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DEVELOPMENT OF A MODIFIED LOW FAT RECIPE FROM AN ORIGINAL RECIPE FOR OBESE

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ABSTRACT

A typical low fat diet for obese is often misconcepted as a diet, full of raw fruits, vegetables, soups, juices, salads. It includes elimination of major recipes from our daily diet, including traditionally cooked vegetables, poultry, fish, etc. because of their higher fat content. But it can be remedied by altering the method of cooking. Typical cooking method such as deep frying, shallow frying, adding oil/ghee in dough, vegetables on top, to increase the taste and palatability of the dish can be easily altered by using method such as steaming, boiling, grilling, and baking, these help in reducing fat content of our daily recipes. Hence, everything from our daily diet need not be eliminated if altered method of cooking is used. The nutritive value of traditional food increases, if functional foods are included in it. This paper aims to modify a snack product i.e. a basket chaat which is originally deep fried hence, high in fat, high in calorie into a healthy snack which can also be consumed by an obese, following a low fat diet. Functional foods such as oats, ragi (nachni) and flaxseeds replace originally used refined flour in the modified product. Also in the product, instead of deep frying, method of steaming is used. On sensory evaluation the product turned acceptable on 5 point scale. On comparing, the calorie and fat content of modified product was found to be low.

Key words: Obesity, modification, altered cooking methods, functional foods, fat, and calorie.

INTRODUCTION

An original snack recipe which is unfit for an obese individual is modified to develop a suitable snack. Obesity is one of the major growing concerns in current population. A Body Mass Index (BMI-Weight in Kg/Height in m²) greater than or equal to 25 (kg/m²) is overweight, and a BMI greater than or equal to 30 (kg/m²) is obesity (WHO). Worldwide obesity has nearly doubled since 1980. In 2008, more than 1.4 billion adults, 20 yrs and older, were overweight (WHO). Of these 200 million men and nearly 300 million women were obese (figure no. 1). 35% of adults aged 20 yrs and older were overweight in 2008, and 11% were obese. More than 40 million children under the age of 5 years were overweight in 2011¹. At least 2.8 million adults die each year as a result of being overweight or obese (44% diabetes, 23% ischemic heart disease, 7-41% certain cancers) (WHO 2013). A basket chaat which made of refined flour and is deep fried is modified into a healthier snack by using method of steaming with addition of functional foods. The original recipe is modified in three different ways using combination of rice-ragi, rice-flaxseed, rice-oats instead of refined flour, and basic method of deep frying is replaced by steaming.

METHODOLOGY

With an aim to develop a low fat, low calorie snack product an original product was modified and standardized. An original snack product i.e. Basket chaat

was modified into the different Basket delights. The method of making original basket chaat:

The original recipe was modified in three different products as:

- Nachni Basket with Curd filling
- Flaxseed basket with paneer filing
- Oats basket with Paneer filing

With a combination of rice-ragi, rice-flaxseed, and rice-oats were standardized individually into 3 baskets. Two fillings, one with paneer (cow's milk) and other with curd were made, which are interchangeable within different baskets. Together they are named Basket Delights.

Table-1 -Ingredients used for the preparation of the developed recipes

Original Basket chaat recipe		Standardized Basket delight recipe (baskets)					
For basket		Nachni Basket		Flaxseed Basket		Oats Basket	
Maida	30g	Ragi flour	20g	Flaxseed flour	20g	Oats flour	20g
Salt	To taste	Rice flour	15g	Rice flour	15g	Rice flour	15g
Oil	1 tsp	Salt	1/8t sp	Salt	1/8 tsp	Salt	1/8t sp

For filling		Standardized Basket delight recipe (filling)			
Potato	20g	Filling 1 (Paneer filing, 2 serving)		Filling 2 (Curd Filling, 1 serving)	
Chaat Masala	¼ tsp	Paneer	20g	Curd	25g
Imli Chutney	2 tsp	Onion	10g	Kabuli chana	15g
Coriander powder	¼ tsp	Tomato	10g	Capsicum	10g
Red chili powder	¼ tsp	Salt, chili powder	To taste	Pepper powder	1/8 tsp
Lemon juice	½ tsp	Olive oil	¼ tsp	Salt	To taste
Salt	To taste				

Portion size: Serves 1

PROCEDURE FOR ORIGINAL BASKET CHAAT RECIPE

FOR BASKET

Sieve maida and salt together, add ½ tsp. oil and make a stiff dough using water. Grease the outside of a medium-sized steel bowl. Stick the dough on the outer side of the bowl so that it takes the shape of the bowl. Press well. Heat the oil for deep frying in a kadai for deep frying. Place the steel bowl in the kadai, till it is deep fried. Remove the steel bowl for as soon as the dough separates. Fry the dough till it turns light brown in colour.

FOR FILLING

Boiled and mash the potatoes. Add all masalas to mashed potato, put lemon juice. Place the filling in the basket. Sprinkle sev and serve.

PROCEDURE FOR STANDARDIZED BASKET DELIGHT RECIPE (BASKETS)

NACHNI BASKET

Mix the flours and salt, make a dough using water. Sprinkle water on the outside of a medium-sized steel bowl. Stick the dough on the outer side of the bowl so that it takes the shape of the bowl. Press well. Steam for 20minutes.

FLAXSEED BASKET

Mix the flours and salt, make a dough using water. Sprinkle water on the outside of a medium-sized steel bowl. Stick the dough on the outer side of the bowl so that it takes the shape of the bowl. Press well. Steam for 20minutes.

OATS BASKET

Mix the flours and salt, make a dough using water. Sprinkle water on the outside of a medium-sized steel bowl. Stick the dough on the outer side of the bowl so

that it takes the shape of the bowl. Press well. Steam for 20minutes.

PROCEDURE FOR STANDARDIZED BASKET DELIGHT RECIPE (FILLING)

FILLING 1 (PANEER FILING, 2 SERVING)

Heat oil in a kadai, add chopped onion, chopped tomato to the oil, add crumpled paneer, stir till properly fried, add salt and chili pwd as per taste. Use as filling for either of basket. Suggestion: sprinkle chaat masala.

FILLING 2 (CURD FILLING, 1 SERVING)

Beat curd till smooth, add overnight soaked and boiled kabuli channa and chopped capsicum. Add pepper powder and salt as required.

NUTRIENT ANALYSIS OF THE DEVELOPED RECIPES

The nutrients such as energy, carbohydrate, protein, fat and fibre content were analyzed. All the estimation was done triplicates.

SENSORY EVALUATION OF THE DEVELOPED RECIPES

The sensory evaluation of the product was done on 5 point scale by using 18 sample individuals from Msc. Part I students of clinical nutrition and dietetics, Dr. BMN college, Mumbai.

RESULT AND DISCUSSION

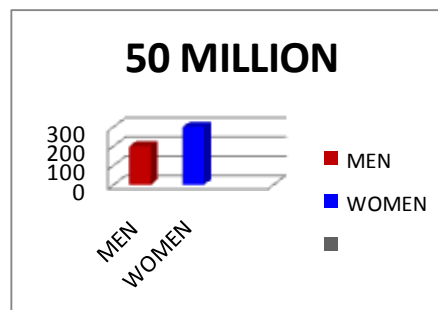


Figure-1 Obesity status

NUTRIENT ANALYSIS OF THE DEVELOPED RECIPES

The nutritional values of the Basket chaat and basket delight were calculated and compared.

Table-2 -Nutrient analysis of the developed recipes

Nutrients	Basket chaat	Nachni Basket with Curd filling	Flaxseed basket with paneer filing	oats basket with paneer filing
Energy (Kcal)	287	188	95.4	152
Carbohydrate (g)	29.32	36.35	15.24	26.2
Protein (g)	4.4	5.92	4.65	5.77
Fat (g)	17.05	2	2.85	4.35
Fibre (g)	0.5	1.43	0.1	2.38

Calculation with reference to NIN Gopalan² was done for each standardized product and it was compared with the nutritional values of original product. In case of nachni basket with curd filling when its nutritional value was compared with original product's nutritional value there was reduction in calorie and fat in the basket delight of nachni due to altered ingredients and altered method of cooking used. Although slight increase in carbohydrates was seen, there was no significant change in fibre. In case of flaxseed basket with paneer filing as well as in oats basket with paneer filing there was reduction in calorie, fat as well as carbohydrates due to altered ingredients and altered method of cooking used. A slight rise in fibre was seen.

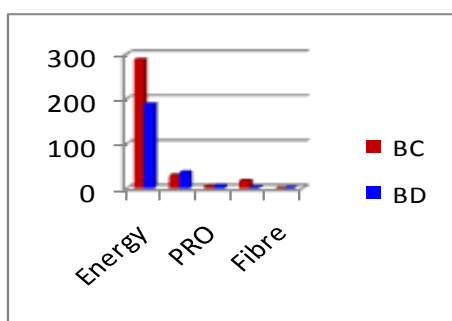


Figure-2 - Basket chaat(BC) Vs Nachni basket with curd filing(BD)

The comparison graph shows reduced calorie, fat in the basket delight of nachni due to altered ingredients and altered method of cooking used. Although slight increases in carbohydrates are seen, there was no significant change in fibre.

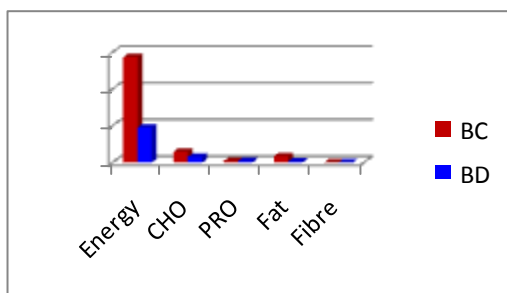


Figure-3 - Basket chaat(BC) Vs Flaxseed basket with paneer filing(BD)

The comparison graph shows reduced calorie, fat in the basket delight of flaxseed due to altered ingredients and altered method of cooking used.

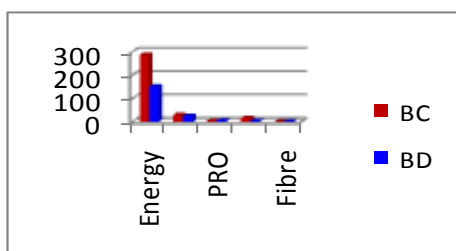


Figure-4 -Basket chaat(BC) Vs oats basket with paneer filing(BD)

The comparison graph shows reduced calorie, fat in the basket delight of oats due to altered ingredients and altered method of cooking used.

SENSORY EVALUATION OF THE DEVELOPED RECIPES

The sensory evaluation of the sample commented that the Flaxseed basket had a slight after taste. The sensory parameters such as colour, appearance, texture, flavor and taste shows good result.

DISCUSSION

In this paper a snack item was targeted to modify it into a suitable product that can be consumed by obese individual. Functional foods were used to increase the health benefits. Oats are high in dietary fibre and it is hypocholesterolemic. β -glucan (oats) decreases LDL cholesterol by 0.26 ± 0.07 mmol/L³. Oats has low Glycemic load⁴. Flaxseed are high in fibre, provides satiety, contains omega-3. On microbial testing 3 colonies were found.

CONCLUSION

The need to eliminate food items from diet is not necessary if altered methods of cooking are used, also addition of functional foods adds to the health benefits. As seen above, by modification of cooking method and some ingredients a snack can be still appealing to appetite as well as healthy.

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