



## Knowledge, attitude and practices about hidden hunger among the selected households at Rajshahi city in Bangladesh

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### Abstract

A descriptive cross sectional study was carried out among the 385 urban households at Rajshahi city in Bangladesh, which was selected by purposive random sampling methods at the time of March to December 2019. The aim of study was to identify the knowledge, attitude and practices about the micronutrient deficiency diseases among the selected households level. About one-third of respondents were acquired knowledge from books. More than eighty percent (81.3%) of the respondent have adequate knowledge about micronutrient deficiency diseases and among the respondents (95.3%) and (90.1%) were highly aware about the VADD and IDA respectively. The study revealed that about 90.4%, 77.4% and 90.1% of the respondents were much aware about the causes of VADD, IDD and IDA respectively. Study also showed about 96.4 % accepts vitamin A capsules two times per year. More than eighty percent of the respondents were consumed vitamin enriched foods and aware of the sources of energy giving foods from rice, bread and cereals. On the other about 88.1%, 86.8% and 77.7 % of the respondent's family member were aware of the sources of body building foods from milk and milk products, protective foods from fruits and vegetables and vitamin enriched foods from milk and milk products respectively and 54.3% of the respondents were normal nutritional status. This study has attempted to address about the micronutrient deficiency diseases which in turns help to find out a sustainable solution and integrated approach for controlling hidden hunger in a coordinated way.

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## Introduction

Worldwide, about 800 million people are chronically hungry, meaning that they are undernourished in terms of calories (FAO, 2017). More than 2 billion people are affected by hidden hunger, meaning that they suffer from micronutrient deficiencies (WHO, 2006). Hidden Hunger (HH) is a debilitating situation caused by the micronutrient deficiencies, which are responsible for some of the most wide spread and debilitating nutritional disorders, including birth defects, mental and physical retardation, weakened immune systems, blindness and even death (WHO, 2001). Apart from the protein-energy malnutrition (PEM, which includes marasmus and kwashiorkor, there exists another form, which is less visible and a result of vitamins and minerals deficiencies, known as micronutrient deficiency (Sharma and Hessen, 2016). Deficiencies of fat soluble vitamins, iron, and zinc are particularly common, but deficiencies of other water-soluble vitamins, minerals, and trace elements are also found and have great impact in physical, mental, and cognitive development of an individual. Iron deficiency is the most prevalent nutrition problem in the world (WHO, 2014). Folic acid deficiency remains responsible for excess birth defects (Blencowe *et al.*, 2010). Vitamin D deficiency can lead to osteoporosis and bone fractures and may become life threatening or leave an elderly person permanently handicapped, thus reducing length and quality of life. (Holick and Chen, 2008) Vitamin A deficiency is a public health problem in more than half of all countries, Southeast Asia, which causes preventable blindness and increases the risk of disease and mortality (Sommer, 2008).

Micronutrient deficiency has global health impact because its manifestations become less visible and usually begins to show when the condition is severe. Although the deficiency affects every age group of both sexes, the most vulnerable groups are children and women of reproductive age including pregnant and lactating mothers (Thompson and Amoroso, 2011). Micronutrient deficiencies negatively affect child survival, growth, brain development educational

achievement and resistance to illness. It is often children in developing countries who suffer most (Bhavesh *et al.*, 2010). Malnutrition, including vitamin and mineral deficiency, underlies over 50% of these child deaths (Caulfield *et al.*, 2004). Vitamin and mineral deficiency compromises the economic development of most developing nations, causing the preventable loss of up to 2% of their gross domestic product (Bhavesh *et al.*, 2010). Vitamin A deficiency increases the risk of severe illness, and even death, from common childhood infections such as diarrheal diseases and measles. In developing countries 200–300 million children of preschool age are at risk of vitamin A deficiency (WHO, 2008).

While some urgent measures are necessary, but quick technological fix may derail the priority, focus and achievement of the science and technology in this area; this may knowingly or unknowingly blur our vision from determining factors causing the symptom. To remain alert on this possible lapse valuable local knowledge and practices must be taken into account. Much more research is needed to turn existing knowledge into practical application.

In Bangladesh, the number of children and women who die because of micronutrient deficiencies is known as hidden hunger great problem. They suffer from not only multiple Micronutrient deficiencies but also multiple impairments.

These children face daunting physical, social, and ultimately economic challenges. Reduced intellectual capacity undermines investments in education and perpetuates cycles of poverty. It is a significant barrier for any nation to achieve economic growth and improved standards of living. Therefore, the aim of this study was to know the prevalence of different micronutrient deficiency and their complications.

## Materials and methods

### Study location

The study was descriptive and cross sectional. The study was carried out among the 385 urban households at Rajshahi city in Bangladesh.

*Study period*

The study was continued from March to December 2019 in which the data collection period was 16<sup>th</sup> July to 16<sup>th</sup> December.

*Sampling technique*

A random sampling technique was applied to avoid the respondent bias.

*Sample size*

A descriptive cross sectional study was carried out among the 385 urban households and sample size (n) was calculated by the following equation:

$$\begin{aligned} n &= z^2pq/d^2 = 384 \\ &= (1.96)^2 \times 0.5 \times 0.5 / (0.05)^2 \\ &= 3.8416 \times 0.25 / 0.0025 \\ &= 384.6 \\ &= 385 \end{aligned}$$

Here, n = Sample size

P = Prevalence rate (Expected rate 0.5)

Q = (1-P) = (1-0.5) = 0.5

d = 5% level of confidence interval = 0.05

Z = 1.96; Value of the normal variable which is equal to 1.96 at 5% level of significance.

*Data collection instrument*

A semi structured interview schedule was developed included the background information, socio-economic conditions, anthropometric information and knowledge, attitude & practice about the micronutrient deficiency disorder. The interview

schedule was finalized after modification based on the pretest i.e. pilot survey. Since the respondents were a mixture of community people of different socio-demographic characteristics, they had different levels of education and understandings. The interview schedule was structured to minimize time and to gather information systematically. A small portion of interview schedule was, however kept open where there were no other alternatives.

*Data analysis*

The data set were first checked, cleaned and entered into the computer from the numerical codes on the form. The data was edited if there is any discrepancy and then cleaned it. The frequency distributions of the entire variables were checked by using SPSS. 16.0 windows programme. For tabular, charts and graphical representation Microsoft word and Microsoft excel were used to get the results in accordance with the objective of the report.

**Results and discussion***Background Information*

Table 1 shows the distribution of the age of the respondents and indicated that majorities (66.5%) of the respondent's aged were between 30 to 39 years and among them majorities (96.9%) of the respondents were female whereas only 3.1 % were male. About (52.5%) of them were medium educated i.e. Graduate and 31.9% were educated i.e. H.S.C.

**Table 1.** Distribution of the respondents based on background information.

Background information	Parameters	Number of the respondent	Percentage
Age (Years)	20-29	19	4.9
	30-39	256	66.5
	40-49	110	28.6
Sex	Male	12	3.1
	Female	373	96.9
	S.S.C.	37	9.6
Educational qualifications	H.S.C.	123	31.9
	Graduate	202	52.5
	Masters	23	6.0

Table 2 shows the distribution of the family type of the respondents and indicated that 73% respondents were from nuclear family and remaining was from

joint family. About 37.40% of the respondent's family size were small (<5 members), about 33.00% families consists of 5-8 members, about 29.60% families

consists of >8 members, about 85% were Muslim. Monthly income of the households indicated that majorities (49.10%) of them income only TK. 30,001

to 40,000 and 51.7% household's monthly expenditure on foods were only TK. 20001 to 30000.

**Table 2.** Distribution of the respondents based on socio economic information.

Socio economic information	Parameters	Number of the respondent	Percentage
Family Type	Nuclear	281	73.0
	Joint	104	27.0
	<5	144	37.4
Family size	5-8	127	33.0
	>8	114	29.6
Religion	Muslims	327	9.6
	Hindu	47	31.9
	Others	11	52.5
Monthly income (Tk.)	<20000	22	5.7
	20001-30000	104	27.0
	30001-40000	189	49.1
	40001-50000	53	13.8
	>50000	17	4.4
Total expenditure (Tk.)	<10,000	27	7.0
	10,000-20,000	118	30.7
	20,001-30,000	199	51.7
	30,001-40,000	41	10.6

Figure 1 shows the prevalence of malnutrition among the respondents. It was assessed by body mass index (BMI<sub>51</sub>), 54.3% (n = 385) of the respondents had

normal nutritional status and only 2.9% of them were suffering from severe malnutrition.

**Table 3.** Distribution of the respondent's knowledge on micronutrient deficiency diseases and concern about the classes of micronutrient deficiency diseases.

Parameters	Frequency	Percentage
Yes	313	81.3
No	72	18.7
VADD	95.3	95.3
IDD	77.4	77.4
IDA	90.1	90.1
Pellagra	52.5	52.5
Rickets	75.1	75.1
VADD	95.3	95.3

#### KAP about household micronutrient deficiency

Table 3 shows the distribution of the respondent's knowledge on micronutrient deficiency diseases

(MND) and indicated that 81.3 % of the respondents had knowledge about micronutrient deficiency diseases whereas 18.7 didn't have idea about MND.

**Table 4.** Distribution of respondent's knowledge based on salt should be used during cooking.

Salt	Frequency	Percentage
Iodized salt	308	80.0
Non iodized salt	38	9.9
Don't know	25	6.5
Others (Mixed)	14	3.6
Total	385	100

It also shows the distribution of the respondents concern about the classes of MND and indicated that majorities of the respondents (95.3%) and (90.1%)

were highly aware about the VADD and IDA respectively. On the other hand 77.4 % and 75.1% were known about the IDD and rickets respectively.

**Table 5.** Distribution of respondents based on which causes responsible for VADD, IDD and IDA.

Knowledge on Diseases	Response	Frequency	Percentage
VADD	Yes	348	90.4
	No	37	9.6
IDD	Yes	298	77.4
	No	87	22.6
IDA	Yes	347	90.1
	No	38	9.9

It also shows the distribution of the respondents concern about the classes of MND and indicated that majorities of the respondents (95.3%) and (90.1%) were highly aware about the VADD and IDA respectively. On the other hand 77.4 % and 75.1% were known about the IDD and rickets respectively.

Table 4 shows the distribution of respondents' knowledge based on salt should be used during cooking and indicated that 80% of the respondents had knowledge about iodized salt used during cooking.

**Table 6.** Distribution of observation on the child or any family members have any primary nutritional disease.

Name of nutritional disease	Frequency	Percentage
Anemia	102	26.5
Scurvy	19	4.9
Xerophthalmia	0	0.0
Goiter	3	0.9
Others	5	1.3

Table 5 shows the distribution of the respondents based on which causes responsible for VADD and presented that 90.4% of the respondents were much aware about the causes of VADD whereas only 9.6 % of them weren't know. Similarly, 77.4% of the respondents were much aware about the causes of

IDD and 90.1% of the respondents were much aware about the causes of IDA. Figure 2 indicated that 33.3 % of them were known from books, 27.5 % from health workers, 20.3% from newspaper/magazine, 11.9% from TV/radio and only 7% of them were known from family members and friends.

**Table 7.** Information about dietary knowledge of the respondents.

Sources of different foods	Parameters	Frequency	Percentage
Name of energy giving foods	Rice, bread and cereals	356	92.5
	Milk and milk products	209	54.3
Name of body building foods	Meat ,fish, egg and poultry	112	29.1
	Fruits and vegetables	34	8.8
	Pulses and legumes	56	14.5
	Others	23	6.0
	Rice, bread and cereals	56	14.5
Name of protective foods	Milk and milk products	339	88.1
	Meat ,fish, egg and poultry	312	81.1
	Fruits and vegetables	45	11.7
	Pulses and legumes	51	13.3
Name of protective foods	Rice, bread and cereals	35	9.1
	Milk and milk products	129	33.5
	Meat ,fish, egg and poultry	32	8.3
	Fruits and vegetables	334	86.8
	Pulses and legumes	16	4.2
	Others	11	2.9

Table 6 shows delineated that 26.5% of the respondents were suffering from anemia, 4.9% were suffering from scurvy, 0.9% of them were suffering from goiter and among the selected respondents there was no xerophthalmia. Table 7 represents the distribution of the respondent's knowledge about

sources of energy giving foods and indicated that about 92.5% respondents family member were aware of the sources of energy giving foods from rice, bread and cereals, again about 54.3% knows that the sources of energy giving foods are milk and milk products.

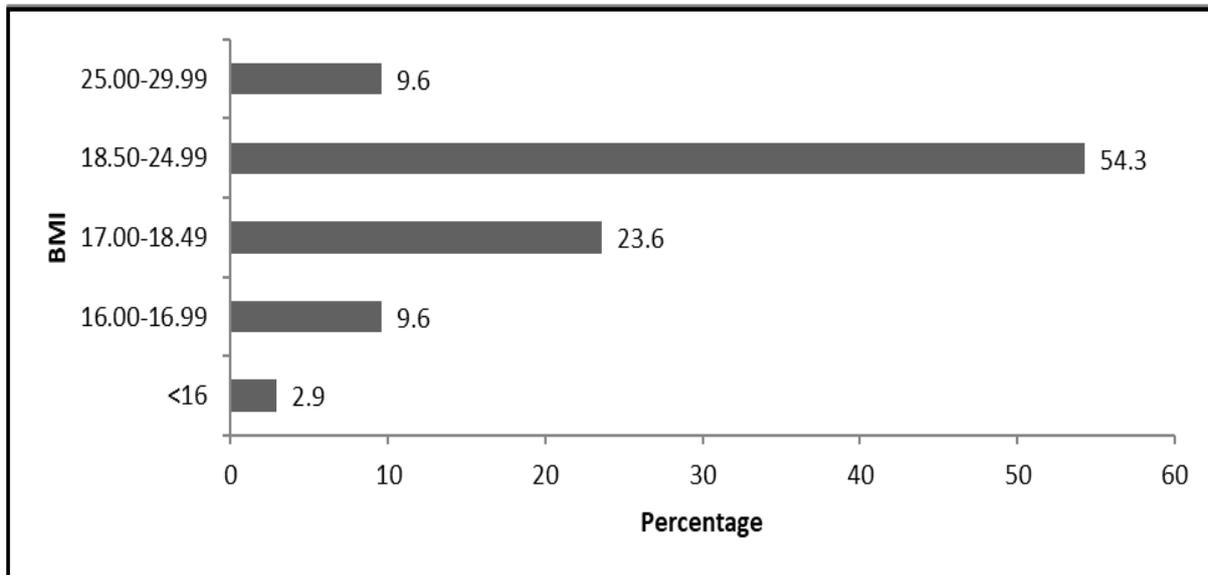


Fig. 1. Nutritional status of the respondents according to BMI.

It also represents that 29.1% respondent's family member have knowledge about the sources of energy giving foods from meat, fish, egg and poultry, 8.8% from fruits and vegetables and 14.5% from pulses and legumes. Table 7 also shows that about 88.1% respondents family member were aware of the

sources of body building foods comes from milk and milk products, again 81.1% knows that body building foods comes from meat, fish, egg and poultry.

About 86.8% knows that the source of protective foods comes from fruits and vegetables.

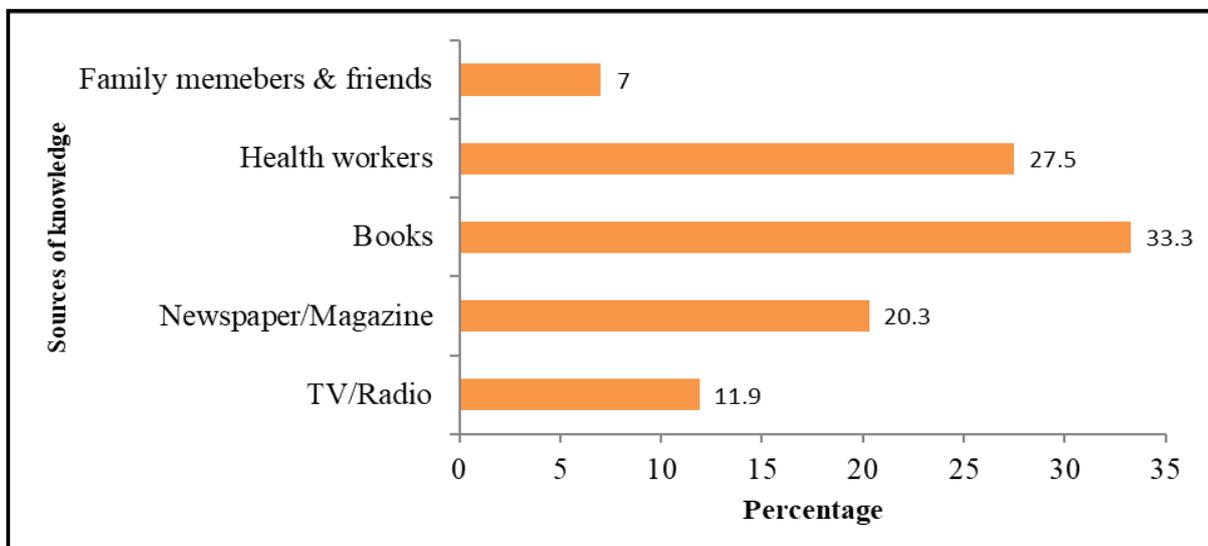


Fig. 2. Distribution of respondents based on from which sources they know KAP about micronutrient deficiency diseases.

### Conclusion

The KAP about micronutrient deficiency among the selected households in Rajshahi city were satisfactory level, and also in some cases there are distance between knowledge and behavior. It seems we need to pay attention to this regard more in order to increase KAP of community. A range of interventions are needed to solve the complex problem of hidden hunger. National governments must take a cohesive approach to confronting hidden hunger; otherwise it will not get the attention it deserves.

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