

Knowledge, Attitude and Practice of Infant Ocular Health among Midwives in the Bosomtwe District

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Abstract

Background: Careful monitoring of the neonate ocular health is a factor that can help in the reduction of child blindness. The purpose of this study was to assess the knowledge, attitude and practice of infant ocular health among midwives in the Bosomtwe District.

Methods: Study type was Descriptive Cross-Sectional. Study was carried out among midwives practicing in the various neonatal units within hospitals in the Bosomtwe District. Data collection was by the use of a structured questionnaire hand delivered to all participants. Data was analyzed using the Statistical Package for the Social Sciences (SPSS) package version 20. Level of knowledge was categorized using Blooms cut-off points into good (> 80%), moderate (60 - 80%) and poor (< 60%).

Results: Out of 62 respondents, 50.7% were knowledgeable in infant ocular conditions. Poorest level of knowledge was recorded in retinoblastoma (6.5%) while level of knowledge in Ophthalmia neonatorum (100%) was the best. Thirty-six (58.1%) of the respondents performed ocular examination on infants. Majority of the respondents (85.5%) referred all abnormalities detected. Education of mothers was done by 82.3% of respondents and only 29% indicated receiving some form of in-service training with regards to infant ocular health. Attitude of respondents was positive with 74.2% of respondents disagreeing that infant ocular health monitoring should only be done by an eye care professional.

Conclusion: Overall, respondents had poor level of knowledge in infant ocular conditions. However level of practice was satisfactory and there was generally positive attitude toward infant ocular health.

Keywords: Neonate; Ocular Health; Knowledge; Attitude; Practice; Examination; Conditions

Background

Careful monitoring of the neonate ocular health is a factor that can help in the reduction of child blindness. A responsive, high quality neonate ocular health monitoring can have major benefits not just through the neonate stage but throughout the lifetime [1]. Worldwide, there are about 1.5 million children estimated to be blind with an additional 5 million visually impaired [2]. Ninety percent of the 1.5 million can be located in developing countries with about 1.3 million found in Asia and sub-Saharan Africa [3]. Prevalence of child blindness within sub-Saharan Africa is the highest [1]. Consequences of childhood blindness are not only felt throughout the childhood years but have an impact throughout the lifetime [4]. Causes of childhood blindness that are associated with both the low income and high income countries include congenital cataracts, strabismus, congenital glaucoma, retinoblastoma, and other congenital abnormalities [5,6]. Within the world health organization, the issue of childhood blindness is considered an issue which requires utmost priority [3]. The control of

childhood blindness poses a different challenge as compared to the control of blindness in adults. It has been estimated that about 45% of all blindness in children were from avoidable causes. Therefore the most significant aspect in the control of childhood blindness is early detection and subsequent treatment. This study was undertaken to assess the knowledge, attitude and practice of infant ocular health among midwives in the Bosomtwe district.

Methods

This was a descriptive cross-sectional study carried out in the Bosomtwe district of the Ashanti region of Ghana. The study included midwives practicing in the selected communities in the Bosomtwe district. Sample size was 62 midwives. Two area councils were selected using simple random sampling technique. Two hospitals were then selected from each council using convenience sampling and midwives from each health facility were selected using convenience sampling. Only midwives who were on duty and also signed the consent forms were included in the study. Data collection technique was by the use of a structured questionnaire hand delivered to the all participants. Overall assessment of knowledge, attitude and practices was done using bloom’s cut off points and data was analyzed using the Statistical Package for the Social Sciences (SPSS) version 20 (IBM Corp., Armonk, New York, USA).

Permission was sought from the administrators of the various health facilities. Consent of applicants was also sought. Participation was purely voluntary and participants were required to sign a consent form detailing a summary of the study. Questionnaires administered did not feature names of applicants and confidentiality of applicants was assured.

Results

Demographics

Total number of respondents was 62 with all of them being females. Minimum age was 23 years with the maximum age being 59 years. Mean age was 36.40 years with a standard deviation of ± 18.04 . Minimum number of years in service was a year representing 6.5% of the total number of years in service. Maximum number of years in service was 39 years.

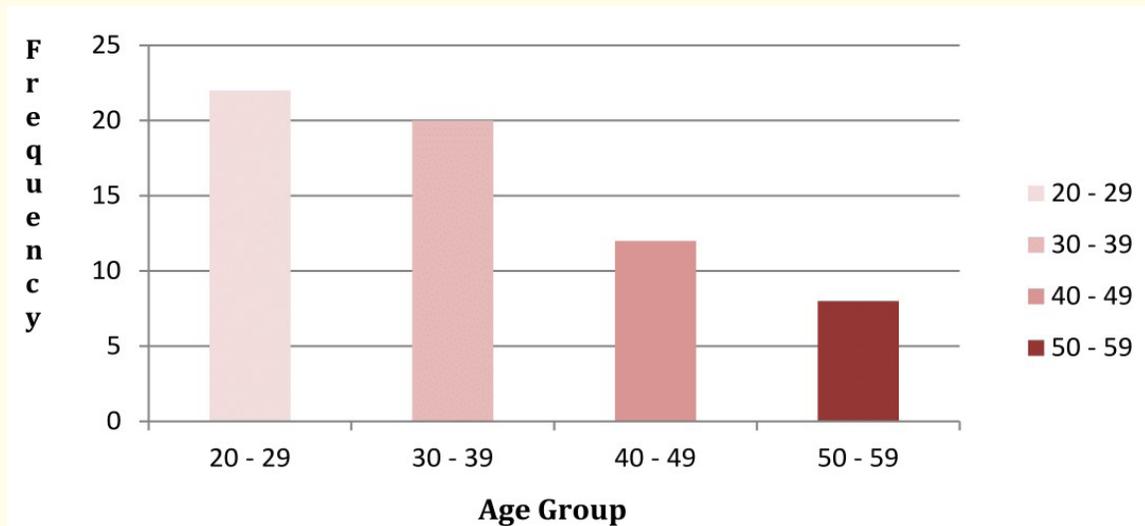


Figure 1: Distribution of respondents by age.

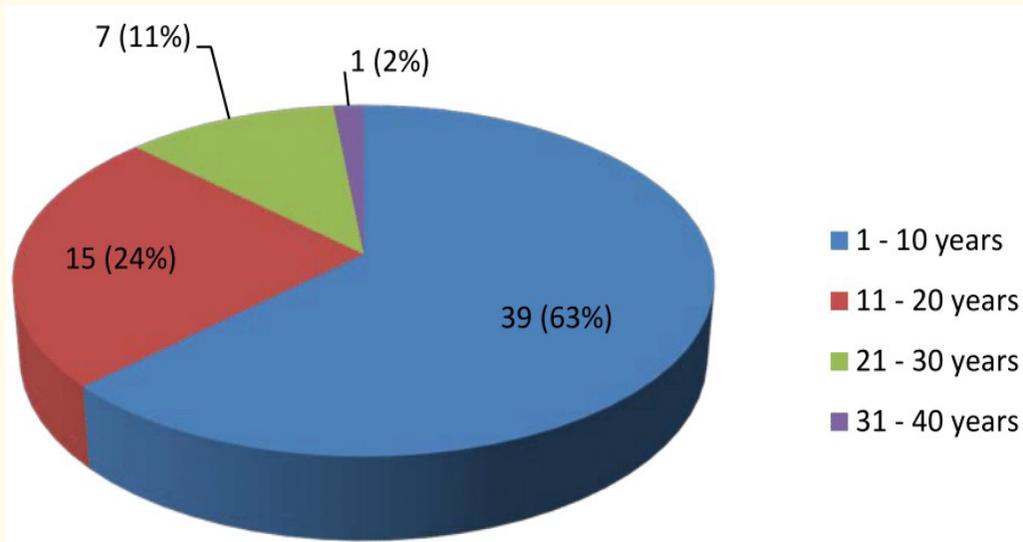


Figure 2: Distribution of respondents' number of years in service.

Knowledge

Ophthalmia Neonatorum

All 62 of the respondents to the questionnaire were familiar with the condition Ophthalmia neonatorum representing a 100%. Again all 62 (100%) of the respondents were able to identify discharge, swollen lids as a sign to an ocular condition and all 62 again were able to identify the condition as Ophthalmia neonatorum. All 62 (100%) of the respondents reported that the condition Ophthalmia neonatorum was treatable (Table 1).

Congenital Cataract

Out of the 62 respondents, 48 representing 77.4% were familiar with the condition congenital cataract. Fourteen (22.6%) out of the 62 responded that they were not familiar with the condition. Forty-eight (77.4%) of the respondents indicated leucocoria as being a sign of an ocular condition and out of the 48, thirty-three (68.8%) attributed the leucocoria to cataract while the remaining 15 (31.2%) only knew leucocoria as being a sign associated with an ocular condition but did not know the condition. Fourteen (22.6%) out of the 62 respondents indicated they were not familiar with the sign leucocoria as being indicative of an ocular condition. Forty-five (45) out of the 62 respondents thought congenital cataract was treatable representing 72.6%. Three (4.8%) out of 62 respondents thought the condition was not treatable. The remaining 14 (22.6%) responded they didn't know or were not sure if the condition was treatable or not. Details are depicted in tables 1 and 2.

Congenital Glaucoma

Thirty-eight (61.3%) out of the 62 respondents were familiar with the condition congenital glaucoma. Twenty-four (38.7%) out of the 62 responded not being familiar with congenital glaucoma. When presented with some of the signs of congenital glaucoma, 31 (50%) of the respondents were able to identify a cloudy cornea, large eyeball, excessive tearing and photophobia as precedents to an ocular condition. Twenty-one (70%) out of the 31 were able to associate the signs to congenital glaucoma while the remaining 11 (30%) were only aware the signs indicated an ocular condition but didn't know the condition. Thirty-one (50%) of the respondents were not familiar with

the signs at all. Thirty-five (56.5%) out of the 62 respondents thought congenital glaucoma was treatable. Three (4.8%) thought the condition was not treatable. The remaining 24 (38.7%) responded they were not sure or did not know if the condition congenital glaucoma was treatable. Further details are shown in tables 1 and 2.

Retinopathy of Prematurity

Out of the 62 respondents, 21 (33.9%) responded they were familiar with the condition retinopathy of prematurity (Table 1). The remaining 41 (66.1%) responded not being familiar with the condition. Fifty-four (87.1%) out of the 62 respondents indicated a baby being born prematurely was a risk factor for some ocular conditions and so had to be monitored. Out of the 54, only 19 of them were able to identify the condition the baby was at risk of as retinopathy of prematurity representing 35.2%. The remaining 35 (65.8%) only knew babies born prematurely were at risk of developing some ocular condition but did not know the particular condition. Eight (12.9%) out of the 62 respondents did not think a baby being born prematurely was a risk factor for any ocular condition. Twenty-one (34.2%) out of the 62 respondents thought retinopathy of prematurity was treatable. The remaining 41 indicated they didn't know or were not sure if the condition was treatable indicating 65.8%.

Retinoblastoma

Out of the 62 respondents to the questionnaire, only 4 (6.5%) were familiar with the condition retinoblastoma (Table 1). Fifty-eight (93.5%) indicated they had no idea or had not heard about the condition before. Even though 48 out of the 62 respondents indicated leucocoria as a sign of an ocular condition, none of the 48 (0%) thought it could be a preceding sign for retinoblastoma. Three out of the 62 respondents to the questionnaires thought retinoblastoma was treatable representing 4.8%. One (1.6%) respondent indicated the condition was not treatable. The remaining 58 (93.6%) respondents indicated they did not know whether it was treatable or not.

Congenital Nystagmus

Fourteen (22.6%) out of the 62 respondents indicated being familiar with the condition congenital Nystagmus. Forty-eight (77.4%) indicated that they were not familiar with the condition. Twenty-two (35.5%) of the 62 respondents identified jerking eye movement as an indicator of an ocular condition. Twelve (54.5%) out of the 22 who thought jerking eye movement was an indicator of an ocular condition were able to link it to the condition Nystagmus. The other 10 (45.5%) even though they knew jerking eye movement was a sign of an ocular condition indicated they didn't know the condition. Forty (64.5%) out of 62 reported not being familiar with the signs at all. Ten (16.1%) out of the 62 respondents thought congenital Nystagmus was treatable. Two (3.2%) indicated that the condition was not treatable while the remaining 50 (80.7%) responded they did not know whether it was treatable or not. Tables 1 and 2 depict the results.

Strabismus

Forty-three (69.4%) out of the 62 respondents were familiar with the condition strabismus while 19 (30.6%) responded not being familiar with the condition. Forty-three (69.4%) out of the 62 respondents thought uncoordinated eye movements was a sign indicative of an ocular condition and all 43 (100%) of them were able to identify or link the sign to strabismus. Nineteen (30.6%) out of 62 reported not being familiar with the sign uncoordinated eye movement. Forty out of the 62 respondents thought strabismus was treatable representing 64.5% while 3 (4.8%) respondents thought it was not treatable. The remaining 19 (30.7%) responded they did not know whether the condition was treatable or not.

Details on the knowledge of infant ocular health are depicted in tables 1 and 2.

	Yes Frequency (%)	No Frequency (%)	Total Frequency (%)
Ophthalmia neonatorum	62 (100.0)	0 (0.00)	62 (100.0)
Congenital cataract	48 (77.4)	14 (22.6)	62 (100.0)
Congenital glaucoma	38 (61.3)	24 (38.7)	62 (100.0)
Retinopathy of prematurity	21 (33.9)	41 (66.1)	62 (100.0)
Retinoblastoma	4 (6.5)	58 (93.5)	62 (100.0)
Congenital Nystagmus	14 (16.1)	48 (3.2)	62 (100.0)
Strabismus	43 (69.4)	19 (30.6)	62 (100.0)

Table 1: Knowledge on infant ocular health.

	Treatable Frequency (%)	Not treatable Frequency (%)	Not sure Frequency (%)	Total Frequency (%)
Ophthalmia neonatorum	62 (100.0)	0 (0.00)	0 (0.00)	62 (100.0)
Congenital cataract	45 (72.6)	3 (4.8)	14 (22.6)	62 (100.0)
Congenital glaucoma	35 (56.5)	3 (4.8)	24 (38.7)	62 (100.0)
Retinopathy of prematurity	16 (25.8)	5 (8.1)	41 (66.1)	62 (100.0)
Retinoblastoma	3 (4.8)	1 (1.6)	58 (93.5)	62 (100.0)
Congenital Nystagmus	10(22.6)	2 (0.0)	50 (80.7)	62 (100.0)
Strabismus	40 (64.5)	3 (4.8)	19 (30.7)	62 (100.0)

Table 2: Knowledge on the treatment pattern of infant ocular conditions.

Practice

Ocular health examination

Majority of the respondents (58.1%) indicated that they perform ocular examination on the infants. Out of this number, 13 (36.1%) went further to elaborate that they did it without the assistance of any instrument and that they just observed the eye to check for any abnormalities after the neonates are born. The remaining 26 (63.9%) elaborated that they did it as part of the general physical examination of the infant after they are born using a source of light to carefully observe the eye for any abnormalities. The remaining who did not perform any eye examination on the neonates indicated the reason as instilling prophylactic eye drops after the neonates are born. The initial prophylactic they used was chloramphenicol eye drops but recently has changed the regimen to tetracycline ointment (Table 3).

Eye exam	Frequency	Percentage (%)
Yes	36	58.1
No	26	41.9
Total	62	100.0

Table 3: Ocular health examination.

Practices of treatment and referral of abnormalities

Few of the respondents (14.5%) indicated that if they detected any abnormality and it is within their means they will treat it. Others indicated that upon detection of any abnormality, they refer immediately irrespective of whether it is within their means or not (Table 4).

Abnormality Detected	Frequency	Percentage (%)
Treat	9	14.5
Refer	53	85.5
Total	62	100.0

Table 4: Practices of treatment and referrals.

Ocular health education

Fifty-one (82.3%) out of 62 respondents indicated giving some form of education to the mothers on the ocular health of their infants. The form of education ranged from ocular hygiene to importance of prompt reporting of any abnormality to health officials. Eleven (17.7%) out of 62 indicated they gave no form of education to the mothers on the ocular health of their infants (Table 5).

	Frequency	Percentage (%)
Educate	51	82.3
Do not educate	11	17.7
Total	62	100.0

Table 5: Education on Infant ocular health.

In-service training

Eighteen (29.0%) out of 62 respondents indicated attending a form of workshop which talked or updated them on importance infant ocular health. They emphasized that infant ocular health was mentioned casually and frequency of these workshops were few and far-fetched. Forty-four (71.0%) out of 62 indicated not attending any form of workshop which updated them on infant ocular health (Table 6).

	Frequency	Percentage (%)
Received in-service training	18	29.0
Did not receive in-service training	44	71.0
Total	62	100.0

Table 6: In-service training for respondents.

Attitude

All 62 (100%) of the respondents were of the opinion that careful monitoring of the infant ocular health can lead to early detection and possible remedying of ocular abnormalities. Forty-six (74.2%) out of 62 respondents disagreed that infant ocular health monitoring should only be done by an eye care professional. They were of the opinion that infant ocular health monitoring was a combined effort which involved all parties in contact with the infants. Sixteen (25.8%) out of 62 agreed that infant ocular health monitoring should only be done by an eye care professional. They also thought that the ocular health of the infant was a delicate area which required expertise of the highest order. Fifty-nine (95.2%) out of 62 respondents indicated that their training adequately equipped them to monitor the ocular health of infants whiles the remaining 3 (4.8%) thought their training was that adequate to monitor the ocular health of infants.

Discussion

Childhood blindness robs an infant of a lifetime opportunities. However with appropriate measures put in place to achieve timely diagnosis and intervention, it can be avoided or at best reduced. This study sought to assess the knowledge, attitude and practice of infant ocular health among midwives since they are mostly the first point of contact between an infant and a health professional after birth.

Knowledge in Ophthalmia neonatorum was good (100%) per blooms cut off points as all 62 (100%) respondents were familiar with condition as well as its signs and symptoms (Table 7). This could be due to increased awareness as well as the condition being the most observed within the neonatal units [7-10]. Knowledge on treatment was good (100%) implying if the condition were to be encountered, prompt treatment or referral could be initiated since they know it's treatable.

Category	Percentage (%)
Poor	< 60
Moderate	60 - 79
Good	80 - 100

Table 7: Categorization according to bloom's cut off points.

Knowledge on congenital cataract was rather moderate (77.4%) as 48 respondents indicated being familiar with the condition. Out of 48 respondents who identified leucocoria as a sign of an ocular condition, only 33 were able to link it to cataract. A survey for childhood blindness and visual impairment in Botswana, revealed that, there was poor awareness of childhood blindness coupled with lack of adequate knowledge and skills among health professionals in detect cataract in children [11]. Even though this research differs from the survey done in Botswana, a trend towards lack of adequate knowledge and skills in detecting cataract especially in developing countries like Ghana is not in doubt. The remaining 15 who did not know the condition could prompt further research in the future.

Knowledge in congenital glaucoma was moderate (61.3%). Though 35 (56.5%) respondents indicated it was treatable, awareness of the signs and symptoms remained poor as only 33.9% were able to identify the signs and link it to the condition. This could result from the fact that the research was conducted in a rural setting where only so many midwives would opt to be, also unlike congenital cataracts, congenital glaucoma is rare, therefore awareness of its signs and symptoms by midwives might not be as adequate [12-14].

Knowledge on retinopathy of prematurity (ROP) was poor (33.9%) as only a third of the respondents were familiar with the condition. Awareness with regards to the risk factors of retinopathy of prematurity was poor (30.6%), with less than a third of respondents being able to link premature babies as a risk factor for Retinopathy of prematurity. In addition, knowledge in treatment was also poor as a large number (65.8%) responded not knowing if ROP was treatable or not. A similar trend could be seen in a research conducted in South India on the awareness of retinopathy of prematurity among pediatricians taken from various hospitals and nursing homes [15]. In this research, it was found out that, only 65.1% of the pediatricians were aware about ROP. Only 39.8% thought it was preventable and 42.2% had no idea on risk factors of ROP. 41% were not aware of which part of the eye is to be examined to identify ROP and 47% did not know who needs to perform the test [15]. Furthermore, a similar research undertaken in Nigeria also revealed that, although majority of paediatricians attending a continuous professional development course in Nigeria were aware of retinopathy of prematurity they were poorly informed on the management of this condition and the need for screening [16].

Knowledge in retinoblastoma was poor (6.5%) as less than one sixth of the respondents were familiar with the condition. This could be due to the poor awareness of the condition among maternal health workers in general. This is very alarming considering the life-threatening status of retinoblastoma if undetected [17-19].

Respondent's knowledge in Nystagmus was poor (22.6%) as well, considering less than a third being familiar with the conditions and its signs. This could be due to rare cases of Nystagmus observed within the various neonatal units resulting in decreased awareness. However the level of knowledge in strabismus was moderate (69.4%) as all 45 respondents who were familiar with the condition could identify the signs and again link it to strabismus. This is positive as strabismus is a condition where early detection and treatment warrants a good prognosis [20,21].

Overall general knowledge was poor (52.1%) as per blooms cut-off points. Respondents recorded the poorest level of knowledge in retinoblastoma (6.5%) and the best level of knowledge in Ophthalmia neonatorum (100%). Overall knowledge in identification of signs and symptoms was poor (47.5%). Even though some of the respondents were familiar with the sign and symptoms, they could not link it to the condition. This could still be a positive as the mere identification of the sign as an abnormality would still warrant scrutiny. Overall 47.46% were ignorant about the treatment of the various conditions which is quite alarming as it would reduce the sense of urgency in dealing with some of the conditions which are time dependent.

There was an overall satisfactory level of good practices among respondents. Even though 41.9% of the respondents did not perform ocular examination which was quite alarming, they still gave prophylaxis in the form of eye drops which was a positive. 82.3% of respondents indicating they educated mothers signified the recognition of the mothers' role in ensuring prompt detection and referral of any abnormalities. Only downside was the response in organisation of in service training which was poor (29%).

Attitudes of respondents towards infant ocular health were generally positive (89.8%). A similar trend could be identified in the study done in Kenya by Wanyama which also recorded an overall positive attitude towards child ocular health. 74.2% of respondents disagreeing that infant ocular health monitoring should only be done by an eye care professional signifies the recognition of respondents in their role to monitor infant ocular health [22].

Conclusion

Overall, respondents displayed poor knowledge in infant ocular conditions. Retinoblastoma recorded the poorest level of knowledge while respondents knowledge in Ophthalmia neonatorum was good.

Infant ocular health practices displayed by respondents were quite satisfactory. Education of mothers on infant ocular health as well as referral upon detection was undertaken by a majority of the respondents.

General attitude of respondents was positive indicating the relevance they attach towards infant ocular health.

Bibliography

1. Foster A and Resnikoff S. "The impact of Vision 2020 on global blindness". *Eye* 19.10 (2005): 1133-1135.
2. Steinkuller PG., et al. "Childhood blindness". *Journal of American Association for Pediatric Ophthalmology and Strabismus* 3.1 (1999): 26-32.
3. Gilbert C and Foster A. "Childhood blindness in the context of VISION 2020: the right to sight". *Bulletin of the World Health Organization* 79.3 (2001): 227-232.
4. Tadić V., et al. "Attentional processes in young children with congenital visual impairment". *British Journal of Developmental Psychology* 27.2 (2009): 311-330.
5. World Health Organization. "Global initiative for the elimination of avoidable blindness". Geneva: WHO. WHO/PBL/97.61 (2007).
6. Koay CL., et al. "A comparative analysis of avoidable causes of childhood blindness in Malaysia with low income, middle income and high income countries". *International Ophthalmology* 35.2 (2015): 201-207.
7. Ganatra HA and Zaidi AK. "Neonatal infections in the developing world". *Seminars in Perinatology* 34.6 (2010): 416-425.
8. Hanley AR. "Introduction. Medicine, Knowledge and Venereal Diseases in England, 1886-1916". Springer (2017): 1-23.
9. Nsanze H., et al. "Ophthalmia neonatorum in the United Arab Emirates". *Annals of Tropical Paediatrics* 16.1 (1996): 27-32.

10. Laga M., *et al.* "Epidemiology and control of gonococcal ophthalmia neonatorum". *Bulletin of the World Health Organization* 67.5 (1989): 471-477.
11. Nallasamy S., *et al.* "Survey of childhood blindness and visual impairment in Botswana". *British Journal of Ophthalmology* 95.10 (2011): 1365-1370.
12. Ali M., *et al.* "Null mutations in LTBP2 cause primary congenital glaucoma". *The American Journal of Human Genetics* 84.5 (2009): 664-671.
13. Gillespie RL., *et al.* "Personalized diagnosis and management of congenital cataract by next-generation sequencing". *Ophthalmology* 121.11 (2014): 2124-2137.e2.
14. Sheeladevi S., *et al.* "Global prevalence of childhood cataract: a systematic review". *Eye* 30.9 (2016): 1160-1169.
15. Sathiamohanraj SR., *et al.* "Awareness of retinopathy of prematurity among pediatricians in a tier two city of South India". *Oman Journal of Ophthalmology* 4.2 (2011): 77-80.
16. Uhumwangho O and Israel-Aina Y. "Awareness and screening for retinopathy of prematurity among paediatricians in Nigeria". *Journal of the West African College of Surgeons* 3.3 (2013): 33-45.
17. Dimaras H., *et al.* "Challenging the global retinoblastoma survival disparity through a collaborative research effort". *British Journal of Ophthalmology* 94.11 (2010): 1415-1416.
18. Leander C., *et al.* "Impact of an education program on late diagnosis of retinoblastoma in Honduras". *Pediatric Blood and Cancer* 49.6 (2007): 817-819.
19. Ali AA., *et al.* "Clinical presentation and outcome of retinoblastoma among children treated at the National Cancer Institute (NCI) in Gezira, Sudan: a single institution experience". *Ophthalmic Genetics* 32.2 (2011): 122-125.
20. Lambert SR., *et al.* "Visual Outcome Following the Reduction or Cessation of Patching Therapy After Early Unilateral Cataract Surgery". *Archives of Ophthalmology* 126.8 (2008): 1071-1074.
21. Mansoor N., *et al.* "Eye pathologies in neonates". *International Journal of Ophthalmology* 9.12 (2016): 1832-1838.
22. Wanyama S., *et al.* "Knowledge, attitude and practice of eye diseases in children among paediatricians in Kenya". *Journal of Ophthalmology of Eastern, Central and Southern Africa* 19.1 (2016): 22-26.

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