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SUNLIGHT EXPOSURE PRACTICE AND ASSOCIATED FACTORS AMONG INFANTS IN SOUTH ACHEFER DISTRICT, WEST GOJAM ZONE, NORTH WEST ETHIOPIA

SHIRSHU, KINDU

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BAHIR DAR UNIVERSITY
COLLEGE OF MEDICINE AND HEALTH SCIENCES
SCHOOL OF PUBLIC HEALTH

**SUNLIGHT EXPOSURE PRACTICE AND ASSOCIATED
FACTORS AMONG INFANTS IN SOUTH ACHEFER DISTRICT,
WEST GOJAM ZONE, NORTH WEST ETHIOPIA**

BY

SHIRSHU KINDU (BSC IN PUBLIC HEALTH.)

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COLLEGE OF MEDICINE AND HEALTH SCIENCES
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GOJAM ZONE, NORTH WEST ETHIOPIA

NAME OF PRINCIPAL INVESTIGATOR
SHIRSHU KINDU (BSC IN PUBLIC HEALTH)

ADDRESS TEL. 0918207479

E-MAIL shirshu2009@gmail.com

NAME OF ADVISORS

1. MR. MULUSEW ANDUALEM (MPH/ HI, ASSOCIATE PROFESSOR)

E.MAILADDRESS: muler.hi@gmail.com

2. MR. GETASEW TADESSE (MPH IN HEALTH ECONOMICS)

E.MAIL ADDRESS: tgetasew@gmail.com

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Abstract

Background: Sunlight has been used for therapeutic purposes such as treating neonatal jaundice, nappy rash and best known sources to vitamin D which is crucial to the development of bone. However, the status of sunlight exposure practice and hindering factors is not well known in Ethiopia, and its district.

Objective: to assess sunlight exposure practice and associated factors among infants in South Achefer district, North West Ethiopia.

Methods: A community based cross-sectional study was conducted between August 15//2018 October 6, 2018. A stratifying random sampling method was to select 391 mothers with infants from eight selected Kebeles. The study participants were selected by systematic random sampling method, based on the sampling frame taken from the health posts from the selected kebeles. The data were collected by using face to face interview using a structured questionnaire. Data were entered to the computer using EPI-INFO version 3.5.3 and exported to the SPSS version 23 software for cleaning and analysis. Descriptive statistics were computed to describe study objectives. Bivariate and multivariable logistic regression analyses were used to identify factors associated with sunlight exposure practice. Odd ratio with 95% CI and p- value < 0.05 was used.

Result- A total of 377 mothers with 96% response rate were involved in the study; the majority 84.4% mothers were living in rural and nearly three-fourth (72.2%) of mothers were below primary education level. Nearly two-third (64.6%) of mothers had poor sunlight exposure practice to their infants. In multivariable logistic regression analysis, mothers who had information on sunlight exposure AOR=19.755(10.027, 38.919), and mothers who were not fear of sunlight exposure AOR=11.869(6.002, 23.472) as a result of sunlight exposure practice showed a statistical significant association.

Conclusion and recommendation-Mothers poorly practiced the sunlight exposure to their infants for various reasons. Getting information and fear of sunlight exposure were statistically significant variables associated with sunlight exposure practice. Therefore, continuous health education and counseling of mothers about the importance and procedure of sunlight exposure to their infants is vital to improve the practice in the study area.

Key words: infants, mothers, sunlight therapy practice, associated factors, South Achefer District, Ethiopia.

Acronyms and abbreviations

BMD.....	Bone mineralization density
BSC.....	Bachelor of Science
CI.....	Confidence interval
HEW.....	Health extension worker
HH	House holds
IU.....	International unit
MOH.....	Ministry of health
NGO-----	Non-governmental organization
nm	nano meter
25(OH) D	25 dehydroxy vitamin D
RHB.....	Regional health bureau
SAD-----	South Achefer district
UVB	Ultra violet B
UVR.....	Ultra violet radiation
VDD-	Vitamin D deficiency
WHO-----	World health organization

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1 Introduction

1.1 Background

Vitamin D (VD) is a pro hormone that is synthesized in humans following skin exposure to ultraviolet B radiation in the range of 280–320 nm. In comparison to diet, sunlight provides more than 10% of the body's VD requirement in supplemented individuals(1, 2). The distance that sunlight travels to the earth's atmosphere is the least in regions nearest the equator. Thus, UVB rays are the most powerful and vitamin D synthesis is possible all year long in zones extending between latitudes 23.5°N and 23.5°S to the equator (the tropics) (3). Ancient Rome and Greece, sunlight has been used for therapeutic purposes (heliotherapy), for century(4). In the second half of the 19th century, therapeutic purpose was practiced that sunlight could have bactericidal causes as well as a therapeutic effect in rickets, jaundice (3, 5).

Vitamin D can be synthesized in skin epithelial cells and therefore strictly is not a vitamin. Cutaneous synthesis is normally the most important source of vitamin D and depends on the conversion of 7-dehydrocholesterol to vitamin D₃ (3-cholecalciferol) by ultraviolet B radiation from the sun. The efficiency of this process is decreased by melanin; hence, more sun exposure is necessary for vitamin D synthesis in people with increased skin pigmentation. Measures to decrease sun exposure, such as covering the skin with clothing or applying sunblock, also decrease vitamin D synthesis. Children who spend less time outside have reduced vitamin D synthesis. The winter sun away from the equator is unsuccessful at facilitating vitamin D synthesis (6).

Studies globally identify lack of sun exposure as the main cause of rickets (2). Rickets is a major public health problem in several countries of the world. In many rich technologically advanced countries, the prevalence of rickets in the overall population reduced after the introduction of dietary supplementation. Still, in such countries, vitamin-D deficiency rickets has recurred in current years, mainly among groups with imperfect exposure to UVB-containing sunlight. Infants at risk of rickets are whose mothers had lowly vitamin D status during pregnancy and those exclusively breast-fed for a prolonged period with slight skin exposure to UVB (7). Rickets is common in children in Sub-Saharan Africa. Vitamin D deficiency rickets has too common in Ethiopian children (3).

1.2. Statement of the problem

VDD is an important public health problem in both industrialized and unindustrialized countries [8]. WHO reported that 3.3 billion DALYS (disability annual life years) would result from low level of UVR exposure(4). VDD remains the most common cause of rickets Globally , even in the industrialized countries, because VD can be obtain from dietary sources or from cutaneous synthesis, most patients in industrialized countries have a combination of risk factors that lead to VDD (6).

The study was done in India prevalence of VDD all age groups were 70% among them nearest to 50% were infants(8).

The study was done in Pakistan the prevalence of VDD infants were 55% and factors influencing care giver behavior of exposing to sunlight(9). Correspondingly the study was conducted in Kenya 50% of infants has rickets among them 34.3% were chronically suffering from severe respiratory tract infection(10)

For Ethiopia in the review of rickets states that the prevalence of rickets was as great as 40%, making it one of the top in the world(11). The study conducted in Addis Ababa, a 41% of 0-36 month children who visiting clinic had rickets (12) and other study conducted in Jimma town 6-59 month have sign of rickets 25(4%). From these 11% of rickets happened in infants; it is also significant associated repeated attack rate of respiratory tract infection(13). The frequency of rickets is mainly high in children who live in crowded houses and are not exposed to sunlight(14). Rickets is common among children in Ethiopia and highly contribute to infant mortality and morbidity (15). Infants, who are on breast feeding but do not get supplemental VD or adequate sunlight exposure are increased risk of developing VDD or rickets, human milk typically contains a VD concentration of 25 IU/l or less(3, 6). Although sunlight exposure to infants is one of the key strategy included in the integrated management of neonatal and child illness (IMNCI) in the current Ethiopian health sector transformation plan/HSTP), few evidences showed as it is not practiced well.

From my observation, in South Achefer District (SAW), there is one hospital, 8 health center and 20 health posts , but the sunlight exposure practice to the infants is poorly practiced Although Ethiopia has thirteen months of sunshine, the existing prevalence of rickets is high. It is not even getting attention from healthcare providers and researchers, hence, there is scarce study about the mothers, practice and factors affecting the practice especially in this study area. So this

study was assess the level of sunlight exposure practice and associated factors among infants in the study area.

1.3. Significant of the study

The purpose of this study was intended primarily to assess mothers' practice and factors affecting their practice about sunlight exposure of their infants. Therefore, this is very important to identify areas for improvement regarding sunlight exposure and to improve the health of the infants/ children; With this regard, in our country Ethiopia not recent researches regarding sunlight exposure are scarce particularly in this study area So that the research study may provide baseline information.

The previous studies conducted in our country about sunlight exposure practice and VDD were in towns and urban health institutions of Ethiopia which might have better access of facilities (Addis Ababa, Jimma and Debremarkos). On the best of my knowledge, no studies were found to determine overall sunlight exposure practice and to identify the factors of sunlight exposure practice in the study area.

Therefore, this study is aimed at assessing the status sunlight exposure practice and associated factors among infants in South Achefer District. The study will be important to South Achefer district health office, West Gojjam zone health office, Regional health Bureau, NGOs, Health posts, health facilities to know the magnitude of the problem with its contributing factors so that evidence based interventions will be made to solve the problem. It will also serve as source of information for further study.

2. Literature review

2.1 The prevalence of VDD related to sunlight exposure

According to WHO Worldwide report, the VDD prevalence was 30- 80% in children. VDD is an important public health problem in both developed and undeveloped countries(16). VDD include musculoskeletal disorders, such as nonspecific muscle pain, poor muscle strength and low BMD, as well as no musculoskeletal disorders, such as an increased risk of respiratory infections, diabetes mellitus and possibly cardiovascular diseases. In undeveloped countries the prevalence of VDD varies widely within regions; the prevalence ranges between 30-90%, according to the cut-off value used within specific regions and it's independent of latitude (2). A high prevalence of the disorder exists in China and Mongolia, especially in children, of whom up to 50% are reported to have serum 25(OH) D3 levels <12.5 nmol/l(3).

According to several studies conducted, despite sufficient sunlight through the year, nearly 50% individuals living in Sub-Saharan Africa and the Middle East have serum 25(OH) D3 levels <25 nmol/l(17). VDD is also prevalent in children and living in Latin America. Risk factors for VDD in underdeveloped countries are similar to those reported in developed countries and include infants, female sex, winter season, dark skin pigmentation, malnutrition, lack of sun exposure, a covered clothing style and obesity(3).

The study conducted on children and women in South Asia region shows that serum 25-hydroxyvitamin D levels of <25 nmol/l have been reported in more than 50% of the infants, even if, UVB radiation levels that are sufficient for vitamin D synthesis for 11 to 12 months of the year(18).

According to study done in India about association of sub clinical of vitamin D deficiency with severe acute lower respiratory infection, children who exposed to sunlight as young infants had higher serum 25(OH) D3 than who were not exposed to sun light. Children who were sun-exposed in infancy without covered had higher serum 25(OH) D3 than those who were covered with cloth when taken outdoors(19).

In Sub-Saharan Africa, rickets is common in children, but it is mostly attributed to mixed calcium and vitamin D deficiencies rather than isolated vitamin D deficiency (14). Vitamin D deficiency rickets has also been described in Ethiopian children who could be resulted from protein-energy malnutrition

and lack of exposure to sunlight (3). Geographically, Ethiopia lies in a region with adequate sunlight throughout the year, but the prevalence of VDD is reported to be high(4). A study on rickets, knowledge, and practice of exposing a child to sunlight in Jimma town showed the presence of knowledge gaps and poor practice of mothers to sunlight exposure of their babies(13).

2.2 Sunlight exposure practice among infants

According to a study finding from Turkey, the prevalence of vitamin D deficiency was 57% in the infants aged 1 to 24 months(20). Similarly, a 82% prevalence was reported from a study conducted among children aged 1 to 24 months their mothers in in Canada Izmir which has an abundant of sunny days throughout the year(21).similarly, another study from Canada based on the time of sun exposure, about 63 % (n= 32) of the participants exposed themselves for four and more days per week to the sunlight. The average number of days per week participants exposed themselves to the sun was significantly different both genders. A 37% of the participants reported spending more than 30 minutes per day outdoors under the sun. The main period that 53% participants spent outdoors under the sun was from 10 am – 4 pm. Based on using sunscreen outdoors under the sun, 61 % of the participants almost never use sunscreen, while 20% reported that they used sunscreen almost all of the time (> 50 - 95%). In addition, 96 % of the participants reported that they have not used any indoor tanning equipment. There was a significant difference between women and men in their sunscreen usage respectively(9).

The study done in Saudi Arabia on the effect of physical activity and sun exposure on vitamin D status of Saudi children, the result showed that the associations of 25 (OH) D were determined in subjects according to 3 groups based on level of exposure to sunlight. These were no exposure (0 minute), daily exposure (10–30 minutes) and weekly exposure (40–160 minutes). Around 24% of the subjects had no exposure to sun light, 39.5% had once in a week exposure and 36.5% had daily exposure and serum vitamin D levels increased with increasing sun exposure. Age was negatively and significantly associated with 25 (OH) vitamin D levels(22).

The study done in Brisbane Australia, approximately one third of the population reported spending 2 or more hours outside on weekends in summer and 41% in winter. Fifty-nine percent of people used sunscreen frequently in summer compared with 21% in winter. People who believed that high levels of sun exposure are required to generate vitamin D were less likely to be frequent sunscreen users.

Compared with those identifying only the benefits to bone, participants identifying other benefits reported spending more than 2 hours in the sun and using less sunscreen(23).

According to study conducted in Kenya, in the title, risk factors associated with rickets in infants; mothers and care givers initiated sunlight exposure was first week, second week and after one month 27(25%), 152(40.3%) and 20(18.5%) respectively. Regarding to dressing style fully undressed 28(7.4%), partly undressed 227(60.2%) and fully dressed 122(32.4%). Regarding to duration of sunlight exposure, < 10 minutes 154(40.6%), 10-15 minute 125(33.1%) and 15 – 20 minute 99(26.3%)(24).

According to a study conducted in Jimma town revealed on the title of rickets, knowledge and practice of exposure to sunlight, a 576(92.16%) of mothers expose their children on sunlight daily, 47(7.52%) less frequently and 2(0.32%) of mothers never exposed. Regarding to condition of clothing during sunlight exposure 548(87.82%) exposed with unclothed/with diapers only and 76(12.18%) partly/Completely covered. Infant start sunlight exposure in this study was 259(42.04%) between 0-15 days, 160(25.97%), between 16-30 days, 142(23.05%) of children exposed between 31-45 days, 55(8.93%) of children exposed after 46 days and above. A 32% believed that a child should be taken outdoors after the one month of life(25).

A study was conducted in southern Ethiopia, revealed a 70 (41.1%) of the 170 mothers exposed their child to sunlight within one month of birth. Most of the children were exposed to sunlight for 20-30 minutes per day. From the total participant infants 84(49.4%) were exposed to sunlight for 7days in a week. About 153(90%) infants were exposed to sunlight without clothing (26).

A study done in Debremarkos town most of mothers 345 (89.4%) were expose their infants to the sunlight outside the house (outdoor);however, 23.4% of the mothers started exposure to sunlight between 0-15 days, and 38% of respondents exposed their infants duration of time was 10-15 minute. In this study 55.4% of the mothers had poor sunlight exposure(27).

2.3 Factors affecting sunlight exposure among infants

The study conducted in India based on the cultural practices and beliefs in care during jaundice revealed that the highest percentage (115) 73% of the mothers exposed the baby to sun light when the baby's skin turns yellow and the lowest percentage (10) 6% of the mothers dressed the baby with yellow clothes during jaundice(28).

The study according to Saudi Arabia on knowledge, attitude and practice regarding vitamin D deficiency among female students indicated that participants were limited in their knowledge about vitamin D and vitamin D deficiency. They reported limited sunlight exposure due to strong heat, cultural reasons for covering the body and due to lack of an infrastructure that makes sunlight exposure difficult(23).

A study conducted in the Turkey reveal 55.1% mothers exposing their infants before 10-11% a.m. and/or after 4 p. m. and 44.9% were reported to be exposed to sun longer than 15 minutes(10).

A study done in Kenya to assess the risk factors associated with rickets showed that exposing an infant to the sun early in life may influence skin vitamin D synthesis and prevent occurrence of rickets. The most common practice was to expose infants to the sunlight during the second week, 152(40.3%), of their life. Rickets infants who were exposed to the sunlight early in life were 27(25.0%). Only 29(7.7%) of the infants were said to have been exposed to the sunlight after one month and 20(18.5%) of rickets children were in this category(24).

Cultural avoidance of sunlight and traditional dress style in the Middle East resulted in the low level of vitamin D in human breast milk and led to high prevalence of vitamin D deficiency in exclusively breastfeeding Arab mothers and their infant in the United Arab Emirates(1, 29, 30).

In Ethiopia, research discovered that lack of awareness was a major cause in development of rickets. These children spent most of their time indoors and therefore compromised vitamin D absorption through the skin(31).

The study according to the topic of micronutrient Deficiency in Jimma University, 2005 indicated that keeping children indoors due to the fear of cold fear of evil eye and the traditional clothing styles are contributing factors of vitamin D deficiency in developing countries(25).

A study conducted by Tefera F. in Southern Ethiopia revealed, the 20 % of participant mothers were avoidance sunlight exposure practice in their area at the early age of the infant, the underlying reasons were fear evil eye, fear of cold, fear of sunburn(26).

A study conducted in Debremarkos town 345 (38.3%) of the mothers had fear of expose their infants to sunlight, from these (11.9%) of the mothers did not expose their infants due to fear of evil eye(27).

3 Conceptual Frame work

Sketch of conceptual framework

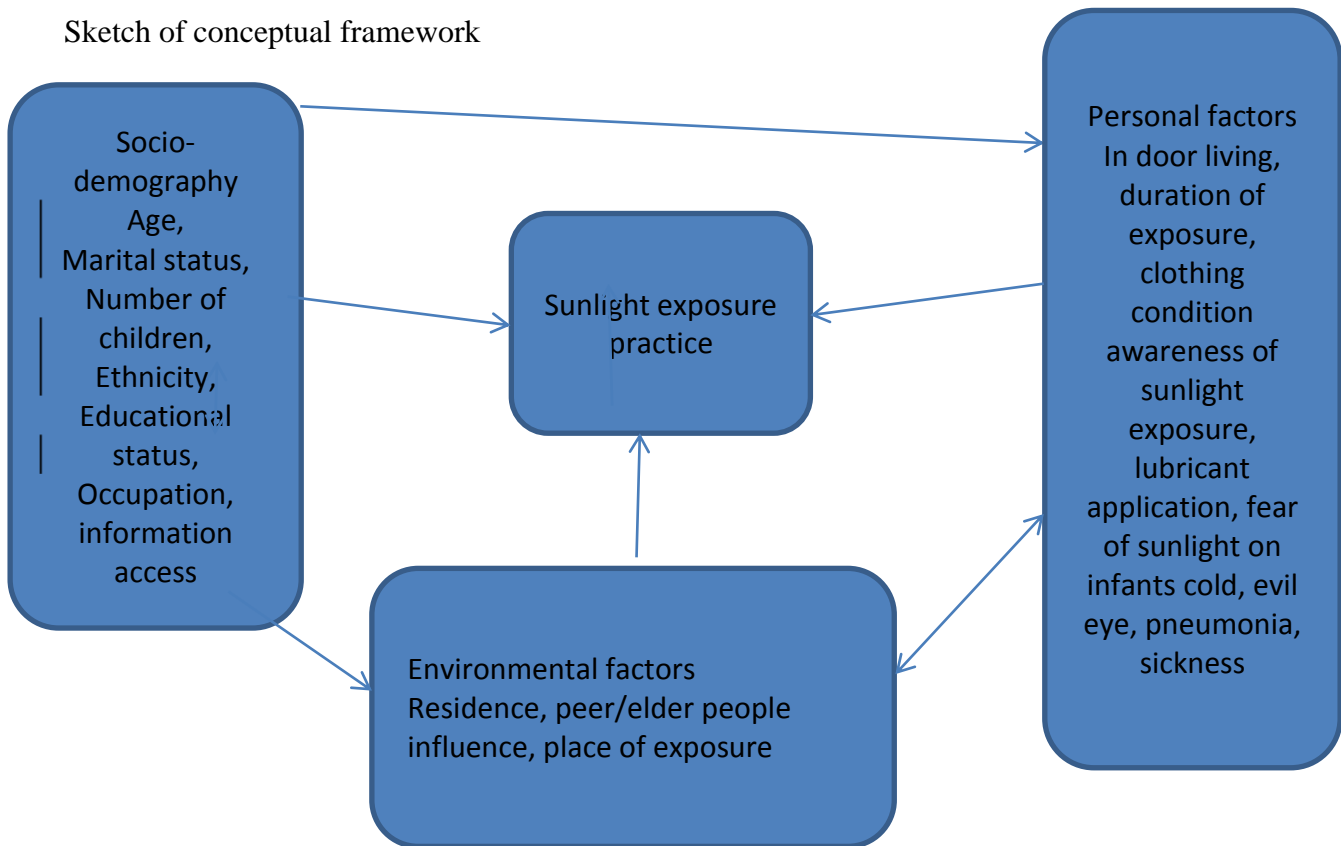


Figure 1:- A conceptual framework shows the interrelation ship and interdependence between predictors and outcome of sunlight exposure practices and associated factors among mothers of infants(1, 16, 20, 22, 27) in South Achefer District Northwest, Ethiopia, 2018.

4 Objectives

4.1 General Objective

- To assess sun light exposure practice and associated factors among infants in South Achefer district, Northwest Ethiopia

4.2 Specific objective

- To determine sun light exposure practice among mothers having infants in south Achefer district, north West Ethiopia.
- To identify factors affecting sun light exposure practice among mothers having infants South Achefer district, Northwest Ethiopia

5 Methods and materials

5.1 Study area and period

The study was conducted in South Achefer District from August 15-October 6, 2018. The district is found in West Gojam zone of Amhara regional state and is located 502km North West of Addis Ababa and 65km from Bahirdar. According to the 2017/18 South Achefer district health office budget year report, the district has a total population was 161,644 among them 21887 and 5036 were under 5 children and under 1(infants) respectively, the district is divided into 20 kebeles which has one hospital, eight health centers, twenty health posts.

5.2 Study design

A cross-sectional community based study was conducted in South Achefer district.

5.2.1 Source of population

All mothers having less than one year (infants) in South Achefer district.

5.3.2 Study population

- All mothers with infants in the selected kebeles in the study area.

5.3.3 Sampling unit

- Mothers having infant selection in the sampling process.

5.3.4 Study unit

- The mothers having infant was selected.

5.4 Inclusion and exclusion criteria

5.4.1 Inclusion criteria

- All mothers with infants who were selected and reside in the selected kebele during survey conducted in the study area.
- Mothers with infants who were agree to participate in the study.

5.4.2 Exclusion criteria

- Mothers with infants, who were seriously ill, excluded.
- Mothers who were give birth after the selection of samples were excluding.

5.5 Sample size determination

The sample size was determined using a single proportion formula by considering proportion of sunlight exposure practice among infants: 46%, from the study conducted in Debreworkos town(27) , 95% CI and 5% of marginal error. Sample size estimation using the following assumption like,

$$n = (Z_{\alpha/2})^2 (P) * (q) / d^2$$

Where, n = desired sample size

$Z_{\alpha/2}$ = (critical value) the standard normal deviate at the required confidence level $\alpha/2 = (1.96)$.

P = the proportion of mothers' practice on sunlight exposure (46%).

q = 1-p = (0.54)

d = the level of statistical significance set in this study (margin of error) (0.05)

Hence; $n = (1.96)^2 (.46) * (.54) / (.05)^2 = 382$

So the total number of infants in South Achefer district is 5036. So this figure is below 10,000, so, use an adjustment formula

$$n_f = n / (1 + n/N) = 355$$

Taking 10% (35.5) non response rate the final sample size was **391** mothers with their infants.

5.6 Sampling procedure

A stratified random probability sampling method was applied with the three strata among 20 existing kebeles in the district. As rule of thumb, > 20% (8) kebeles was selected from the three strata by proportionate allocation by the access of information, each stratum varies with health facilities, health care providers and infrastructure (road) mothers transported to the health facility who were get information, and then from each stratum, the kebele was selected by lottery method. All individual households who had mothers with history of live birth in the previous one year was identified using the newborn registration book (community health information system) at health post, this was sampling frame list. The number of households sample from the selected kebeles was determined using proportionate-to-mothers with their infant size. The household was selected by using systematic random sampling technique; the first HH was selected by lottery method then from the first sample was selected every 4 house interval. For households with more than one mother with infant in one household, only one person was selected using lottery method.

Proportionate allocation sample size to each stratum by the access of information about sunlight exposure practice.

$$n_j = n/N * N_j$$

n_j is sample size of j th stratum

N_j is population size of j th stratum

n is the total sample size

N is the total population size

Stratum A sample size = $391 * 1960 / 5036 = 152$

Stratus B sample size = $391 * 1790 / 5036 = 139$

Stratum C sample size = $391 * 1286 / 5036 = 100$

Schematic presentation of sampling procedure from study population in the study area

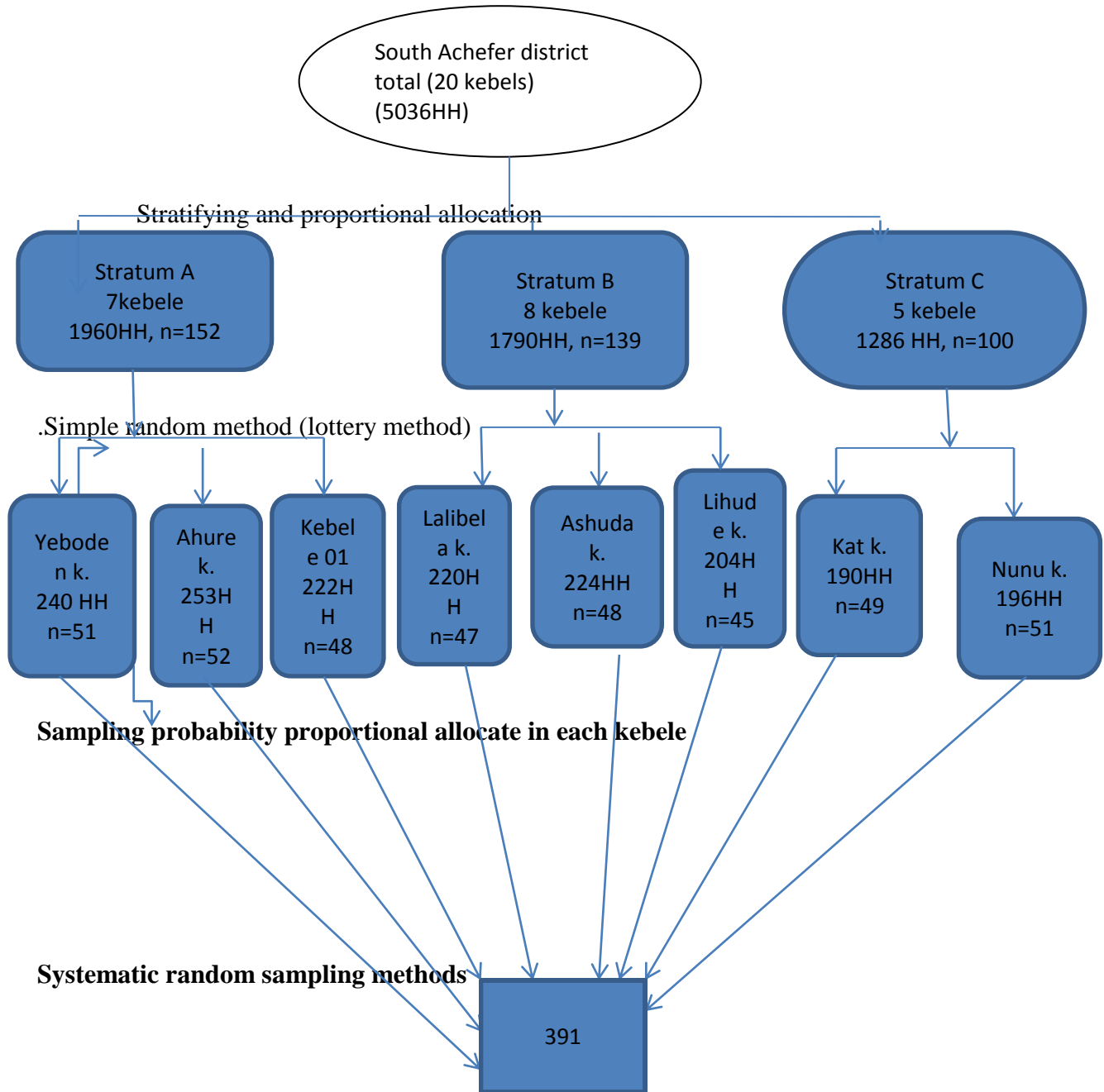


Figure: 2 Shows that sampling procedures of study participant's

HH= household

k= kebele

n= sample size

5.7 Data collecting tools and technique

After a thorough review of literatures, a structured questionnaire was developed to collect the data. The questions was interviewer administered structured questionnaire, and first prepared in English and translated to local language (Amharic), then back to English to check its consistency. The questionnaire was consisted of socio-demographic, personal, environmental, and related variables. The data was collected by six trained diploma holders (nurses and midwives) using face to face interview of mothers with infants. The tool was pretested at nearby community with similar culture to evaluate if it collects the data that we intend to collect, and corrections were made based on the pretesting feedbacks.

5.8 Data quality assurance

To increase the quality of data, translated and conducted pretest on 5% of the questionnaire, training to data collectors, conducting close supportive supervision, checking data consistency, completeness, coding, and cleaning of data using frequent sorting and listing to identify any missed value and editing were basic data quality assurance tasks.

5.9 Data processing and analysis

Data were checked, coded and entered to EPI-info and was exported to SPSS (Statistical Package for Social science) version 23 for further editing and analysis. Data were entered by the principal investigator. Binary and multivariable logistic regression analyses were done to identify factors associated with sunlight exposure. Various descriptive statistics were computed to describe the study objectives and be presented using tables, graphs, and charts when necessary. Significance was determined at Odds ratio with 95% CI and p value < 0.05 to describe the strength of association between the study and outcome variable.

5.10 Study variables

5.10.1 Dependent variable

Sunlight exposure practice

5.10.2 Independent variables

Socio-demographic factors (age, religion, ethnicity, marital status, educational status, number of children, occupation and information access) ; personal factors (sickness, evil eye, cold, pneumonia, in door living, awareness of sunlight exposure, clothing style), environmental factors (residence, peer/elderly people influence, access of health facility).

5.11 Operational definition

- **Sunlight exposure Practice** – Exposure of infants to sunlight daily for 15-20minutes in the morning (8am-10am) uncovered body, starting within two weeks of age after birth(32, 33).
- **Good practice-** Mothers who were responds to practice questions and scored above 4 the median value.
- **Poor practice-** Mothers who were responds to practice questions and scored 4 and below 4 median value.

6 Ethical considerations

Ethical clearance was obtained from the Ethical review Committee board of Bahir Dar University College of Medicine and health sciences. Supporting letters were taken from Amhara regional health bureau, west Gojam health administrative and South Achefer Distract health office. Informed consent was obtained from respondents before starting participation. Confidentiality was maintained by omitting their name and personal identification and participant was not been compelled to the study. Participation was fully voluntary based including the right to withdraw from the study at any stage.

7 Results

7.1 Socio-demographic characteristics of the study population.

A total of 391 of 377 (96.4%) mothers were participating in the study. The mean age of the study participants were 27.5 ± 5.6 (SD) years for the mothers and 5 ± 3.4 (SD) months for infants. Most of the study participants 369 (97.9%) were Orthodox followers and almost all, 376 (99%), were Amara in ethnicity. The majority of mothers, 368 (97.6%), were married and 147 (39%) were unable to read and write. Three-fourth, 288 (76.4%) mothers were housewife and over half, 125(33.2%) of mothers were under informal and primary education category. The majority, 318(84.4%) of the respondents were from the rural residence (**Table 1**).

Table 1: socio-demographic characteristics of mothers in South Achefer District, 2018 (n=377)

Variables	Categorical variables	Frequency	Percent
Mother's age in years	≤ 30	256	69.9%
	> 30	121	32.1%
Infants age in month	≤ 6	175	46.4%
	7-12	202	53.6%
Religion	Orthodox	369	97.9%
	Muslim	8	2.1%
Ethnicity	Amara	376	99%
	Oromo	1	.3%

Marital status	Single	9	2.4%
	Married	368	97.6%
Mother's educational status	Unable to read and write	147	39
	Informal and Primary education	125	33.2
	Secondary education and Diploma +	105	27.9
Occupation of mothers	Housewife	288	76.4%
	employed	74	19.6%
	Merchant	15	4%
Family size	<4	214	56.8%
	>=4	163	43.2%
Husband's educational status	Unable to read and write	100	26.5%
	Informal and primary education	169	44.8%
	Secondary education, diploma above	108	28.6%
Place of residence	Rural	318	84.4%
	Urban	59	15.6%

7.2 Source of information mothers exposed their infants to sunlight

Among the 377 Mothers, 250(66.3%) had information about sunlight exposure their infants from various sources. About 121(32.1%) mothers got information from midwife/ nurses/ pho, 73(19.4%) got information from neighbor/ elder people and 44(11.7%) got from HEW. (Figure 3).

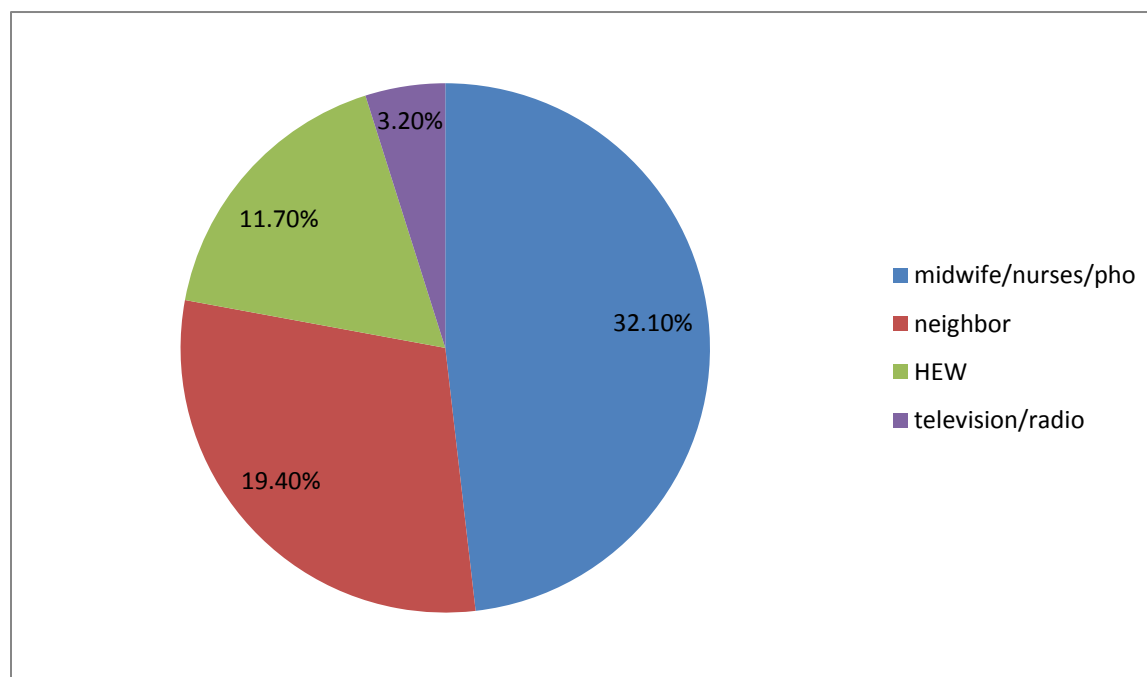


Figure 3: Sources of information to Mothers about sunlight exposure for infants in South Achefer district, West Gojam zone, 2018.

7.3 sunlight exposure practice of mothers for their infants

Among 377 interviewed mothers, 266(70.6%) exposed their infants to sunlight. From these, 101 (38%) started to expose infants to sunlight with in15 days after delivery and 66 (24.8%) of mothers exposed infants to sunlight from 16-30 days. Even if, 266(70.6%) of mothers exposed infants to sunlight, only 145(54.5%) practiced daily. According to place of sunlight exposure, 240(90.2) of mothers exposed infants to sunlight outdoor. The majority, 261(98.1%) of mothers exposed infants to sunlight between the time range of 8:00-10:00 am. Concerning the condition of clothing while exposure, 119(44.7) of the mothers exposed their infants to sunlight uncovered and 67(25.2%) partially covered to sunlight. According to time duration, 81(30.5%) mothers exposed to sunlight from 5-10 minutes and 80(30%) of mothers exposed infants to sunlight from 15-20 minutes (Table 2). A regarding practice of lubricant application, majority 212(79.7%) of mothers applied lubricants on

infants' body during sunlight exposure. About 105(27.9%) of the mothers applied lubricants during sunlight exposure, 60(15.9%) mothers applied lubricants before sunlight exposed and 45(12.5%) of mothers applied lubricants after expose to sunlight, from 212(79.7%) of the mothers, mostly 173(81.6%) of the mothers applied butter during sunlight exposure practice (Table 3).

Table 2: Sunlight exposure practices and factors affecting among mothers to their infants in South Achefer district, 2018.

Variables	Categories	Frequencies	Percent
Do you expose your infant to sunlight	Yes	266	70.6
	No	111	29.4
Age at which infants exposed to sunlight	within15 days	101	38
	16-30 days	66	24.8
	31-45 days	52	19.7
Frequency of sunlight exposure	Above 45 days	47	17.7
	Daily	145	54.5
	sometimes	121	45.5
Place where mothers exposed infants to sunlight	Outdoor	240	90.2
	indoor	26	9.8
Time of sunlight exposure	Morning from 2:00- 4:00AM	261	98.1
	Midday from5:00AM- 8:00PM	5	1.9
Clothing condition of infants during sunlight exposure	Uncovered	119	44.7
	Only covered eyes and diaper	16	6
	Partially covered	67	25.2
	Completely covered	64	24.1
Duration of sunlight exposure per day	5-10 minutes	81	30.5
	10-15minutes	36	13.5

		15-20 minutes	80	30
		>20 minutes	69	25.9
Do you apply lubricant during sunlight exposure	Yes		212	79.7
	No		54	20.3
Application of lubricant on infants body	Before expose		60	15.9
	During expose		105	27.9
	After expose		47	12.5
Things application during expose	Baby Vaseline		15	7.1
	Baby lotion		23	10.8
	Butter		173	81.6
	Other*		1	0.5
Do you fear your infant expose to sunlight	Yes		145	38.5
	No		232	61.5
Perceived reasons why mothers did not practice sunlight exposure	Fear of sickness		34	9
	Fear of evil eye		13	6.1
	Fear of cold		33	8.8
	Fear of pneumonia		65	17

*Add plant leave while sunlight exposure prescribed by traditional healer

7.4 Perceived reasons why mothers did not practice sunlight exposure.

Among the total 377 respondents, 145(38.5%) of mothers in the study area had fear to expose infants on the sunlight. The most fear of mothers, 65(17%) fear of pneumonia, 33(8.8%) of mothers had fear cold and almost similarly to cold, 34(9%) of mothers had fear of sickness to expose sunlight in the district (**table 2**).

7.5 Mothers' poor practice exposure status their infants body to sunlight.

According to the sunlight exposure practice from practice questions median value was calculated and it was 4, out of 377 mothers 244(64.6%) scored less than or equal to 4, so based on the operational definition 64.6% of the mothers had poor practice sunlight exposure for infants' body (see annex).

7.6 Association factors of mothers' sunlight exposure practice to their infants; 2018

According to sunlight exposure practice, there was a statistically significant association between maternal education status and sunlight exposure practice, on bivariate logistic regression analysis informal and primary education; secondary school and above mothers were 2.849 and 5.595 times more likely sunlight exposure practice compared with mothers were unable to read and write respectively, COR=2.849(1.682, 4.826) and 5.595(2,923, 10.711). According to mothers occupation not all associated but, governmental employee mothers were 3.611 times more likely sunlight exposure practice compared with mothers were housewives, COR=3.611(1.725, 7.56). According to mothers' husbands educational status, in bivariate association, informal and primary education, secondary and above diploma husbands were 2.444 and 4.154 times more likely sunlight exposure practice with compared husbands who were unable to read and write respectively, COR= 2.444(1.453, 4.111) and 4.154(2.208,7.816). With regard to place of residence, urban mothers were 4.354 times more likely sunlight exposure practice compared with mothers who were live in rural COR: 4.354(1.813, 10.456). According to get of information, mothers who had get information 24.273 times more likely sunlight exposure practice with compared mothers were not get information COR= 24.273(13.598, 43.326).

With regard mothers fear of sunlight exposure, in bivariate logistic regression analysis, mothers who had no fear of sunlight exposure 15.17 times more likely sunlight exposure practice their infants compared with mothers were counter parts, COR= 15.17(8.735, 26.346) (Table 3).

All variables were seen in the bivariate logistic regression analysis taken in to multivariable logistic regression analysis and statistical significant association / p-value < 0.05.) Mothers who got information on sunlight exposure were 19.755 times more likely to practice sunlight exposure on their infants compared to mothers who did not have information, AOR= 19.755(10.027,38.919).

Mothers who have no fear of sunlight exposure their infants were 11.869 times more likely to practice sunlight exposure to their infants compared to their counter parts AOR=11.869(6.002, 23.472), (table 3).

Table 3: Association of independent variables with mothers' sunlight exposure practice on infants in South Achefre District, Ethiopia, 2018

Variable	Categories	Sunlight exposure practice			#COR 95%CI	AOR 95%CI**	p-value
		Yes	No				
Age of mothers in years	<=30	179	77	1		1	0.671
	>30	87	34	0.908(0.563,1.465)		1.157(0.513,2.613)	
Infants age in month	<7	121	54	1			0.218
	7-12	145	57	1.135(0.729,1.769)		1.511(0.783,2.916)	
Marital status	Single	5	4	1			0.528
	Married	261	107	0.526 (.135, 1.945)		2.01(0.23,17.58)	
Mothers' education status	Unable to read and write	79	68	1		1	0.43
	Informal & primary education Secondary school	96	29	2.849(1.682,4.826)		0.693(0.279,1.721)	

	and diploma+	91	14	5.595(2.923,10.711)	0.693(0.210,2.286)	0.693
Mothers occupation	Housewife	192	96	1	1	
	Employed	65	9	3.611(1.725,7.56)	1.062(0.333, 3.393)	0.919
	Merchant	9	6	0.75(0.259, 2.168)	1.504(0.165, 13.673)	0.717
Family size	<4	159	55	1	1	
	>=4	107	56	0.661(0.423,1.032)	0.825 (0.375,1.812)	0.693
Husbands' education status	Unable to read and write	53	47	(1)	1	
	Informal& primary education	124	45	2.444(1.453,4.111)	1.255(0.558,2.822)	0.582
	Secondary education& diploma+	89	19	4.154(2.208,7.816)	1.456(0.364,5.829)	0.596
Place of residence	Rural	213	105	1	1	
	Urban	53	6	4.354 (1.813, 10.456)	2.66(0.735, 9.695)	0.136
Got information on sunlight exposure	Yes	228	22	24.273(13.598,43.33)	19.755(10.027,38.919	< 0.001*
	No	38	89	1)	

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No 210 22 15.17 (8.735, 26.346) 11.869(6.002,23.472) < 0.001*

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*Significant p –value < 0.05

**Adjusted odd ratio 95% confidence interval

Crude odd ratio 95% confidence interval

8 Discussions

This study tried to assess the sunlight exposure practice and factors affecting among mothers to their infants. According to this study, significant number, 266(70.6%) mothers had practiced sunlight exposure to their infants. This finding is lower than findings from similar study conducted in Dedre markos town, where sunlight exposure practice was 93%(27). This difference might be due to variations in residence of study participants where our study is community based, differences in information access and health facility availability. All these conditions will directly or indirectly affect the mothers' awareness and sunlight exposure practice. The current findings is also lower than findings from similar study conducted at Dale district in the southern Ethiopia in which sunlight exposure was practiced 100%(26). This variation could result from differences in creating awareness with attention which is poorly practiced in our study area, and cultural differences.

Our finding is lower compared to the study findings from Kenya where the prevalence of sunlight exposure practice was 84.4%(24). The observation difference might be due to culture, awareness, government attention, education level and socio-demographic variations between Kenya and Ethiopia.

Regarding to this study, 20% of mothers' had get of information to practice sunlight exposure their infants were neighbor/elder people. This finding is lower than finding from similar study conducted in D/markos town, where get of information from neighbor/elderly people about sunlight exposure practice was 63% (27). The difference might be due to variations in residence of study participants where our study is community based, the differences in get of information from neighbor/ elderly people, access of media, level of education and health care services availability, these condition will affected mothers get of information about sunlight exposure practice for their infants from neighbor/ elderly people. Our finding is lower compared to the study findings from Turkey, where got of information of sunlight exposure practice was 31%(10). The observation difference might be due to awareness, governmental policy, attention and educational level variation between Turkey and Ethiopia. Most of the mothers told that they exposed their infants to sunlight out door rather than indoor (table 2) health care providers (31%) and neighbor or elderly people were found to be the major information source for this sunlight exposure practice.

According to this study, 38% of the mothers were started sunlight exposure their infants with in two weeks after delivered which was higher than similar study was conducted in Debremarkos town which was 23.4%(27). The observation difference might be due to access of media and better

educational status might be fear skin cancer early initiation exposure neonates to sunlight , but the current study is similar the same study was done in Jimma town(13). In this study , 54.5% of mothers were expose their infants to sunlight daily and the rest mothers was expose infants sometimes. This finding is similar the same study was done in Deberemarkos town (27). This finding is lower compared to the study findings from Jimma town were daily sunlight exposure practice was 92.16%(13) the different might be due to variations in residence of study participants where our study is community based, the difference in information, health care services access and socio-demography difference, these conditions indirectly or directly affect the mothers daily sunlight exposure practice for their infants. Majority 90.2% of mothers who have sunlight exposure practice their infants were out door which is almost similar the same study conducted in Dale district was 92.9%(26). According to Ethiopian ministry of health recommendation duration of time infants expose to sunlight is 15-20 minute, even though, my finding was only 30% of respondents expose their infants to sunlight between 15-20 minutes (32, 33). The observation is difference due to less attention of health administrations and health care providers to give health education according to standard. The current finding is more compared to the study findings from Kenya between 15-20 minutes sunlight exposure practice was 26.3%(24). This different might be due to culture, socio- demography and governmental attention difference of two countries, Ethiopia and Kenya.

Regarding to clothing while exposure to sunlight, 119(44.7%) of mothers who have sunlight exposure practice for their infants were uncovered. This finding is lower compared the study findings from Dale Woreda's mothers were uncovered sunlight exposure practice was 90%(26). This variation could result from differences awareness with attention which is poorly practiced in our study area and culture differences. But, this finding is more than the study was done in Kenya 28(7.4%)(24).The difference may be also culture and socio-demography difference of respondents.

Regarding to lubricant application, 79.7% of mothers were apply lubricant on the infants body during the time of sunlight exposure practice and 15.9% and 27.9% of mothers were apply lubricant on infants body before and during exposure to sunlight respectively, lubricant application may be absorbing UVB radiation preventing it from getting in to skin cells. This also indicates that 56% of total mothers were applying traditional practice.

According to practice questions, median value was calculated and the median value was 4, and significant number, 243(64.6%) mothers had poor practiced sunlight exposure to their infants. and the mothers who were scored above the median value classified as good practice which was 36.4%. Our finding is lower compared to the study findings from Debremarkos town mothers were good practice

of sunlight exposure practice was 46.4%(27). This different might be due to variations in residence of study participants where our study is community based, the difference in good practice of sunlight exposure for their infants access of health care services, media and socio-demographic variation, this conditions will affect the mothers good practice of sunlight exposure for their infants.

Mothers who got information 19.286 times more likely sunlight exposure practice than mothers who were not got of information AOR=19.755 (10.027, 38.919). This is the fact that, mothers get of information have better knowledge about sunlight exposure practice what the mothers have heard about sunlight exposure it indicates that mothers get of information plays significant role in meeting appropriate exposure infants body to sunlight.

Mothers who were not fear exposure their infants body to sunlight 11.869 times more likely sunlight exposure practice than mothers who were counter parts AOR =11.869 (6.002,23.472) which is meet the same study done in Debremarkos town(27). The mothers who were not fear for various reason like sick, evil eye, cold air and pneumonia the fact that significant role to practice the mothers have expose infants body on sunlight.

9 Limitation of the study

- The study was conducted in rainy season; it was take time for data collection and affects the study results.
- The study was cross-sectional study which is affected by the all drawback of cross-sectional study design.
- It is better if the study was supported by qualitative method.

10 Conclusion and recommendation

10.1 conclusions

Based on the findings of this study, the following conclusions are made:

According to this finding, nearly three-fourth mothers practiced sunlight exposure with various frequencies and durations of time. Significant number of mothers got information about sunlight exposure practice from various sources such as health extension workers and other health workers.

In this study, about two- third of the mothers had poor sunlight exposure practice for their Infants. Majority of the mothers applied lubricants while practicing the sunlight exposure to their Infants. Common perceived fears of mothers that affect their sunlight exposure practice to their infants in the study area were pneumonia, sickness, cold air and evil eyes after exposing their infants to the sunlight. Having information on sunlight exposure, fear of sickness, cold air, pneumonia, and evil eyes were statistically significant variables with the sunlight exposure practice.

10.2 Recommendations

- MOH and RHB need to have national and local media to raise awareness of mothers on the benefit as well as risk of sunlight exposure.
- The Amara regional health bureau, west Gojam zone health department, and Achefer health office together with the supporting stakeholders need to have continuous interventions on awareness creation and counseling among mothers about the benefit and appropriate procedures of sun light exposure to the infants in the study area.
- Facility health workers and health extension workers should conduct regular health education on the importance and procedures of sunlight exposure among infants to the community using facility and community-based strategies to enhance community awareness.
- The researchers need conduct further researches in a broader area using both the qualitative and quantitative methods to dig out the critical factors affecting the sunlight exposure practice among the community.

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12. Annex-

Annex 1: Participant information sheet

BahirDar University

A

Study prepared to collect data on practice and factors affecting of mothers exposed their infants to sunlight in the community of South achefer district.

Hello! My name is _____. I am conducting a survey on mothers' and practice factors affecting regarding sunlight exposure of their infants. The study conducted by Shirsh Kindu from Bahir-Dar University. This is beneficial to identify areas of improvement in the mothers practice and highlighting the need for corrective actions. By doing this we will provide sufficient information for policy makers, clinicians and researchers, as a result they could make informed decision. In order to attain this goal, you are kindly requested to provide your genuine response on the questions given below. I would like to confirm you that you have the right to with draw the interview at any time or skip any question that you do not wish to answer. Because taking part in this survey is not mandatory and your responses will be held in strict confidence. Your privacy will also be confidential and no one will know your answer. If you do not wish to participate, it will not affect the services you receive at the kebele now or in the future. I also request you to answer it candidly because your answers are like one important piece of brick in the whole research and determine the outcome of this study.

Thank you very much for your willingness to listen to me. In case if you have any question you can ask.

Shirshu Kindu, Phone: 0918207479

Are you willing to participate?

If the answer is:

YES _____ please continue

NO _____ Thanks her and end

Annex II: Consent form

Hello! My name is. -----

I temporarily represent a member of this study. The objective of this study to assess practice and factors affecting of mothers regarding sun light exposure of their infants in south Achefer district selected kebele. As the study is directly related to women and you are one of the women who have been selected randomly to participate in this study. Therefore, you are kindly requested to participate in this study and provide the essential information required from you. I would like to ask you a few questions, but you can refuse to answer any question I ask. You may end the interview at any time. You can also refuse to participate in the study completely. Your refusal will not restrict you from obtaining the required medical care when you need. The interview will last approximately 30 minutes. Your responses will be kept confidential and there will be no way of linking your individual responses to the final results of the study findings. I would like to inform you that the responses that you provide to the questions are very essential for the successful accomplishment of the study objectives. Are you voluntary to respond to the questions?

Yes; ----proceed with the interview

No; ---- thanks her and end.

The respondent signature

The interviewer name Signature

Annex-III

Questionnaire prepare to assess mothers practice and factors affecting on sunlight exposure of their infants among in South Achefer district


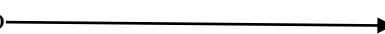
Part I- Socio-demographic information

Instruction: Please, carefully read the following questions and write their age and circle the number which best describes response of the respondents.

No	Questions	Coding categories	Skip s
101	Mother's age	—— Years	
102	Infant's age	/ month/	
103	Religion	1. Orthodox 2. Muslim 3. protestant 4. Others	
104	Ethnicity	1. Amhara 2. Oromo 3. Tigray 4. Others	
105	Marital status	1. Single 2. Married	
106	Mother's educational status	1. Unable to read and write 2. Informal and primary education	

		3.Secondary education and diploma+	
107	Occupation	1. House wife 2. employee 3. Merchant	
108	Family size	1.<4 2.>= 4	
109	Husband's educational status	1. Unable to read and Write 2.Informal and primary education 3.Secondary education and diploma+	
110	Place of residence	1.rural 2.urban	
111	Do you have information infant expose to sunlight?	1.Yes 2.No	
112	If your answer "yes" Who are/is source of information	1.HEW 2.Midwife/nurse/Health officer 3. Television/Radio 4. Neighbors /elder people 5. Other specify	

Part II- Practice of mothers on sunlight exposure of their infants

201	Do you expose your baby on sunlight?	1. Yes 2. No 	301
202	Age infant start sunlight exposure	1. with in 15 days 2. 16-30 days 3. 31-45 days 4. 45 days and above	
203	How frequently do you expose?	1. Daily 2. Sometimes	
204	Where do you expose your baby on Sunlight	1. Outdoor 2. Indoor	
205	At what time of the day do you expose your baby outdoors?	1. Morning 8-10 AM 2. Mid-day 11AM-1 PM 3. Afternoon 2-4 PM	
206	Condition of clothing during Exposure	1. Unclothed 2. With diapers and eye protection only 3. Partly covered 4. Completely covered	
207	For how much minutes you expose your baby on sunlight?	1. 5-10 minute 2. 10-15 minute 3. 15-20 minute 4. Above 20 minute	
208	Do you apply lubricants on your baby's body during sunlight exposure?	1. Yes 2. No 	301
209	If you apply, when do you apply?	1. Before exposure 2. During exposure 3. After exposure	

210	What things do you apply?	1. Baby Vaseline 2. Baby lotion 3. butter 4. other	
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Part IV- Factors affecting practice of mothers on sunlight exposure of their infants

No	Questions	Categories code	Skips
301	Do you have fear to expose your baby on sunlight?	1. Yes 2. No	
302	What mother's fear on sunlight exposure?	1. Sickness 2. Evil eye 3. Cold 4. Pneumonia 5. Other specify	

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እናቶች ልጆቻቸውን የፀሐይ ብርሀን ስለማሞቅ ትግበራና እንዳይተገብሩ የሚያደርጉ ነገሮች እንዴት ነዉ

የጥናቱ አላማ

የጥናቱ አላማ እናቶች ስለፀይ ብርሀን ያላቸው ትግበራና እንዳይተገብሩ የሚያደርጉ ነገሮች በመለየት በጠቀሱት ችግሮች ላይ መፍትሔ ለማግኘት ተነግሮኛል። በዚህ ጥናት ላይም በተራ የእንደሳተፍ ተጠይቆ ያለሁ።

በጥናቱ ላይ መሳተፍ በፍቃደኝነት ላይ የተመረከዘ መሐኑና የምስጢር መረጃም ለጥናቱ አላማ ብቻ እንደያነ ተነግሮኛል ። በጥናቱ ላይ መሳተፍ ፈቃደኛ አለመሆን ወይም መሳተፍ ጀምሮ ማቋረጥ ብፈልግ ማቆም እንደምችል እንዲሁም ደግሞ መመለስ የማልፈልገውን ጥያቄች አለመመለስ (ወይም) መተው እንደምችል ተነግሮኛል። ሆኖም ግን በጥናቱ ላይ ባልመሳተፈ እኔም ሆነ ቤተሰቦቼ ምንም አይነት ተፅዕኖ ያይም ጉዳት እንደሌለው ተረድቻለሁ።

በተጨማሪም የምስጢር መልሶች ለማንም እንደማይሰጡ ና በሚስጥር እንደሚጠበቁ እንዲሁም ብዙሕ ትናት ሪፖርትም ዉስጥ የሰጡት የኔ ለመሆኑ ማንም ሊያወቀው እንደማይችል ተገንዝቢያለሁ። በዚህ ጥናት በመሳተፍ የምስጢር መረጃ ግን የጥናቱን አላማ ለማሳካት ከፍተኛ ጠቀሜታ እንዳለው ተገንዝቤለሁ።

ይህን ጥናት በተመለከተ ጥያቄ ከለዎት በ0918207479 ደዉለዉ ይጠቁ

አመሰግናለሁ

ባሕርዳር ዩኒቨርሲቲ ሕክምናና ጤና ሳይንስ ኮሌጅ

በምእራብ ንጃም ዞን በደቡብ አቸፈር ወረዳ እናቶች ልጆቻቸውን የፀሐይ ብርሀን ማሞቅ ትግበራና፤ እንዳይተገብሩ የሚያደርጋቸው ነገሮች በተመለከተ የሚደረግ በሕብረተሠብ ጤና ሳይንስ የሌላተኛ ድግሪ ማሙያ የስምምነት ማስገንዘቢያ ቅፅ፡-

ጤና ይስጥልኝ ስሜ _____

እኔ ዛሬ ይህን የጥያቄና መልስ ይገባ የመጠሁት እናቶች ልጆቻቸውን የፀሐይ ብርሀን ማሞቅ ትግበራና፤ እንዳይተገብሩ የሚያደርጋቸው ነገሮች መረጃ ለመሰብሰብ ነው።ይህንን ጥናት የሚያጠኑት ከባህርዳር ዩኒቨርሲቲ ሕክምናና ጤና ሳይንስ ኮሌጅ የሁለተኛ ድግሪ ተማሪ የሆኑት ሸርሹ ክንዱ ናቸው።

በጥናቱ እንዲሳተፉ በጣ ከተመረጡ ሴቶች አንዷ እርሶዎ ነወት፤ ስለዚህ ከዚህ ጥናት ላይ እንዲሳተፉና አስፈላጊዎን መረጃ እንድሰጡን በትህትና እንጠይቃለን። ይሁን እንጂ ማንኛውም ጥያቄ አለመመለስ ይችላሉ።እንዲሁም በማንኛውም ጊዜ ጥያቄዎን ማቋረጥና በጥናቱ አለመሳተፍ ይችላሉ። በጥናቱ ባለመሳተፊዎ ማግኘት የሚገበዎ አገልግሎት ከማግኘት አያግደዎትም። ጥያቄና መልሱ 15-20 ደቂቃ ይፈጃል።፤

ይህ በግለሰብ የሚሰጡት መልሶ በሚስጥር የሚጠበቅ ስለሆነ ከጥናቱ ውጤት ጋር በምንም የሚያያዝ አይደለም።

ላረጋግጥለዎት የምፈልገው ነገር ቢኖር ይህ የሚሰጡት መልስ በጣም አስፈላጊ የሚሆነው ጥናቱን ለማጥንት ብቻ ሳይሆን የፀሐይ ብራሃን ባለማግኘት ለተጎዱ ሕፃናት አስፈላጊ የሆነ እቅድ ለማውጣትና በተግባር ለማዋል የሚጠቅም አስተያየት ለማግኘትም ነው። ስለዚህ በጥናቱ ለመሳተፍ ፈቃደኛ ነዎት?

አዎ ከሆነ.....ቃለ መጠይቁን ይቀጥሉ
አይደለሁም ከሆነ.....አመስግነው ቃለ መጠይቁን ያቁሙ

በባህርዳር ዩኒቨርሲቲ ህክምናና ጤና ሳይንስ ኮሌጅ የህብረተሰብ ጤና ትምህርት ክፍል

በደቡብ አቸፈር ወረዳ በተመረጡ ቀበሌዎች እናቶች ከአንድ አመት በታች ያሉ ልጆቻቸውን የፀሐይ ብራሃን ስለማሞቅ ትግብራ እና እንዳይተገብሩ የሚያደርጉ ነገሮችን ለማዎቅ የተዘጋጀ መጠይቅ፡፡

ክፍል-አንድ ማህበራዊ መረጃ

ተ.ቁ	ጥያቄ	መልስ	ማለፍ
101	የእናት እድሜ በአመት	
102	የልጅ እድሜ በወር	
103	ሀይማኖት	1. ኦርቶዶክስ 2. እስላም 3. ፕሮቴስታንት 4. ካቶሊክ 5. ሌላ	
104	ብሄር	1. አማራ 2. ኦሮሞ 3. ትግሬ 4. ጉራጌ 5. ሌላ	
105	የጋብቻ ሁኔታ	1. ያላገባች 2. ያገባች	
106	የእናት የትምህርት ሁኔታ	1. ማንበብና መጻፍ የማትችል 2. መደበኛ ያልሆነ እና አንደኛ ደረጃ የተማሩ 3. ሁለተኛ ደረጃ እና ከዚያ በላይ የተማሩ	
107	ሥራ	1. የቤት አመቤት 2. የመንግስት ሠራተኛ 3. ነጋዴ	
108		1. ከ 4 አመት በታች	

	የቤተሠብ ብዛት	2. 4 አመት እና ከዝያ በላይ	
109	የባል የትምህርት ሁኔታ	1. ማንበብና መጻፍ የማትችል 2. መደበኛ ያልሆነ እና አንደኛ ደረጃ የተማሩ 3. ሁለተኛ ደረጃ እና ከዚያ በላይ የተማሩ	
110	የሚኖሩበት ቦታ	1. ገጠር 2. ከተማ	
111	ልጅዎን የጠሀይ ብራሃን ለማሞቅ መረጃ/ትምህርት አግተዉ ያዉቃሉ፤	1.አዎ 2.የለም	
112	መልሰዎ አዎ ከሆነ መረጃዉን ማን ሰጠዎት	1.ጤና ኤክስቴሽን 2.አዋላጅ ነርስ/ነርሰ/ጤና መኮንን 3.ቴሌቪዥን/ሬዲዮ 4.ከጎረቤት/ትላልቅ ሰዎች 5. ሌላ ይጠቀስ	

ክፍል ሁለት እናቶች ልጆቻቸውን ፀሐይ ብርሃን ሳያሞቁ የሚያደርጉት ትግበራን በተመለከተ መጠይቅ፡፡

ተ. ቁ.	ጥያቄ	መልስ	አለፈ
201	ልጅሽን የፀሐይ ብርሀን ታሞቂው አለሽ ?	1. አዎ 2. አላሞቀውም →	301
202	ፀሐይ ማሞቅ የጀመርሽው በሥንት ጊዜው/ዋላይ ነው?	1. ከተዎለደ በ15 ቀናት ዉስጥ 2. ከ16-30 ቀናት 3. ከ31-45 ቀናት 4. ከ45 ቀናት በኋላ	
203	አዎ ከሆነ, ልጅሽን የፀሐይ ብርሀን የምታሞቂው እንዴት ነው?	1. በየቀኑ 2. አልፎ አልፎ	
204	ልጅሽን የፀሀይ ብርሀን የምታሞቂው የት	1. ከቤት ውጭ በርሀይ	

	ነው?	2. ቤት ውስጥ ከመስኮት ጀርባ	
205	በቀን ውስጥ ልጅሽን የፀሐይ ብርሐን የምታሞቁው በየትኛው ሰዓት ነው?	1. ጥዋት ከ2:00-4:00 ሰዓት 2. ቀን ከ5:00-7:00 ሰዓት 3. ከሰዓት በኋላ ከ8:00-10:00 ሰዓት	
206	ልጅሽን የፀሐይ ብርሐን የምታሞቁው እንዴት ነው?	1. ልብስ ሳይለብስ 2. የሽንት ልብስና የዳይን መሸፈኛ ለብሶ 3. በከፊል ለብሶ 4. ሙሉ በሙሉ ለብሶ	
207	ልጅሽን የፀሐይ ብርሐን የምታሞቁው ለስንት ደቂቃ ነው?	1. ከ5-10 ደቂቃ 2. ከ10-15 ደቂቃ 3. ከ15-20 ደቂቃ 4. ከ20 ደቂቃ በላይ	
208	ፀሐይ በምታሞቁበት ጊዜ ልጅሽ ገላ ላይ የምትቀቢው ነገር አለ?	1. አዎ 2. አልቀባም →	301
209	በተራ ቁጥር 209 መልሰዎ አዎ ከሆነ, መቸ ነው የምትቀቢው?	1. ፀሐይ ከመሞቁ በፊት 2. ፀሐይ እየሞቀ 3. ፀሐይ ከሞቀ በኋላ	
210	ልጅሽ ገላ ላይ የምትቀቢው ምንድን ነው?	1. የህፃን ባዝሊን 2. የህፃን ቅባት 3. ቅቤ 4. ሌላ	

ክፍል ሦስት፡ እናቶች ልጆቻቸውን የፀሐይ ብርሃን እንዳያሞቁ የሚያደርጉ ተፅዕኖዎች መጠይቅ፡፡

ተ.ቁ.	ጥያቄ	መልስ	እለፍ
301	የፀሐይ ብርሀን ለማሞቅ ትፈሪያለሽ?	1. አዎ 2. አልፈራም	
302	አዎ ከሆነ, የምትፈረበት ምክንያት ምንድን ነው?	1. ያመዋል 2. ቡዳ ይበላዋል 3. ብርድ ይመታዋል 4. ምች ይመታዋል 5. ሌላ	

ይህ የመጠይቁ ማብቂያ ነዉ አመሰግናለሁ

የቃለ መጠይቁ መረጃ የተሰጠበት ቀን

ቃለ መጠይቅ የተደረገዉ ሰዉ ፊርማ

መረጃዉን የሰበሰበዉ ባለሞያ ሥም ፊርማ

የተቆጣጣሪዉ ባለሞያ ሥም ፍርማ

Table: Distribution of mothers by their practice level about sunlight exposure in south Achefer District, Ethiopia, 2018

Correct answer	Frequency	percent	Cumulative frequency	Median
0	111	29	29	4 –Value
2	6	1.6	30.6	
3	49	13	43.6	
4	78	21	64.6	
5	65	17	81.6	
6	47	12.4	94	
7	21	6	100	

Declaration

I, the under signed, declared that this is my original work, has never presented in this or any author or any other university, and that all the resources and materials used for the research, have been fully acknowledged

Investigator

Full name Shirshu Kindu

Signature _____ date _____

Approved by

Advisors

Full name _____

Signature _____ date _____

Full name _____

signature _____ date _____

Internal examiner

Full name _____

Signature _____ date _____