

Original article

Cataract surgical rate in Yemen 2012

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Abstract

Objective: To determine cataract surgical rate (CSR) in 2012 (01 January to 31 December 2012) in 22 Governorates of Yemen in order to identify the needs to reduce cataract related blindness.

Methods: A standardized questionnaire was sent to the 184 eye units in governmental, university, military, private and charity clinics and hospitals in Yemen.

Results: The response rate to the questionnaire was 80.7%, and the collected data are summarized. During the 12-month period, a total of 62,577 cataract surgeries were performed by 268 ophthalmology specialists and residents. The cataract surgical rate was 2473 cataract operations per million inhabitants per year. Intraocular lens implantation was performed on 98% of the cases.

Conclusion: CSR has increased in Yemen in the recent years but is still below the target suggested by WHO. There is need to increase the cataract surgical rate in Yemen mainly in rural areas. Inadequate number of eye surgeons, limited accessibility of cataract surgical services in rural areas and the affordability of surgery to large sections of society are major constraints that have to be addressed. The information from this study will help and enable Ministry of Health and other eye care providers to more equitably disperse trained ophthalmic personnel and eye units in Yemeni governorates.

Keywords: Cataract, Cataract surgical rate, Yemen

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Introduction

Republic of Yemen is located in the south west part of the Arab Peninsula with an area of 555,000 square kilometers. Yemen population is around 25.3 Million distributed in 21 governorates in addition to the capital city of Sana.¹ About 68.2% of the population lives in rural areas.²

Yemen is one of the WHO Eastern Mediterranean Region countries, the estimated prevalence of blindness in this region is 0.97^{3,4} and Yemen is regarded as one of the countries with high prevalence rate of blindness.^{5,6}

Cataract blindness is a public health problem of major proportions in developing countries. The major contributors to

blindness in Yemen are cataract (49–70%), glaucoma (11%), retinal diseases (9–10%), corneal diseases including microbial and traumatic corneal opacities (5–9%) and others.^{5,6}

Cataract-related blindness treatment is one of the priorities of WHO and the International Agency for the Prevention of Blindness especially after the presentation of the VISION 2020: the Right to Sight initiative in 1999. However, 75% of blindness is avoidable, defined as blindness that can be either treated or prevented by a cataract surgery which is a successful, cost-effective intervention.⁷ One of the VISION 2020 strategies is monitoring the cataract surgical rate (CSR) and evaluating its trend over time. The CSR is defined as the number of cataract surgeries per million population

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per year and it is an international recognized critical index of cataract surgery service activity and an indicator of the availability and accessibility of the service to the population. Globally CSR ranges from 100 to 11,000 per million population.⁸ In Yemen CSR in 2003 was 1560 and in 2012 was 2473.

Apart from the ophthalmic situation analysis survey in 2003,⁹ there is still lack of information describing eye health care services in Yemen by measurable qualitative parameters. Health care in Yemen is going through a comprehensive process of transformation.¹⁰ The affordability and availability of eye health care services are affected by various changes strongly related to the socio-economic situation of Yemen.

The aim of this study which is done in 2012 was to estimate the CSR after nine years since the 2003 study.⁹ The outcome of this study is going to help decision makers in the Ministry of Health Population and other eye care providers in updating short and long term strategies for the reduction and prevention of blindness in the framework of the global initiative "Vision 2020 – the right to sight".¹⁰

Patients and methods

This retrospective descriptive study was used to determine the number and type of cataract surgeries performed in Yemen in 2012 (01 January to 31 December 2012). Ethical approval from Nebras Health Society was obtained. Initially all cataract units were identified throughout Yemen. A standardized questionnaire (Vision 2020 form B)¹¹ was used by the data collection team to collect information regarding the cataract surgical rate (total number of cataract operations performed within a year per one million inhabitants) in 2012. Those with more than 1,000 cataract surgeries per year were classified as group A, those with 500–1000 were classified as group B and those with less than 500 cataract surgeries were classified as group C.

Data were obtained by information gathered during personal visits by the data collection team to the 184 eye units in governmental, university, military, private and NGOs clinics and hospitals. Information regarding CSR was collected through case records, hospital administration sources and/or theater data.

Results

The response rate to the questionnaire was 80.7%. To increase the accuracy and quality of data, the collected information was obtained from theater lists, case records and hospital administration data. During the 12-month period, a total of 62,577 cataract surgeries were performed by 268 ophthalmology specialists. The majority of cataract surgeries (61.54%) were performed in the private sector facilities. The cataract surgical rate was 2,473 operations per million inhabitants per year. Intraocular lens implantation was performed on 98.02% of the cases. Table 1 shows distribution of ophthalmologists and cataract surgeries by governorates in 2012.

The extracapsular cataract extraction was the leading technique in cataract surgery (81.9%); however, in few centers the phacoemulsification cataract surgery is used (17.9%). Intracapsular cataract extraction was done in (0.2%) of cases.

Fig. 1 shows the total cataract surgeries done by governmental, private eye units and charity eye camps.

Fig. 2 shows CSR map divided into three groups according to number of surgeries in the different governorates.

Majority of cataract surgeries (81%) were performed in the following five governorates: Sana'a city (32%), Hodeidah (21%), Taiz (10.7%), Aden (8.6%) and Hadramout (8.5%) (see Table 2).

Discussion

The prevalence of blindness and visual impairment in Yemen is among the highest rate in Eastern Mediterranean Region countries.^{12,13} The prevalence of blindness due to cataract increases with age.^{14–16} Cataract related blindness in Yemen is regarded as the most common cause of blindness.^{5,6}

The cataract surgical rate (CSR) is one of the main indicators of eye care services and it indicates the number of cataract operations per million populations. CSR is high in well developed countries ranging between 4000 and 6000 surgeries.^{17,18} The CSR in many developing countries in Africa and Asia is between 500 and 2000.^{18,19} The CSR in Yemen in 2003 was 1560⁹ and increased to 2473 in the current study done in 2012.

From the study done in 2003⁹ the CSR of 1560 should have increased to 2500 cataract surgeries per million populations by the year 2005 and to 3000 by the year 2010 in order to decrease the backlog of cataract related blindness in Yemen.²⁰ This was not achieved mostly due to deficiency in ophthalmic personnel distribution in many governorates and there was very little increase in establishing eye units in those governorates with lack in eye units.^{21–23} Other causes of not achieving the targeted CSR number estimated in the previous study⁹ are long distances from surgical centers, cost of surgery to the poor Yemeni people and lack of public awareness. In addition to that Yemen in 2011 has gone through major political and socioeconomic difficulties (Arab Spring) which affected the health system including ophthalmic human resources and eye care infrastructure in the whole country.^{24,25}

Cataract surgical rate in Yemen varies between governorates and is shown in Fig. 2. Six governorates (Sana'a City, Aden, Taiz, Hadramout, Hodeidah and Dhala) have CSR of more than 1000. Three governorates (Ibb, Dhamar and Sada) have CSR of 500 to 1000. The remaining thirteen governorates have CSR of less than 500.

Majority of cataract surgeries (81%) were performed in five governorates (Sana'a city (32%), Hodeidah (21%), Taiz (10.7%), Aden (8.6%) and Hadramout (8.5%). Four governorates (Jawf, Mahara, Raymah and Soqatra) had neither eye units nor ophthalmologists. Because of limited governmental resources for health care system the private medical sector is filling the defects in public sector so 61.5% of cataract surgeries are performed in the private sector eye units and 21.8% of cataract surgeries are performed in the public sector eye units: Ministry of Health (16.8%), Military and Police (4.2%) and University (0.8%). 16.6% of cataract surgeries are performed in eye camps which also contribute to increase the awareness of public in rural areas toward cataract related blindness.

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