



Sociocultural Factors Affecting Sun-Seeking Behavior for Infants Living in Rural or Urban Communities in Southern Ethiopia



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ABSTRACT

Introduction: Most Ethiopians depend on sunlight for vitamin D synthesis due to limited dietary sources. This qualitative study investigated sociocultural factors affecting sun exposure for infants of women from three categories: initial pregnancies, mothers of infants <1 y, and grandmothers. **Methods:** Eighteen focus groups with ~10 participants each were held in three urban and three rural communities. In-depth interviews were conducted with local health extension workers (HEWs). **Results:** Reports from grandmothers indicated that awareness of benefits of sun exposure for infants has increased in the last generation. Practicing infant sun exposure is a generally accepted practice among all participants. Mothers wait to expose their infants to sunlight for 1-3 months in rural and ~15 days in urban areas. The prevalent feeling was that roughly 30 minutes of morning sunlight (7-9am), never afternoon sun, was best for infant health. Barriers mentioned for mothers were headaches, skin irritation, catching a cold from drafts, and general discomfort. Factors that limit infant exposure postpartum included fear of the evil eye and catching a cold from drafts. Only 2/82 rural and 26/88 urban women freely associated sunlight with vitamin D. HEWs provided health information for a self-reported 96% of rural and 88% of urban women. Most participants agreed that sun exposure was generally healthy for their infants with urban women citing more knowledge of its benefits for bone health than rural women. **Discussion:** It appears that, besides heavy sunlight, mothers have few aversions to sunlight itself. Rather, they fear illness caused by public exposure (evil eye) and temperature changes (drafts causing colds). Delays in initiating sun exposure and short exposure duration in the mornings only may prevent adequate vitamin D synthesis in this population. Variable understanding of the specific importance of sun exposure amongst rural women and of sources of vitamin D in both groups indicates disparities in knowledge transfer and application. Our data support additional training of both rural and urban HEWs regarding benefits of sun exposure for infants in order to increase this behavior, promote its earlier initiation, and increase its duration in both rural and urban populations.

INTRODUCTION AND RATIONALE

- Vitamin D is a cholesterol-based hormone synthesized in the skin with UVB exposure from sunlight (290-315 nm)
- Vitamin D regulates Ca and P absorption and interacts with PTH to regulate bone mineralization
- Vitamin D receptors (VDR) found in cells all over body, implying more varied roles in health
- Clinical deficiency results in rickets in children and osteomalacia in adults
- Subclinical deficiency may have health effects
- Darker skinned individuals require longer sun exposure to synthesize the same amount of vitamin D
- Deficiency and insufficiency is prevalent in Ethiopia
- Few studies examining reasons for this deficiency

OBJECTIVES

Primary Objectives

1. To assess sociocultural factors (dress, cultural practices, safety, daily responsibilities) that interfere with adequate sun exposure for mothers and their infants
2. To examine differences in sun seeking behavior between rural and urban women

Secondary Objectives

1. To assess knowledge of the role of sunlight in health
2. To examine changes in beliefs regarding sunlight exposure and subsequent practices in the last two generations of Ethiopia rural and urban women

METHODS

- 169 women (87 urban, 82 rural)
- Three categories: 1) women pregnant with their first child, 2) women with a 1-2 year old child, 3) grandmothers
- Three rural kebeles (Tula, Finchaowa, Alamura) and three urban kebeles (Hogane, Dume, Gabyadar)
- Sociodemographic information collected via questionnaire
- FGD's for each category discussed sun exposure practices
- Health extension workers (HEWs) interviewed regarding personal and kebele sun exposure practices



Pictures 1: Almost all women are completely covered, limiting vitamin D synthesis. Infants are also covered when outside at noon.

CONCLUSIONS

- Cultural practices, safety, dress, and education limit sun exposure behavior
- Secondary fears of illness interfere with earlier and longer sun exposure for infants
- Urban women are more educated regarding benefits of sun
- All women seem accepting of sun exposure itself
- Acceptance of sun exposure for infants has increased in the last generation
- HEWs and family/ neighbor support are biggest influence on sun exposure practice

RESULTS

Table 1: FGD Response Summary

Question	Themes	Urban		Rural	
		Themes	Quotes	Themes	Quotes
<i>While doing your daily activities outside, do you take precautions to avoid sunlight exposure? Why or why not?</i>	Headache, skin irritation, general discomfort Umbrellas Only for heavy sunlight		"I avoid heavy sunlight at noontime. It is dangerous, affects my skin, and is generally not good ." DC	Headache, general discomfort Natural shade Time of day not specified	"I am very careful not to expose myself to sunlight. If the sun gets me, I will sweat and have a headache." TP
<i>Did you stay in the dark after you gave birth? For how long? Why?</i>	45 days (1.5 months) Cultural tradition, recover mother's strength		"I am planning to stay at least two months inside the home [for] rest and recovery. But I am planning to get my baby out to the sunlight starting fifteen days after I give birth." DP	1-3 months Cultural tradition, fear of illness from "drafts"/ "air collisions" for both mother and infant, and evil eye	"...I am afraid that if sunlight gets me, I could have an air collision. Then if I breastfed my baby, he will get sick." A "I am afraid to... get my son outside because I believe he could catch a cold." AP "...want him to be strong and healthy..." FC
<i>Did you ever expose your infant to sunlight? Why and for how long?</i>	~15 days or 2 weeks Fear of evil eye, illness from drafts		"Morning sun has vitamins totally from the sun. Sunlight makes my baby strong ." HE		
<i>What is the best time during the day for an infant to be exposed to the sun? Why?</i>	7-9 am, ~30 min		"After 9:00am, the sunlight becomes too strong for infants ." DE "Exposing babies to the morning sunlight helps them to have a good body shape and...a straight leg...Babies who are not exposed to the morning sunlight will have bow-shaped legs. " DC	Morning, 30 min-1 hr	"I took him for one hour because morning sunlight is important for his strength." FC
<i>How do you dress your child when they will be outdoors? Why?</i>	Depends on weather conditions (windy, cold, etc.) and time of day (strong sunlight)		"I only dress my baby in clothes when I am in the compound; I do not use additional protection. When I go outside my compound, I use an umbrella." GP	Cover whole body with clothes, sling, umbrella Fear of the evil eye, illness	"When I take my son outside, I dress him well to prevent him from sunlight [because] he could get a draft." FP "I...cover his head, leg, and face because I am afraid of the evil eye." FP
<i>Have you been told/ taught anything about sun exposure for your baby? Who told/ taught you these things? How do you feel about the advice you received?</i>	HEWs/ clinic workers, family and neighbors, formal education		"I feel this advice is very helpful and important." DC "I feel happy and accepting towards this information; I am going to follow it." GP	HEWs encourage, family and neighbors may discourage	"I didn't take my first child for sunlight based on [my mother's] advice, but this [infant] gets sunlight because I am educated by professionals ." FC
<i>Do you recommend sun exposure for your grandchildren or other mothers in the community?</i>	Grandmothers cited a change towards acceptance and promotion of sun exposure behavior		"I am not only recommending but even showing [women] how to properly expose their infants to sunlight and [teaching them] the benefits." DE	Most grandmothers did not expose, but now advocate exposure	"...after understanding the importance of sunlight, I stopped advising others not to expose their babies to sunlight. I even expose my grandchildren to sunlight." AE

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