

Knowledge and Awareness of Childhood Blindness among Pregnant Women and Mothers with Children Under Six Years in the Obuasi Municipality, Ghana

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Abstract

Purpose: To assess the knowledge and awareness of childhood blindness among pregnant women and mothers with children under 6 years in the Obuasi municipality, Ghana.

Materials and Method: This was a hospital-based descriptive cross-sectional study. A semi-structured questionnaire was used to collect data. One-hundred and forty women were included in the study using convenience sampling. Data analysis was done using the IBM Statistical Product and Service Solution version 23.0 (IBM SPSS Inc., Chicago, Illinois, USA). The study population was described using descriptive statistics that related to relevant variables.

Results: Forty-seven (33.6%) of the participants were pregnant women and 93 (66.4%) were mothers with children below 6 years. The mean (\pm SD) age of participants was 28.36 (\pm 7.25) years. Seventy-three (52.1%) of the women responded positive of being aware of childhood blindness whilst only 23 (16.4%) knew about childhood blindness. Television, hospitals, radio, friends and family were the major sources of information on childhood blindness among the participants.

Conclusion: This study found a high awareness in contrast to poor knowledge about childhood blindness among the women. Public education on childhood blindness should be encouraged for early detection and intervention.

Keywords: Childhood Blindness; Knowledge; Awareness; Obuasi Municipal

Introduction

The World Health Organization (WHO) defines childhood blindness as a group of diseases and conditions occurring in childhood or early adolescence, which, if left untreated, result in blindness or severe visual impairments that are likely to be untreatable later in life [1]. According to the 2007 WHO report on childhood blindness, it is estimated that the prevalence of childhood blindness is 1.4 million worldwide [2]. This prevalence ranges from 0.3/1000 children aged 0 - 15 years in countries that are affluent to 1.5/1000 children in very deprived countries. The same report showed that 500 000 children become blind each year (nearly one per minute). Abnormal developments of the visual system during the formative years can have serious consequences, predisposing children to many diseases and disorders of the eye. Childhood blindness can be congenital in origin or acquired. Notable causes of childhood blindness include congenital cataract, retinopathy of prematurity, retinoblastoma, uncorrected refractive errors, congenital glaucoma, trachoma. Measles and Vitamin

A deficiency have also contributed a lot in propelling the condition [2,3]. A Vitamin A deficient population are at risk of preventable blindness and significantly raised mortality in children and probably also in pregnant women [4]. Lifestyle and potentially harmful practices of some mothers/pregnant women such as smoking and alcohol intake during pregnancy can also have adverse effects on the sight of unborn children [5].

While early detection of ocular disorders in children will help prevent permanent impairment to visual acuity and binocular vision, it is reported that the main challenge of childhood cataract is that affected children are presented late for surgery [6]. Adequate knowledge and awareness of these would-be mothers and mothers is very essential for early detection and prevention of childhood blindness. Thus, this study seeks to assess the knowledge and awareness of women in the Obuasi Municipality on childhood blindness.

Materials and Methods

This study adhered to the principles of the Declaration of Helsinki for research involving humans. The study was a hospital-based descriptive cross-sectional study. One hundred and forty-three pregnant women and mothers with children under 6 years were conveniently sampled and included in the study. A list of all health facilities within the Municipality were taken from the Municipal Health Directorate after their permission was sought for the study. Simple random sampling was used in the selection of health facilities. A semi-structured questionnaire was used to assess the knowledge and awareness of the selected women. Simple questions were used for easy interpretation. The questionnaire was designed using previous literature. A one-week pilot study was carried out in the study area to authenticate the questionnaire through adjustment of research tools to create a final draft. Data entry and analysis were done using the IBM Statistical Product and Service Solution version 23.0 (IBM SPSS Inc., Chicago, Illinois, USA). The study population was described using descriptive statistics that related to relevant variables.

Results

Demographic characteristics of participants

A total of 140 women comprising 47 (33.6%) pregnant women and 93 (66.4%) mothers with children under 6 years were included in the study. The mean (\pm SD) age of these women was 28.36 (\pm 7.25) years with the majority between 21 to 30 years. Table 1 represents the demographic characteristics of the participants.

Characteristics	n (%)
Age (years)	
11 - 20	16 (11.4)
21 - 30	84 (60)
31 - 40	30 (21.3)
41 - 50	8 (5.6)
> 50	2 (1.4)
Maternal status	
Pregnant	47 (33.6)
With child below six years	93 (66.4)
Level of Education	
Never went to school	6 (4.3)
Elementary	44 (31.4)
Secondary	38 (27.1)
Tertiary	52 (37.1)

Table 1: Demographic characteristics of participants.
n: Frequency; (%): Percentage of the demographic features of the participants which includes their motherhood status and level of education.

Awareness and knowledge on the causes of childhood blindness among participants

Out of the 140 women, 73(52.1%) responded positive of being aware of childhood blindness. Only 23 (16.4%) knew about childhood blindness. The number and percentage of women who were aware of and knew some causes of childhood blindness are summarized in table 2.

Causes	Awareness n (%)	Knowledge n (%)
Measles	129 (92.1)	90 (68.7)
Vitamin A Deficiency	90 (64.7)	65 (52.4)
Strabismus	77 (55.0)	45 (38.1)
Ophthalmia Neonatorum	103 (73.6)	82 (67.2)
Congenital Cataract	102 (72.9)	91 (68.4)
Glaucoma	78 (55.7)	69 (55.6)
Retinoblastoma	55 (39.3)	59 (47.6)
Uncorrected Refractive Error	91 (65.0)	67 (51.5)
Traditional Remedies	109 (77.9)	90 (69.8)
Eye Injuries	133 (95.0)	126 (95.5)

Table 2: Awareness and knowledge of childhood blindness causes among participants.

n: Frequency; (%): Percentage of participants' awareness and knowledge about the causes of childhood blindness.

Participants knowledge about childhood blindness treatment measures

Treatment Measure	n (%)
Medication	61 (43.6)
Surgery	52 (37.1)
Spectacles	22 (15.7)

Table 3: Knowledge about treatment measures.

n: Frequency; (%): Percentage of participants' knowledge about treatment measures.

Participants' knowledge about preventive measures for childhood blindness

Preventive measure	n (%)
Good Nutrition	38 (27.1)
Routine Eye Exams	65 (46.4)
Parental Care	74 (52.9)
Immunisation	29 (20.7)
Vitamin A Supplement	27 (19.3)

Table 4: Knowledge about preventive measures.

n: Frequency; (%): Percentage of participants' knowledge about preventive measures.

Participants' sources of information about childhood blindness

The television, hospitals, radio, friends and family were the major sources of information on childhood blindness among the participants (Figure 1).

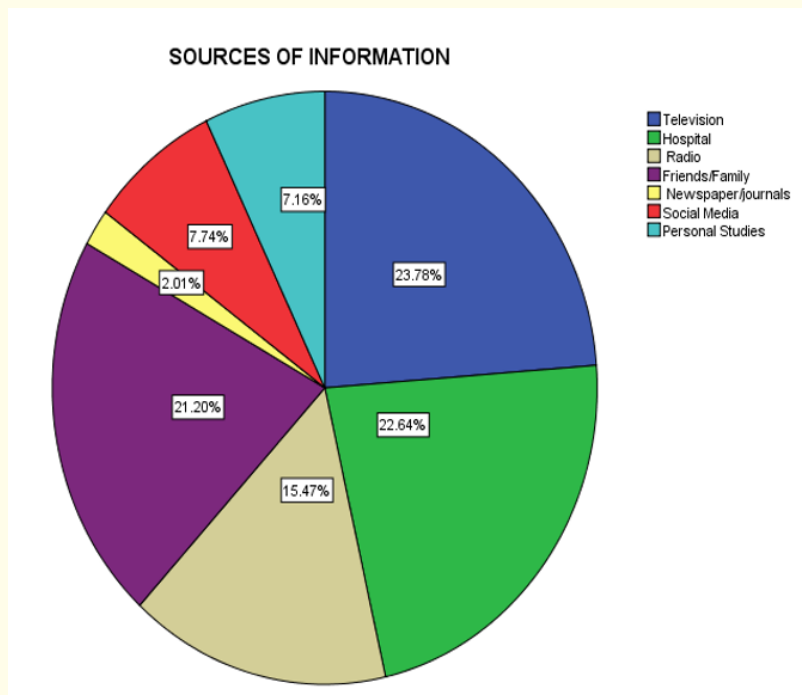


Figure 1: Participants' sources of information about childhood blindness.

Discussion

Children are often unable to tell when their vision is compromised. The onus lies on parents and guardians to monitor the child and be able to report any visual abnormality for early intervention. This study sought to assess the knowledge and awareness of childhood blindness among pregnant women and mothers with children below six years. Even though more than half of the women in this study had heard about childhood blindness, only a few knew what it was. This is similar to the response of majority of parents in a study by Paranjpe, *et al.* [7] who were also aware of an eye problem but did not know the nature of the condition.

Regarding awareness of the causes of childhood blindness, majority of the women were aware of vitamin A deficiency which contrasts the study conducted by Matta, *et al* [8]. This could be due to the fact that issues of vitamin A deficiency and measles are often discussed during antenatal and postnatal education at hospitals. Even though both studies were hospital-based, this study may have recorded a higher percentage of awareness because pregnant women were specifically included in this study for which the conditions may have been mentioned during their antenatal care education. The same may be true concerning the awareness of measles for which this study recorded 92.1% awareness rate whereas that of Ebeigbe and Emedike [9] was only 48.5%. However, knowledge and awareness of vitamin A supplementation as a preventive measure for childhood blindness was relatively low which is in agreement with previous studies [8,10]. Also, awareness of conditions like uncorrected refractive error, cataract and strabismus were low compared to that of Ebeigbe and Eme-

dike [9] study. Retinoblastoma had the lowest rate of awareness as also reported by Ayanniyi., *et al* [11]. This outcome may be possible because retinoblastoma is a rare condition. The percentage of participants who affirmed their knowledge and awareness of glaucoma in this study was low and consistent with the study done by Rewri and Kakkar [12]. However, it contradicts the report made by Kumah., *et al.* [13] wherein glaucoma awareness had as high as 90% affirmation percentage. A possible reason may be that there is inadequate education on glaucoma in the municipality. Also, an important cause of ocular morbidity in children are eye injuries. Common causes of eye injuries are accidental blows and falls, sports and recreational activities [14,15]. Consistent with the research done by Kumah., *et al.* [13], eye injuries was the most common cause of childhood blindness known by the mothers in this study.

Also, majority of the responses given in this study suggested that childhood blindness is treatable which is higher than a study by Belaynew., *et al.* [16] which indicated that only a few (24.3%) knew that childhood blindness is treatable. This is likely because between the years 2014 and 2018, a lot of education and public awareness may have been done within the 4-year interval [17]. In response to preventive and treatment measures of childhood blindness, participants' knowledge about routine eye examination and parental care were the highest. This is a good practice because parents acknowledged they had a personal role to play in protecting the eyes of their children. Sending their children to see an eye care practitioner was something they would consider. Majority of these women also knew of medication as a treatment measure followed by surgeries in the treatment of the causes of childhood blindness. Spectacle correction as a form of treatment measure had the lowest recognition (15.7%) even though 51.5% of the participants believed uncorrected refractive errors was a cause of childhood blindness.

Concerning sources of information, majority of these women rely on information from family/friends and education they get from the hospitals as well as the audio-visual media (TV and radio). Kumah., *et al.* [13] reported that the use of print media (e.g. Newspapers and social media) as a source of information for national education on childhood blindness was likely to be the reason for the relatively high level of knowledge and awareness. On the contrary, this study contradicts the report given by Kumah., *et al* [13]. It however agrees with the study done by Amiebenomo., *et al.* [18] as information sources that involved a bit of reading had the lowest identification (e.g. newspaper/journals had just 2.01%). Another possible reason could be that people in this technologically advancing era hardly purchase newspapers because of the internet which has become the major source of information [19]. However, it is among the least identified sources of information.

Conclusion

This study found a high awareness in contrast to poor knowledge about childhood blindness among pregnant women and women with children under six years. Public education on childhood blindness should be encouraged for early detection and intervention.

Bibliography

1. World Health Organization. "Blindness and vision impairment prevention". Priority Eye Disease. Childhood blindness (2019).
2. World Health Organization. "Global Initiative for the Elimination of Avoidable Blindness: action plan 2006-2011" (2007).
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 (2001): 227-232.
4. Sifri Z., *et al.* "A concise overview of micronutrient deficiencies in Africa and future directions". *African Journal of Food, Agriculture, Nutrition and Development* 2.2 (2002): 78-85.
5. Abdelrahman A and Conn R. "Eye abnormalities in fetal alcohol syndrome". *Ulster Medical Journal* 78.3 (2009): 164.
6. Mwende J., *et al.* "Delay in presentation to hospital for surgery for congenital and developmental cataract in Tanzania". *British Journal of Ophthalmology* 89.11 (2005): 1478-1482.

7. Paranjpe R., *et al.* "Awareness of childhood blindness in parents attending Paediatrics Ophthalmology outpatient department". *Medical Journal of Dr. D.Y. Patil Vidyapeeth* 9.4 (2016): 451.
8. Matta S., *et al.* "Knowledge among women regarding vitamin A deficiency: A hospital based study". *Indian Journal of Preventive and Social Medicine* 37.3-4 (2006): 138-141.
9. Ebeigbe JA and Emedike CM. "Parents' awareness and perception of children's eye diseases in Nigeria". *Journal of Optometry* 10.4 (2017): 104-110.
10. Mbadugha C and Patel D. "Perceptions of Child Caregivers About Factors Influencing Childhood Corneal Blindness in a Rural Community in Southern Nigeria". *Nigerian Journal of Ophthalmology* 2.1 (2012): 7-13.
11. Ayanniyi AA., *et al.* "Awareness and knowledge of ocular cancers in a resource-limited economy". *North American Journal of Medicine and Science* 2.11 (2010): 526.
12. Rewri P and Kakkar M. "Awareness, knowledge, and practice: a survey of glaucoma in north Indian rural residents". *Indian Journal of Ophthalmology* 62.4 (2014): 482.
13. Kumah D., *et al.* "Knowledge of Childhood Blindness among Mothers Visiting a Children's Hospital in the Kumasi Metropolis, Ghana". *Advances in Ophthalmology and Visual System* 7.3 (2017): 1-5.
14. Ellen S., *et al.* "Causes of Pediatric Eye Injuries: A Population-Based Study". *Archives of Ophthalmology* 108.4 (1990): 603-606.
15. Nelson Lb., *et al.* "Eye injuries in childhood: demography, etiology, and prevention". *Pediatrics* 84.3 (1989): 438-441.
16. Belaynew W., *et al.* "Knowledge and practice on childhood blindness among communities in Northwest Ethiopia: implications to blindness prevention programs". *The Journal of Ophthalmology of Eastern, Central and Southern Africa* 17.2 (2014).
17. World Health Organisation. "Universal Eye health: Global Action plan 2014-2019" (2013).
18. Amiebenomo O., *et al.* "Parental knowledge and attitude to children's eye care services". *The Nigerian Journal of Paediatrics* 43.3 (2016): 215-220.
19. Kyei S., *et al.* "Knowledge and awareness of ocular allergy among undergraduate students of public universities in Ghana". *BMC Ophthalmology* 16.1 (2016): 190.

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