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Prevalence, Types and Determinants of Traditional Eye Medication (TEM) Usage Among Nursing Mothers in Northeast Nigeria

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Abstract

Background: Traditional eye medication (TEM) use is widespread in sub-Saharan Africa, particularly in Nigeria, where it remains a major public health concern. This practice remains prevalent among nursing mothers who may use TEM to manage eye conditions either for their infants or themselves. This study assessed the prevalence, types as well as the determinants influencing TEM usage among nursing mothers in Northeast Nigeria.

Methodology: A hospital-based cross-sectional study was conducted in Bauchi and Taraba states in Northeast Nigeria between November and February 2025. A multistage sampling technique was used for sampling respondents. Four hundred and twenty-two (422) nursing mothers were interviewed using a questionnaire. The quantitative variables were summarised using mean/median and standard deviation appropriately. Associations between the socio-demographic characteristics and the outcome variables were done using chi-square, and a p-value of <0.05 was considered statistically significant.

Results: The study found that 68.5% of nursing mothers reported using Traditional Eye Medications (TEM), with 40.5% administering TEM to their children. The most used TEM was breast milk (55.7%), while the commonest indication for TEM use was red eye (161, 55.7%). Factors such as urban residence, occupation (particularly traders and civil servants), and household income below 150,000 Naira were associated with TEM use.

Conclusion: TEM use remains prevalent among nursing mothers in Northeast Nigeria, with breast milk being the most frequently used form. Public health interventions targeting awareness and eye health education are crucial to addressing this issue and protecting maternal and child eye health.

Keywords: Traditional eye medications, Breast Milk, Nursing Mothers, Northeast Nigeria

Background

The prevalence of traditional practices in sub-Saharan Africa, particularly in Nigeria remains a public health concern. [1] Practices like early and forced marriages, female genital mutilation, and early pregnancy continue to generate emotions on all sides.[1] Of particular concern are traditional practices related to the eye which can result in avoidable blindness with a resultant burden on, not only the family but on the society at large. The last two decades have witnessed a surge in the use of traditional medication not just in Nigeria but globally.[2] Traditional eye medications (TEM) are defined as "biologically active-based therapies, inorganic or organic agents that can be applied through different routes of administration to achieve a desired ocular therapeutic effect".[3] The shortage in the number of practising ophthalmologists (one ophthalmologist to 500,000 population) in Nigeria, poverty, ignorance, and the failure of conventional treatment are some of the factors responsible for the increasing use of traditional eye medications.[4,5]

The types of TEM that have been reported include tea, plant extracts, human urine, holy water, salt water, kerosene, battery chemicals and breast milk.[5] Studies in the Middle East (Palestine) have also revealed that tea was the commonest TEM used.[5] This practice remains prevalent among nursing mothers, especially in Northern Nigeria, who may use TEM to manage eye conditions either for their infants or themselves.[2] Children are particularly at risk of eye/visual complications from these practices as they rely totally on the parents/guardians who may be ignorant of the detrimental effect of such practices. Any poor vision that results from use of TEM during the crucial visual developmental stage can hinder a child's educational progress, leading to long-term consequences for academic achievement and socio-economic success.[6] In order to develop a targeted intervention approach to reduce the prevalence of visual loss from TEM use among nursing mothers, data is needed on prevalence, types and factors influencing TEM usage among nursing mothers in Northern Nigeria.

Method

This was a hospital-based cross-sectional study. The study population comprised nursing mothers aged 18 years and older attending the immunisation clinics of the selected hospitals, while nursing mothers who are health professionals were excluded to avoid bias.

A minimum sample size of 422 was calculated using **Fisher's formula**.[7] The Northeast geopolitical zone in Nigeria comprises six states: Adamawa, Bauchi, Borno, Gombe, Taraba, and Yobe. A multistage sampling technique was employed to select two states (Bauchi and Taraba), followed by selection of two Local Government Areas (LGAs) in each state. Subsequently, two hospitals were chosen from the selected LGAs in each state. At each stage, simple random sampling was conducted using the ballot method. Proportional allocation of the subjects was done based on the number of local government areas in each state. At each selected hospital, all consecutive, eligible, and consenting subjects were enrolled in the study until the sample size was met. A structured interviewer-administered questionnaire consisting of three sections was used. These included a section on the socio-demographic characteristics, questions to assess the prevalence of TEM use, and a section evaluating the types of TEM used in Northeast Nigeria.

Ethical clearance for the study was obtained from the Health Research Ethics Committees of the Ministries of Health of Taraba (TRSHRE/2025/007) and Bauchi (NHREC/TR/BAU-HREC/28/8/2023) states. Informed consent was also obtained from the individual subjects. Participants received

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detailed explanations of the study's purpose, procedures, and their rights to withdraw at any time without repercussion.

Data analysis was done using IBM Statistical Package for the Social Sciences (SPSS) Version 29. Socio-demographic and economic characteristics of the study participants, prevalence of TEM use, and types of TEM used were summarised using means, standard deviations (for continuous variables), and frequencies or percentages (for categorical variables). The associations between categorical variables, such as the relationship between TEM use and factors like education, income, and residence type (urban vs. rural), were assessed using the Chi-Square. A p-value of <0.05 was considered statistically significant.

Results

A total of 422 nursing mothers were recruited into the study with a 100% response rate. The majority (373, 88.4%) of the respondents were between 21 and 40 years old, with a mean age of 29.8 ± 6.4 SD (range 19-56 years). About 5% of the study population were either single, divorced or widowed. The majority (395, 93.6%) had secondary or tertiary level education. Regarding the place of residence, 323 (76.5%) subjects lived in urban settings. Over 70% of the study population had less than 4 children, while 13 (3.1%) had more than 6 children, with a mean of 2.85 ± 1.6 SD and a range of 1-10 (Table 1).

Table 1: Socio-demographic and Economic Characteristics and Health insurance status of participants

Variables	Frequency n=422	Percent
Age group (in years)		
≤20	27	6.4
21-30	207	49.1
31-40	166	39.3
41-50	21	5.0
51-60	1	0.2
Marital Status		
Married	400	94.8
Single	8	1.9
Divorced	7	1.7
Separated	1	0.2
Widowed	6	1.4
Religion		
Islam	315	74.6
Christianity	107	25.4
Level of education		
No formal education	16	3.8
Primary	11	2.6
Secondary	126	29.9
Tertiary	269	63.7
Main Occupation		
Farming	70	16.6
House wife	91	21.6
Civil Servants	111	26.3
Trader	146	34.6
Teacher	1	0.2
Student	3	0.7
Average monthly household income in Naira		
<50,000	120	28.4
50,000- 100,000	160	37.9

Print ISSN: 3043-4742 Online ISSN: 3043-4750

100,001-150,000	34	8.1
150,001-200,000	48	11.4
200,001-250,000	12	2.8
>250,000	48	11.4
Ethnicity		
Fulani	121	28.7
Hausa	248	58.8
Igbo	12	2.8
Yoruba	22	5.2
Others*	19	4.5
Place of Residence		
Rural	99	23.5
Urban	323	76.5
Do you have health insurance coverage?		
Yes	169	40.0
No	253	60.0
Number of Children		
<4	303	71.8
4-6	106	25.1
>6	13	3.1

*Gbagyi, Ham, Jonjo, Jukun, Karim, Joo, kutep, Mumuye, Nupe, Nyenkpa, Tiv, and Yandam

As highlighted in figure 1, two hundred and eighty-nine (68.5%) nursing mothers reported to have used TEM on themselves, and 171 (40.5%) subjects have used TEM on their children for various reasons (Figure 2). Most (127, 30.1%) of the participants use TEM occasionally, 92 (21.8%) have only used it once, while 42 (10.0%) use it regularly. Although 188 (65.1%) nursing mothers reported complete relief of symptoms with use of TEM, 101 (34.9%) either had partial relief, no improvement or worsening of symptoms (Figure 3).

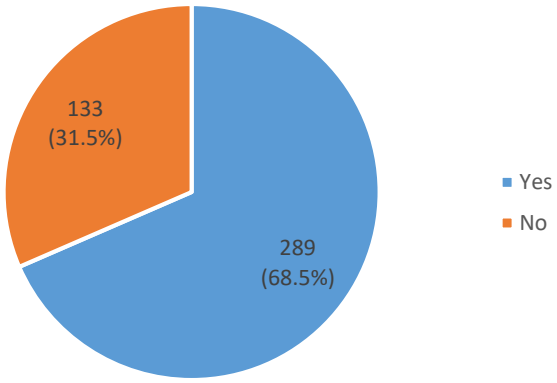

Figure 1: Prevalence of TEM use among study participants

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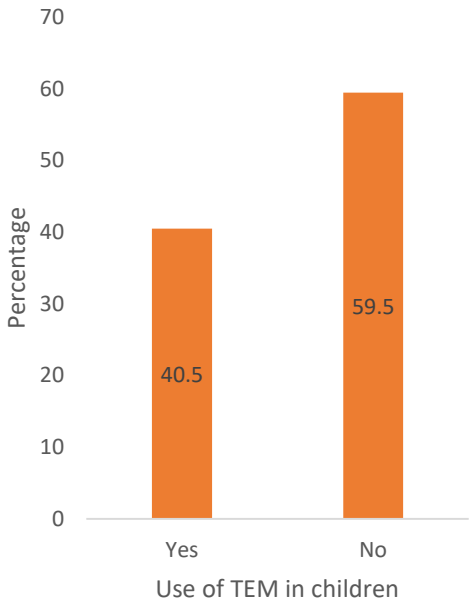

Figure 2: Use of TEM in Children of study Participants

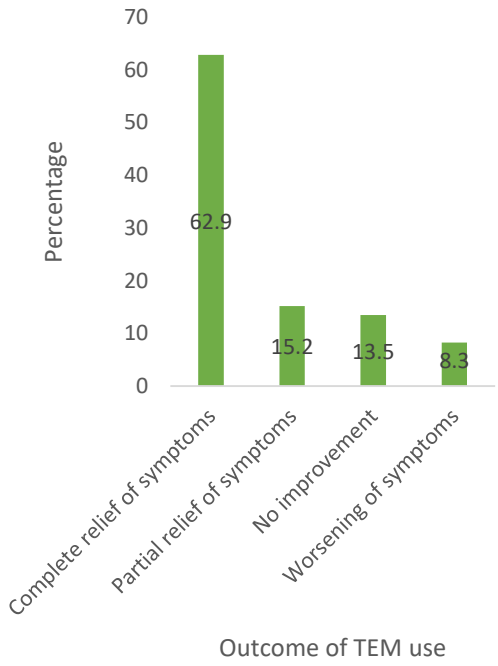

Figure 3: Outcome of TEM use among study participants

The most common TEM used was breast milk in 161 (55.7%) participants. This is closely followed by ash or charcoal (153, 52.9%), herbal extracts (98, 33.9%) as well plant leaves or powder (90, 31.1%) (Figure 4). The common indications for TEM use were redness (161, 55.7%) and eye discharge (105, 36.3%) (Figure 5).

Print ISSN: 3043-4742 Online ISSN: 3043-4750

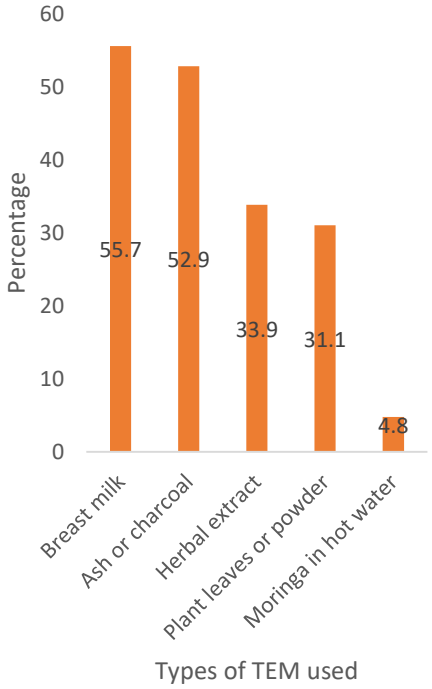

Figure 4: Common TEM used by study participants

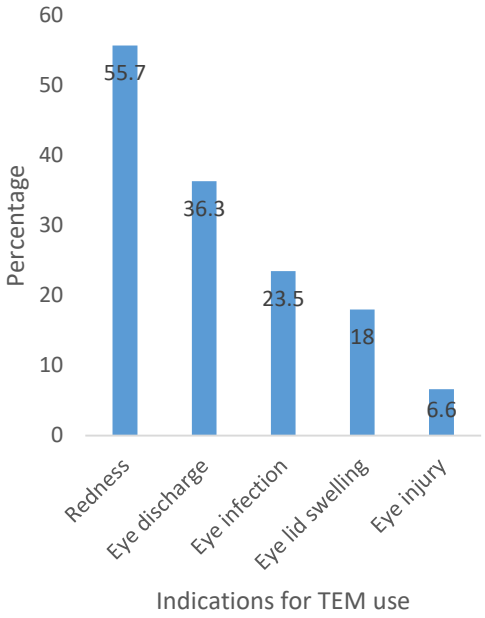

Figure 5: Indications for use of TEM among study participants

Table 2 shows that urban residence (p value 0.01), occupation (trader and civil servant) (p value 0.00) and average income of less than one hundred and fifty thousand naira (p value 0.01) are the identified determinants influencing usage of TEM.

Print ISSN: 3043-4742 Online ISSN: 3043-4750

Table 2: Relationship between demographic and socioeconomic factors and use of TEM

Variables	Have you used TEM before Freq (%), n=422				
	Yes	No	Total	Chi square	P value
Age group (in years)				9.72	0.45
<20	13 (3.1)	14 (3.3)	27 (6.4)		
21-30	140 (33.2)	67 (15.9)	207 (49.1)		
31-40	119 (28.2)	47 (11.1)	166 (39.3)		
41-50	17 (4.0)	4(0.9)	21 (4.9)		
51-60	1 (0.2)	0 (0.0)	1 (0.2)		
Marital Status				3.35	0.50
Married	275 (65.2)	125 (29.6)	400 (94.8)		
Single	5 (1.2)	3 (0.7)	8 (1.9)		
Separated	0 (0.0)	1 (0.2)	1 (0.2)		
Widowed	5 (1.2)	1 (0.2)	6 (1.4)		
Place of Residence				10.66	**0.01**
Rural	81 (19.2)	18 (4.3)	99 (23.4)		
Urban	208 (49.3)	115 (27.3)	323 (76.6)		
Occupation				23.08	**0.00**
Civil servant	63 (14.9)	48 (11.4)	111 (26.3)		
Farming	59 (14.0)	11 (2.6)	70 (16.6)		
Housewife	57 (13.5)	34 (8.1)	91 (21.6)		
Teacher	0 (0.0)	1 (0.2)	1 (0.2)		
Trading	109 (25.8)	37 (8.8)	146 (34.6)		
Average household monthly income				21.29	**0.01**
<50,000	68 (16.1)	52 (12.3)	120 (28.4)		
50,000- 100,000	123 (29.1)	37 (8.8)	160 (37.9)		
100,001-150,000	26 (6.2)	8(1.9)	34 (8.1)		
150,001-200,000	29 (6.9)	19 (4.5)	48 (11.4)		
200,001-250,000	12 (2.8)	0 (0.0)	12 (2.8)		
>250,000	31 (7.3)	17 (4.0)	48 (11.4)		
Level of Education					
No formal education	10 (2.4)	6 (1.4)	16 (3.8)	4.16	0.24
Primary	5 (1.2)	6 (1.4)	11 (2.6)		
Secondary	83 (19.7)	43 (10.2)	126 (29.9)		
Tertiary	191(45.3)	78 (18.4)	269 (63.7)		
Health insurance coverage				0.83	0.36
Yes	120 (28.4)	49 (11.6)	169 (40.1)		
No	84 (19.9)	169 (16.4)	253 (59.9)		

Print ISSN: 3043-4742 Online ISSN: 3043-4750

Discussion

About 90% of the study population were aged between 21 and 40 years. This is different from the results of studies by Kayoma et al.[8], Oyediji et al.[2], and Ukponmwan et al.[9], who reported 32.3%, 31.6%, and 20.0%, respectively. These studies, like many related studies in Nigeria focused on diverse populations, including males and children, while this current study focused specifically on nursing mothers; thus, it is not surprising to have the majority of the participants in the childbearing age. The health-seeking behaviour of this group may influence household eye health practices; therefore, targeted health intervention may promote safe eye care choices.

Most study participants (about 90%) had secondary or tertiary level education. This is in contrast to the findings of Kayoma et al.[8], where 81.6% of the study population had either no education or just primary school education. The study by Kayoma was a community-based rural/semi-urban study, while over 76% of the population in this current study lived in urban settings. This demographic difference most likely contributed to the differences in education levels noted between these two studies. The high level of education among participants indicates that targeted health education campaigns have the potential to effectively discourage TEM use by promoting evidence-based alternatives.

The prevalence of TEM use in this study was 68.5%. This is high compared to a study by Achigbu et al.[10] in South-eastern Nigeria, Ajite et al.[3] in Southwest Nigeria, and Oyediji et al.[2] in North-central Nigeria who reported 15.8%, 3.4% and 4.3%, respectively. These other studies included a broader population compared to the present study, which specifically targeted nursing mothers. TEM use is not peculiar to Nigeria, as its use has been well reported in other African countries. In Uganda, a population-based study conducted in rural communities reported that 44.2% of the 824 heads of households acknowledged the use of traditional eye medication as first-line treatment. [11] Also, a South Africa, hospital-based study by Jaya et al. reported a prevalence of 61.5%. 12 The prevalence documented in these African studies are higher than most studies in Nigeria but lower than what was found in this study. This may be a reflection of ignorance, a shortage of practising ophthalmologists, and a belief in the effectiveness of TEM, as well as its affordability, accessibility and availability. The high prevalence calls for a need for immediate awareness campaigns, community engagement, and policy-driven interventions to educate nursing mothers on the risks of TEM, and promote safe, evidence-based eye care practices. Over 40% of these nursing mothers have also used TEM on their children and this shows the complexity of the problem. The visual complications (which include cornea opacification, endophthalmitis and blindness) in a child may be irreversible, resulting in stigmatisation, social isolation, limited access to education, restricted career opportunities, mental health challenges and financial strain on the family.

The most common indication for TEM in this study was eye redness in 55.7%, followed by eye discharge (36.3%). This is in contrast to results by Achigbu et al.[10] and Ukponwan et al.9, who reported itching and poor vision to be the most common indications in 56% and 54%, respectively. The observed disparity may be attributed to differences in the pattern of common ocular conditions across different regions of the country, therefore emphasising the need for a health education approach that addresses locally prevalent eye symptoms and discourages TEM use.

About 35% of the nursing mothers reported either partial relief, no improvement or worsening of symptoms. This shows the public

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health risk associated with TEM use. Even though 55% of the nursing mothers reported relief of their symptoms, this may be accounted for by the placebo effect/psychological factors, the self-limiting nature of the condition or the potential efficacy of some of these remedies.

The most commonly used TEM in this study was breast milk (55.7%), followed by ash or charcoal (52.9%) and herbal extracts (33.9%). This is in contrast to a study by Kayoma et al.[8] who reported herbal extract to be the most common (94.4%), followed by breast milk (2.8%), and Ajite et al.[3] who reported kerosene (33.3%) and urine (20.8%) as the common TEM used. The findings from our study are, however, similar to a South India study by Prajna et al.[13], who also reported breast milk to be the most common TEM used in 45.2% of their subjects. It is not surprising to have breast milk as the most common TEM used because the population in this study are nursing mothers who have easy and unrestricted access to breast milk. Also, breast milk is considered a "universal remedy" or natural cure for all ailments and this perception may be prevalent in Nigeria's North East region. Breast milk, ash and herbal extract are substances that can breed bacteria and initiate or worsen an infectious process within the eye, leading to visual loss. Some of these agents can also be contaminated from poor handling, compounding the severity of the condition. Public health campaigns should focus on educating mothers about the dangers of TEM use and promote evidence-based, safer alternatives for treating eye conditions.

From our study, urban place of residence and occupation (being a trader and civil servant), as well as average household monthly income of less than one hundred and fifty thousand naira, were associated with use of TEM. This is in contrast to a study by Kayoma et al.[8] who reported that age, level of education and marital status were the observed determinants. However, our study did not show these factors to be statistically significant (age P value 0.45, level of education P value 0.24 and marital status P value 0.5). The finding that urban residents turn to TEM use despite access to health care may point to the significance of cultural beliefs, community ties and long-time traditional practices in the behavioural manifestation of nursing mothers to care. Also, the indiscriminate advertisement of TEM in the media as well as the busy schedule in the urban setting may influence the use of TEM. Individuals with limited financial resources may see TEM as a more affordable alternative to formal healthcare. TEM is often cheaper and, in some cases, accessible at no cost, making it an attractive option for individuals with lower incomes. Public health interventions should target these groups with tailored education on the risks of TEM and promote affordable, accessible healthcare alternatives.

Conclusion

In conclusion, this study revealed that 68.5% of nursing mothers reported using TEM, while 40.5% had used it on their children. The most used traditional eye medications were breast milk, ash or charcoal and herbal extracts, while the primary reasons for TEM use included eye redness and eye discharge. The study identified significant associations between TEM use and urban residence, occupation and average household income. Traditional eye medication use is prevalent among nursing mothers in northeast Nigeria with a significant proportion using the medication on their children too. Targeted public eye health education and policy development **on TEM regulation** are recommended to prevent avoidable visual loss.

References

1. Jimoh AO, Adaji SE, Adelaiye H, Olorukooba AA, Bawa U, Ibrahim HI, et al. A

Print ISSN: 3043-4742 Online ISSN: 3043-4750

cross-sectional study of traditional practices affecting maternal and newborn health in rural Nigeria. Pan Afr Med J. 2018;31:64. doi:10.11604/PAMJ.2018.31.64.15880.

2. Oyediji FJ, Ramyil A, Odugbo P, Mpyet C. Traditional eye practices: a facility-based study in North Central Nigeria. Jos Journal of Medicine. 2019;13(2):31-34.

3. Ajite KO, Fadamiro OC. Prevalence of harmful/traditional medication use in traumatic eye injury. Global journal of health science. 2013;5(4):55-59. doi:10.5539/gjhs.v5n4p55.

4. Nathaniel GI, Eze UA. Harmful traditional eye practices in Nigeria and its burden on eye care: A review of literature. Global Journal of Cataract Surgery and Research in Ophthalmology. 2023;3:34-42. doi:10.25259/gjcsro_29_2023.

5. Atawi R, Ayed A, Batran A. Traditional eye medicine practice and its determinant factors among ophthalmic patients in the West Bank. Journal of public health research. 2014;13(2):22799036241243267. https://doi.org/10.1177/22799036241243267.

6. Ademola-Popoola DS, Yusuf I. Couching in pediatric patients in Nigeria: Report of a medical socioeconomic dilemma in a developing country. Taiwan Journal of Ophthalmology. 2020;10(4):259-263. doi:10.4103/tjo.tjo_79_19.

7. Fisher AA, Laing JE, Townsend JW. Handbook for Family Planning Operations Research Design. 2nd ed. New York: Population Council; 1998

8. Kayoma DH, Ukponmwan CU. Determinants of the use of traditional eye medication in a semi-urban community in southern nigeria. Journal of the West African College of Surgeons. 2016;6(3):49. https://pmc.ncbi.nlm.nih.gov/articles/PMC5555722/. Accessed November 14, 2024.

9. Ukponmwan C, Momoh N. Incidence and complications of traditional eye medications in Nigeria in a teaching hospital. Middle East African Journal of Ophthalmology. 2010;17(4):315-319. doi:10.4103/0974-9233.71596.

10. Achigbu E, Achigbu K. Traditional eye medicine use among ophthalmic patients attending a secondary health care center in Southeast Nigeria. Port Harcourt Medical Journal. 2017;11(2):79. doi:10.4103/phmj.phmj_5_16.

11. Nyathirombo A, Mwesigye F MA. Traditional eye health practices in Atyak Sub-county, Nebbi district- Uganda. East African Journal of Ophthalmology. 2013;16(1).

12. Jaya Y, Masanganise R. The prevalence, types and effects of traditional eye medicine use among newly presenting patients at Sekuru Kaguvi Hospital Eye Unit in Harare, Zimbabwe. The Central African journal of medicine. 2014;60(5-8).

13. Prajna NV, Pillai MR, Manimegalai TK, Srinivasan M. Use of Traditional Eye Medicines by Corneal Ulcer Patients Presenting to a Hospital in South India. Indian Journal of Ophthalmology. 1999;47(1):15-18.

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