Knowledge of ~~on~~ nutrition and hygiene ~~of~~ among rural women of Assam in India

Abstract

The study was carried out ~~in the state of Assam (India) with~~ on 270 randomly selected rural women of 3 districts from the state of Assam (India), ~~viz.~~namely~~,~~ Tinsukia, Nagaon and Barpeta, ~~districts~~ to find the existing knowledge of respondents on nutrition and hygiene. The knowledge on nutrition and hygiene was measured in terms of knowledge statements known and unknown by the respondents regarding nutrition and ~~knowledge statements known and unknown by respondents regarding~~ hygiene. It is found that 100 percent of respondents did not know that the first and main symptom of a child ~~,~~ suffering from Protein Energy Malnutrition (PEM) is loss of weight according to age and that the Colostrums is rich in Fat, but majority of the respondents (63.33%) knew mother's milk ~~is~~ was easily available, pure and safe as it ~~is in~~has the correct temperature. It is very interesting to note that only 8.15 percent of respondents knew that ~~rinsing of~~rinsing utensils with hot water before using them is necessary.

Key word: Knowledge, Nutrition, Hygiene, Rural Women, ~~and~~ Assam

Introduction

Nutrition is a basic human need and a prerequisite to a healthy life. A proper diet is essential from the very early stages of life for proper growth, development and to remain active. Food consumption, which largely depends on production and distribution, determines the health and nutritional status of the population. One of ~~T~~the major food issues of concern are insufficient/ imbalanced intake of foods/nutrients. The common nutritional problems of public health importance in India are low birth weight, protein energy malnutrition in children, chronic energy deficiency in adults, micronutrient malnutrition and diet-related non communicable diseases. However, diseases at the either end of the spectrum of nutrition malnutrition (under and over nutrition) are important. Recent evidences indicate that under nutrition *in utero* may set the pace for diet-related chronic diseases in later life. Population explosion, demographic changes, rapid urbanization and alterations in traditional habits contribute to the development of certain unhealthy dietary practices and physical inactivity, resulting in diet-related chronic diseases.

Nutrition, health and hygiene are almost synonymous to each other, ~~but~~ and without good nutrition and proper hygiene, health cannot be at its best. Nutrition is the science that deals ~~about~~ with the foods we eat and ~~its~~ their effect on our health in relation to maintenance, growth, reproduction, disease and excretion. Good Nutrition is an adequate, ~~well balanced~~well-balanced diet which need to be combined with regular physical activity. Poor nutrition can lead to reduced immunity, increased susceptibility to disease, impaired physical and mental development, and reduced productivity (*WHO*). Hygiene refers to conditions and practices that help to maintain health and prevent the spread of diseases. It can be defined as the practice of certain habits to maintain a good health both at the personal level (personal hygiene – cleanliness, physical exercise, proper rest, sleep, bathing, avoiding smoking, drinking alcohols, drugs etc.) and at the community level (social hygiene – proper disposal of waste) *(WHO, ~~Jan,~~ 2016)*. India, though ~~after independence,~~ has progressed a lot after independence, yet, the spread of diseases, suffering from deficiency diseases, growth of harmful organisms due to improper disposal of sewage and refuse, lack of drainage system, habit of open-defecation by the people, lack of safe water, lack of healthy nutritional practices etc. are some of the common problems prevailing in the society, especially in ~~of~~ the vulnerable areas like villages, slum areas etc.

Everybody knows that women are the backbone of a society. The success of any programme depends on the cooperation of the women. As Nehru said, "to awaken the people, it is the woman who must be awakened and once she is on move, then the family moves, the village moves and the nation moves." Thus, if the knowledge level of rural women on nutrition and hygiene is assessed, then varieties of educational programme can be undertaken for the rural women based on their knowledge level, which in turn will help them to improve their health status in general. Justification needs to be built based on statistical profile of India and the state of Assam, the nutritional status of women and children in Assam. There are programs in place under Mission Poshan hence the authors must justify why this research is important and relevant.

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Methodology

The present study was carried in the state of Assam. Three parts of Assam ~~had been~~were included for the study~~,~~ namely Upper Assam, Middle Assam and Lower Assam ~~for the study~~. From these ~~T~~three administrative districts were selected randomly, viz., Tinsukia, Nagoan and Barpeta ~~from the three parts of Assam~~. ~~Out of~~From the three subdivisions of Tinsukia district, Tinsukia

subdivision; from four subdivisions of Nagaon district, Nagaon subdivision and from the five subdivisions of Barpeta district, Sorbhog subdivision were ~~as~~ selected randomly for the study. One development block from each selected subdivision, one *gaon* (village) ~~–~~panchayat from each selected block and three villages from each selected *gaon* panchayat were selected randomly. Thus, ~~finally~~ a total of nine villages were considered for carrying out the study. Selection of respondents was done ~~by~~ based on equal distribution method. Thirty respondents in the reproductive age group (15 yrs – 49 yrs) (according to WHO, reproductive age group is usually defined as 15-49 years or 12-49 years) were selected randomly from each village. Thus, there were two hundred seventy (270) ~~numbers of~~ respondents were selected for assessing the existing knowledge of the respondents on nutrition. The data were collected personally by the investigator through personal interview method with the help of the prepared interview schedule.

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The existing knowledge on nutrition was measured by using a structure schedule consisting of 30 statements on nutrition and 56 statements for hygiene was prepared after discussion with expert and review of literature. If some criteria could be developed to say whether the knowledge was adequate or inadequate it would be better. More than knowledge this seems to be an awareness-based tool. Was the tool presented in English? Could the rural women understand technical terms like Colostrum, PEM, Carbohydrates, Proteins etc?

Result and Discussion

Background information about the respondents? Their level of education, their occupation etc. This is required to understand the context.

Knowledge on Nutrition and Hygiene

a)Knowledge ~~statements known and unknown by~~ of respondents regarding Nutrition

The distribution of respondents based on the knowledge statements known and unknown (Not aware or Do not know, would be better than unknown) by respondents regarding Nutrition are presented in Table 1.

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The items where knowledge is adequate could be highlighted in the table

Table 1: Distribution of respondents based on the knowledge statements known and unknown by respondents regarding Nutrition **N = 270**

Sl. No.	Statements	Percentage	
		Known	Unknown
1.	Dal or any other pulses are source of protein.	18.89	81.11
2.	The real food like rice and wheat give energy to the body.	15.92	84.07
3.	**Hand pound rice / *Dhenki* rice is more nutritious than machine milled rice.**	77.41	22.59
4.	Protein foods like meat, fish and egg helps in body building and repairing.	14.81	85.19
5.	Vitamins and minerals are rich in green leafy vegetables.	29.26	70.74
6.	Carbohydrate rich foods are rice, wheat, potato.	4.07	95.93
7.	The energy giving nutrient is Carbohydrate.	4.07	95.93
8.	Rich source of vitamin C is Amla	26.67	73.33
9.	Dal is to be cooked in the same water where it is soaked.	25.18	74.81
10.	Rice, wheat, flour etc. are to be preserved in container with lid in dry place.	39.63	60.37
11.	Foods like potatoes, ghee and butter gives energy to our body.	3.33	96.67
12.	Vegetables are to be washed properly before chopping them.	22.22	77.78
13.	Vegetable is to be stored in basket covered with a damp cloth.	3.70	96.30
14.	Wheat flour is to be sieved once before consumption.	13.33	86.67
15.	Rice is to be washed once or twice before cooking it.	2.96	97.04
16.	Vegetables are to be scrapped instead of peeling to get more nutrients.	25.55	74.44
17.	Just cooked vegetables are to be consumed as it contains more nutrients.	30.37	69.63
18.	**'Soda' should not be used for prompt cooking of vegetables, dals etc.**	76.67	23.33
19.	Cooking is to be done in low flame.	52.59	47.41
20.	Vegetables are to be cooked always in minimum water.	32.96	67.04
21.	Vegetables should be covered while cooking.	22.22	77.78
22.	**Frequent stirring of food during cooking does not decrease its ~~nutrient~~nutrients.**	62.96	37.04
23.	Pressure cooking helps to conserve more nutrients.	34.07	65.92
24.	Deep fry decreases the nutrient content of food.	29.26	70.74
25.	Repeated heating of oil decreases its nutrient content.	28.89	71.11

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26.	Boiled vegetables are better than fried vegetables.	39.26	60.74
27.	Draining of excess water from rice (after cooking) decreases its nutrient content.	7.78	92.22
28.	The excess water of vegetables after cooking should not be drained off.	10.00	90.00
29.	The nutritive value of cooked foods will decrease if heated again.	12.22	87.78
30.	The excess water of cooked vegetables can be used for cooking other foods.	7.78	92.22
31.	Cooking of food ~~with~~ covered with lid is necessary.	32.22	67.78
32.	Vegetables like papaya, tomato, carrots etc. if consumed in raw, gives more nutrients.	14.07	85.92
33.	The vegetables are to be chopped in big size before cooking.	25.56	74.44
34.	Vegetables are to be chopped just before cooking.	3.33	96.67
35.	Vegetables are to be thinly peeled before cooking.	29.26	70.74
36.	All the food stuff are to be included in the diet of pregnant women	28.15	71.85
37.	There is need of extra food for growth of the foetus.	21.11	78.89
38.	A pregnant woman is to consume one fruit daily.	25.56	74.44
39.	Iron and folic acid tablets taken by pregnant woman helps in Iron Supplementation.	9.26	90.74
40.	The child is to be breast fed soon after birth.	40.74	59.26
41.	Colostrum, the first secretion of mother's milk which is thick and yellow in colour, protects the child from diseases.	8.52	91.48
42.	A lactating mother is to drink more water than a normal woman.	31.48	68.52
43.	Dry fruits such as Khismis, Dates ~~etc~~etc. are rich in iron.	9.63	90.37
44.	A pregnant woman is to be immunized against Tetanus.	22.59	77.41
45.	During pregnancy a woman must eat frequently in lesser amount.	21.48	78.52
46.	Anaemia is lack of blood in the body.	6.30	93.73
47.	**Mother's milk is easily available, pure and safe as it is in correct temperature.**	63.33	36.67
48.	Child is to be breast feed as long as possible. How long?	36.67	63.33
49.	In the absence of mother's ~~milk~~milk, a ~~new born~~newborn e baby should not be fed with cow's milk. Then what should be done?	28.89	71.11
50.	A child's health would not deteriorate if it is weaned before one year.	33.33	66.67

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51.	A mixture of rice and dal preparation is to be given to a child of 7- 8 months old.	46.96	57.04
52.	The first and main symptom of a child, suffering from PEM is loss of weight according to age.	0.00	100.00
53.	A child should not be weaned ~~when~~till it is 4-6 months old. ambiguity in statement	17.04	82.96
54.	Colostrum is rich in Fat. The WebMed and other references show that Colostrum has low fat content, please verify.	0.00	100.00
55.	The child is to be weaned because mother's milk only cannot supply all the nutrients required by the child.	3.70	96.30
56.	Breast feeding should not be stopped when a child starts weaning.	35.56	64.44

~~A p~~Perusal of Table 1 shows that ~~100 percent of~~majority of the respondents did not know that the first and main symptom of a child, suffering from PEM is loss of weight according to age. They might not be ambiguous statement aware about malnutrition, which is a major public health problem throughout the developing world and is an underlying factor for deaths in children under five years of age. Table 4.16?:??~~ which is Table 4.16? also revealed that ~~100 percent of~~ though the respondents did not know that Colostrums is rich in Fat, though ~~but~~ majority of the respondents (63.33%) knew mother's milk is easily available, pure and safe as it is in correct temperature. Again, 96.30 percent of respondents did not know that the child is to be weaned because mother's milk only cannot supply all the nutrients required by the child. They might not have clear concept on Colostrum, mother's milk and its nutrient content. It is again interesting to note that, 96.67 percent of respondents did not know that vegetables are to be chopped just before cooking and 92.22 percent of respondents did not know that the excess water of cooked vegetables can be used for cooking other foods and draining of excess water from rice (after cooking) decreases its nutrient content. They might not have knowledge that some nutrients of foods get destroyed while coming in contact with water for longer time. Table 4.16 also revealed that 76.67 percent knew that 'Soda' should not be used for prompt cooking of vegetables, dals etc. 97.04 percent of respondents did not know that rice is to be washed once or twice before cooking it. The respondents might not know that rice (raw) losses the water soluble vitamin (vitamin B_1/ Thiamine) present in it if washed again and again. Adequate awareness on these aspects would help the respondents to increase their knowledge and improve their health condition. Awareness programme on nutrition should be

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organized among the rural people involving the rural women specially. After the survey " Might Not know" should not be used since there is data to support whether they Know or Do Not know.

b) Knowledge ~~statements known and unknown by~~ of respondents regarding Hygiene

The distribution of respondents based on the knowledge statements known and unknown by respondents regarding Hygiene are presented in Table 2.

Table 2: Distribution of respondents based on the knowledge statements known and unknown by respondents regarding Hygiene **N = 270**

Sl. No.	Statements	Percentage	
		Known	Unknown
1.	Boiling of feeding bottles and nipples before using does ~~not have~~ leave any chance of germ transmission.	24.07	75.93
2.	Disposable plates, glasses and containers are unhygienic.	00.00	100.00
3.	Food is infected if handled by a person suffering from infectious disease.	20.74	79.26
4.	Prolonged boiling of milk before serving is necessary	22.96	77.04
5.	Ladle used for stirring meat, fish cannot be used for serving food without cleaning/ washing. ? What is the basis for this statement?	00.00	100.00
6.	Mopping of floors with plain water in the house does not give protection from germs.???	36.30	63.70
7.	Proper flushing of toilet after using is a good hygienic practice.	47.04	52.96
8.	To maintain hygiene, it is necessary to keep separately cooked and uncooked foods in a refrigerator	24.81	75.19
9.	Utensils are necessary to be rinsed with hot water before using.	8.15	91.85
10.	Washing of hands with soap and water after changing a baby's diaper (nappy) is advisable.	33.70	66.30
11.	Washing of hands properly with soap after scrubbing soiled/filthy utensils is necessary.	25.92	74.07
12.	Hands are to be washed properly after urination.	31.85	68.15
13.	Washing of hands with soap after taking care of sick people is necessary.	24.44	75.56
14.	A child must be given bath everyday with mild soap and luke warm water.	37.04	62.96
15.	Washing hands with soap before preparing or handling cooked/ ready-to-eat food is necessary.	35.18	64.81

16.	Sharing of soaps and towels may increase danger of cross-infection.	28.15	71.85
17.	It is necessary to change clothes after each bath.	20.00	80.00
18.	It is necessary to wear *chappals/ slippers* while going for defecation.	33.70	66.30
19.	Washing of hands properly with soap after defecation is important.	37.41	62.59
20.	A sanitary pad cannot be used for more than 6 hours.	00.00	100.00
21.	Sanitary pads after using has to be washed and disposed off in a proper way (in pit) to reduce spreading of infection from it.	00.00	100.00
22.	Washing hands with soap after handling a used sanitary pad is necessary.	46.30	53.70
23.	The surrounding of the source of drinking water is necessary to be cleaned regularly.	42.22	57.78
24.	The source of drinking water has to be atleast 8-10 mtrs. away from the toilet.	28.89	71.11
25.	Kitchen wastes are to be disposed properly in a particular pit for decomposition.	44.07	55.93
26.	Stagnated water is an important reason for mosquito breeding.	37.41	62.59
27.	Open defecation of children is a serious matter as it spread infection or germs.	40.37	59.63
28.	It is important to construct hen's and bird's coop away from the main house.	35.92	64.07
29.	Dumping of household waste for 2 days inside the house leads to the growth of harmful insects.	29.26	70.74
30.	Pet animals are to be kept away/ aside to maintain hygiene at home.	43.33	56.67

A perusal of Table 2 shows that 100 percent of respondents under study did not know that same sanitary pad should not be used for more than 6 hours and they also did not know that a used sanitary pad should be washed and disposed off in a proper way (in pit) to reduce spreading of infection from it. This might be due to that the respondents were not aware about the menstrual hygiene and the urinary tract infection caused due to poor menstrual hygiene. Table 4.17 also revealed that 100 percent of respondents did not know that the ladle used for stirring meat, fish cannot be used for serving food without cleaning/ washing and they also did not know that using of disposable plates, glasses and containers are considered as unhygienic. It is very interesting to note that only 8.15 percent of respondents knew that rinsing of utensils with hot water before using is necessary. The respondents might not be aware about the food hygiene and the contamination

of foods from unclean utensils. To increase knowledge on these aspects, rural women have to be made aware by organizing awareness programme regarding hygiene.

Conclusion

The conclusions must start by summarizing the findings, then use a funnel technique to organize them.

Studies revealed that more than 122 million households have no toilets, and 33% lack access to latrines, over 50% of the population (638 million) defecate in the open. Although, 211 million people gained access to improved sanitation only 31% use the facilities provided (Gohain *et. al*, 2019a*).* In India, only 11% of rural families dispose off stools safely whereas 80% of the population leave their stools in the open or throw them in the garbage. Open air defecation leads to the spread of disease and malnutrition through parasitic and bacterial infections (Gohain *et. al.*, 2019b)). About 75% of health facilities are concentrated in urban areas where only 27% of the total population lives. Contagious, infectious and waterborne diseases such as diarrhea, amoebiasis, typhoid, infectious hepatitis, worm infestations, measles, malaria, tuberculosis, whooping cough, respiratory infections, pneumonia, reproductive tract infections etc. dominate the morbidity pattern, especially in rural areas (Gohain *et. al*., 2021).

In spite of so much effort being taken by the government and other organizations for improving the health status of rural women by introducing information on, there is still a gap to reach the rural people. The awareness on proper nutrition and hygiene among rural women was possible only when they understand the importance of basics of nutrition, conservation of nutrients in food, nutrition for mothers and children and also programme on hygiene such as provision of safe drinking water, proper defecation of human excreta, and proper maintenance of surroundings for rural areas, that play a vital role in prevention of both deficiency diseases and communicable diseases and to improve the quality of life in the community (Gohain *et. al.*, 2019c). To bring changes among the rural women of Assam, knowledge in the form of education had to be imparted to them. To improve the prevailing situation of poor nutrition and hygiene, dissemination of knowledge was to be addressed both at macro (national and state) and micro (district and villages) levels (Timung J, 2011).

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