**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 (7-9 am), never afternoon sunlight, 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 sun exposure and short exposure duration in the mornings only may interfere with earlier initiation and increase its duration in both rural and urban populations.

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**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) are found in cells all over body, implying very varied roles in health.
- Clinical deficiency results in rickets in children and osteomalacia in adults.
- Subclinical deficiency may have health effects.
- Dark-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**

- **Participants:** 169 women (87 urban, 82 rural)
- **Focus Groups:** Three rural kebeles (Tula, Finchaowa, Alamura) and three urban kebeles (Hogane, Dume, Gabyadar)
- **Data Collection:** Sociodemographic information collected via questionnaire.
- **Analysis:** FGD’s for each category discussed sun exposure practices.

**RESULTS**

**Table 1: FGD Response Summary**

<table>
<thead>
<tr>
<th>Question</th>
<th>Urban</th>
<th>Rural</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>What is the best time during the day for an infant to be exposed to the sun?</strong></td>
<td>~7-9 am, ~30 min</td>
<td>After 9:00 am, the sunlight becomes too strong for infants.</td>
</tr>
<tr>
<td><strong>How do you dress your child when they will be outdoors?</strong></td>
<td>Depends on weather conditions (windy, cold, etc.) and time of day (strong sunlight)</td>
<td>I only dress my baby in clothes because I am educated by GP</td>
</tr>
<tr>
<td><strong>Have you been told/taught anything about sun exposure for your baby?</strong></td>
<td>HEWs/ clinic workers, family and neighbors, formal education</td>
<td>I feel this advice is very helpful and important.</td>
</tr>
<tr>
<td><strong>Do you recommend sun exposure for your grandchild or other mothers in the community?</strong></td>
<td>Grandmothers cited a change towards acceptance and promotion of sun exposure behavior</td>
<td>I am not only recommending but even showing [women] how to properly expose their infants to sunlight and [teaching them] the benefits.</td>
</tr>
<tr>
<td><strong>Conclusions:</strong></td>
<td></td>
<td>Most grandmothers did not expose, but now advocate exposure</td>
</tr>
</tbody>
</table>

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**CONCLUSIONS**

- Cultural practices, safety, dress, and education limit sun exposure behavior.
- Sociocultural fears of illness interfere with earlier and longer sun exposure.
- Urban women are more educated regarding benefits of sun exposure.
- 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.

**INTRODUCTION TO THE RESEARCH**

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