervention. *Invest Ophthalmol Visual Sci*. 2013;54:4396.

How to cite this article: Rabiū MM, Taryam MO, Yusuf M, Maji IK. The economic impacts of cataract surgery on sustainable vision and quality of life in Katsina state. *Health Care Sci*. 2023;2:112–119. <https://doi.org/10.1002/hcs2.39>