ECRONICON OPEN ACCESS

EC PAEDIATRICS
Short Communication

Throwback on Surveys of Household Iodized Salt Utilization in Benishangul-Gumuz Region, West Ethiopia: Outstanding Works of Ethiopian Demographic and Health Survey (EDHS)

Sahilu Assegid*

Associate Professor of Epidemiology, Jimma University, Ethiopia

***Corresponding Author**: Sahilu Assegid, Associate Professor of Epidemiology, Jimma University, Ethiopia.

Received: May 16, 2016; **Published:** July 21, 2016

Background

Between December 27/2010 and May 20/2012, two surveys on household iodized salt utilization were conducted in Benishangul-Gumuz Region, West Ethiopia: EDHS 2011 and Cross-sectional Survey of Goiter Prevalence among 6-12 and Household Salt Iodization Levels in Assosa Town, Beni-Shangul-Gumuz Region, West Ethiopia the following year.

Objective

To review the report of regional Household Iodized Salt Utilization conducted by EDHS 201, and the Cross-sectional Survey of Goiter Prevalence and Household Salt Iodization Levels in Assosa Town conducted the following year.

Chronology of significant events

The 2011 EDHS [1]

The training of interviewers, editors and supervisors was conducted from 24 November to 23 December 2010.
Pre-test: 20 September to 8 October 2010

127	ASK RESPONDENT FOR A TEASPOONFUL OF IODINE TEST SALT FOR IODINE.	Iodine Present----------1 No Iodine----------2 No Salt in household----------3 Salt not tested_____6 (Specify Reason)

- Data collection:27 December 2010 - 3 June 2011.
- The preliminary report: October 2011
- Final report: March 2012
- Number of households included in Benishangul-Gumuz Region:

Urban: 26314
Rural: 119446

Result

National

- Ninety-four percent of households had salt tested for iodine at the time of the interview.

- Of these households, 15 percent were using iodized salt.Urban households are more likely to use iodized salt (23 percent) than rural households (13 percent).
- Urban households are more likely to use iodized salt (23 percent) than rural households (13 percent). Households in the highest wealth quintile are twice as likely to use iodized salt as households in the lowest two wealth quintiles.

Regional

- At the regional level Benishangul-Gumuz and Addis Ababa have the highest proportions of households using iodized salt (40 percent and 30 percent, respectively), whereas the Dire Dawa and Harari regions have the lowest (6 percent).

1. The Proclamation [2]

"No person shall process, import, store, transport, distribute or sale non iodized salt for human consumption"
Salt Iodization Council of Ministers Regulation No. 204/2011, Done Addis Ababa March 20.

2. Research [3]

Cross-sectional Survey of Goiter Prevalence and Household Salt Iodization Levels in Assosa town, Benishangul-Gumuz Region, West Ethiopia.

Why was it conducted?

- Topic: is of national interest
- Purpose: academic- for partial fulfillment of MPH degree from Jimma University
- Problem: real, Benishangul-Gumuz Region is well known iodine deficient and goiter prevalent
- Study area: Assosa town, capital of Benishangul-Gumuz Regional government
- Target: Households in which at least one child aged 6-12 was living
- Opportunity: Rapid Iodine Test Kits provided by Regional Health Bureau
- Scale for salt iodine level: Nil, 1-15, > 15PPM
- Principal investigator: Regional Health Bureau staff member
- Sponsor: Benishangul-Gumuz Region
- Data collection: From May 10 - May 20/2012
- Number of households: 395

Result

- The overall prevalence of goiter was 104 (26.3%).
- The prevalence of households with adequately iodized salt, inadequately iodized salt, and non-iodized salt were 103 (26.1%), 219 (55.4%) and 73 (18.5.0%) respectively.
- During data analysis, 37 (35.9%) of households with non-iodized salt samples had also child having goiter, 50 (22.8%) of households with salt iodine < 15PPM also contained child having goiter, and 7 (9.6%) of households having ≥ 15 PPM salt iodine also had child having goiter.

EMDHS 2014 [4]

"The EMDHS provides updated information on key health indicators since 2011 when the third Ethiopia Demographic and Health (2011 EDHS) survey was conducted. The sample design, sample selection and survey methodology employed in the EMDHS is identical to that of the three previous EDHS surveys in order to ensure comparability [5]."

Facts

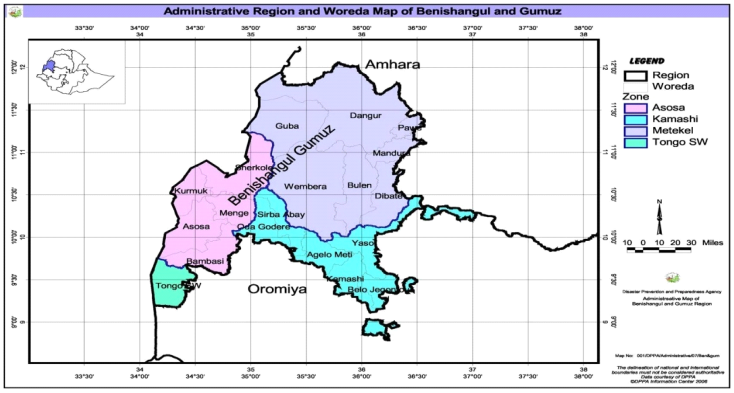
A cross-section community based study was conducted during February to May 2005 in 10998 women in child bearing age of 15 to 49 years. Goiter prevalence in four regional states namely Southern Nation Nationalities and People (SNNP), Oromia, Benishangul-Gumuz and Tigray was greater than 30%, an indication of severe iodine deficiency [6].

A study 2008 Dec; 5(3): 163-8. Showed: Cassava consumption and living in high altitude were found to be risk factors for IDD. In the two regions (SNNP and Benishangul-Gumuz) among three where cassava is cultivated, those who consume cassava frequently were significantly ($p < 0.001$) affected by goiter than those consuming rarely or not [7].

A study published in 2015, stated: "According to the Ethiopian Demographic and Health Survey (EDHS) report of 2011, only 15.4% of the Ethiopian population use iodized salt and the percentage is higher in urban areas (23.2%) than in rural areas (13.3%). At the regional level, Benishangul-Gumuz (40%) and Addis Ababa (30%) had the highestproportions of households using iodized salt and Dire Dawa and Harari regions had the lowest (6%) whereas, in Tigray region 22.3% of households were using iodized salt [15] however, as per WHO to eliminate IDD salt iodization needs to achieve 90% [8].

The severity of ID in the general population is clearly indicated by its appearance among school-age children. The national cross-sectional study from before iodization (2007) demonstrated a high prevalence of ID among 10,965 children aged 6-12 years as indicated by both low UIC and high TGR. Based on UIC values, nearly 46% of children had severe ID (2 µg/dL or less), 23% were moderately iodine deficient (2.01-5.00 µg/dL), 15% were mildly deficient (5.01-10.00 µg/dL) and only 17% were within the normal range (>100 µg/dL). Using the prevalence of goiter as an indicator, the survey recorded the highest TGR in the SNNPR region (56.2%), followed by Oromia (42.0%), Benishangul-Gumuz (40.5%), Amhara (29.1%), and Tigray (21.9%). These results showed severe ID with over 30% of TGR in three regional states, whereas two other regions had moderate ID with between 20.0 and 29.9%. The TGR in the rest of the regional states ranged from about 5 - 20 %, indicating mild ID. Harari had the lowest TGR (4.7%), and is considered the only normal region. Overall, Ethiopia had 39.9% TGR with rates of 27.7% for palpable and 12.2% for visible goiter, with about 4 million children affected by goiter throughout the country except for Gambela regional state [9].

Map of Benishangul-Gumuz Region



Key Findings

1. EDHS 2011

A. The issue of iodized salt survey was not raised in the following sections of EDHS 2011 report:

- OBJECTIVES OF THE 2011 EDHS SURVEY
- QUESTIONNAIRES
- LISTING, PRETEST, MAIN TRAINING, FIELDWORK, AND DATA PROCESSING
- ANTHROPOMETRY, ANAEMIA, AND HIV TESTING
- Yet, itcropped in CHAPTER 11 NUTRITION OF CHILDREN AND ADULTS in jarred and curious manner. Rapid test kit also emerged in the CHAPTER 11 NUTRITION OF CHILDREN AND ADULTS

B. In *sampling errors* part Issue of iodized salt not included

C. Result of salt iodine using Rapid test kit was presented as:

- With salt
- Without salt
- Not as Nil, 1-15PPM, and >15 PPM

D. In Report there was no explanation about the achievement of Benishangul-Gumuz Region:

- Ninety-four percent of households had salt tested for iodine at the time of the interview.
- Of these households, 15 percent were using iodized salt. Urban households are more likely to use iodized salt (23 percent) than rural households (13 percent).
- At the regional level Benishangul-Gumuz and Addis Ababa have the highest proportions of households using iodized salt (40 percent and 30 percent, respectively), whereas the Dire Dawa and Harari regions have the lowest (6 percent).
- Urban households are more likely to use iodized salt (23 percent) than rural households (13 percent). Households in the highest wealth quintile are twice as likely to use iodized salt as households in the lowest two wealth quintiles.
- No urban rural stratification

The proclamations: Data collection of DHS 2014 was conducted at around or even before the proclamation was done

- The proclamation:Addis Ababa this 251h day of March 2011.
- Data collection took place over a five-month period from 27 December 2010 to 3 June 2011.

2. Research [3]

- The overall prevalence of goiter was 104 (26.3%).
- The prevalence of HH with adequately iodized salt, 103 (26.1%), of whom 7 (6.8%) had goiter
- Inadequately iodized salt219 (55.4%), of whom 50 (22.8%) had goiter
- Non 73 (18.5%), of whom 37 (50.7%) had goiter

3. EMDHS 2014

- No mention about iodine or goiter

Conclusion

Research vs. report

The research finding specifically the prevalence of goiter (visible/palpable/) among 6-12 (children of reproductive age group in Assosa town, from where *iodized salt* arrives and then distributed to other areas at least partially) indicates the enduring and pervasiveness of the problem and is distasteful and demeaning to the EDHS report on the matter.

The notion that the proportion of households with *iodized salt* surpassed other reason, as reported in DHS 2011, was unexplained and is unsupported by the geophysical, locational, locational, and socioeconomic background of the Benishangul-Gumuz Region [10].

The DMHS 2014 which, first shrank and changed its name, insisted: "The sample design, sample selection and survey methodology employed in the EMDHS is identical to that of the three previous EDHS surveys in order to ensure comparability".

Never the less, the subject of *iodized salt* that cropped in the CHAPTER 11 NUTRITION OF CHILDREN AND ADULTS in DHS 2011 report vanished from DMHS 2014 with whimper.

Other researches continued making references to the EDHS

Recommendation

Equip each household with iodine test kit that correctly indicates level of iodine in salt thus changing their ability to perceive and measure it.

Bibliography

1. Ethiopia Demographic and Health Survey 2011. Central Statistical Agency Addis Ababa, Ethiopia ICF International, Calverton, Maryland, USA, March (2012).

2. COUNCIL OF MINISTERS REGULATION No. 204/2011, Council of Ministers Regulation to Provide for Salt Iodization: This Regulation is issued by the Council of Ministers pursuant to Article 5 of the Definition of Powers and Duties of the Executive Organs of the Federal Democratic Republic of Ethiopia Proclamation No. 6'9112010 and Article 9(4) of the Food, Medicine and Health Care Administration and Control Proclamation No. 66 112009.

3. Done at Addis I Ababa this 251th day of March 2011. Meles Zenawi, Prime Minister of the Federal Democratic Republic of Ethiopia.

4. Gebriel TW.,*et al.* "Cross-sectional Survey of Goiter Prevalence and Household Salt Iodization Levels in Assosa Town, Beni Shangul-Gumuz Region, West Ethiopia". *Pregnancy & Child Health journal* 1 (2014): 119.

5. Ethiopia Mini Demographic and Health Survey 2014 Central Statistical Agency Addis Ababa, Ethiopia August 2014

6. Abuye C and Berhane Y. "The goitre rate, its association with reproductive failure, and the knowledge of iodine deficiency disorders (IDD) among women in Ethiopia: Cross-section community based study".*BMC Public Health* 8 (2007): 316.

7. TameneFiteDuressa., *et al.* "Comparative Analysis of Iodine Concentration in Water, Soil, Cereals and Table Salt of Horaboka, Mio and Besaso Towns of Bale Robe, South East Ethiopia". *Journal of Environment Pollution and Human Health* 2.1 (2014): 27-33.

8. CherinetAbuye., e*t al.* "The role of changing diet and altitude on goitre prevalence in five regional states in Ethiopia". *East African Journal of Public Health* 5.3 (2008): 163-168.

9. Gidey B., *et al.* "Availability of Adequate Iodized Salt at Household Level and Associated Factors in Rural Communities in LaelayMaychew District, Northern Ethiopia: A Cross Sectional Study".*Journal of Nutrition and Health Sciences* 2.1 (2015): 103.

Volume 2 Issue 3 July 2016