

Knowledge and Awareness about Health Benefits of indigenous fermented foods: A comprehensive study

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Abstract

Fermented foods are not exactly human inventions they are natural phenomena that people observe and then learn how to cultivate. It is a unique process with great potential which is an environment friendly process, consume less energy, produce less waste and easy to manage under house hold condition as well as in industrial scale. Fermentation of food offer immense opportunity for production of products which can be classified as "organic food and natural food", "health food and convenience food", ethnic food and functional food " and not to forget "food for clinical nutrition". Fermented foods are manufactured and consumed throughout the world. The foods such as cereals, pulses. Oat crops, vegetables, fruits, meat and fish are preserved by one or other method of fermentation. The objectives of the research were to study the knowledge about preparation of traditional methods of fermented foods and awareness about their health benefits used at house hold level by the homemaker. One hundred housewives were selected by random purposive sampling method for present study. The data was collected with the help of questionnaire cum interview method. Results of the study revealed that majority of the respondents were not aware about the term "fermented food" even though they use it in their day to day life. The most common fermented foods used at house hold level were Water rice (Pakhal), Pan Cake (Chakuli pitha, Chitau pitha), Curd, Torani kanji etc. Majority of the respondents used Water rice (Pakhal) as one of their staple food. Very few respondents were aware about health benefits of fermented foods. Most of them used fermented foods because of traditional practice. Fermented foods were seldom used by modern house wives because of lack of knowledge about their preparation, usage and nutritional value. However traditional preparation of those foods is largely uncontrolled and laid no guidelines are available. Further as people move from rural area to urban area they often give up traditional foods and inclined towards westernized foods. Thus steps should be taken to educate and create awareness among people regarding health benefits of the fermented foods for greater interest of the society.

Keywords: fermented food, water rice (pakhala), pan cake (chakuli), chitau pitha, curd, torani kanji

Introduction

A food is considered fermented when one or more of its constituents have been acted upon by microorganisms to produce a considerably altered product acceptable for human use. Traditional or indigenous fermented foods are those popular products that are used since early history. These can be prepared in the household or in cottage industry using relatively simple technique and equipment. The origin of most fermentation technologies have been lost in the mist history. Many fermented foods are not receiving world attention for their health promoting or disease preventing effect. There are some important steps of preparation of different types of fermented foods traditionally practise in our country. Fermentation is the process according to which microorganisms break down organic matter to obtain the energy required to stay alive and make organic compounds such as alcohols and organic acid, as well as inorganic compounds such as carbon dioxide and hydrogen. Depending on the substances formed the process is called alcohol fermentation, lactic acid fermentation, amino acid fermentation etc, Fermentation is used in various ways in our day to day lives. There are various types of fermented foods used all over the world but they all share some of the same

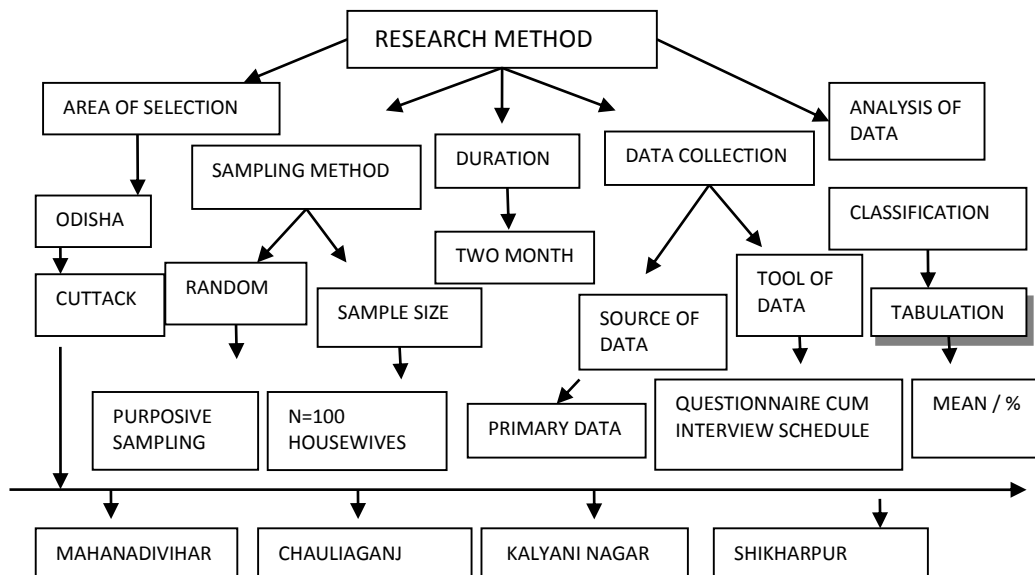
characteristic, Such as (A) Fermented foods can be stored for a certain length of time. (B) Fermented foods have a very distinctive flavor and smell. (C) It promotes good health. Odisha is one of the state of India where different types of fermented foods are used and prepared in different ways at house hold level. It is observed that even though those food stuffs are very good for health, preparation and intake of these fermented foods are decreasing day by day. Therefore this work is designed to study the knowledge and awareness of the house wives about health benefits of Indigenous fermented foods at household level.

Objective

The objectives of the present research were to study the knowledge about traditional methods of preparation of fermented foods and awareness about the health benefits of fermented foods of the homemakers.

Methodology

One hundreds house wives were selected by random purposive sampling for the present study. The data was collected with the help of questionnaire cum interview method.



Result and Discussion

The results of the study were statistically analyzed and discussed below.

A) Demographic Profile of the Respondent

Table 1: Demographic profile of the respondents (N =100)

S. No.	Characteristics	Frequency	Percentage
1.	Age – Below 20 years	Nil	-
	20 to 50 years	85	85
	Above 50 years	15	15
2.	Education – Below 10 th	Nil	-
	10 th to Graduation	36	36
	Above Graduation	64	64
3.	Total Family Income-		
	Low income (less than 1 lakh)	05	05
	Middle income (1 lakh to 2 lakh)	84	84
4.	Types of Family – Joint family	11	11
	Nuclear family	32	32
		68	68

Information on demographic profile of the home makers revealed that majority of the respondents were between the age group of 20 to 50 years. All of them were well educated and 64% of them were educated above graduation. Maximum of the respondents belonged middle income group family and nuclear family system was found to be prevalent among the respondents.

B) Knowledge about Fermented Foods

Table 2: Knowledge about Fermented foods (N=100)

S. No.	Response	Frequency	Percentage
1.	Positive	26	26
2.	Negative	74	74

It was interesting to note that majority of the respondents were not aware about the term fermented foods even though they used it in their day today life.

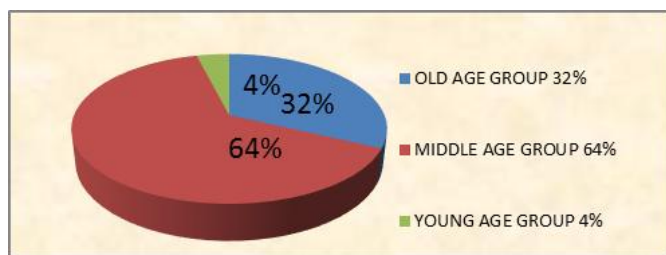
C) Frequency and types of fermented foods consumed by the respondents

Table 3: Frequency and types of fermented food consumed by respondent (N=100)

S. No.	Foods Consumed	Daily	Weekly	Occasionally
1.	Water Rice (Pakhala)	16	39	45
2.	Curd (Dahi)	32	60	08
3.	Pancake (Chakuli)	06	84	10
4.	Idli	00	39	61
5.	Torani kanji	00	00	100

Results of the table no 3 depicts that daily consumption of Curd was more in comparison to other food stuffs whereas Pancake (Chakuli) consumption was more on weekly basis. However it was interesting to note that Idli and Torani kanji was not consumed daily by the respondents. Rice water, Curd and Pancake was found to consume on regular basis by the respondents.

D) Acceptability of Fermented foods by different age groups



It was interesting to note that respondents belonged to middle age group (64%) or old age group (32%) liked to take fermented foods in comparison to younger ones.

E) Perception about Fermented Foods

Table No 4: Perception about Fermented foods (N = 100)

S No.	Characteristics	Frequency	Percentage
1.	Taste	24	24
2.	Variety	64	64
3.	Preservation	06	06
4.	Good for Health	06	06

Result of Table no 4 revealed that most (64%) of the respondents liked to take fermented foods to add variety to their diet and 24% of the respondents liked to take it because of taste. Only 12% respondents used fermented foods for preservation health purposes.

F) Scientific knowledge regarding fermented foods

- a) Most of (74%) of the respondents unknown about beneficial Bacteria such as Bifido bacteria present in fermented food,
- b) Only 32% respondent had idea about Lactobacilli bacteria which may protect both the lining of intestinal tract and immune system.
- c) Only 10% had knowledge about fermented food which controls the growth of disease causing bacteria such as eliminate toxin, control Asthma and reduce the risk of Allergic, benefits for mood and mental health.

G) Reasons for Less use of Fermented Foods (N=100)

S. No.	Characteristics	Frequency	Percentage
1.	No time	06	06
2.	Dislike	14	14
3.	Health problem like Gastritis /Asthma	80	80

Information on less use of fermented foods revealed that 6% respondents had no time to prepare any kind of fermented food because of their busy schedule where as 14% respondent said they did not like the fermented food at all.80% respondents used fermented foods such as idli and chakuli, but they suffer from gastritis or asthma or any type of allergic.

H) Preparation fermented foods

i) Preparation of Pakhala and its health benefits

Pakhala is a rice porridge or flooded rice prepared by the process of fermentation where leftover rice is covered with water and left overnight to ferment. This lightly fermented rice is eaten the following morning with salt, lime and chilies along with fish, egg or vegetables. Through fermentation Pakhala is enrich with

calorie and vitamin B like riboflavin, which is easily digestible and good for health.

ii) Preparation of Curd (Dahi) and its health benefits

Boil the milk first. Let the milk become Luke warm, add 1 tsp of curd and mix well. Cover and keep the pan for 5-6 hours or till the curd set. It is made by using the culture of bacteria called lactobacillus deldrueckii. These lactobacillus aids lot of benefits to the digestive system, help to cure many stomach infections, including pyloric infection. It strengthen our immune system due to presence of good bacteria. Curd has anti-fungal properties mainly due to availability of lactic acid. Consuming Curd daily will prevent hypertension and promote better cardiovascular health

iii) Preparation of Torani Kanji and its health benefits

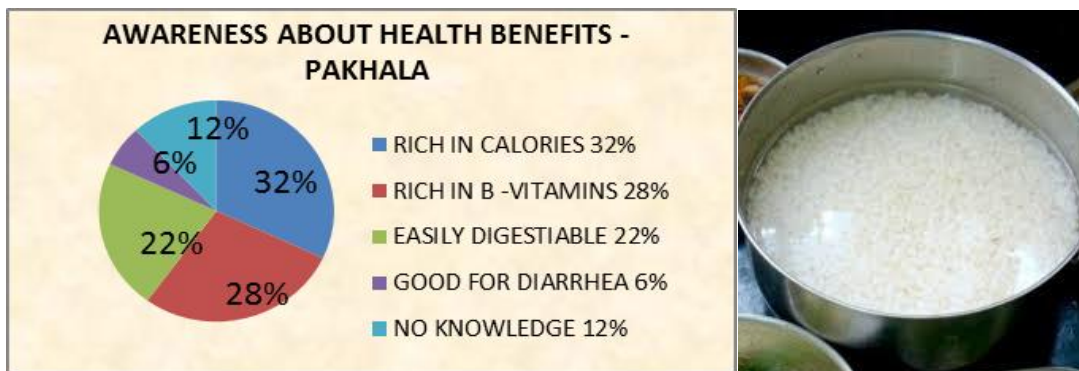
Take Torani in a bowl. Add Salt, Water, Bengal gram flour, and Turmeric Powder in curd and mix properly so that it will get any lumps. Cut Pumpkin, Ladies finger and Papaya in dice shape. Cut Radish in round shape. Wash and drain the cut vegetables. Boil the vegetable with salt and turmeric .Cut Green Chilly in lengthwise. Take a pan and heat 1tbsp of Oil and fry the Ladies finger & Radish for 5 mins in low flame. Take a heavy bottom pan & add the Torani mixture with Green Chilly and boil it for 7 mins. Add all the vegetables and boil for 5-7 mins. Now add Ladies finger and again boil till all the vegetables get cooked. Take the pan out from heat and keep side. Heat another 1 tbsp of Oil in a Frying Pan. Add Mustard Seeds; Cumin Seeds; Fenugreek Seeds; Fennel Seeds; Asafetida and fry till it crackles. Add Red Chilly Whole; Curry Leaves; Garlic and fry for 1 min. add this Tadka in the vegetable pan and mix it well, Now “Kanji” is ready. It is good source of energy as well as prevents Constipation and dehydration. It is also a home remedy for viral infection and can manage diarrhea well.

iv) Preparation of Pan Cake (Chakuli) and Idli and its health benefits

Chakuli which resembles *dosa*, is a round, fried pancake. Rice is washed, soaked, dewatered and briefly sun-dried. Dried rice grains are pounded in an iron or wooden mortar and sieved to obtain a fine powder. Black gram is soaked until the seed coat is easily removable by applying a gentle pressure. The grains are rubbed with hands to loosen seed coats, which are allowed to float away. The black gram is then made to a smooth paste using a stone grinder. The paste is beaten repeatedly by hands with a little amount of water and mixed with rice powder, appropriate amount of lukewarm water and salt. The batter is left to ferment under cover for 4-5 hrs during summer (12-15 hrs during winter). The fermented batter is fried over a hot greased pan to round shaped flat cake. Spices, like ginger, onion and black pepper powder are sometimes added at the time of frying. Idli: Soak the rice and urad dal in separate bowls for at least 4 hours. These will be later ground together to make a batter which ferments for 6 hours. Oil the idli steamer plates; spoon the batter into the plates set the idli steamer into a large pre heated pot with water in the bottom for steaming. Steamer the batter for 5-10 minutes or until fluffy. Remove the idies from the steamer and serve warm with chutney. In Chakuli and Idli the fermentation process increases the vitamin B, vitamin C, Zinc and Iron. Fermentation of cereals and legumes improve bioavailability of Iron by reducing phytate level. Phytate is an anti-nutrient that prevents absorption of many vital nutrients such Iron.

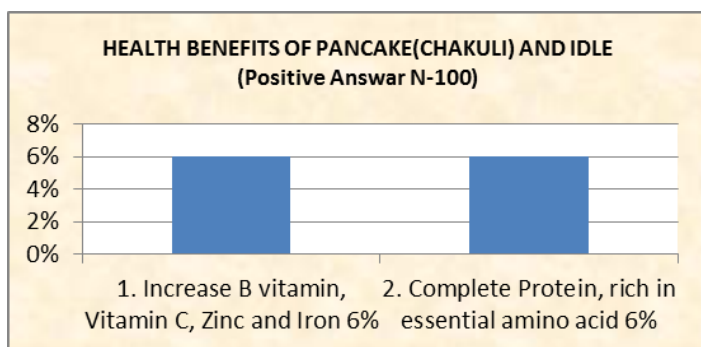
I) Awareness about health benefits of different foods

i) Awareness about health benefits of Water rice (Pakhal)



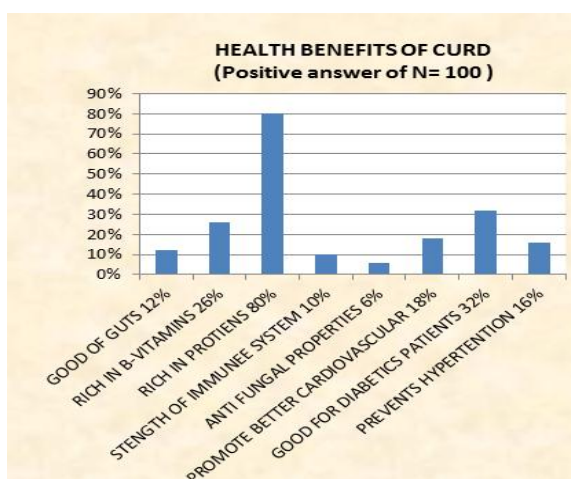
It was interesting to note that majority of the respondents were unaware about the health benefits of water rice except few such as rich in calories (32%), rich in vitamins (28%), easily digestible (22%) etc.

ii) Awareness about health benefits of Pancake (Chakuli) and Idli



Only few respondents were aware about health benefits of Idli and Pancake i.e. 6% only.

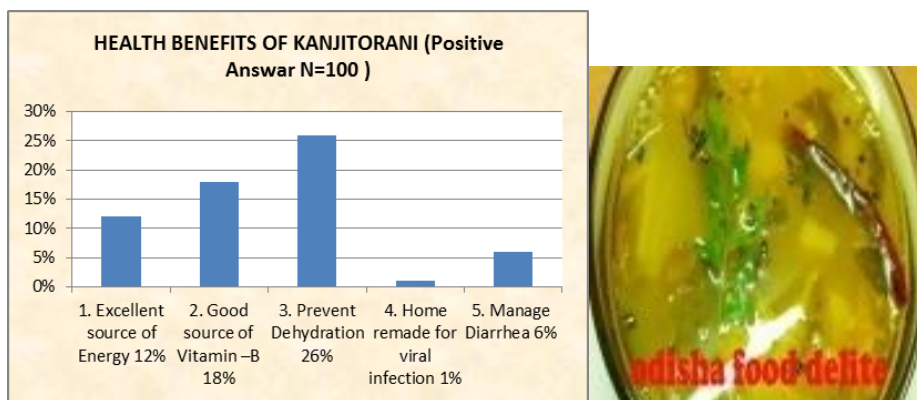
iii) Awareness about health benefits of Curd



Information related to awareness about health benefits of curd showed that majority of the respondents well known about the protein value of protein followed by good for diabetes patients

and rich in B vitamins. Very few respondents were aware about antifungal properties of curd as well as its effect on gut and immune system.

iv) Awareness about health benefits of Kanjii Torani



It was interesting to note that majority of the respondents were not aware about the health benefits of Kanji Torani. Only few respondents were aware about its health benefits such as it prevents dehydration (26%), good source of vitamin (18%), excellent source of energy (12%).

Conclusion and Suggestion

It can be concluded that the respondents were not comfortable to feed fermented foods to their family members because they have poor knowledge about the health benefits of fermented foods. The modern housewives had inclination towards western diet and had no knowledge about the value of indigenous fermented foods and their preparation. It is not only a method of preservation but also a tool to improve quality, digestibility and nutrition. The popular traditional food is gradually decreasing day by day due to increased rate of urbanization and industrialization. It was also observed that indigenous knowledge were not being transferred to the younger generation due to lack of interest on their part. Thus it is a challenge for the food scientists to carry on in-depth research on the health benefits of the fermented foods and to transfer the scientific knowledge to the common people of the society for greater interest of the community.

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