ORIGINAL ARTICLE

Barriers for Cataract Surgical Services in West Java Province of Indonesia

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ABSTRACT

Background: Prevalence of blindness in West Java province according to RAAB survey is 2.8% with confidence interval 2.0-3.5%, and cataract is the main cause with the proportion of 77.1%. It means there are 257,600 blind people of 50 and above, 198,609 of them have cataract blindness. In the term of cataract problems, West Java government has been implementing the prevention of blindness and low vision program since 2005, but backlog of cataract is still high. Lots of barriers on cataract surgical services program come from provider and population. Five main kind of barriers come from population are costs, distance, social and culture, community awareness, and trust to provider. Information of barriers is important for program planning to overcome the barriers. The purpose of this research is to report the barriers of cataract surgical services program in West Java province according to RAAB survey.

Methods: This study is West Java population-based cross sectional study using Rapid Assessment of Avoidable Blindness (RAAB) protocol, with multistage cluster sampling that was conducted in 2014.

Results: Cataract blindness prevalence was 0.8% (95% CI 0.2-1.3%) for male and 2.2% (95% CI 1.4-2.9%) for female. Cataract surgery was performed more in male (44.1%) than female (25.8%). Main barriers in male group of cost, need no felt, fear, and unaware of treatment are possible; while the barriers in female group were cost and fear. An unaware of the treatment is possible.

Conclusion: The barriers of cataract surgical services in West Java were cost, need no felt, fear, and unaware of the treatment are possible. We need to manage the cost and increase community awareness and willingness of cataract surgery to encounter the problem cataract blindness and visual impairment in West Java province.

According to WHO data recently, cataract is still the main cause of blindness world wide, estimately 51%.[1] Blindness in Indonesia is 1.5% according to survey data in 1996 and 0.78% is cataract blindness, the worst among South-East Asian countries.[2] Cataract in Indonesia will increase along with elderly population growth. Estimately in the year 2025, elderly population will be 414% increase compared to sampe population in year 2000.

Prevalence of blindness in West Java province according to RAAB survey is 2.8% with confidence interval of 2.0-3.5% and cataract is the main cause with the proportion of 77.1%. It means that there are 257,600 blind people of 50 and above, 198,609 of them have cataract blindness.[3]

In the term of cataract problems, West Java government has been implementing the prevention of blindness and low vision program (PGPK)[4] since 2005, but backlog of cataract is still high. There are a lot of barriers on cataract surgical services program

RESULTS

Rapid Assessment of Avoidable Blindness (RAAB) was designed as rapid procedures which did not provide detailed interview to know barriers in cataract surgical services program. Data from RAAB survey was initial data indicated for more detailed qualitative researches if needed.

Total sample size were 3,000 samples and response rate of this survey was 94.7%. Unresponded samples were not available when field works were conducted (2.9%), refused (1.6%), and could not communicate (0.8%). Mean of age was 62.29±9.3 years old.

Research sample characteristics were described in Table 2 and 3. The main barrier for both bilateral and unilateral cataract in male and female group was cost. Second barrier for bilateral and unilateral cataract was different between male and female group. 'Need no felt' was the second barrier for bilateral and unilateral cataract of male group, while 'fear' was considered as the second barrier for bilateral cataract in female group and 'unaware of the treatment' was the second barrier for unilateral cataract in female group.

Detailed description for 'need no felt' barrier is in the Table 4. Neither individuals with visual acuity of 6/60 or above nor age group of 70 and above felt no need for treatment.

Table 1. Sample characteristics

Categories		Total
Age	Mean (SD)	62.29 (9.63)
	Median	60
Sex, n(%)	Male	1,065 (37.47)
	Female	1,777 (62.53)
Cataract blindness prevalence (95% CI)	Male	0.8 (0.2-1.3)
	Female	2.2 (1.4-2.9)
Cataract cases* n(%)		
Bilateral	Male	118 (34)
	Female	216 (66)
Unilateral	Male	74 (35)
	Female	146 (65)
Cataract surgical coverage (%)	Male	44.1
	Female	25.8
Second eye cataract surgery (%)	Male	18.4
	Female	20.0
Preferred cataract surgery providers (%)	Government hospital	46.5
	Private hospital	21.2
	Mobile charity program	32.3
Age when cataract surgery were done (%)	40-49	9.1
	50-59	17.2
	60-69	34.3
	70-79	33.3
	≥80	6.1

*Chi square, p<0.05

DISCUSSION

Fifty and above age group population in West Java in 2010 consisted of 50% male and female, while female life expectancy rate in Indonesia was higher than male (73.38 years in female compared to 68.26 years in male). It might be the reason for research sample distribution, which female became almost twice more than male. The prevalence of cataract blindness in female group was also almost twice more than male. The similar figure for cataract prevalence was found in China, Malawi, Tibet, Saudi Arabia, India, and Nepal.[7]

Table 2. Barriers for bilateral cataract on cataract surgical services

Barriers	Male n(%)	Female n(%)	Total n(%)
Need no felt	2 (15.4)	10 (17.9)	12 (17.4)
Fear	0 (0.0%)	10 (17.9)	10 (14.5)
Cost	8 (61.5)	14 (25.0)	22 (31.9)
Postopned treatment by providers	1 (7.7)	8 (14.3)	9 (13.0)
Possibility of unaware toward treatment	1 (7.7)	8 (14.3)	9 (13.0)
Unable to access treatment	1 (7.7)	6 (10.7)	7 (10.1)
Local reason (culture/region)	0 (0.0%)	0 (0.0%)	0 (0.0%)

The data of Cataract Surgical Coverage in this survey was controverted with recent

Table 3. Barriers for unilateral cataract on cataract surgical services

Barriers	Male n(%)	Female n(%)	Total n(%)
Need no felt	14 (24.6)	14 (16.9)	28 (20.0)
Fear	3 (5.3)	7 (8.4)	10 (7.1)
Cost	21 (36.8)	35 (42.2)	56 (40.0)
Postopned treatment by providers	6 (10.5)	4 (4.8)	10 (7.1)
Possibility of unaware toward treatment	10 (17.5)	19 (22.9)	29 (20.7)
Unable to access treatment	3 (5.3)	4 (4.8)	7 (5.0)
Local reason (culture/region)	0 (0.0%)	0 (0.0%)	0 (0.0%)

Table 4. Description of 'need no felt' barriers

Categories		Male (n=45)	Female (n=68)
Visual acuity n(%)	≥6/60	41 (91.11)	56 (82.35)
	<6/60	4 (8.89)	12 (17.65)
Age groups n(%)	50-59	4 (8.89)	10 (14.71)
	60-69	15 (33.33)	17 (25.00)
	70-79	17 (37.78)	21 (30.88)
	≥80	9 (20.00)	20 (29.41)

cataract situation. Cataract Surgical Coverage in male group was almost twice higher than female group. It might relate to the condition that female had less oportunity for education than male. Education indicators described that female had lower level than male. Literacy rate was 95.65 for male and 90.52 for female. School duration for male was 8.34 years and for female was 7.5 years.[8] Women also might not have necessary support in her family to get the treatment because the roles of women in family were considered lower than men. Without support from her family or community, women will no do travelling alone to get treatment. It showed that gender issue in eye services still become a problem in West Java. Targetig educational efforts in women's group and creating support mechanisms for elderly women may increase the Cataract Surgical Coverage among women.

The main barrier for cataract surgical services in West Java was cost. Cost of cataract surgery in government hospitals were varied from 3 million rupiah up to 7 million rupiah. Private hospitals might be higher than government hospitals. Cost of charity program which conducted by Indonesian Ophthalmologists Association was 600,000 rupiah and it was for non registered poor people.[9] Health Assurance System in Indonesia will insure the cataract surgery cost for the registered poor. According to statistic office data, 9.6% West Java population or estimately 4.5 million people were poor and there were almost 15 people in West Java insured for health by government.[10] There was no sharing cost for direct cost in the system.[11] Therefore, most of people choosed government hospital for getting free cataract surgery (Table 1). Since the government set the certain hospitals in health assurance services without capacity services consideration, backlog of cataract would increase. Low cataract surgical capacity would give longer waiting time for surgery. Recently, most of districts in West Java had more than 3 months of cataract surgical waiting time, the same condition as in Europe in year 2004.[12] Increasing capacity of cataract surgery in hospitals by improving infrastructure facilities, professional quality, better procedures will shorten the waiting time, increase the trust of patients and decrease the backlog.

Out of free cataract surgery, the health assurance system with limited quantity and quality of secondary hospital setting will give the burden of indirect cost for the patients including cost of transportation, accomodation, and meals both for patients and accompanying family due to hospital distance and frequent turn away on pre-operative examination within surgical waiting time. In Nepal, indirect cost of cataract surgery is estimately one fifth of rural annual income patient.[13] Therefore the patients prefered to undergo surgery in mobile charity program which was usually done in remote area around their house (Table 1).

India has anticipated the same problem by giving shuttle transportation facility to bring patients to the hospital. Shuttle transportation is accompanied by hospital staff, so that the family does not need to accompany the patient whole the time. It

will reduce the cost of transportation, meals, accomodation, and the family can still work to earn the money rather than spending the time for accompanying. India also conducted outreach program to remote area.[14] Vannestee stated that "One month cataract surgery without family accompanying" event could be done in celebrating National Days. In this event, a lot of volunteers would be needed to help.[15]

For patients who were not insured by national health system, surgery cost of 3-7 million rupiah will become burden for them, especially the patients with income 1-2.5 million rupiah per month as minimum wage in West Java.[16] They will postpone the treatment and fulfil the living cost. Most of them got the surgery at the age of 60-79 years old. Same condition was found in Ethiopia.[17] Less than 20% of bilateral cataract blind afford the surgery on the second eye (Table 1). Getting good vision after surgery in one eye was enough for them to run daily living and need no felt for second eye cataract surgery. Therefore, cataract surgical coverage will remain low. To increase the coverage due to this reason, making the affordable surgery for everyone and reduce the cost is the best choice. Cost effective high volume cataract surgery could save the cost of consumables by the bulk procurement so that unit cost will reduce a lot.[18]

Second barrier for both bilateral and unilateral cataract surgical services in male group was 'need no felt'. Most of them were 70 years old and above, they also had visual acuity of 6/60 or better (Table 4). Decreasing visual acuity on elderly was considered as an inevitable part of old age or God's will. Furthermore, the health of elderly recently is still not a priority for most of low income families. Spending money for elderly's health care including cataract surgery became a burden. Less activity and productivity were the reasons to let them blind and stay at home, even employ the young family member to assist. This condition made productivity loss doubled. The retaining enough visual acuity for independently daily living (personal hygiene, cooking, eating, dressing without family assistance) was other factor for delaying surgery. The mindsetting of health worker about cataract surgery timing that should wait until 'mature' also became a factor for delaying surgery. Lack of information about disease and treatment underlay these situation. To encounter the problem, we need to conduct information disemination that cataract blindness is not an inevitable part of ageing, educational campaigns using media resources and change health workers' mind-set and use them to find, screen, and educate patients about cataract surgery.[14]

Other barrier for bilateral cataract surgical services in female group was fear. Fear of surgical procedure and outcome is the main reason of it. Lack of information about surgical procedure made the wrong opinion among community, including painful procedure and taking out the whole eye ball during surgery. Seeing others to be blind again after surgery was also the reason not to undergo the surgery and they more likely refused surgery rather than spending money for 'nothing'. Research in Ghana found that people more likely fear of hospital environment, staff, and loss of pride rather than its procedure.[19] In a study in Tanzania, it was reported that fear of the city, where to stay, what is going to happen when left alone in the hospital were become the reason of fear. Community-based education for cataract and its treatment, making eye service more friendly and culturally acceptable, and using successfully operated patients as educators and motivators will reduce patients' fear and increase the trust in good outcome.

'Unaware that treatment is possible' was the other second barrier of unilateral cataract blindness among the women. Lack of education opportunity and lack of information for women made them unaware of the eye condition and did not seek the treament. It was the part of gender issue on cataract surgical services problem. Slow progression of cataract and good vision in other eye also made the patients had adjusted to their dissability and feel nothing change

in their eyes. We need to raise the awareness of cataract and promote equity in eye care services delivery, access, and use.[15]

There were some limitaton of the research. We used provincial stage on sampling frame which had bigger population than 5 million people. The census data used for the design of the survey was data in 2010, which was not updated for any changes in subdistrict boundaries and would affect to the number of its population.

CONCLUSION

The barriers of cataract surgical services in West Java of cost, need no felt, fear, and unaware of the treatment are possible. We need to reduce the cost, increase hospital surgery capacity, apply flexible pricing system, decrease indirect cost, and increase outreach program. Community-based education need to be improved to increase awareness and willingness for cataract surgery. Health worker and cadre training and education will improve their skills as cataract surgical motivator in order to increase the awareness of community.

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