The Nutritive Benefits of Pap Consumption to Human Beings. (Students of Federal College of Education, Okene, Kogi State as a Case Study)

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Abstract
This research focuses on the nutritive benefits of pap consumption to human beings (a case study of selected students of the Federal College of Education, Okene in Okehi Local Government, Kogi State). The motive of the research was to determine the benefits of pap consumption to human beings. The research would be of benefit to students in various environment, the readers and the society at large. The population was made up of students between the age group of 19-25years, a total of 50 questionnaires were distributed and the same number retrieved. Data was analyzed using frequency tables, percentage distribution and bar charts. Result collected showed that 90% of the respondents were well aware of pap while 10% were faintly aware of it; finally, recommendations were made to enhance pap consumption in a bid to harnessing its benefits to human nutritional and health status.

INTRODUCTION

Maize "Pap" Ogi in Yoruba is produced by soaking clean and healthy maize grains in water for 2-3 days. The grains are washed several times in water and grinded to obtain a paste. The paste is sieved to smooth slurry in clean water which is allowed to settle and the supernatant decanted. The settle mash-like substance [slurry] is the raw pap Ogi, (Omenu, 2011). To prepare it for food, the slurry is mixed with hot water and stirring until it forms a thick gel. This thick gel is referred to as the liquid pap [Ogi]. Ogi as a weaning food for babies could be mixed with milk or with grinded crayfish before being fed to babies. Also as a very nutritive diet in Africa, for example, adults consume it with bean cake, fried ripe plantain, mixed with little sugar and milk. The characteristic qualities of fermented food which includes liquid pap [ogi] are of interests to researchers. Many fermented foods are known, while some serves as main meal, others as beverages or high prized food condiments, (Abdul Bahaman and Klowole 2006). Those which serve as main meals and beverages are usually from fermentation of carbohydrate as raw materials most of which have low protein and vitamin contents. Despite the dawn of science and technology in Africa, the production of fermented foods is still largely a traditional formula and done at homes in a crude manner, (Obizoba, 1998). The crude form of processing encourages high microbial contaminations which at times make some foods undesirable when organisms causing spoilage, food poisoning or food intoxication are present.

THE FOLLOWING ARE THE BENEFITS OF CONSUMING PAP:

Regulates Blood Pressure:

Pap is an excellent source of potassium and contains zero sodium content, making it a good diet for people with high blood pressure and those who want to maintain stable blood pressure.

Another benefit of taking potassium-rich foods such as pap is that it helps to lessen the effect of sodium in the body while also relieving discomfort in the blood vessel walls,

thereby protecting you from myriads of health problems that might emerge, (Sanni and Adesulu, 2013).

Lowers LDL Cholesterol:

There are two primary forms of cholesterol in the body, low – density lipoprotein [LDL] and high – density lipoprotein [HDL], respectively. Excess cholesterol in the body will cause plaque to grow in artery walls, making circulation a problem. It may also result in undue heart strain, and can even lead to high blood pressure stroke, or heart attack.

On the positive side, pap contains a decent deal of Chromium, Zinc, Magnesium, and some other active properties that help minimize the body's cholesterol levels of 'poor' LDLs.

In pap, chromium is found to be involved in lowering LDL cholesterol levels as well as inhibiting atherosclerotic plaque formation in the body. This same mineral is also linked to improved levels of blood sugar, reduced risk of type 1and 2 diabetes, reduced depression, increased levels of energy, increased regenerative capacity, to mention but a few. Again, pap's Zinc and Magnesium content are also considered great for lowering the body's LDL cholesterols, as they possess potent properties that are useful for this, (Sanni and Adesulu, 2013).

Having said that, some of the best ways to help raise your 'healthy' HDL cholesterols and lower your 'poor' HDL cholesterols include moderate calorie intake, daily physical activity [exercise], reduce smoking, reduced sugar intake and Trans fats, to name just a few. Eating Nigerian foods with low cholesterols, too, will be perfect, (Akanbi, Agarry and Garba, 2010).

Highly Beneficial For Nursing Mothers:

Pap contains a high amount of water and some other components which facilitate the adequate flow of breast milk for mothers who are lactating.

It also helps to recover after having suffered from one disease or another, not forgetting that it is again an easy – to – digest food a friend of the digestive system.

Good Source of Energy:

Pap is an excellent source of carbohydrate, one of nutrients on which the body strongly relies on for adequate energy.

Carbohydrate – rich foods such as pap not only provided the body with energy that also encourage mental sharpness and improve fact for energy metabolism [Onweluzo and Nwabugwu, 2009].

Easy To Digest:

Pap is one of the easy – to – digest foods available. It helps the body to get rid of unnecessary contaminants and chemicals quickly by simply increasing the pace of urination.

Another advantage of eating easily digestible food is that it puts less stress on the digestive system and is good for people recovering from illness.

In addition to the above, people with digestive disorders, including irritable bowel syndrome [IBS], irritable bowel disease [IBD], or a sensitive stomach, may enjoy consuming easily digestible foods such as pap as they function on the digestive system quite carefully and seldom trigger issues [Heaney and Nordin, 2002].

Boosts the Kidney's Health:

The kidneys are among the body's most important organs, so any disruption that can cause adverse effects in the human system in this area. Many of the things that can destroy this vital organ are uric acid, urea, toxins, waste, and other hazardous substances. The great news, however, is that drinking pap can get rid of these substances because it helps remove

harmful contaminants in the body by urine. Pap consumer appears to urinate more [Martinez Maldonado, 1998].

Promotes Healthy Pregnancy and Lowers The Rick Of Neural Tube Defects:

One of the main components pregnant women need to have in order to carry successful pregnancy is folic acid. This acid deficiency may contribute to the birth of underweight children, or may even cause neural tube defects in newborn babies. Pap is high in folic acid on the plus side making it a perfect and safe food for expectant mothers [Fashakin, 2011].

Akamu Is Good For Babies And Toddlers:

Pap is one of the safe foods for children in Nigeria. In Nigeria, it's a common weaning meal introduced to infants while being highly economical, simple to prepare and easy to digest, it is also very nutritious to growing children. Brown pap is the best form of baby pap. Brown pap consists of carbohydrate, millet, and guinea corn which provide some proteins, vitamins, and minerals that are very important to the growth and overall development of babies.

In addition, Pap isn't like some people believe it to be a 'normal' food. But it is filled with many health benefits, including reduced risk of hypertension, improved digestion, sufficient breast milk flow, and improved health of the kidneys [USDA, 2012; Nnanyelugo and Onofiok, 1998].

Maize is rich in carbohydrates and minerals, including potassium and magnesium it contains trace amounts of lysine and tryptophan, contributing to the low content of protein, and trace amounts of B – vitamins [USDA, 2012].

Protein deficiency in infants and young children has been shown to have harmful effects on the brain and may have longer term effects on brain function [Omemu and Faniran, 2011]. It has been shown to have adverse effects on the immune system, resulting in a higher risk of infections [Bistrian, Blackburn, Scrimshaw, and Flatt, 1975; Omemu, 2011]. It also affects gut mucosal function and permeability which, in turn, affects absorption and makes possible bacterial invasion from the gut, which can result in septicemia. Protein deficiency has also been shown to adversely after kidney function, affecting adversely glomerular and tubular function [Benabe and Martinez Maldonado, 1998].

Fortification of food refers to the addition of essential micronutrients to food particularly added to correct specific nutritional deficiencies such as addition of vitamins and iron to breakfast foods [cereals and beverages] and fortification of sugar with vitamin A and fortification of table salt with iodine (Adegunwa, Bakare and Godwin, 2011). Several studies have shown the enrichment of ogi with different food substances such as bambara groundnut, (Adegunwa, Bakare and Godwin, 2011), pawpaw, groundnut seed, soybean [Adeleke and Oyewole, 2010], crayfish, okra seed meal, flour, scarlet runner bean, cowpea, among others. One cheap method of enhancing the nutritive value of ogi is by adding legumes to it.

RESEARCH DESIGN

The research method used was the non-experimental type, which is a survey study designed for the study of the nutritive benefits of pap consumption to human beings.

Study Setting

The setting is the students of Federal College of Education, Okene, in Okehi Local Government Area, Kogi State.

Target Population

The sample population consists of 50 peoples, 30 female and 20 male.

Method of Data Collection

The respondents were informed about the objectivity in completing the questionnaire. The questionnaire were distributed by hands and collected back from the respondents.

Method of Data Analysis

The data were analyzed statistically using tables and bar charts.

Table 1: percentage distribution on whether they have heard of pap

S/N	FREQUENCY	PERCENTAGE	PERCENTAGE
1	YES	45	90%
2	NO	5	10%
3	TOTAL	50	100%

The table above showed the percentage of the respondents that have heard about pap and those that have not heard of it. 90% were aware and 10% were not.

Table 2: percentage distribution on whether they have consumed pap

S/N	FREQUENCY	PERCENTAGE	PERCENTAGE
1	YES	45	90%
2	NO	5	10%
3	TOTAL	50	100%

The table above showed the percentage of the respondents that have consumed pap and those that have not consumed it 90% have previously consumed and 10% have not consumed it.

Table 3: percentage distribution on pap source

Responses	Frequency	Percentage
Maize	17	34%
Tiger nut	6	12%
Millet	12	24%
Soya beans	15	30%
Total	50	100%

The table above showed the percentage of respondents on papa sources 34% maize, 12% tiger nut, 24% millet, 30% soya beans.

Table 4: percentage distribution of urination immediately after taking pap

Responses	Frequency	Percentage
Yes	38	76%
No	12	24%
Total	50	100%

The above table showed the percentage of those that normally urinate immediately after taking pap. 76% ticked Yes and 24% ticked No.

Table 5: percentage distribution on the texture of pap they loved consuming

Responses	Frequency	Percentage
Thick one	35	70%
Liquid one	15	30%
Total	50	100%

The table above showed the percentage on the texture of pap they loved to consume, 70% favored thick one while 30% fluidly texture

Table 6: percentage distribution according to how they felt after taking pap

Responses	Frequency	Percentage
Yes	35	70%
No	15	30%
Total	50	100%

The table above showed that 70% of the respondents do felt dizzy/spleepy after taking pap while 30% did not felt anything

Table 7: percentage distribution on the category of persons that should consume pap

Responses	Frequency	Percentage
Yes	50	100%
No	_	_
Total	50	100%

The above table shows that all categories of persons can consume pap

Table 8: percentage distribution on whether pap is rich in minerals

Responses	Frequency	Percentage
Yes	38	76%
No	12	24%
Total	50	100%

The table above showed that 76% of the respondents agreed that pap is rich in minerals while 24% did not.

Table 9: percentage distribution on whether pap promotes healthy pregnancy

Responses	Frequency	Percentage
Yes	40	80%
No	10	20%

The table above shows that 80% of the respondents concorded while 20% did not

Table 10: percentage distribution on whether pap is one of the easy digested foods

Responses	Frequency	Percentage
Yes	40	40%
No	10	60%
Total	50	100%

The above figure showed that 40 of the respondents believe that pap encouraged tender skin while 10 disagreed

CONCLUSION

The relevance of pap have been highlighted along the nutritional benefits of its consumption in human beings in Federal College of Education, Okene. The results suggested that these pap samples were of profound benefits to the generality of tested samples and to the human population, regardless of age, status or condition.

RECOMMENDATIONS

1. It is recommended that a combination of methods could be used to obtain maximum result of pap preparation.
2. Graded quantity of potash should be used in processing maize grains to pap. The soaking medium should be changed daily.
3. Farmers and processors should be trained in principle and practice of utilizing these methods to boast food security.
4. It is recommended that all people, sick or healthy should consume pap on daily basis.

REFERENCES

Abdul Bahaman, A.A and Klowole O.M. (2006). Traditional preparation and uses of maize
in Nigeria. Department of plant biology. University of Ilorin. Ilorin Pp 219-227.

Adegunwa M.O, alamu, E.O, Bakare H.A and Godwin P.O.(2011), effect of fermentation length and varieties on the qualities of corn starch(Ogi) production. International institute of tropical Agriculture, Ibadan Nig. *African journal of Food Agricultural Nutrition and development,* vol .9, No 7 Oct, 2007, Pp 1524-1547.

Akanbi, B.O.; Agarry, O.O and Garba, S.A. (2010). Quality assessment of selected cereal soybean mixtures in Ogi production.

CRA. (2006). Corn oil (5^{th} ed.). Washington, DC: Corn Refiners Association.

Grace, T.O. Otitoju (2009). Effect of dry and wet milling processing techniques on the nutrient composition and organoleptic attributes of fermented yellow maize (zea mags). *African Jounal of Food Science* Vol.3 (4). P. 113-116.

Obizoba I.C. (1998) Fermented Foods. Inc; Osagie, A.U. & Eka, O.U. (eds), Nutritional Quality of Plant Foods. Benin city, Nigeria.

Omenu A.M (2011). Fermentation dynamics during production of Ogi, A Nigeria fermented cereal porridge. Report and opinion: 3(4):8-17 (ISSN: 1556-263).

Sanni A.J and A.T Adesulu (2013). Micro biology physco-chemical during fermentation of maize production. University of Ibadan, oyo state, Nigeria.