Original Research Article

DOI: http://dx.doi.org/10.18203/2394-6040.ijcmph20173323

Global hunger index of India based on National family health survey-IV with special reference to some states and critical review

Ashish Wasudeo Khobragade*, K. Rajan

Department of Community Medicine, Jubilee Mission Medical College and Research Institute, Thrissur, Kerala, India

Received: 09 June 2017 Accepted: 04 July 2017

*Correspondence:

Dr. Ashish Wasudeo Khobragade, E-mail: aw k2008@rediffmail.com

Copyright: © the author(s), publisher and licensee Medip Academy. This is an open-access article distributed under the terms of the Creative Commons Attribution Non-Commercial License, which permits unrestricted non-commercial use, distribution, and reproduction in any medium, provided the original work is properly cited.

ABSTRACT

Background: India is facing serious hunger situation now. Factors responsible for this hunger situation are different. This study focuses on hunger situation in 4 different states of India and remedial measures.

Methods: Secondary data was collected from National Family Health Survey-IV (NFHS). Data entry was done in excel sheet. GHI was calculated using new formula given by IFPRI.

Results: There are wide disparities in hunger situation in Indian states. Madhya Pradesh is in alarming state of hunger.

Conclusions: Hunger situation in Indian states varies from states to states. Different types of interventions are required at each state level to improve the overall hunger situation.

Keywords: Global hunger index, Stunting, Wasting, India, NFHS-IV

INTRODUCTION

About 194 million Indian peoples sleep hungry every day. Every year International Food Policy Research Institute (IFPRI) publishes Global Hunger Index (GHI). 2

GHI has 4 components mainly undernourished population, stunting, wasting and mortality in under 5 children (U5MR). GHI-2016 rank of India is 97 out of 118 countries. Recently International Institute for Population Sciences (IIPPS) released the data of NFHS-IV survey conducted in 2015-16.³

India's Global hunger Index as calculated by IFPRI is 28.5.² According to GHI classification India comes under serious hunger situation.

Objectives

To obtain GHI for the Kerala, Bihar, Maharashtra and Madhya Pradesh (MP) and discuss the factors responsible for serious hunger situation.

METHODS

Data collection

Secondary data collected from NFHS-IV data (Refer Table 1).

Calculation

GHI calculated in this study based on NFHS-IV data. Prevalence of stunting, wasting and U5MR data collected

from NFHS –IV data. Global Hunger Index of India was calculated by using the formula given by IFPRI.² GHI calculated in 3 steps as shown in Table 1-3. After data

collection, it was standardized as shown in Table 2. In third step actual calculation of GHI was done.

Table 1: Calculation of GHI: step-1 (data collection).

States	Undernourished population (%)*	Wasting in under 5 (%)	Stunting in under 5 (%)	U5MR (%)
India	15.2	21	38.4	5
Kerala	15.2	15.7	19.7	0.7
Madhya Pradesh	15.2	25.8	42	6.5
Maharashtra	15.2	25.6	34.4	2.9
Bihar	15.2	20.8	48.3	5.8

^{*}Data regarding state wise undernourished population was not available so, the national average of undernourished population of India was taken.

Table 2: Calculation of GHI: step-2 (standardization).

States	Standardized PUN= PUN/80 X 100	Standardized CWA= CWA/30 X 100	Standardized CST= CST/70 X100	Standardized CM= CM/35 X100
India	19	70	54.86	14.29
Kerala	19	52.33	28.14	2
Madhya Pradesh	19	86	60	18.57
Maharashtra	19	85.33	49.14	8.29
Bihar	19	69.33	69	16.57

PUN: Population undernourished, CWA: Prevalence of wasting in under 5 children, CST: Prevalence of stunting in under 5 children, CM: Child mortality.

Data analysis

Data entry was done in excel sheet. Data was analysed by using Microsoft excel by using new formula given by IFPRI.

RESULTS

4 states from India were included in this study. Global hunger index of various states was calculated as Kerala

(20.41), Bihar (34.91), Maharashtra (31.51) and Madhya Pradesh (36.86) as per table no. 3. Global hunger index of India as per NFHS-IV data was calculated as 31.90 as shown in Table 3.

These states were classified by GHI severity scale as shown in Table 4. Only Madhya Pradesh is in alarming situation while others are in serious hunger situation.

Table 3: Calculation of GHI: step -3 (actual calculation).

States	1/3 standardized PUN	1/6 standardized CWA	1/6 standardized CST	1/3 standardized CM	Total (GHI)
India	6.33	11.67	9.14	4.76	31.90
Kerala	6.33	8.72	4.69	0.67	20.41
MP	6.33	14.33	10	6.19	36.86
Maharashtra	6.33	14.22	8.19	2.76	31.51
Bihar	6.33	11.56	11.50	5.52	34.91

Table 4: GHI severity scale.²

GHI	Remark	India and States
≤9.9	Low	-
10-19.9	Moderate	-
20-34.9	Serious	India, Kerala, Maharashtra, Bihar
35.49.9	Alarming	Madhya Pradesh
≥ 50	Extremely alarming	-

DISCUSSION

No country from SEAR has GHI in alarming situation.² MP has GHI in alarming situation as shown in Table 4.

Undernourished population in India

According to the World Bank undernourished population in India is 15.2%.

U5MR

The most common causes of U5MR are prematurity and infections like Pneumonia, diarrhoeal diseases and malaria. Infections and malnutrition are interrelated. 45% of children deaths are attributed to malnutrition. ^[4] The leading social cause of malnutrition is poverty. Early diagnosis and prompt management of these childhood morbidities is utmost important to reduce U5MR.

Stunting

38.4% of the under five children are stunted in India down from 48% (NFHS-III). Stunting indicates chronic malnutrition. Decrease in stunting rate of a country is followed by the improvement in the socioeconomic status.⁵

Wasting

21% of the under five children have wasting in India.³ Wasting or low weight for height indicates acute malnutrition.

Poverty

According to the Tendulkar methodology (2011-12), almost $1/3^{\rm rd}$ population is below poverty line in Bihar and MP. The national average is about $1/5^{\rm th}$.

Food grain production in India

Malnutrition status of the community depends on the agricultural performance of that region but there are other factors which also affects it. Despite MP is one of the high food grains producing state, but hunger situation is the worst.

Natural calamities, sudden climatic changes and less rainfall affect the agricultural production.⁸ Environment friendly modern agricultural technologies are required to deal with this issue.

In this perspective, Sikkim has taken initiative by introducing organic farming. There is need to promote home farming. Decreasing cultivable land, scarcity of energy and less rainfall are the challenges to the food production. The food production should be increased but without compromising its safety and quality. Each state

should have adequate facilities for the storage of food grains. 10

Income and gender inequalities

There is inequitable distribution of income in India. Gender inequalities in education, literacy, job opportunities and political involvement are related with hunger situation. According to 2011 census male and female literacy rate of India is 82.14% and 65.46% respectively. There is difference of 13% points in male and female literacy. The numbers of women representatives in the parliament of India are only 12%.

Political involvement

Lack of political will is also responsible for serious hunger situation. ^{14,15} Public distribution system (PDS) is functional all over India. There should be transparency in the working of PDS, so that targeted beneficiaries will get the benefits at right time. Government of India launched integrated child development scheme (ICDS) in 1975. One of the objectives of ICDS is to improve malnutrition by providing supplementary nutrition to 0-6 children, pregnant and lactating women. ¹⁶ It is one of the largest programmes in World. But merely by providing food only hunger situation is not going to improve. ^[17] Action at various levels is required such as provision of safe and potable water, changes in feeding practices of children, healthy environment, accessible and affordable health care services.

Availability, accessibility and affordability of health care services

Government spending on health care in India is only 1.3% of the total GDP in 2015-16. New National health policy 2017 ensures that public health expenditure on health care will be at least 2.5% of the total GDP. Most of the health care is given by the private sector in India which is not affordable to the poor section of the society.

Breast feeding practices

Poor breast feeding practices is the most common cause of growth faltering in children. Only 54.9% children are exclusively breast fed up to the age of 6 months. Mothers start breast feeding within 1 hour after birth only in 41.6% children.³

Government of India passed National food security act in 2013. Goal number 2 of sustainable development goals (SDG) is zero hunger by 2030. Sustainable food security can be one of the ways to achieve the SDG.

CONCLUSION

Hunger situation in India is in severe condition and it varies from states to states. Different types of

interventions are required at each state level to improve the overall hunger situation.

Limitation

Data regarding state wise undernourished population was not available so, the national average of undernourished population of India was taken for each state.

Funding: No funding sources Conflict of interest: None declared Ethical approval: Not required

REFERENCES

- Food and Agriculture Organization of the United Nations. The state of food security in the world, 2015:52. Available at: http://www.fao.org/3/ai4646e.pdf
- International Food Policy Research Institute (IFPRI) Global Hunger Index. 2016 Available at: http://www.ifpri.org/topic/global-hunger-index Accessed on 3 November 2016.
- International Institute for Population Sciences (IIPS). National Family Health Survey 2015-16. Available at: http://rchiips.org/NFHS/factsheet_ NFHS-4.shtml
- 4. World Health Organization. Children: reducing mortality. Available at: http://www.who.int/mediacentre/factsheets/fs178/en/. Accessed on 7 November 2016.
- World Health Organization. Global database on child growth and malnutrition. 1997: 46. Available at: http://www.who.int/nutgrowthdb/about/ introduction/en/index2.html Accessed on 3 November 2016.
- 6. Planning Commission, Government of India. Press note on poverty estimate. 2013. Available at: http://planningcommission.nic.in/news/pre_pov2307.pdf Accessed on 3 December 2016.
- Gulati A, Ganesh-Kumar A, Shreedhar G, Nandakumar T. Agriculture and malnutrition in India. Food and Nutrition Bulletin. 2012;33(1):74– 86.
- 8. Wu SH, Ho CT, Nah SL, Chau CF. Global hunger: a challenge to agricultural, food, and nutritional sciences. Critical Rev Food Sci Nutr. 2014;54(2):151–62.
- International Food Policy Research Institute. 2012 Global Hunger Index. The challenge of hunger: ensuring sustainable food security under land, water,

- and energy stresses. IFPRI Issue Brief. 2012;(70):1–67.
- Mishra, S. Hunger, ethics and the right to food-India. Indian journal of medical ethics. 2012;9(1):32–7.
- 11. Von Braun J. The 2009 Global Hunger Index: More Attention to Women's Role Needed. (Cover story). 2009;89:4–7.
- 12. Registrar General & Census Commissioner, India. State of literacy, 2011. Available at: http://censusindia.gov.in/2011-prov-results/data_files/india/Final_PPT_2011_chapter6.pdf Accessed on 1 November 2016.
- 13. World Bank. Proportion of seats held by the women in national parliament. Available at: http://data.worldbank.org/indicator/SG.GEN.PARL. ZS Accessed on 6 March 2017.
- 14. Wiesmann, D. Global Hunger Index. Food Policy. 2006;212(12):1–6.
- 15. Ghosh J. The political economy of hunger in 21st century India', Economic and Political Weekly. 2010;45(44):33–8.
- Ministry of women and child development. ICDS. Available at: http://icds-wcd.nic.in/icds/icds.aspx Accessed on 8 March 2017.
- 17. Saxena NC. Hunger and Malnutrition in India', IDS Bulletin. 2012;43(1):8–14.
- 18. Press bureau of India, Government of India. Ministry of health and family welfare. Public health expenditure in India, 2016. Available at: http://pib.nic.in/newsite/PrintRelease.aspx?relid=15 3797 Accessed on 2 March 2017.
- Press bureau of India, Government of India. National Health policy, 2017. Available at: http://pib.nic.in/newsite/PrintRelease.aspx?relid=15 9376 Accessed on 12 March 2017.
- National food security act (NFSA), 2013. Available at: http://dfpd.nic.in/nfsa-act.htm Accessed on 14 March 2017.
- 21. United Nation. Sustainable development goals. Available at: http://www.un.org/sustainable-development/hunger/. Accessed on 4 April 2017.

Cite this article as: Khobragade AW, Rajan K. Global hunger index of India based on National family health survey—IV with special reference to some states and critical review. Int J Community Med Public Health 2017;4:2783-6.