

The Beliefs that Hindering the use of Food and the Scientific Criterion: A Mixed Method Study

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Abstract

The nutritional status of our country remains worrisome, due to the fever availability of nutritious food and inaccessible access to the community. In such a situation, not using the easily available food due to misconceptions and wrong beliefs is making the situation worse. In this study, the Inhibitors that hinder the use of food items in rural areas of Uttar Pradesh have been studied through a mixed method research design. The study explores the belief for misconceptions hindering the use of food items in the rural community of Uttar Pradesh state and the criterion has been done based on published research articles. The results of the study showed that several assumptions were hindering the use of food ingredients present in the selected area, which did not prove correct with the criterion thought published scientific literature. In the study area, there were a total of 3 assumptions whose claimants were more than 50% of claimants, and 10 assumptions were claimed by more than 20% of claimants. The existing beliefs about pumpkin, meat, bottle gourd, millet, green vegetable, and citrus fruits were not supported by any research article. There is a need to promote the use of all types of food items by removing the existing barriers in the selected area.

Keywords: Misconception; Food myth; Food beliefs; Food assumption, Food items; Food stuff; Food knowledge; Religious beliefs; Rural food.

INTRODUCTION

Everyone needs to think about what they put on the plate and which ingredients should be avoided.¹ It is not enough to fill the stomach with food, but the food should be such that the various nutrients are available in sufficient quantity, the knowledge of

these different types of nutritious substances is not appropriate in the rural population in India.² Not having enough accurate information about food can be responsible for misconceptions that can hinder the use of much nutrient rich food, while we are already grappling with the problem of low availability of food.³

It is generally seen that the initial cause of various diseases can be found in their diet. It is a well known fact that the level of nature of people completely depends on the food and the nutrients obtained from the food.⁴ If the food is full of nutrients, the level of health will be equally good. If seen from this point of view, nutritional imbalance is the primary cause of most diseases. Because the adjustment of different food items in the diet seems to be correct by the people only from the point of view of the stomach.⁵ But there is a huge

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imbalance in the nutrients obtained from different substances in the food. Nutrients obtained from different food items seem to be somewhat fine from the quantitative point of view but qualitatively it seems to be a very low level because most of the nutrients are being taken from food grains which are not qualitatively superior.⁶ For example, in all classes, protein is being consumed more than the required standard level, but due to the majority of it being obtained from food grains, it is not as good as the best protein obtained from foods like eggs, milk, meat, fish and cheese, etc. The same fact is more or less visible concerning other nutrients.⁷

Misconceptions impede better use of available food, due to which health deteriorates, and falls behind in this competitive environment.⁸ Some beliefs were as follows, the woman should feed their family first, women should avoid certain foods during pregnancy & lactation, girls need less food than boys, and the sick person needs less food than a healthy person and less food frequency during pregnancy.⁹ There were also beliefs they are deprived of nutritious food, for example, some women avoid oranges, guavas, and other fruits during suffering from a cold, whereas vitamin 'C' is found in abundance in these fruits, which is very helpful in overcoming these infections.¹⁰

The objective of this study was to find out the food beliefs present in the research population and to test the beliefs with the existing research based literature in which that decision can be reached against the existing beliefs.

METHODOLOGY

The local of the study was selected conveniently from the Kanpur and Kannauj districts of Uttar Pradesh state while the selection of the respondent was done by random sampling method. A total of 252 homemakers were interviewed after describing the research proposal and written concerns. The tool used for data collection was constructed based on indications obtained from a previous study; the actual data collection was started only after testing its validity and reliability by the appropriate method. Only such claims have been included in this study, which have been claimed by at least 10 percent of the respondents. The claims made by the respondent were discussed based on research articles already available on the electronic database like Pubmed, Springer Link, Research Gate, Scopus, Web of Science, and GoogleScholar.

RESULTS AND DISCUSSION

Knowledge related to food and nutrition:

Lack of appropriate or proper nutrition knowledge promotes food myths because traditional food beliefs are not refereed based on logic.¹¹ Food myths are nutritional beliefs that people take as gospel but that are ill supported by or even at odds with the best available scientific evidence. Nutritional knowledge is a powerful weapon in the fight against false information and the promotion of healthy eating choices.¹² Hence, it

Table 1: Nutrition knowledge of adults

Food required for	Relevant answer		Irrelevant answer		Don't know	
	N	%	n	%	n	%
Provide energy	85	41.87	75	36.06	43	41.35
Prevent illness	64	30.77	91	43.75	53	25.48
Prevent anemia	61	29.33	84	40.38	63	30.29
Growth & maintenance	52	25.62	88	42.31	63	25.00
Build teeth/bones	44	21.15	88	42.31	76	36.54
Healthy eyes	40	19.23	97	46.63	71	34.13
Prevent obesity	32	15.38	110	52.88	66	31.73
Average	54	26.19	90	43.48	62	32.07

was concluded that, despite the levels of nutritional knowledge, there are still several food myths that need to be debunked, through the proper channels, to promote healthy, balanced, and adequate eating behaviors.

Participants were lacking in nutrition related knowledge; 41.87% gave the correct response when

asked about the energy giving foods 32 respondents gave the right answer about foods needed for growth & maintenance. Overall, only 26.19% of the respondents gave relevant answers, 43.48% irrelevant answers, and 32.07% of respondents did not know anything about the above subjects.

Better utilization of all available food items

Table 2: Popular beliefs that are hindering the use of food (n=252)

S. no.	Name of food stuff	Inhibitors	Claimants	
			In nos	In %
1.	Non-vegetarian (Except eggs)	Non-vegetarian food is not good for the health	209	82.94
2.	Pumpkin	Only men can cut the pumpkin; pumpkin vegetables cannot be made if there is no man available for engraving.	169	67.06
3.	Citrus fruits	Consumption of citrus fruits is harmful in cold	136	53.97
4.	Green vegetables	Eating green vegetables during pregnancy will increase the chances of a pregnant woman getting a cold.	121	48.02
5.	Dry pea	Using dry peas produces gas, upset stomach, and digestive problems arise	111	44.05
6.	Bengal gram dal	Upset stomach and digestive problems arise	106	42.06
7.	Brinjal	Eating brinjal increases the pain in joints, which is why many people do not like brinjal.	86	34.13
8.	Meat	Eating meat causes more anger	81	32.14
9.	Ladies finger	Increases the joints pain	68	26.98
10.	Banana	Eating bananas during pregnancy caused cold	63	25.00
11.	Black gram dal	Increases the joints pain	60	23.81
12.	Bottle guard	Eating bottle gourd seeds causes birth to a girl child.	55	21.83
13.	Millets (bajra)	Feeding bajra to children can make their color darker.	51	20.04
14.	Green vegetables	Only fresh vegetables are	48	19.05
15.	Green vegetables	Green vegetables are easily digested	36	14.29

is necessary for a healthy diet, but due to some misbeliefs and myths that are hindering the use of food variety. Respondents, 24% reported that eating dry peas or Bengal gram dal causes acidity, so they were not wanted to cook. 67.06% of people claimed that Pumpkins could be cut only by men;

if no men were available in the HH, then there was a problem with carving the pumpkin. The above table shows that several types of food inhibitors were prevalent in the populations.

(1) Non-vegetarian food is not good for

health:

In a selected population, 82.94% of the respondents believed that non-vegetarian food is harmful to health. By the way, there are many reasons behind the less use of non-vegetarian food in the large population of India like religious restrictions, compassion towards animals, and misconceptions about non-vegetarian food. According to Kumar and Gautam, the villagers of Uttar Pradesh sell meat for 97% of the total production because they have compassion for the animals they nurture and do not want to see them as food.⁶

Reviewed research articles showing that including chicken mutton and fish has several health benefits because this type of food is rich in protein and vitamins.¹³ Non-vegetarian food strengthens muscles and helps them grow faster. It also helps to maintain body stamina and hemoglobin. Vitamin B 12 and iron found in meat, and fish are in abundance and It is very important for the formation of red blood cells and nerve fibers. If bodies do not produce enough red blood cells it can lead to iron deficiency known as anemia.¹⁴ According to medical science, a diet constituting seafood like fish and eggs sharpens our intellect and promotes the smooth functioning of our brain.

The protein content in it is quite more than what is required by the body. Non-vegetarian food has a higher amount of protein content, and much intake of meat makes digestion difficult. Consuming much non-vegetarian food may lead to acidity and constipation which in turn might cause other digestion related complications as well.¹⁵ Overall research shows that the intake of non-vegetarian food in prescribed amounts is beneficial for health.¹⁶

(2) Only men can cut the pumpkin:

It was a belief that only men can cut pumpkins, due to which if there are only women in the house, then it is not used to make pumpkin curry.^{16,17} There was no scientific basis for this, but 67.06% of the respondents believed in this tradition. Pumpkin is an affordable and available all season vegetable for rural areas of Uttar Pradesh. Many types of research show that the potassium, fiber, and vitamin C in pumpkin can all help you keep your blood pressure low.¹⁸ Eating pumpkin every day is a great way to promote good gut health and a strong heart. After being rich in nutrients, hindering barriers to pumpkin use is a matter of concern.

(3) Consumption of citrus fruits is harmful in cold:

The present research shows that 53.97% of respondents claimed that citrus fruits are not good

during the cold and winter. In winter most rural people were avoiding the use of citrus fruits like lemon, orange, and other citrus fruits.

But several types of research show that the consumption of fruits and vegetables containing vitamin C is very beneficial for health.¹⁹ It is believed that they should not be consumed in the problem of cold and flu. It is wrong to believe so. There is an immunity booster, which is useful in these problems.^{19,22} There is no harm in consuming them for cold and flu. Because oranges are rich in vitamin C, we believe falsely that eating them can help cure a cold. Let us be clear: after the onset of cold symptoms, eating oranges or drinking orange juice is not an effective treatment.^{20,21}

(4) Eating green vegetables during pregnancy will increase the chances of a pregnant woman getting a cold:

48.02% of the population believed that eating green vegetables during pregnancy can cause a cold in the mother, she used to avoid eating vegetables with high water content. Green vegetables have an important role during pregnancy, so misconceptions about them can be a hindrance to the use of green vegetables.

Greens and sprouts are generally great foods to add to the diet as they contain large amounts of fiber and nutrients.²³ Most of the studies suggested adding all these vegetables to the diet and walking through the pregnancy journey with a happy mind and healthy body supplied with the vitamins and nutrients they need for healthy growth. According to *Kumar et al., (2022)*, Dark greens also supply a significant amount of folate, a B vitamin that promotes heart health and helps protect against some kinds of birth defects.^{24,25} However, some greens or sprouts may contain bacteria, such as Salmonella or E. coli, which can cause infection but there is never a danger in eating green vegetables by washing them well, they are rich in nutrients.²⁶

(5) Using dry peas produces gas, upset stomach, and digestive problems arise:

The 44.05% of the population of the study area experienced and believed that eating peas causes stomach problems, which is why they avoided the use of peas. Peas contain high amounts of complex sugar called raffinose, which the body has trouble breaking down.²⁷ Peas are also rich in fiber, and a high intake of fiber can increase gassiness.²⁸ Peas are available in abundance in Uttar Pradesh and its price also works with all parties, it is a cheap source of protein. Therefore, after soaking the peas once, the problem can be reduced by throwing away

their water.^{29,30}

(6) Use of Bengal gram upset stomach and digestive problems arise:

Bengal Gram, also better known as dark brown peas or chana, is widely regarded as an important pulse, owing to its nutritional properties.³¹ It contains a good amount of iron, sodium, and selenium in addition to small doses of manganese, copper, and zinc. A handful of Bengal gram is a very good source of fiber and folic acid. The 42.06% of the population (Table 2) of the study area experienced and believed that eating Bengal gram causes stomach problems, which is why they avoided the use.

According to Bodagh and Maleki (2018), Chana also has certain medicinal properties.³¹ Always soak some grams overnight and then have them in the morning along with a dollop of honey.^{32,33} The water can be macerated and consumed as a healthy tonic. Sprouted Bengal gram also serves as a great source of vitamins and B-complex.³⁴

(7) Eating brinjal increases the pain in joints:

Brinjal has a wide array of health benefits like getting strong bones and offsets the onset of osteoporosis.^{35,1} It helps to deal with symptoms of anemia, increases cognitive function, improves cardiovascular health, and, even, protects the digestive system. Furthermore, brinjal also helps you to lose weight, reduces stress levels, helps to protect infants from birth defects, and also fights some strains of cancer.³⁶ In the study area, 34.13% of the population reported that eating brinjal caused increased pain in joints.

Despite all the health benefits that brinjal provides, consumption of this vegetable in large quantities can have some harmful effects on the body.^{37,3} Nasunin, present in brinjal is a phytochemical which can bind with iron and remove it from the cells. The oxalates in this vegetable can cause stones in the kidney.^{38,39}

(8) Eating meat causes more anger:

According to research presented at a recent symposium at McGill, seeing meat appears to make human beings significantly less aggressive.⁴⁰ Protein consumption (from foods like fish, beef, chicken, turkey, tofu, beans, eggs, and unsweetened yogurt) has been linked to higher levels of dopamine and norepinephrine, which are brain chemicals that play a role in your mood, motivation, and concentration.^{41,42,43} In the present study 32.14% of the population in study areas showed that eating meat causes more anger.

(9) Lady's finger Increases the joints pain:

In the present study, it was found against the lady's finger, after eating it, joint pain is not confirmed by any research paper. 26.98% of the population believed that eating okra causes joint pain (Table 2). There are no studies that report any major side effects of ladyfinger. However, some people might be allergic to a lady's finger. According to *Tschon et al., 2021*, the lady's finger contains solanine, which is a toxic compound that may trigger joint pain, arthritis, and prolonged inflammation in some people.⁴⁴ Potatoes, tomatoes, eggplant, blueberries, and artichokes also contain solanine. Excessive use of any finger can cause side effects, but mixed amounts are beneficial for health.⁶

(10) Eating bananas during pregnancy caused cold:

Researchers suggested that bananas should be on the top of your list and can be eaten throughout pregnancy.⁴⁵ They are rich in carbohydrates and will give you the much needed energy during this time. Bananas are super healthy for those ladies who suffer from anemia, as it gives a good boost to the hemoglobin levels.⁴⁶ But 25.00% of the participants (table 2) of the study population claimed that pregnant women should not eat bananas because they can cause cold problems in pregnant women. When pregnant women in our country are suffering from underweight and anemia, in a situation, bananas can prove to be a portion of good food, if there is a need for proper use.

Banana is healthy and energizing but should be avoided at night during winter only if the person is suffering from cough and cold or other respiratory ailments as it irritates when it comes in contact with mucus or phlegm.⁴⁷⁻⁴⁹

(11) Black Gram Dal Increases joints pain:

Black gram can improve digestion as it is filled with fibers that help with the bulking up and movement of your stool.^{51,52} It can therefore be used to combat both, constipation and diarrhea.⁵⁰ It boosts your energy by helping provide more oxygenated blood to your organs. It increases your bone mineral density, making bones stronger and healthier as you grow older. In the present research, 23.81% of the participants of the study population claimed that eating black gram dal increases the problem of joint pain.

One of the main issues of consuming high amounts of black grams is that it increases the amount of uric acid in blood.⁵³ As a result, it can stimulate the calcification stones in the kidney. Even though it is known to prevent the same, very

high quantities of a black gram can induce the very thing you want it to prevent. It is proved by all the studies that use in excessive quantity can be harmful but use in prescribed quantity is beneficial.¹⁷

(12) Eating bottle gourd seeds causes birth to a girl child:

Bottle gourd is not liked by all for its bland and sour taste, but it is a very healthy vegetable. It offers several health benefits, especially for pregnant women. Pregnant women need to strengthen their immune system as their nutrients get used up very fast in the path towards the delivery of their baby, and eating bottle gourd can fulfill that need.

There was only a myth about bottle gourd; it in no way proved scientifically that eating gourd seeds increases the chances of giving birth to a girl child. In the present study, 21.83% of the participants believed that eating gourd seeds would increase the chances of having a girl. According to Kumar and Gautam (2020), women who are planning to become pregnant avoid eating bottle gourd, which will help them to reduce the chances of having a girl child.^{10,17}

(13) Feeding bajra to children can make their color darker:

Millets are gluten free, rich in fiber grain that is a nutritious, highly digestible grain that is both nutritious and easy to prepare.⁵⁴ This grain is considered one of the least allergenic foods available today.⁵⁵ It very closely resembles barley in terms of size and shape but is high in fiber, which makes it easy to digest. Millets are also considered superfoods because it is additionally rich in Vitamin B, Protein, Potassium, Iron, Magnesium, and Phosphorus.⁵⁶

In the present study, 19.84% of the participants believed that the leftovers born from eating millet increased the chances of darkening when the studied article proved that millet is beneficial for healthy skin. According to research, Bajra is extremely rich in several nutrients such as protein, vitamin B6, zinc, iron, and folate. These nutrients altogether are responsible for healthy hair and skin.^{57,8}

(14) Only fresh vegetables are best:

19.05 % of the participants in the current study believed that only fresh vegetables were rich in nutrients. In today's time, vegetables and fruits are available in many forms, fresh, canned, and dried.⁵⁸ All fruits and vegetables are such that after being processed, they are sent to the market. In such a situation, need to know how beneficial their

consumption is for you. Fruits and vegetables that come canned or dried in the market are equally beneficial for health.^{59,60} Provided that no harmful chemical substances have been used in their processing. There are many areas of India where many vegetables like cabbage are dried and used.⁶¹ They also contain nutrients beneficial for health.

(15) Green vegetables are easily digested:

In the present study, 14.29% of the participants believed that green vegetables go quickly. Green leafy vegetables and greens are rich in fiber. After consuming them, the stomach takes more time to digest them.⁶² Due to the presence of fiber in abundance, the stomach has to work harder to metabolize them. Chew them properly then they can be easily digested.⁶³ In such a situation, it would be completely wrong to say that green vegetables are easily digested.⁶⁴

According to Kumar *et al.* (2022), There were religious feelings and some food myth was responsible for less consumption of meat and eggs, their consumption could be increased by resolving food myth related issues.¹⁰ Only 12.06% of the fish was consumed in HHs out of the total produced, 2.21% was shared with other HHs, and the remaining 80.88% was sold. Most people were vegetarian, and have sold 100% of the total meat production.¹⁷ At a time when pregnant women, adolescent girls, and survivors are suffering from nutritional deficiency, confusion about such nutritious food items can add to the problem, today there is a need to remove all the hinders and make proper use of them.^{65,66}

CONCLUSION

For the improvement in the nutrition status of vulnerable groups, the emphasis has to be on full utilization of the available food items and the existing obstructions have to be removed. In this article, the misconceptions present in the rural population of Uttar Pradesh state, the scenario have been discussed by studying the available research article and it was found that many misconceptions and wrong beliefs about food are affecting the nutrition of the community. Some misconceptions were as follows (highest claimants to lowest): non-vegetarian food is not good for the health (82.94%), only men can cut the pumpkin (67.06%) pumpkin vegetables cannot be made if there is no man available for engraving, consumption of citrus fruits is harmful in cold (53.97%), eating green vegetables during pregnancy will increase the chances of a pregnant woman getting a cold (48.02%), using dry

peas and Bengal gram dal produces gas (42.05%), upset stomach, and digestive problems arise. Most of the myths were beliefs, which were not proved to be true based on the research paper studied and to be used in a prescribed quantity. The use of all types of food items in a combination proves beneficial.

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