

Analysis of influence factors of free cataract surgery in suburban district of one city in middle China

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中国中部城市郊区影响实施免费白内障手术的原因分析

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摘要

目的:分析中国中部城市郊区影响实施免费白内障手术的原因。

方法:2008/2009年,在中国中部一个城市郊区的白内障复明活动中,我们对所有筛查出的影响视力的白内障患者进行问卷调查,询问为何接受(或不接受)免费白内障手术等问题。将答案记录进行分析。

结果:在筛查出的892名患者中,起初只有387人(43.39%)接受免费白内障手术,最终490人(54.93%)接受手术。患者不接受白内障手术的主要原因包括:193人(21.64%)害怕手术,希望有其他治疗方式;148人(16.59%)认为现有视力够用;担心手术效果不如付费手术好(147,16.48%;17人(1.91%)有其他原因。

结论:中国中部城市郊区影响实施免费白内障手术的原因主要包括:患者医学知识匮乏,周围白内障患者手术效果和指定手术医院对免费白内障手术运作形式。

关键词:免费白内障手术;障碍;中国

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Abstract

• **AIM:** To investigate the reasons of the barriers to free cataract surgery in suburban area of one city in middle China.

• **METHODS:** From 2008 to 2009, in Sight Rehabilitation

Programme of Cataract in suburban district of one city in middle China, all visually significant cataract patients screened were questioned about why he/she did not accept free cataract surgery. The answers were recorded and analyzed.

• **RESULTS:** Of 892 screened patients, only 387 patients (43.39%) wanted a free cataract surgery at first. At last 490 patients (54.93%) accepted free surgery. The main reasons for patients who did not accept free surgery include: be afraid of surgery and wanting other treatments (193, 21.64%), thinking the eyesight was enough for daily life (148, 16.59%), worrying about that the result would not be good as those paid for surgery (147, 16.48%), and other reasons (17, 1.91%).

• **CONCLUSION:** The reasons of the barriers to free cataract surgery include patients' ignorance, surgery outcome of patients around, and working mode of designated surgical hospital.

• **KEYWORDS:** free cataract surgery; barriers; China

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INTRODUCTION

Economic reason was an important barrier to cataract surgery in most developing countries^[1-7]. To meet Vision 2020 targets, Chinese government provided funds to accelerate the Sight Rehabilitation Programme of Cataract in recent years^[8,9]. In Henan province, with the largest population in China and the leading cause of visual disability was cataract^[10], a Sight Rehabilitation Programme of Cataract funded by government was carried from 2007. In this long-term programme, cataract patients can get free operation in qualified hospitals near their residence at any time they want. However, quite a few cataract patients were still reluctant to accept surgery. The hospital we worked was selected as a designated surgical hospital from 2008 to 2009 for one suburban district in Luoyang, a medium-sized city in Midwest Henan. So we have a chance to investigate the reasons of the barriers to free cataract surgery in this district.

Table 1 Number of cataract patients screened and accepted surgery in 2008 and 2009

Year	Number of screened patients	Number of patients accepted surgery	Surgery acceptance percentage
2008	765	305 (screened and accepted surgery in 2008)	39.87%
		84 (screened in 2008 but accepted surgery in 2009)	10.98%
2009	127	101 (screened and accepted surgery in 2009)	79.53%
Total	892	490	54.93%

SUBJECTS AND METHODS

Subjects In this suburban district, there were 330 000 people live in 211km², and most of them were peasants. Under the guidance of this Sight Rehabilitation Programme of Cataract, screening of visually significant cataract patients was the first step. We carried out screening in two ways. First, a medical team was sent to every town of this district with examination instruments such as slit lamp microscope, visual testing chart, optometry testing lenses and ophthalmoscope. Second, peasants and resident were informed by district and town government that they can go to either the designated hospital or the medical team at any time for cataract screening.

Methods In 2008, all visually significant cataract patients' information was recorded after carefully examined in the initial screening, then an additional questionnaire were conducted. The questions include: Q1. Did you examine your eye before this examination after blurred vision? Q2. Do you want to have your cataract operated and get better eyesight? Q3. Do you want a cataract operation free of charge in this Sight Rehabilitation Programme? Q4. If the answer is no, what is the reason? If the patients (too old, too young or had other problems to communicate with) can not answer the question, the questions were answered by his/her relative.

In 2009, new patients' information of initial screening was recorded and the same questionnaire as 2008 was conducted. Patients screened in 2008 but accepted surgeries in 2009 were asked additional questions. The questions include: Q1. Why didn't you accept surgery in 2008 but accept surgery at last? Q2. Some cataract patients lived around you still did not accept free surgery, what is the reason?

Small incisionextracapsular extraction and PMMA IOL (intraocular lens, PC156C55, Henan Universe Intraocular Lens Research and Manufacture Co., Ltd, provided by Henan Disabled Persons' Federation) implanting were carried out in all cataract surgeries and performed by 1 of 2 surgeons (Jianhe Xiao, Shiyang Li) with peribulbar anesthesia^[11]. No serious complications happened during operation in all cases. Routine anti-inflammatory and antibacterial drops were used for 1 to 2 months postoperatively and routine checkup lasted for 3 to 6 months.

The research adhered to the tenets of the Declaration of Helsinki.

RESULTS

In 2008, there were 765 visually significant cataract patients (1104 eyes) in initial screening. In 2009, there were 127 patients (173 eyes) in initial screening. Of all cataract patients in initial screening, 339 were men and 553 were women, with preoperative eyesight ranged from HM to 0.6, and age ranged from 9 to 87. In 2008, 305 patients accepted free cataract surgery (322 eyes). The number was 247 (271 eyes) in 2009, including 84 patients (91 eyes) screened in 2008 but did not accept surgery, 62 patients (62 eyes) screened in 2008 and had one eye operated, 101 patients (118 eyes) first screened in 2009. In all, 490 patients accepted free cataract surgery, accounting for 54.93% of all screened patients (Table 1).

231 patients accepted surgery were men, 259 were women. There was statistically difference between genders ($\chi^2 = 10.90, P < 0.05$), men were inclined to accept surgery than women.

Questionnaire answered by 892 visually significant cataract patients screened in these 2 years were listed as following: Q1. Only 283 patients examined their eyes by ophthalmologist after blurred vision before this examination, accounting for 31.73%; Q2. 534 patients want to have cataract operated and get better eyesight, accounting for 59.87%. Q3. 387 patients want a cataract operation free of charge in this Sight Rehabilitation Programme, accounting for 43.39%. Q4. The reasons for patients not accept free cataract surgery include: be afraid of surgery and want other treatments (193, 21.64%), think the eyesight was enough for daily life (148, 16.59%), worry about that the effect would not be good as those paid for surgery (147, 16.48%), other reasons (17, 1.91%). Some patients had more than one reason.

Questionnaire answered by 84 patients screened in 2008 but accepted surgeries in 2009 were listed as follows: Q1. The reasons why they did not accept surgery in 2008 include: worry about that the result would not be good as those paid for surgery (46, 54.48%), be afraid of surgery and want other treatments (23, 27.38%), have no time (19, 22.62%), think the eyesight was enough for daily life (8, 9.52%), other reasons (5, 5.95%). Some patients had more than one reason. Q2. The reasons of their neighbors with visually significant cataract did not accept surgery include: be afraid of surgery and want other treatments (56, 66.67%), think

the eyesight was enough for daily life (37, 44.05%), one eye with cataract were operated but the result was not as expected (16, 19.05%), had other diseases which make cataract surgery complicated or improving fee but this part was not free (9, 10.71%), have no time and other reasons (5, 5.95%). Some patients had more than one reason.

Though from 2010, our hospital was not selected as designated surgical hospital, 18 patients (22 eyes) of this district underwent cataract surgery in our hospital and were paid by themselves. Of these 18 patients, 11 patients had one eye operated in this Sight Rehabilitation Programme in our hospital, 5 patients had been screened by us but did not accept surgery in 2008 and 2009, 2 patients was not screened by us.

DISCUSSION

A study of vision-related quality of life and visual acuity in Kenya showed vision-related Quality of Life (QoL) was poorer in people accepting free cataract surgery than those refusing, and people with poor visual acuity were only slightly more inclined to accept surgery than people with better vision, and men were twice as likely to accept compared to women^[2]. Another population-based study on coverage, utilization and barriers to cataract surgical services in rural South India showed that inability to afford the operation (22.9%) and fearing of the operation (19.2%) were the main barriers to cataract surgery^[1]. Some other studies^[3-7] revealed the same thing that economic reason was a main barrier to cataract surgery in developing countries. So government of developing countries provided funds to solve cataract problem, the leading cause of visual disability in most areas. Whereas, the problem could be more complicated than had expected.

In our study, though 1000 free cataract surgeries could be funded by the government in this district every year, only 490 visually significant cataract patients accepted surgery in 2 years, and the number account for only one half of all screened patients. It seems that there were more socioeconomic reasons which influence patients' decision.

The first reason was patients' ignorance of cataract treatment. Most people in this district were peasants and had lower degree of education than citizens, so they still looked eye surgery as terrible things. Non-surgery treatment was their favorite selection though in most occasions it could not reverse cataract and the only effective method was surgery. Till the cataract was thick enough and severely affect on most of their daily life, they finally accept cataract surgery with much fear. The situation was also found in other studies. Briesen analyzed differences between people accepting and people refusing surgery and the reasons for non-acceptance in Kenya^[12]. He found underlying reasons appear to be related to

shame, fear of surgery or missing social support. Athanasiov's study showed cataract surgical coverage in central Sri Lanka was higher than that in neighboring developing regions^[13], so he advised surgical uptake may be improved through better community education. In our study, men seemed be willing to accept surgery probably because they had more chance to get education than women in traditional China.

Another important fact was surgery outcome of cataract patients around. People trust what his familiar neighbour said rather than the doctor said in most of times. So if someone had poor or unpleasant result after cataract surgery, no matter what the reason was, most cataract patients around did not accept free cataract surgery for at least more than one year. Of course, he would not accept the other cataract operated for several years. But if one got good results after cataract being removed, cataract patients around would accept surgery in no more than several months. In our study, more than one half of patients accepted surgery after he or she saw other patients got good surgical outcome. It was the same as that of hospital or surgeon for cataract surgery. If the patients trust the hospital or surgeon, they would undergo surgery even paid by themselves, which was common in our practices in 2010 when our hospital was not designated surgical hospital anymore.

In addition, the working mode of designated surgical hospital had marked effect on cataract patients' acceptance of surgery. More staff was needed for Sight Rehabilitation Programme of Cataract if selected as designated surgical hospital. If there is no enough financial support, the hospital would be reluctant to take part in the Programme. In Agarwal's study^[14], the cost of cataract surgery ranged from 245 US \$ to 22000 US \$ in developed countries, and 9 US \$ to 1600 US \$ in developing countries. In the district, average expenses was 1800 RMB (about 284 US \$, not including some examination and medicine fee) priced by Medical Insurance Office, but only 700 RMB (about 110 US \$) with a piece of PMMA IOL and a piece of hydroxypropyl methyl cellulose (HPMC) were funded by the government for each cataract patient of the programme. If medical disputes happened, the thing would be worse. As a result, with increasing financial expenses and medical tangle in China's reform of medical system, some hospitals were not actively work in the Sight Rehabilitation Programme of cataract.

When money is not a problem for cataract surgeries, there would be more things to do for improving cataract patients' acceptance of operation. Healthy education is important, as well as the working mode of the programme. With most barriers eliminated steadily, the money funded by the government will give cataract patients real happiness, and Vision 2020 targets will be realized sooner or later.

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