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Facilitating Dietary Intake using Pictorial Portion Sizes of Indian Recipes

KEYWORDS: Portion size, Nutrient Calculation, Digital Medium

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ABSTRACT *The growing rate of metabolic diseases poses a major challenge to the health and nutrition status of the general public. Being linked to faulty lifestyle and eating pattern, these disorders can be checked at an early stage by imposing self corrective measures. While talking of such measures the first and foremost thing which comes to the mind is to make the people aware of healthy eating practices. In today's times when people have a dearth of time and their hectic job schedules at Multi National Companies leads them to binge on unhealthy junk food. All these habits manifest in the form of overweight, obesity, diabetes, high blood pressure at a very early age. The general public is unaware of the portion size that they should eat. To facilitate dietary intake of the general public, a pictorial method of estimating portion size would be helpful as visual medium is more effective than any other medium. In the present study, 50 common Indian recipes were standardised for one portion size, their photographs were captured via a digital medium and further nutrient calculation was carried out for all these recipes. This will be helpful for the people at large to check the portion sizes that they are currently eating and to improve on their eating habits by gaining information on correct portion sizes.*

Introduction :
Obesity is an important modifiable risk factor for type 2 diabetes, cardiovascular diseases risk and many other associated metabolic diseases. The major cause of obesity being sedentary lifestyle and faulty eating behaviour. Lifestyle modification and changes in eating pattern can largely reduce obesity. Dietary intake provides valuable insights for mounting intervention programs for the prevention of chronic diseases. (Hong & Lee et al.,2008)

The general public today is quite aware but in the absence of correct knowledge on portion sizes, they tend to overeat. Estimating correct portion size is a major difficulty while assessing Dietary intake. Large portion sized snacks, sandwiches, restaurant meals and beverages appear to result in higher total food intake.(Beverly,2010)

It is believed that visual perception is better perceived than other medium. Hence a photographic portion size estimate to help the general public gain information about correct portion size is urgently needed.

The photograph method is particularly attractive because for any food photographs can be made of one or several different portions.(Lucas et.al.,1995).

The photographic method of diet evaluation was first described by Elawood and Bird (1983).In this method a hand held personal digital camera was used to capture the photographs.

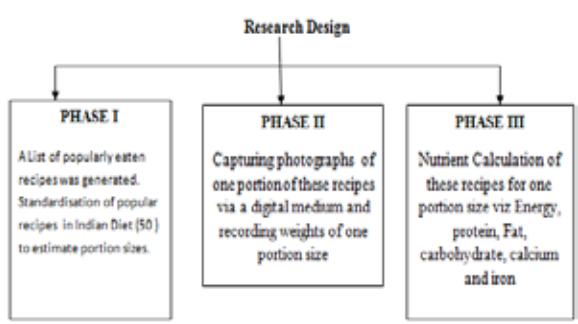
Rationale of the study :
A pictorial portion size estimation guide is not available for Indian Foods at present. Pictorial portion sizes would help the people to check what they are currently eating and to improve their eating habits by gaining information on correct portion sizes.

Visual medium is more powerful than any other medium, hence such real life pictures will help the people to use these portion sizes in their daily life.

Objectives of the study :
Broad Objective : To help the general public, a pictorial method of portion size estimation was developed. This would further help Dieticians and research scholars in taking dietary intake.

Specific Objectives:
1. Standardization of one portion size of 50 recipes, popular in Indian Cuisine.
2. Capturing photographs of these 50 recipes via a digital medium and recording the weight of one serving.
3. Nutrient Calculations of all these 50 recipes for Energy, Protein, Fat , Carbohydrate , Calcium and Iron content.

Materials and Methods:



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Methodology :

1. A list of popular food items in Indian Diet was generated.

Table 1: List of Recipes standardized for one portion size:

Cereals	Pulses	Vegetables	Beverages	Non Veg	Snacks	Salads
1.Roti 2.Aloo Paratha 3.Plain Poori 4.Poha 5.Upma 6.Vegetable Chow-mein 7.Plain Rice 8.Pulao	1.Moong dal 2.Arhar Dal 3.Chana Dal 4.Rajma 5.Chole 6.Besan Kadhi with Pakoda 7.Masoor dal 8.Sambhar	1.Mix Veg 2.Palak Paneer 3.Shahi Paneer 4.Peapotato curry 5.Pumpkin Veg 6.Brinjal Bharta 7.Ladyfinger veg 8.Sarso ka saag 9.Aloomethi	1.Tea 2.HotCoffee 3.Ice tea 4.Lassi (sweet) 5.Cold Coffee with icecream	1.Chicken Biryani 2.Chicken Burger 3.Fish Curry 4.Tandoori Chicken 5.Shami Kabab	1.Potato Pakoda 2.Potato samosa 3.Spring roll 4.Burger 5.Pizza 6.Idli 7.Dosa 8.Uttapam 9.Dhokla 10.Pani Batasha 11.Aloo tikki 12.Momos 13.Tomato and cheese sandwich	1.Tossed Green Salad 2.Mix pulse and veg salad

2. One portion of all these recipes were standardized using Basic Food Preparation- Fourth Edition, Usha Raina, Sushma Kashyap et al,2005.
3. Photographs of One portion were captured on a digital medium.
4. Weight of one portion was further recorded.
5. Nutritive value (i.e energy, protein, fat, carbohydrate, calcium, iron) was calculated for one portion size.
6. Photographs were further edited and the Ingredients, Nutritive value and portion size along with cooked weight was mentioned on the photographs.

Result and discussion

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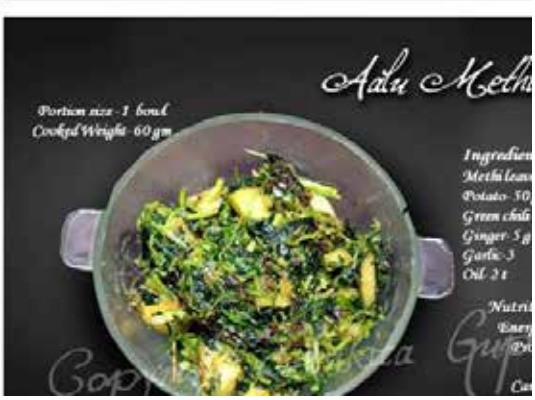

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***All the pictures have been reduced to 1/8 of the original size.**

Conclusion :

Pictorial presentation of standardised portion sizes of these 50 recipes can be useful for the general public in assessing their dietary intake as well as gain information on the weight and nutrient content of the recipes.

A digital database in the form of a website can be maintained for all these and many more recipes.

Further Dietary intake can be taken with the help of these pictures, thereby helping both Dieticians and Research Scholars in Dietary assessment.

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