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Original Article

THE PREVALENCE OF OPHTHALMIA NEONATORUM AMONG NEONATES RECEIVING HEALTHCARE SERVICES AT JINJA REGIONAL REFERRAL HOSPITAL.

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ABSTRACT

Background
The study delved into Ophthalmia Neonatorum (ON), a neonatal eye infection primarily caused by Neisseria gonorrhea and Chlamydia trachomatis. The research, conducted at JRRH in Eastern Uganda, aims to determine the prevalence of ON among neonates receiving healthcare services.

Methodology
A cross-sectional quantitative approach was employed, focusing on neonates with ON through a convenient sampling process.

Results
The prevalence of Ophthalmia Neonatorum is highest 20(50%) in the eastern region, followed by northern 10(25%), then central 6(15%), and then Western 4(10%). The majority of neonates with ON were aged 1-7 days, presenting with symptoms like discharge, redness, swollen eyelids, and tearing. Bilateral eye involvement was more prevalent than unilateral. The prevalence of ON was notably higher in the Eastern region compared to other regions studied, possibly influenced by the geographical focus of the research.

Conclusion
The study identified the prevalence of ON among neonates at JRRH, emphasizing the Eastern region's higher incidence. The majority of neonates with ON were from the Eastern region, while a history of sexually transmitted diseases was associated with the infection.

Recommendation
Community awareness campaigns to enhance early prevention through healthcare workers, village health teams, and various communication channels are recommended.

Keywords: Prevalence of Ophthalmia Neonatorum, Neonates, Healthcare Services, Jinja Regional Referral Hospital.
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Background of the study
Ophthalmia Neonatorum is the conjunctivitis of the newborn from birth to 28 weeks. It is mostly caused by Neisseria gonorrhea and chlamydia trachomatis. Incubation is usually 7 days. Clinical signs like redness, tearing, purulent eye discharge, erythema and edema of eyelids, pseudomembranous and corneal perorations are regularly presented by neonates with infection. The incidence is usually bilateral and used to cause 50% of childhood blindness however due to prophylaxis and improved health medical services, it has reduced to almost 23%. The bacteria penetrate the corneal epithelium and other ocular layers and cause several complications if not managed. They include corneal ulcer, corneal opacity, iris prolapse, panophthalmitis, and nystagmus. However, there are some ways to prevent ON. They include attending antenatal clinics during pregnancy, delivery from health facilities, treatment of partners, and application of tetracycline eye ointments in the baby's eyes after birth and early diagnosis and treatment.

Globally, 1.4 million children go blind. According to WHO Vision2020" The right to sight, Global initiative for the elimination of avoidance of blindness," ON is the most common infection during the neonatal period. The infection ranges from less than 2% to 23% in developing countries and is dependent mainly on socioeconomic conditions, level of knowledge of general health standards of maternal healthcare as well and the choice of prophylactic eye treatment (WHO, 2019).

In Africa, 20% of children go blind due to inadequate eye care services. The major concern varies from region to region and is dependent on socioeconomic development. In West Africa, 2% to 3% of cases of ON cause corneal scaring leading to blindness (Boadi-Kusi et al., 2021). A clinic-based prospective study was conducted in the maternal and child health units of six healthcare facilities in the central region of Ghana over 17 months. Conjunctival swabs were taken from all neonates with signs of ON. Microbial growth was recorded in 86 cases (52.4%) out of 110 neonates assessed. Staphylococcus species (39.2%) of all positive cultures) was the most common causative organism. No gonococcus was isolated, delivery method, vaginal discharge. Administration of prophylaxis and weight of neonates

were risk factors associated with the development of ON(P<0.5). The level of resistance to tetracycline was 73%. ON is more likely to be acquired postnatally, culture and sensitivity testing…… is required as important for treatment (Boadi-Kusi et al., 2021).

In East Africa, studies conducted among women in Tanzania documented a prevalence rate of 36.2% among women in Mwanza city (Armstrong-Mensah E et al., 2021).

In Uganda, ON remains a public concern. This is because of its unknown etiology, patterns, growing concern for antibiotic-resistant strains, and the contribution of ON to childhood blindness (Boadi-Kusi et al., 2021).

The study is therefore conducted to determine the prevalence of ophthalmia neonatorum among neonates receiving healthcare services at JRRH.

Methodology

Study design

A cross-sectional quantitative study was conducted because data was collected at one point in time.

Study Area

This study was conducted at JRRH. This was because JRRH being a regional referral for many of the districts in Eastern Uganda, a variety of people were allowed to participate and benefit from the research study.

Study population

Neonates with ON receiving health care services at JRRH.

Sample size determination

The sample size was determined using the method below.
Sample size, S=GR/O (Button's 1995).
Where S = sample size,
G Number of people interviewed per day.
R=Maximum number of days for data collection.
The maximum time an interviewer spends on each patient
G=4 people
R=5 days
O= (30/60) =0.5 Hours
Therefore, S=(4x5)/0.5=40 respondents

Participants

Inclusion criteria

Only neonates with ON receiving healthcare services at JRRH whose parents or guardians consented to the study were included.

Sampling technique

A non-probability convenient sampling process, self-selection of the patients was used since a specific group of patients with ophthalmia neonatorum was required among neonates receiving healthcare services at JRRH.

Sampling procedure

All eye health workers, midwives, and birth attendants were sensitized about ON. Then I and my assistant were given a chance to access the patients for data collection.

Data collection method

A qualitative survey method was used. The process of data collection began with the researcher having a self-introduction, with his introductory letter from the OCO training school in JRRH. The letter helped me get permission from the hospital administration.

Data collection tool

Interview questionnaires were used. The questionnaires were written in English and constructed along with the specific objectives of the study. It consisted of both closed and open-ended questions.

Data collection procedure

An interview-administered questionnaire was used. The researcher fully explained the question to the respondents, interpretation was done for respondents who could not read and write. Each filled questionnaire was checked for accuracy and completeness by the researcher.

study variables

Independent variable

Neonates receiving healthcare services at JRRH

Dependent variable

Factors associated with the prevalence of ON

Quality control

Quality control was carried out through;

Pretesting of research tool

Questionnaires were pre-tested for completeness on four patients at JRRH.

Training of research assistant

A research assistant was trained, questionnaires translated into Luganda and pre-tested and patients confidentially kept.

Data analysis and presentation

Completed questionnaires were edited for accuracy and consistency, using Microsoft Excel and Microsoft Word, the data collected were presented in tables and figures using frequencies and percentages and some pie charts. The quantitative data were investigated for relevant information.

Piloting the study

The children's ward at JRRH was visited to obtain permission from the head of the department, and

assurance of the presence of ON patients was given. The designed objectives were realized depending on the information and results that were obtained.

Ethical consideration

A letter of introduction was provided by the principal ophthalmic clinical officer's school and it was delivered to the hospital Director who introduced me to different in-charges of the wards.

Patients were asked to make a written consent before interviewing them. Confidentiality and autonomy were observed.

Results

Table 1; Individual factors and clinical manifestations of ON

Variables		
Age of mother(years)	**Frequency(f)(N=40)**	**%**
15-24	08	20
25-34	22	55
35-44	10	25
Average=30		
Age of neonates(days)		
1-7	20	50
8-14	10	25
15-21	06	15
22-28	04	10
Average=9.95		
Signs and symptoms		
Discharge	20	50
Redness	10	25
Swollen eyelids	08	20
Tearing	02	05
Eye involvement		
Bilateral	26	65
Unilateral	14	35

The majority of neonates who had ON, their parents were aged 25-34 years and the least their parents were aged 15-24 years 08(20%).

The majority of neonates with ophthalmia neonatorum were aged 1-7 days, 20(50%) and the least were 22-28 days, 04(10%).

According to signs and symptoms, the majority of the neonates presented with a discharge, 20(50%), and the least with tearing, 02(05%).

Eye involvement, bilateral was the highest, 26(65%), and then unilateral, 14(35%).

This study presents the prevalence of ophthalmia neonatorum among neonates receiving healthcare services at JRRH.

Prevalence of ophthalmia neonatorum

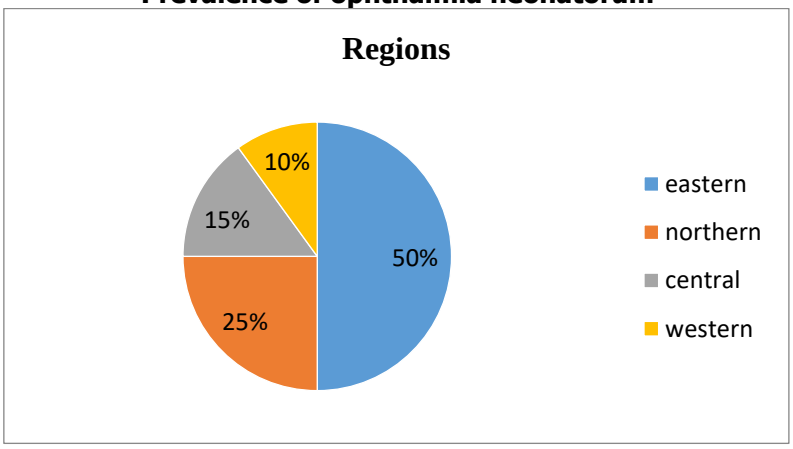

Figure 1, A pie chart showing the prevalence of ophthalmia neonatorum
The majority of the neonates 20(50%) who had ophthalmia neonatorum were from the Eastern region and the least, 4(10%) were from the Western region.

Discussion
The eastern region had the highest 20(50%) followed by northern 10(25%), then central 6(15%), and then Western 4(10%). The higher prevalence of ON in the eastern than in other regions was because the study was conducted in that region. Other regions, central and western have specialized eye hospitals like Mengo and Ruharo that offer comprehensive eye care services. This increase is higher than 7.5% cited by Gogate P (2012) who added that the number of neonates with ophthalmia neonatorum in 2015 was estimated to be less than 12.7% in 2019.

Conclusion
The majority of the neonates 20(50%) who had ophthalmia neonatorum were from the Eastern region and the least, 4(10%) were from the Western region majority of the neonates with ON, their parents had a history of STDs 24(60%) and minority 16(40%) were neonates whose parents did not have a history of STD's.

Recommendation
There is a need for awareness campaigns and community education on Ophthalmia Neonatorum by health workers, and village health team members through organizing eye health camps, use of media like through radios, churches, houses to house, and also in community meetings by aid of community mobilization

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List of Abbreviations
CDC Centre for Disease Control and Prevention
HMIS Health Management Information System
JRRH Jinja Regional Referral Hospital
OCO Ophthalmic Clinical Officer
ON Ophthalmia Neonatorum
PHC Primary Health Care
PRETX Paediatric Research in Emergency Therapeutics
TEM Traditional Eye Medicines
WHO World Health Organisation

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Conflict of interest
The author had no conflict of interest.

Author Biography

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