DOCUMENTATION AND NUTRITIVE EVALUATION OF TRADITIONAL FOODS OF KERALA – PATHANAMTHITTA DISTRICT

PROJECT SUBMITTED

In Partial Fulfilment of the Requirement for the Award of the degree of

B.Sc NUTRITION AND DIETETICS\

BY

AISWARYA SANYA

ALEENA BEEGUM E.M

FATHIMA BEEVI K.R

Register No

SB21ND002

SB21ND004

SB21ND017

DEPARTMENT OF CLINICAL NUTRITION AND DIETETICS

ST.TERESA 'S COLLEGE (AUTONOMOUS)

ERNAKULAM

APRIL 2024

CERTIFIED AS BONAFIDE RESEARCH WORK

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Signature of Internal Examiner **Signature of External Examiner**

DECLARATION

I hereby declare that the project entitled **"DOCUMENTATION AND NUTRITIVE EVALUATION OF TRADITIONAL FOODS OF KERALA – PATHANAMTHITTA DISTRICT"**, submitted in partial fulfilment of the requirement for the award of the degree of B. Sc Nutrition and Dietetics is a record of original research work done by me under the supervision and guidance of **Ms. Elizabeth Varghese Anthikkat** , Assistant Professor, Department of Clinical Nutrition and Dietetics, St. Teresa's College (Autonomous), Ernakulam and has not been submitted in part or full of any other degree/diploma/fellowship or the similar titles to any candidate of any other university.

Place : Ernakulam

Date : 29 – 04 -2024

Name : Aiswarya Sanya

Aleena Beegum E.M

Fathima Beevi K.R

CERTIFICATE

We hereby certify that the project entitled **" DOCUMENTATION AND NUTRITIVE EVALUATION OF TRADITIONAL FOODS OF KERALA – PATHANAMTHITTA DISTRICT "** , submitted in partial fulfilment of the requirement for the award of the degree of B.Sc. Nutrition and Dietetics is a record of original work done by **Ms. Aiswarya Sanya , Ms. Aleena Beegum E.M, Ms. Fathima Beevi K.R** , during the period of the study under my guidance and supervision.

Signature of HOD

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1. INTRODUCTION

“ Tell me what you eat and I will tell you who you are “

- Jean Anthelme Brillat Savarian

Food is considered as a culture, emotion, strength and power and it is closely connected with the tradition. As the culinary culture is developed from the place of its origin , traditional local foods have the power to unite and stabilize communities while preserving their histories and promoting cultural continuity. Indian cuisine is characterized by a diverse range of culinary traditions with regional variations. Moreover, commercially processed foods like fast foods and canned foods are posing a serios threat to traditional food products. The substitution of traditional foods not only resulted in the decline of production of traditional foods but also the decline of traditional knowledge about food production. There is a lack of information about the nutritional value and cooking methods of traditional dishes. A vast range of food cultures with distinctly regional variations and preferences are reflected in traditional cuisine. (Aneena et al., 2015)

The indigenous occupants of the Indian subcontinent, the Dravidians, were driven southward when the Aryans invaded the region of about 6000 BC. The splendour of the greatest culinary arts in the world with them. Subsequently, the Mughals, British, Turks, and Portuguese, among many invaders who left their imprint on Indian cuisine by introducing their own ingredients and cooking techniques, had a significant influence on it. They contributed a wealth of diversity, which led to the creation of a singular cuisine that was different, varied, and diversified. The fundamentals of an Indian meal are the same regardless of the influence of foreigners; they consist of a few lentils, local or regional vegetables, pickles, chutneys, rice or bread and maybe a meat or fish dish that is typically served at every meal. When eating, fingers are typically used to mix the vegetables and curries. (Dubey, K. G. 2010)

The primary role of diet is to provide enough nutrients to meet metabolic requirements while giving the consumer a feeling of satisfaction and well-being. Recent knowledge, however, supports the hypothesis that, beyond meeting nutrition needs, diet may modulate various functions in the body and may play detrimental or beneficial roles in some diseases. We stand today at the threshold of a new frontier in nutrition sciences. Indeed, at least in the Western world, concepts in nutrition are expanding from the past emphasis on survival, hunger satisfaction, and preventing adverse effects to an emphasis on the use of foods to promote a

state of well-being and better health and to help reduce the risk of diseases. These concepts are particularly important in light of the increasing cost of health care, the steady increase in life expectancy, and the desire of older people for improved quality of their later years. (Marcel B Roberfroid,2000)

Food is also a factor which is responsible for or may act as cause for death and diseases. Humas can't live without food as they are required for their growth, but sometimes these food items may end their life too. likewise other factor which influence consumption of food may include, identity and convenience out of this Identity involves personal preference, creativity, sense about food and ourselves. It includes some basic factors such as taste, family, tradition, ethics and all. Gender is also main important factor i.e., difference in gender attitudes toward food product such as meat have had important consequences. Compared to women men have long invoked power since there is a rationalization for having best cuts of scarce meat. Due to this rationalization there also shows difference in nutritional aspects that is such nutritional requirements of iron, protein, calcium are more in men.(Berg , 2008)

As a working definition, a food can be said to be functional if it contains a component (whether or not a nutrient) that benefits one or a limited number of functions in the body in a targeted way that is relevant to either the state of wellbeing and health or the reduction of the risk of a disease or if it has physiologic or psychological effect beyond the traditional nutritional effect. At a consensus meeting (Madrid, October 1998) that was the last activity of a 3-year action supported by the European Union and coordinated by the International Life Science Institute Europe, a group of European experts adopted the following working definition: "a food can be regarded as functional if it is satisfactorily demonstrated to affect beneficially one or more target functions in the body, beyond adequate nutritional effects in a way which is relevant to either the state of well-being and health or the reduction of the risk of a disease". Marcel B Roberfroid,2000)

There are currently no trustworthy texts or sources that offer precise data on traditional recipes. The aim of the study is to achieve the following objectives:-

1. To identify and gather information and details about traditional food items of Pathanamthitta district in Kerala

2. To record the process of preparing traditional dishes

3. To calculate and analyse the nutritive value of selected prepared foods.

2. REVIEW OF LITERATURE

Literature relevant to the present study entitled “Documentation and quality evaluation of traditional foods of South zone of Kerala “is reviewed under the following heads.

1. Importance of traditional knowledge
2. History of traditional foods
   2.1 Food traditional to India
   2.2 Food traditional to Kerala
   2.3 Meaning, concept and definition
   2.4 History and ethical background
3. Traditional foods of adequacy of different group
4. Health and nutritional aspects of traditional foods
5. Future scope of traditional foods
6. Innovation approaches to radiation foods
7. Importance of traditional foods

1. IMPORTANCE OF TRADITIONAL KNOWLEDGE

Traditional knowledge refers to the knowledge system of a certain society that is embedded in a society’s cultural and religious belief system and has been passed on from generation to generation. The building blocks of traditional knowledge are often long periods of empirical observation that are interpreted within the cultural and religious belief system (Mazzocchi 2006). Similar to culture and religion, traditional knowledge is adaptive and responds to interactions with the environment and with other information channels (e.g. other cultures) (Mazzocchi 2006)

Traditional food knowledge refers to the cultural tradition of sharing food, recipes and cooking skills and techniques and passing down through generations. knowledge on this is hidden in global food system offering commercial convenience foods. They may also provide an individual capacity to prepare meal that are nutritious and well balanced. (Kiwik and Jessica ,2008)

It was found that culture, religion and traditional knowledge affect food and nutrition security by shaping a community's diet, food preferences, feeding practices, food processing and preparation techniques, health and sanitation practices, The food and nutrition security impact of culture, religion and traditional knowledge is inherently localized. (Elena 2015)

2. History of traditional foods

2.1 Food traditional to India

By the virtue of diversity such as their cultures, languages, climates, religions, India is blessed with many cuisines including variety of ingredients and different preparational methods. These traditional foods are prepared according to the traditional way of preparation which has been flowed by years ago and has been handled down from generation to generation. Indians predominantly follow vegetarian diet while in case of coastal areas they consume non-vegetarian diet. It's also reviewed that there are many vegetarians who consume eggs but abstain from other meat and fish-based products. (Ananthanarayanan et al, 2019)

In India fermented foods and beverages are the fundamental part of ethnic heritage. One of the traditional oldest and most cost-effective methods for producing and preserving food is fermentation (Jeyaram, 2009). It has been practiced since ancient time by the antique man as the cost-effective method for providing longevity to fermented products (foods and beverages). Traditional fermented food preparation is one of the oldest biotechnological processes around the world (Sekar and Mariappan, 2007).

The Indian cuisines primarily influenced by locally available spices, herbs, vegetables, fruits and also the diversity of soil types, climate and culture, ethnic groups and socio-economic condition and geographical location (proximity to sea, desert or mountain). Indian cuisines are also influenced by religion and cultural choices and traditions. The cuisines reflect the culture of a specific society. From the royalty of Tunde Kabab of Lucknow and Spice Biriyani of Hyderabad every food items has remarkable taste. The peoples of India have taken healthy breakfast in the morning. (Taufeeq,2019)

South Indian cultures are diverse and unique amongst Indian traditions. In spite of many changes in Indian traditions over generations, South Indian states seem to have maintained a great extent of similarity with reference to vegetarian ethnic food habits and the reason behind is not convincingly known. (Parthasarathi et al. (2022))

A closer look at the traditional foods consumed in various parts of India shows their efficacy and wisdom in the intelligent use of resources available in each specific geographical region ranging from coastal to plains to hilly to the desert, and the perfection achieved in processing such foods that suit the palate along with nutritional perspective, safety protocols, and the combination of foods in typical meals that cater to all the physiological needs of the human body. Some of them have been verified by modern science, but many need scientific documentation. Discussing Indian traditional foods from the engineering viewpoint becomes utmost necessary when there has been a significant shift towards convenience foods, and mechanization is the only possible solution to cater to this huge demand. Most of the Indian foods are majorly dough or batter-based systems, where the rheological, thermal and bulk properties directly affect the final quality of the product. In this review, the Indian traditional foods have been revisited, and the role of critical engineering properties of foods has been critically argued, along with a detailed analysis of the heat and mass transfer during several engineering operations. This will pave the way for further research and provide a holistic view of the approaches adopted till-date for engineering aspects of Indian traditional foods. (Food Control 143, 2023),(Somath et al , 2023))behind is not convincingly known.(Parthasarathi et al. (2022))

It is also known that many of the food ingredients used in Indian diets (viz., rice, salt, sugar, jaggery, mustard, turmeric etc.) are being mentioned in many pre-historic traditional texts like Vedas, Upanishads, Bhagavad Gita, and Mahabharata. (Parthasarathi et al. (2022))

Moreover, it is found that rice is the predominant item in any South Indian platter, which is generally cooked and used as a base for mixing and eating different varieties of other dishes ranging in tastes from bland to spicy to hot. Additionally rice based sweets are also prepared especially during festivals. Not just being a staple food, rice is also known to be a low-fat diet, rich in carbohydrates, proteins, vitamins and minerals. (Parthasarathi et al. (2022))

2.2 Food traditional to Kerala

Traditional food is originated from different kitchens are developed by different individual to improve nutritional and social wellbeing of people around the world. These forms of foods are socially, economically important. Also provide food security, enhances livelihood and improves nutritional status as well social stage of an individual. These forms of food also help to bind the cultural and histories behind the origin of each food. (Achaya, 1998).

Ancient trade influenced cuisines is an invaluable compendium of culinary tradition and variety of food recipes that evolved out of Kerala's kitchen. Natural beauty and resources of state especially fragrant spices are attracted by foreign soils and inspired them to initiate overseas trade along what was later known as spice route. from Kerala there are a lot of traditional foods which are attracted by foreigners. These traditional recipes are originated and handled by the past down generations via cross cultural interactions within jews of par desi, Malabari sects, Syrian Christians, Muslims. (Abraham, 2020)

Majority of the traditional foods are rich in many macronutrients and micronutrients. It can be concluded that even though there is a rich treasure of diversified traditional foods in central Kerala, many of them are facing extinction and are undergoing several changes. From the present study, it is evident that the endangered traditional foods can be replicated under prevailing conditions preserving their quality attributes. Knowledge on nutritional qualities of various traditional foods creates interest among young generation and thereby it helps to protect these items from getting endangered. (Aneena,2009).

3. MEANING, CONCEPT AND DEFINITION

India is a nation that embraces a wide range of communities, languages, climates, and faiths. India is fortunate to have a wide range of cuisines that use different ingredients and cooking techniques due to its diversity. Indian traditional cuisine, therefore, is incredibly diverse and varied and is typically made in homes or establishments such as hotels and restaurants. Traditional dishes are cooked using the customary manner or methods that have been passed down from generation to generation and have been practiced for a long time. (Ananthanarayan et al., 2019)

Traditional foods are the expressions of culture, identity, heritage, and lifestyle. The quality level of traditional foods (i.e. safety, processing and preparation, and health) is a key to secure and expand the market share. (Guerrero et al., 2009).

Tradition is "a long-established custom or belief that has been passed on from one generation to another", Oxford Dictionary 2018). According to the definition of the European Commission, a food is said to be traditional if the usage is proven to be transmitted between generations considering that one human generation of at least 25 years. Eating habits also contribute to the concept of traditional food. The definition of traditional foods is also applied to traditional ingredients and traditional preparation methods. The traditional consumption methods also varied with culture, for example Arabs and Indians use their hand for eating,

while Chinese and European use chop sticks and spoons. From the literature, a traditional food must be linked to a territory (Al-Khusaibi et al., (2019).

A product frequently consumed or associated with specific celebrations and/or seasons, normally transmitted from one generation to another, made accurately in a specific way according to the gastronomic heritage, with little or no processing/manipulation, distinguished and known because of its sensory properties and associated with a certain local area, region or country, a definition of traditional food from consumer perspective.

(Guerrero et al.,2009).

India's food culture has a rich history with many delectable turns and twists, among other things, supporting the idea that Indian culture can be understood through its cuisine. Societal factors have traditionally influenced gastronomic preferences throughout a wide range of cultures. Understanding Indian cuisine requires an understanding of its culinary history. (Antani, V et al., 2022)

4. HISTORY AND ETHICAL BACKGROUND

The origins of Indian cuisine, particularly in the Vedic era can be traced back to the attribute of Guna, a term from Hindu philosophy that denotes excellence or uniqueness. The three Gunas, sattva, rajas, and tamas, were bought to take the form of "vegetarian, spicy and carnivorous" in their manifestations. In ancient Hindu Civilizations, people's dietary choices were influenced even by the ahimsa principle. The Mughal conquest and European colonization of India brought about a number of geopolitical and sociological upheavals that put this intellectual tradition under pressure. (Antani, V et al., 2022)

India is a country where the past and present coexist and also every ingredient used to make Indian food is grown there. The participation of individuals from around the globe has broadened and enhanced its culinary culture. Indian cuisine has not lost its uniqueness despite the various influences that various rulers, conquerors, and travellers have brought to the nation; rather it has grown increasingly complex and richer as a result of the absorption of several influences. India's food is so diverse that it has left a notable and unexplored impression on international cuisine. People have been drawn to India's shores by it's beauty and mystique from thousands of years, drawing them from far lands. India has been repurposing its cuisine in response to globalization and colonialism. (Kapoor, A. 2021)

5. TRADITIONAL FOODS AT DIFFERENT GROUPS

Each age groups may prefer variety of food items, some may prefer traditional nutritious while others may prefer unhealth and unbalanced food.

The Monna tribes of West Kameng district have varieties of food items like Phinang Thukpa, Khrangpa, Bogpoi/Zan, Putang, Khazi, Tenthuk/ Baksa, Solu Kamtang, Bamu Kamtang, Dressi/Bressi, Kyola/Chola, Chameen, Chur Kamtang, Kakung, Momo, Khura/Khurba, Khabse. (Bapu et al. (2021)

However, spicy are almost equally preferred by all age groups. Fast food such as Dressi/Bressi and Momos and other form of food items are highly preferred by the young age groups (18-34 years). (Bapu et al. (2021)

A transitional variation can be observed between young and old age groups, where the old-aged prefers traditional food items and the preference of young groups ranging between the moder dish and traditional fast food. The overall average for the preference ratings of listed traditional food items reflects higher preferences among the above 55 age group compared to 34 age group. (Bapu et al. (2021)

Consumption of an adequate quantity and wide variety of vegetables on a regular basis, however, in adult populations is low. While World Health Organization guidelines recommend consumption of at least 160–240 g or 2–3 portions of vegetables/day. Elder individuals (aged 65 years plus) as a population group can have low dietary variety, or can report an unwillingness to consume certain foods, largely as a result of changes in sensory and gastro-intestinal abilities, increasing disabilities, increased medical conditions and medication usage, and reduced social and economic circumstances but those people consume large amount of green leafy vegetables and maintain good health rather than of adults of the population.(Appleton et al. (2017)

It is noted that all indicators are showing diversity in food consumption in the middle-income group compared to the high and low-income groups. This is due to food concertation among richer classes mainly towards animal source food, packaged processed food and beverages. Furthermore, the low-income group concentrated their food consumption toward cereals, served processed. The diet diversification towards served processed food, packaged processed food and beverages in urban areas may have serious health implications since these items are costlier causes the cost of calorie intake to soar. (Retheesh et al. (2021)

Traditional food is never just about eating and fulfilling our biological needs; nevertheless, it preserves the culture and tradition properties of a nation. Traditional food is known as representation of identity and embraces the components of cultural and heritage of a particular group of people in particular region. Malaysia has created distinctively traditional food based on the multi-ethnicity roots that lives together throughout the years such as Malay, Chinese and Indian communities. Presently, in this new and modern environment with economic prosperity of the country, young generation seems unappreciated the traditional food. They had been showered with Western fast food and other foreign foods; whereby traditional food is not their only option. Previous studies found socioeconomic level effects the eating behaviour of traditional food, especially in adolescents. Therefore, this study aims to investigate the impact of socioeconomic level on adolescents' eating behaviour of traditional food in Malaysia situation by implementing Theory of Planned Behaviour (TPB) as a background theory. Self-administered questionnaire was distributed to 655 secondary school students by using cluster sampling technique. Multiple linear regression (MLR) results indicated adolescents belong to lower (B= 0.28) and middle (B= 0.46) socioeconomic level family have the capability to control their intention to eat traditional food; whereas adolescents came from high socioeconomic level proved to rely on their attitudes towards traditional food (B= 0.34) to drive the intention to eat traditional food. (Muhammad et al. (2013)

HEALTH AND NUTRITIONAL ASPECTS OF TRADITIONAL FOODS

6.1 HEALTH AND NUTRITIONAL ADVANTAGES OF TRADITIONAL FOODS

In most societies there is no clear distinction between food and medicine (Huffman 2001).6 In traditional medicine, components of the regular diet frequently have a therapeutic function as well. Food proscriptions and prescriptions are commonly used to prevent, treat, and alleviate health problems and illnesses. Koo (1984) for instance finds that Chinese households in Hong Kong treat common symptoms and illnesses mostly through food prescriptions and proscriptions and proper timing and preparation of these foods. Odebiyi (1989) examines food taboos related to child and maternal health in Ile-Ife (Nigeria) and finds that food proscriptions and prescriptions are an integral part of beliefs regarding the causation and treatment of disease. Ma et al. (2000) describe how Chinese medicine has effectively used red yeast rice for centuries to improve blood circulation and lower cholesterol. Numerous other case studies document local plants and animals having both dietary and medicinal uses (e.g. Kunwar et al. 2012; Li et

al. 2004; Seixas and Begossi 2001).

The importance of food in traditional medicine is explained by the fact that in nearly all ethnopsychologies food and health are intimately related: food is often seen as a potential cause of or therapy for illness. In humoral theories of the body and pathology for instance, health is determined by a balance of opposing energies or elements (humours) and illness occurs when this balance is disrupted (Carmona et al. 2005; Patwardhan et al. 2005; Wiley 2002). Imbalances may be caused by metaphysical factors such as spiritual imbalance or physical factors such as food consumption. (Alonso (2015)

Cultural or religious dietary practices may also positively affect food and nutrition security and health. Several scholars have argued that food proscriptions contribute to biodiversity and resource conservation, for instance by protecting certain species or areas from overexploitation.12 Food proscriptions may also protect the community from health hazards (Meyer-Rochow 2009).

6.2 IMPACT OF DIETARY TRANSITION ON HEALTH AND DISEASE

The westernisation of the Indian food poses a risk to public health. Globally, the prevalence of diet-related chronic diseases (such as obesity and type 2 diabetes) is on the rise. This is particularly true in emerging and developing nations like China and India, where the shift to a more nutritious diet has had a greater influence on human health than it has in industrialised nations. (Fardet et al., 2022)

Global health is also seriously threatened by the sustainability of the food system, social disparities in the availability of healthful food, the progressive disappearance of small-scale agriculture, the loss of plant and animal biodiversity, the increased suffering of animals due to intensive breeding, and environmental degradation. 34% of greenhouse gas emissions worldwide are attributable to the food systems, with 24% coming from land-use change and agriculture and 10% from supply chain operations. But making better and more environmentally friendly food choices later on could lead to more environmentally friendly food processing (i.e., less ultra-processing), which could lead to more environmentally friendly food production and a possible reduction in pollution and greenhouse gas emissions upstream. Current research indicates that an imbalance can also arise depending on the level of processing

applied to the foods consumed, in addition to the standard nutritional recommendations that stress the balance between animal and plant calories and the consumption of a variety of foods from the groups in the food pyramid. (Fardet et al., 2022)

India's daily total calorie intake has climbed by about 31% over the past thirty years, but it is still less than the 2420 kcal/day that is advised for moderate activity in 2019. But the prevalence of type 2 diabetes, cardiovascular disease mortality, and overweight/obesity—particularly the latter, which hit 10% in 2019—all continue to rise. In comparison to other developing nations like Brazil (20.1% in 2016) and China (6.2% in 2016), the prevalence of obesity is still comparatively low (3.9% in 2016). Consequently, variables other than only an increase in total caloric intake must be considered in explanations for this increased prevalence. (Fardet et al., 2022)

6. FUTURE SCOPE OF TRADITIONAL FOODS

Modern times have brought about advancements in the realm of traditional culinary goods. Traditional food products in Western nations have been standardised according to GI. Traditional food products that can be produced on a small to big scale comprise the majority of goods that are registered as Protected Designation of Origin, Protected Geographical Indication, or Traditional Speciality Guaranteed. Labelling that can accurately describe regional traditional foods will be required in the future for the Western world. Additionally, it's critical to preserve traditional food as a distinguishable meal from a certain area. It's also crucial to have laws that support or encourage people, men and women alike, to get back in the kitchen and base their values about health on the food they prepare. (Fibri et al., 2022)

In the meantime, traditional food products have evolved into conventional forms in Eastern countries, although these products lack a guaranteed label stating that they are traditional products. In order to maintain their diversity in both practice and documentation, the Eastern region needs regulations that safeguard their small-scale industries, artisanal foods, and traditional food practices, since the big industry is now responsible for much of the region's food technology advancement and knowledge transfer is less effective than it once was. It is also necessary to document the variety of traditional meals and agricultural products found in both eastern and western countries, as well as the gastronomy of each particular traditional food products. (Fibri et al., 2022)

7. INNOVATION APPROACHES TO RADIATION FOODS :

Innovations in Traditional Foods addresses the most relevant topics of traditional foods while placing emphasis on the introduction of innovations and consumer preferences. Certain food categories, such as fruits, grains, nuts, seeds, grains and legumes, vegetables, mushrooms, roots and tubers, table olives and olive oil, wine, fermented foods and beverages, fish, meat, milk and dairy products are addressed. Intended for food scientists, technologists, engineers, and chemists working in food science, product developers, SMEs, researchers, academics and professionals, this book provides a reference supporting technological advances, product development improvements and potential positioning in the traditional food market. Addresses the most relevant topics of traditional foods while placing emphasis on the introduction of innovations and consumer preferences Provides a reference supporting technological advances, product development improvements, and potential positioning in the traditional food market Contains coverage of various food categories, including fruits, grains, nuts, seeds, grains and legumes, vegetables, mushrooms, roots and tubers, table olives and olive oil, wine, fermented foods and beverages, fish, meat, and milk and dairy products. (Charis M Galanakis,Wood head Publishing, 2019)

8. **IMPORTANCE OF TRADITIONAL FOODS** :

indigenous People's traditional food system is crucial to preserving their health and well-being. Nonetheless, there is ample evidence that the traditional food source and cultural understanding of Indigenous People are disappearing. Because of household food insecurity, this has led to a loss in dietary diversity and the usage of fewer species, which has had a negative impact on health. Understanding the conventional food system has the power to alter this situation. Raising awareness of the traditional food system can help to forge a robust nation by fostering a healthy society. Traditional culinary knowledge is seen to be the greatest for a given geographic area. Changing dietary habits can be detrimental to society's overall health. Thus, understanding the significance of healthy eating customs from our own tradition is crucial. (Bhat. S, 2012)

3.MATERIALS AND METHODS

This chapter deals with the methods and tools followed in the various phases of the study and the details are presented under the following headings:

3.1 Locality of the study

3.2 Selection of sample

3.3 Plan of study

3.3.1 Collection of information regarding traditional food habits in Pathanamthitta

3.3.2 Documentation of traditional foods in Pathanamthitta

3.3.3 Preparation of selected traditional foods in Pathanamthitta

3.3.4 To develop nutritive value of selected traditional foods in Pathanamthitta district.

3.1Locality of study:

Pathanamthitta district of south zone of Kerala was purposely selected for the study. The influence of traditional foods on population in pathanamthitta can be greatly observed in their diet. Different localities in Pathanamthitta district were selected to conduct the study .

The following localities were namely selected:

Table 1: Localities of the study

SL.NO	LOCALITIES SELECTED
1.	Thiruvalla
2.	Adoor
3.	Kozhenchery
4.	Ranni
5.	Mallappally

3.2 Selection of sample:

Individuals above the age of 40 years who have knowledge about traditional foods and its preparations were selected randomly from each study location. The chosen samples were categorized according to the populations they represent because traditional eating customs vary depending on the area, religion, and caste. 10 individuals from various communities, including Christians, Muslims, and Hindus, were chosen.

Table 2 ; Distribution of respondents selected for the study

SL.NO	Hindus	Muslims	Christians	Total
1.	10	10	10	30

3.1Plan of the study

The study strategy was created based on goals of the investigation:

3.3.1 collection of information regarding's traditional food habits in Pathanamthitta

3.3.2 documentation of traditional foods in Pathanamthitta

3.3.3 preparation of s3elected traditional foods in Pathanamthitta

3.3.4 To develop nutritive value of selected traditional foods in Pathanamthitta district

3.3.1. Collection of information regarding the traditional food habits in Pathanamthitta .

From the identified study locations, information is regarding the traditional foods and food habits of each community associated with religious customs, festivals, special occasions, the ingredients and their method of preparations were collected through questionnaires that contained information about the same.

The samples were also interviewed to collect further details on their experience involving the traditional foods, different festivals, and special foods prepared during those occasions, foods they consumed during their school life etc. we were also shown different traditional kitchen equipment's and utensils including utensils.

3.3.2 Documentation of traditional foods in Pathanamthitta

From the questionnaire and survey, the details of different traditional foods of different communities were identified and list of traditional foods thus identified is given in table . we also gathered the detailed information of method of preparation of selected traditional foods. Documentation of the process through photographic and written methods was done. The history of selected traditional foods and the changes occurred to traditional food preparations were also collected from the skilled experts using time / trend line through in – person interviews.

TABLE 3:

SL.NO	DIFFERENT TRADITIONAL FOODS
1.	Kudampulli curry
2.	Mathan erissery
3.	Their mulak chammanthi
4.	Muringakka manga curry
5.	Chena erissery
6.	Kumbilappam
7.	Chemb unakkameen curry
8.	Vattayappam
9.	Vanpayar kaya puzhukk
10.	Ulli theeyal
11.	Ari payasam
12.	Samudra Sadhya
13.	Mulam koomb thoran
14.	Chembila thaalu thoran
15.	Aranmula valla Sadhya
16.	Beetroot payar thoran
17.	Muringiyilla paripp thoran
18.	Muringyakka kaya paripp thoran
19.	Chembappam
20.	Chemeen porichath

Out of the above foods, the following foods were selected for further study :

TABLE 4:

SL.NO	SELECTED TRADITIONAL FOODS
1.	Chemb unakkameen curry
2.	Vanpayar kaya puzhukk
3.	Chembila thaalu thoran
4.	Ulli theeyal
5.	Ari payasam
6.	Thair mulak chammathi
7.	Mathan erissery
8.	Chena erissery
9.	Beetroot payar thoran
10.	Muringiyilla paripp thoran

3.3.3 Preparation of selected traditional foods in Pathanamthitta

3.3.3.1 CHEMB UNAKKAMEEN CURRY

INGREDIENTS:

- Chemb (Colocasia) – 125g (1 cup)
- Unakkameen(dried fish)- Mackerel - 60g (¼ cup)
- Water – 1 glass
- Tamarind (kudampuli) – 4g
- Chilli powder – 3g
- Turmeric powder -3g
- Coriander powder- 3g
- Coconut – 60g (1/4cup)
- Oil – 2 ml
- Mustard – 2g
- Red chilli – 2g
- Shallot – 10g
- Curry leaves - 2g

PREPARATION :

- Soak the dried fish for some time and then wash them well.
- Cut the dried fish into small pieces.
- Peel the skin of the Colocasia and cut them into small pieces.
- Heat some coconut oil in a pot and add the Colocasia pieces, dried fish, tamarind and chopped shallots into it.
- Add chilli powder, turmeric powder, and coriander powder into the pot. Close the container and allow it to boil.
- Take some coconut and grate it in a mixed.
- Add a glass of water into the boiling colocasia- dry fish mix and mix it well.
- Then add the grated coconut into the pot, mix it well.

- Close the pot for boiling.
- Serve the hot chemb unakkameen curry with rice.

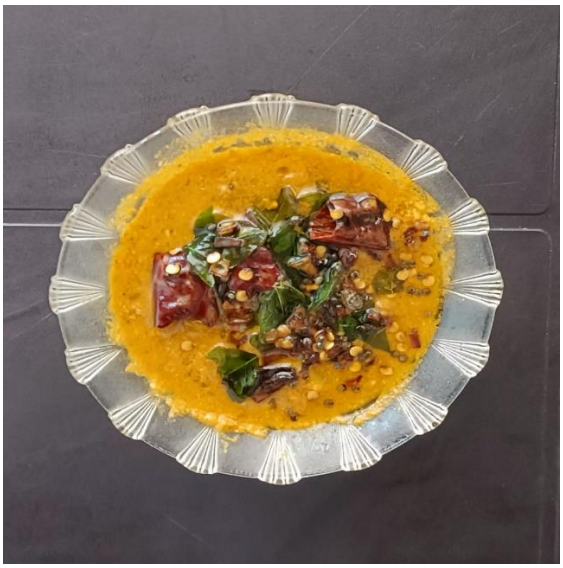


Plate 1 : Chemb unakkameen curry

3.3.3.2 CHENA ERISSERY

INGREDIENTS:

- Bengal gram
- Elephant Yam - 2 cup cubed.
- Salt to taste

For Grinding:

- Coconut – 1 cup
- Whole Pepper / Pepper Powder – 1 tsp
- Chilli Powder – 2 tsp
- Garlic – 3 cloves
- Turmeric powder 1 tsp

For Tempering:

- Coconut Oil – 2 tblspn
- Mustard Seeds 1 tsp
- Urad dal 1 tsp
- Curry leaves – 1 spring

PREPARATIONS :

- Soak Cow peas overnight in lots of water. Drain the water and Pressure cook it with some water for 3 whistle. Let it simmer for 5 mins. Switch off the flame and let the pressure go all by itself. Remove and set aside.
- •Now take cubed yam in a kadai and cover it with water. Add salt to it. Cover and cook for 15-20 mins till the yam is completely cooked.
- Add the cooked Bengal gram in this and mix well.
- Now take the grinding ingredients in a mixer and make into a fine paste.
- Pour this over the cooked yam and cow peas and mix well.
- Let it simmer for 10 mins.

- Now make the seasoning. Heat oil and add mustard, urad dal and curry leaves in this. Let it sizzle and crack.
- Pour this over the curry and mix well
- Serve with rice.

Plate 2; Chena erissery

3.3.3.3 THAIR MULAK CHAMMANTHI

INGREDIENTS :

- Curd – 60ml
- Tamarind – 4g
- Green chili – 3g
- Shallot – 15g
- Salt to taste

PREPARATIONS:

- Crush the shallots in a grinder or within a grinding stone.
- Add green chili and crush it again.
- Add tamarind and crush it. Mix altogether well.
- Transfer the mix into a container.
- Add salt as per need.
- Finally add curd and mix it well.
- Serve it with boiled tapioca.

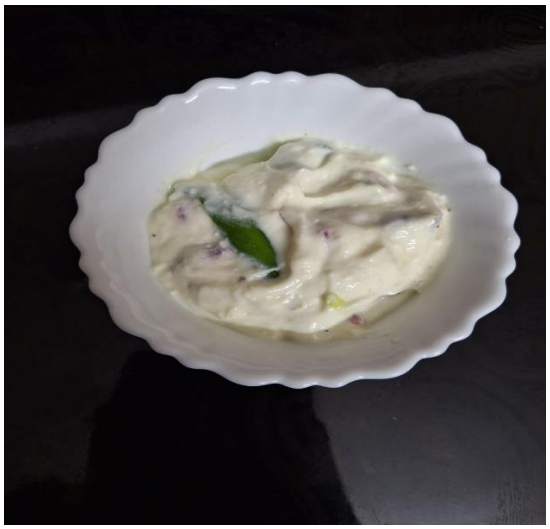


Plate 3: Thair mulak chammathi

3.3.3.4 VANPAYAR KAYA PUZHUKK

INGREDIENTS:

- Pea (cow pea) - ½ cup (125g)
- Raw plantain - ½ cup (125g)
- Salt - a pinch
- Shallot - 30g
- Red chili - 2g
- Garlic - 2g
- Coconut - ¼ cup (60g)
- Coconut oil - ½ teaspoon
- Curry leaves

PREPARATIONS:

- Boil the cowpea in a pressure cooker by adding salt and water.
- Similarly boil the raw plantain.
- Crush garlic, shallot, and red chilly together in a paste form.
- Heat the wok and add the coconut oil.
- Add crushed ingredients into the oil and saute it in a low flame.
- Add the boiled cowpea, boiled raw plantain and it’s water to the wok.
- Mix it well and close the wok for 3-4 minutes. Boil it again.
- Add the grated coconut and mix it well for 2 minutes to become thick consistency.
- Add fresh curry leaves and close the wok.
- Serve it with hot kanji.

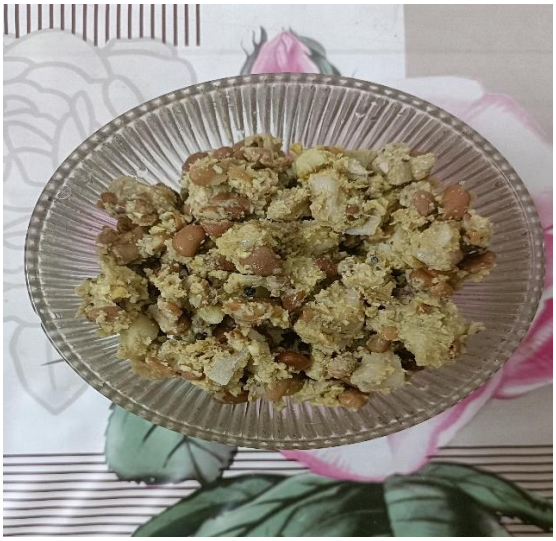


Plate 4: Vanpayar kaya puzhukk

3.3.3.5 ULLI THEEYAL

INGREDIENTS:

- Coconut oil – 2ml
- Coconut – 50g
- Coriander powder – 3g
- Red chilli powder - 3g
- Turmeric powder – 3g
- Shallots – 60g (1cup)
- Fenugreek seeds – 3g
- Whole pepper – 3g
- Curry leaves – 2g
- Tamarind -4g
- Water – ½ cup

PREPARATIONS:

- Heat a saucepan or kadai and add coconut oil. When the oil is hot, add the coconut first and fry for a minute or two. Then add all the spice powders – coriander powder, red chili powder, turmeric powder, three shallots, fenugreek seeds, and whole pepper.
- Now roast till the raw smell goes for about 4 to 5 minutes over medium heat. The coconut mixture will turn brown, and that is perfectly fine. Remember, theeyal means “burnt dish.” We need to roast the coconut well. Do not let it turn dark brown, though.
- Let this mixture cool down and grind with ½ cup of water into a smooth paste. Set this aside.
- Now heat the same saucepan or kadai and add oil. When the oil is hot, add the mustard seeds, asafoetida, curry leaves. Let the mustard seeds splutter.
- At this stage, add the shallots and saute for a few minutes (three to four minutes).
- Now add tamarind water and salt and let it simmer become tender also add ground paste and bring to a boil stage.
- Now turn off the heat and few more curry leaves and serve.

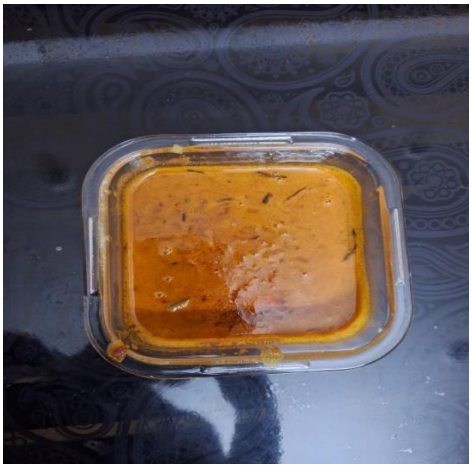


Plate 5: Ulli theeyal

3.3.3.6 MATHAN ERISSERY:

INGREDIENTS:

- Red beans – 15g
- Pumpkin – 20g
- Chilli powder- 3g
- Turmeric powder -3g
- Salt as taste
- Coconut – 60g
- Cumin seed – 3g
- Water – 1 Cup
- Coconut oil – 3ml
- Mustard seed – 3g
- Der red chilli – 3g
- Curry leaves – 2g

PREPARATIONS:

- Soak one cup red beans minimum (4 hrs) and move to a cooker. to this add chilli powder, turmeric powder, salt sand one cup water and cook for 10 min.
- To this add pumpkin mix well with the mixture and cook for next 5 min.
- To the above mixture add the grated coconut mix along with cumin seed and boil for 5 minutes. Allow to thicken bit.
- For seasoning heat oil, add mustard seed, dry red chilli and curry leaves, grated coconut and fry till brown colour.
- Now add the cooked pumpkin and bean to this and mix well.
- Cook for 2-3 min and turn of gas. And serve.

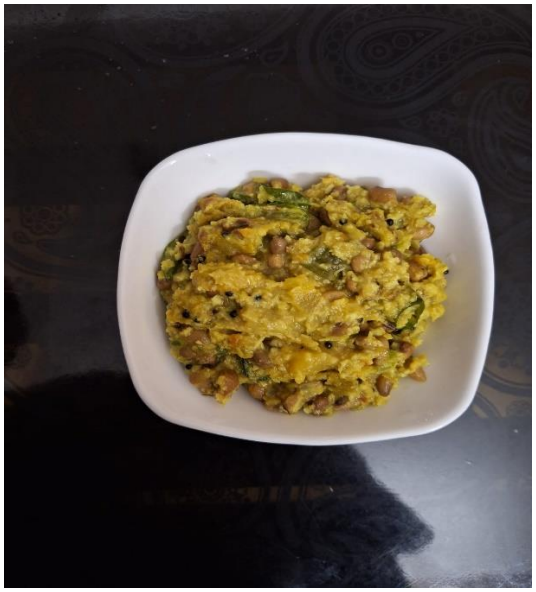


Plate 6: Mathan erissery

3.3.3.7 ARIPAYASAM:

INGREDIENTS:

- Jaggery – 5g
- raw rice with bran (unakkalari) – 10g
- cashew nuts – 2g
- raisins – 2g
- coconut, sliced into thin pieces – 15g.
- ghee or clarified butter – 3ml.
- cardamom – 2g
- A pinch of salt
- Sugar - 10g
- Water – 4 cups

PREPARATIONS:

- Wash the rice thoroughly until the water runs clear. Strain and keep the rice aside.
- Making coconut milk...
- For the first extract, add grated coconut into a blender and add one cup of lukewarm water. Blend for 10 to 15 seconds and pour the mix into a strainer.
- • b) For the second extract, repeat the process with two cups of water and keep the extract in another bowl. This semi-diluted milk is called randam paal.
- c) For the third extract, repeat the same process with three cups of water. Blend it, strain it and keep it in another bowl. This diluted milk is called moonam paal.
- In a pressure cooker, add the drained raw rice and the third extract of coconut milk (moonam paal) and one tablespoon of ghee or clarified butter. Cook until the rice is soft, but not mushy.
- In the meantime, add one cup of water into a pan. Add jaggery and let it melt over medium to low flame. Crush the jaggery to speed the process. Strain the jaggery syrup using a strainer; keep aside.

- To garnish, heat a ghee or clarified butter in a non-stick pan. Shallow fry the cashew nuts and raisins remove until it turns lightly brown keep aside. . Finally, fry the chopped coconut in the same ghee until brown. Remove and keep aside.
- Transfer the cooked rice from the pressure cooker to a thick-bottomed pan and add melted jaggery and cook for about 5 minutes.
- After five minutes of cooking, pour the second extract of coconut milk to the rice-jaggery mix and cook for another 5 to 10 minutes on a medium flame.
- Add the cardamom powder and a pinch of salt into the rice-jaggery mix and stir until thick in consistency.
- Bring the flame to a simmer and then add the first extract of coconut milk and mix well. Turn the flame off immediately. Do not boil the mix.
- Finally, add the fried garnish and stir softly. Drizzle any remaining ghee over the payasam. Serve hot.

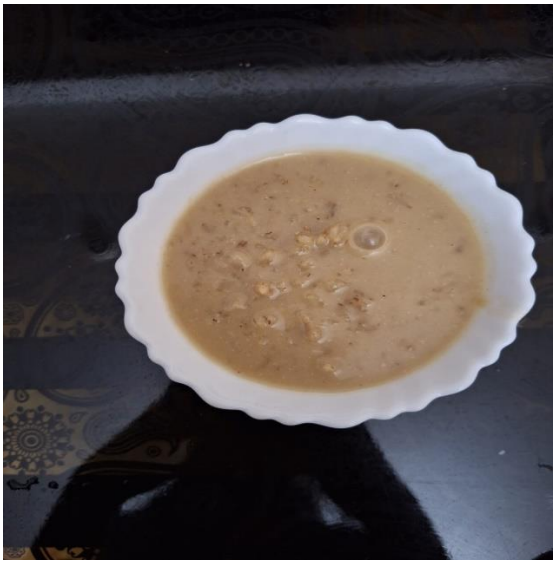


Plate 7 : Ari payasam

3.3.3.8 CHEMBILA THAALU THORAN

INGREDIENTS:

- Colocasia leaves- 1 cup(250g)
- Colocasia stem- 1 cup (250g)
- Coconut- ¼ cup (60g)
- Onion- ¼ cup(60g)
- Green chilli- 2g
- Turmeric powder – ½ teaspoon
- Salt a pinch
- Oil – 3ml.
- Mustard – 2g

PREPARATIONS:

- Take a frying pan and add some oil and mustard for seasoning.
- Add chopped onion and green chilli into it and sauté well.
- Add grated coconut, turmeric powder and mix it.
- Squeeze the chopped Colocasia leaves and stem to remove the water and add to the frying pan.
- Add a pinch of salt and close the pan with a lid to cook.
- Serve it with hot rice.

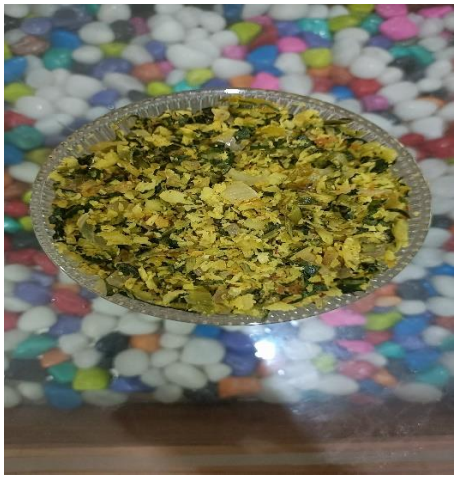


Plate 8: Chembila thaalu thoran

3.3.3.9 BEETROOT PAYAR THORAN

INGREDIENTS:

- 1 medium-sized beetroot, grated.
- 1 cup chopped long beans (payar)
- ½ cup grated coconut
- ½ cup onion, chopped
- 2-3 green chilies, chopped.
- ½ teaspoon mustard seeds
- ½ teaspoon cumin seeds
- 2-3 dry red chilies
- A few curry leaves.
- Salt to taste
- Coconut oil for tempering

PREPARATION:

- Heat some oil in a pan and splutter mustard seeds, cumin seeds, dry red chilies, and curry leaves.
- Add the chopped long beans (payar) and sauté for a few minutes until they are slightly tender.
- Then add the grated beetroot to the pan and mix well.
- Cover and cook on low heat until the beetroot and beans are cooked through, stirring occasionally.
- Meanwhile, grind the grated coconut and green chilies to a coarse paste using a mortar and pestle or a grinder.
- Once the beetroot and beans are cooked, add the ground coconut mixture to the pan and mix well.
- Cook for another couple of minutes until everything is well combined and heated through.
- Adjust salt according to taste.

- Serve hot with rice or roti. Enjoy your Beetroot Payar Thoran

Plate 9: beetroot payar thoran

3.3.3.10 MURINGIYILLA PARIPP THORAN

INGREDIENTS:

- 1 cup drumstick leaves (muringiyilla), washed and finely chopped.
- ½ cup dal (paripp), washed and cooked until soft
- ½ cup grated coconut
- ¼ cup onion
- 2 green chilies finely chopped.
- ½ teaspoon turmeric powder
- Salt to taste
- 1 tablespoon coconut oil
- 1 teaspoon mustard seeds
- 2-3 dry red chilies
- A few curry leaves.

PREAPARATION :

- Cook the dal (paripp) in a pressure cooker or pot until soft. Drain any excess water and keep it aside.
- In a pan, heat coconut oil over medium heat. Add mustard seeds and let them splutter.
- Add dry red chilies and curry leaves to the pan and sauté for a few seconds.
- Add the chopped drumstick leaves (muringiyilla) to the pan and sauté for a couple of minutes until they wilt.
- Add cooked dal (paripp) to the pan and mix well with the drumstick leaves.
- Add grated coconut, green chilies, turmeric powder, and salt to the pan. Mix everything together.
- Cook the mixture for 5-7 minutes, stirring occasionally, until the flavors combine well.
- Once cooked, remove from heat and serve hot.

Plate 10: muringiyilla paripp thoran

3.3.4 To develop a nutritive value of selected foods in pathanamthitta

The nutrients that we are selected for analysing the nutritive value for each recipe are based on the high nutritive content in that recipe: which include : energy , protein , fat , carbohydrates , iron , calcium , phosphorous , potassium , magnesium , sodium , zinc .

ENERGY:

The body requires energy for various activities such as to regenerate body tissues, maintain body temperature, grow and other activities. Energy is formed in mitochondria is stored in liver and muscles and these are used as glycogen. The energy is available in form of ATP.

CARBOHYDRATES:

In human diets carbohydrates are considered as the main source of energy. Maily 2 types of carbohydrates are present in foods which are in form of monosaccharides and polysaccharides. it is also recommended that about 40 to 80 % of energy should constitute from carbohydrates depending on their requirements. Food carbohydrates that are digested and absorbed in small intestine is mainly in form of glucose to the blood and this glucose is utilized as source of energy through different ways such as conversion to fatty acid and stored as body fat or maybe in form of oxidation in various tissues or maybe stored as glycogen. Glucose can be used immediately or stored in liver and muscles for later use.

PROTEIN:

Body requires protein to build and repair muscles and bones and to make hormones and enzymes. They can also be used as an energy source. They are also required in tissue repairment and regeneration. Proteins are also made of from amino acid. There are 20 different amino acids present. Out of this 20, 9 are not synthesised in the body therefore it I important to supply these through diet. There also founds that protein synthesis is crucial in growing children. And also, in elderly age group the absorption is low therefore these are the two groups which requires more amount of protein.

FAT:

Fat is a source of essential fatty acids which the body cannot make itself. Fat helps the body absorb Vitamin A, Vitamin D and Vitamin D. It is observed that fat is high in energy. A garam of fat provides 9Kcal of energy whether its saturated or unsaturated. usually, 2 forms of fat are

present in food which are saturated and unsaturated fat. fats are also absorbed when the unused carbohydrates and protein are also converted to fat which can be used.

CALCUIM:

Calcium is a mineral your body needs to build and maintain strong bones. These are the most abundant mineral in the body. Almost all the calcium is stored in bones and teeth (about 99%) . Calcium also helps blood vessels through blood and help to release hormones . vitamin D helps body to absorb calcium.

POTTASIUM:

Potassium is a mineral that is essential for all the body's functions. Mainly helps in nerves, muscles heart to function, helps to move nutrients, mainly body get potassium through their diet. Both high and low levels of potassium can be dangerous. If excess potassium is present in boy kidney helps to absorb it and excrete in form of urine in potassium. High potassium can lead to hypokalaemia and low potassium can leads to hyperkalaemia. Moving towards the recommendation of potassium adult men requires 3800mg/day and adult women requires 2800mg/day. During pregnancy 2800mg/day is recommended.

MAGNESIUM:

Magnesium is abundantly found in the body. These are requiring for many processes in body such as regulating muscles and nerve's function, maintain blood sugar level and pressure level, making protein in bone. Magnesium is required for energy production, oxidative phosphorylation, and glycolysis. About recommendation, adult men requires 400 – 420 mg, adult women 310 – 320 mg, pregnant women 350 – 360 mg per day.

SODIUM:

Sodium is an essential nutrient and is needed by body relatively in small amounts mainly to maintain body fluid and keep muscles and nerves running smoothly. It is founded that bout 500 mg of sodium is required for body.

ZINC:

Zinc is mainly needed for body's immune system to work properly. It also plays a role in cell division, cell growth, wound healing, and breakdown of carbohydrates. During pregnancy, infancy, and childhood the body requires zinc to grow and maintain the functionalities in body.

Adequate intake (AI) recommends, adult males and females requires 11 and 9 mg /day. Pregnant females require about 11mg/day and lactating females requires 13mg/day.

IRON:

Iron is a mineral that body needs for growth and development. body uses iron to make haemoglobin, protein in RBC that caries oxygen to lungs and requires to make some hormones. The iron is present in 3 forms that is heme and honheme iron. Amount or iron requirements: adult men – 8mg , adult female – 18mg, pregnant female – 27 mg , lactating women – 9 mg .

PHOSPHOROUS:

Main function of phosphorous is in formation of bones and teeth. Also, it plays and important role in how body uses carbohydrates and fats. These are also requiring making protein for growth, maintenance and repair of cell and tissues. These are requiring in kidney function, muscle contractions, normal heartbeat, nerve signalling. the amount of phosphorus requirements: Pregnant and lactating women – 1250mg /day, adult men and female 700mg/day, teenage children require 1250mg / day.

4. RESULTS AND DISCUSSION

Results of the study conducted on traditional foods in Pathanamthitta district are presented in this chapter under the following headings:

4.1 Traditional food habits of different communities

4.1.1 Preference of traditional foods of different communities

4.1.2 Reasons for preference of traditional foods

4.1.3 Frequency of preparation of traditional food items

4.1.4 Traditional kitchen utensils

4.2 Nutritive value calculation of traditional food items collected.

4.1 Traditional food habits of different communities

The respondent's traditional eating habits were investigated regarding their preference for traditional foods, the reasons behind their preference, how often they prepared traditional foods, how often they prepared traditional foods for special occasions, religious festivals and rituals, how often they prepared traditional health foods, and the specifics of the kitchen utensils and equipment used.

4.1.1 Preference of traditional foods of different communities

The data regarding the preference of traditional foods of different communities is given below in the table 5:

Communities	Preferred	Not preferred
Christians (10)	7 (70%)	3 (30%)
Muslims (10)	6(60%)	4 (40%)
Hindus (10)	6 (60%)	4 (40%)

Numbers in bracket are percentage.

It was found that, out of 10 from each community 7 from Christian community prefers traditional foods i.e., about 70 % preferred traditional foods. From Muslim community only 60% preferred traditional type foods. And in case of Hindus 60% are only preferred.

4.1.2 Reasons for preferred of traditional foods.

The data regarding the reasons for preference of traditional foods are given in the following table 6:

Reasons	Christians (10)	Muslims (10)	Hindus (10)
Nutritious	7 (100%)	6 (100%)	6 (100%)
Natural taste	6 (85.7%)	5 (83.3%)	6 (100%)
Environmental impact	2 (28.5%)	2 (33. %)	4 (66.6%)
Quality	4 (57%)	5 (83.3%)	6 (100%)
Source	3 (42.8%)	5 (83.3%)	3 (50%)
Authenticity	2 (28.5%)	2 (33.3%)	1 (16.6%)
Less expensive	3 (42.8%)	6 (100%)	5 (83.3%)
Opportunity for rural development	1 (14.2%)	4 (66.6%)	3 (50%)

Numbers in bracket are percentage.

All the respondents belong to 3 communities prefer traditional food due to their nutritious benefits. 85 % of Christians, 83 % of Muslims and all the respondents from the Hindus consume this traditional food due to their natural taste they impart. All the respondents from Muslims, and 42 % from Christians and 83 % from Hindus prefer this due to the less expensive factor. In case of quality all the respondents from Hindus , 83% from Muslims, 42 % from Christians prefers.

4.1.3 Frequency of preparation of traditional food items

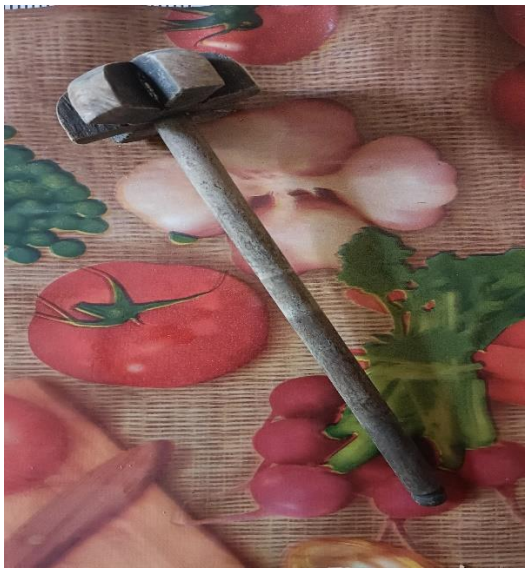
Frequency	Christians	Muslims	Hindus
Daily	1 (4.3%)	1 (16.6%)	3 (50%)
Weekly twice	2 (28.5%)	1 (16.6)	3 (50%)
Weekly thrice	3 (43.6%)	3 (50%)	0
Monthly	1 (14.3%)	2 (33.3%)	0

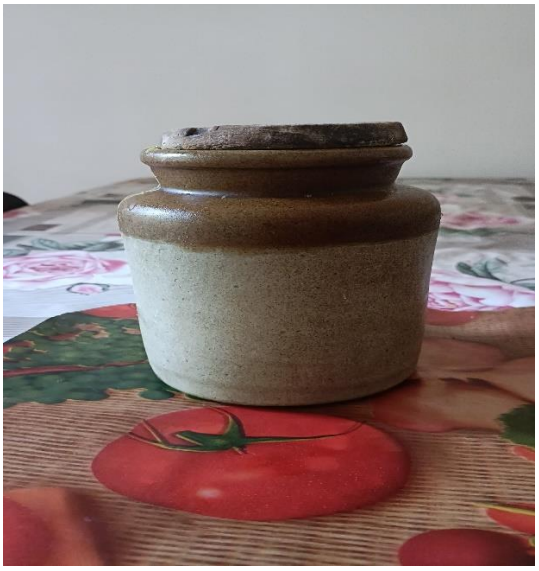
Numbers in bracket are percentage.

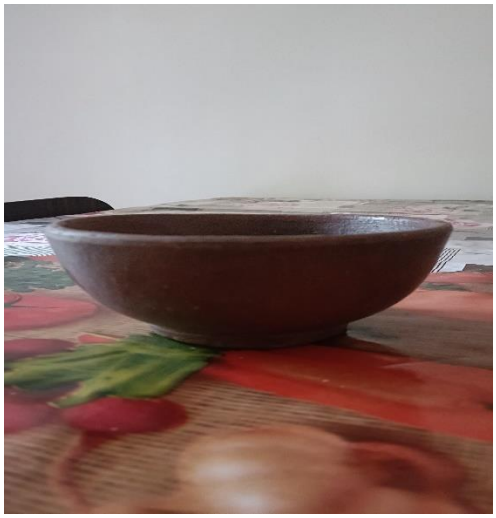
From the above table 7: it is evident that 28% Christian's and 16a5 Muslims prepare traditional foods daily. 43 % Christians and 50 % Muslims prepare it weekly thrice. While in case of Hindus 50% prepare daily and 50% prepare weekly. From this it is noticed almost all Hindus prefer traditional foods and prepare daily or weekly.

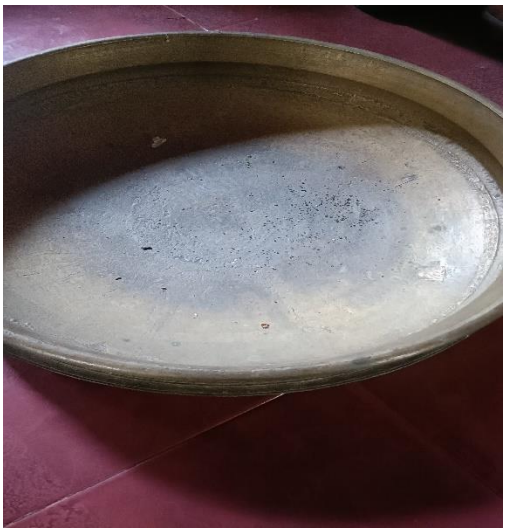
4.1.6 Traditional kitchen utensils

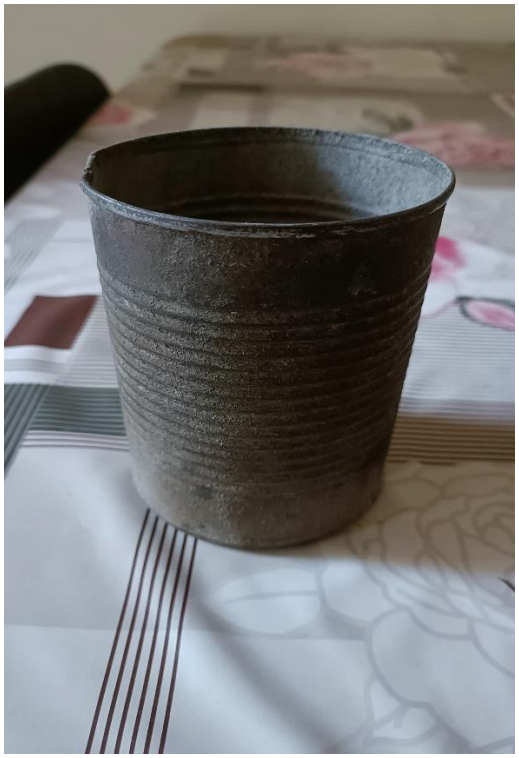
Information on traditional household utensils and equipment's used were presented in the table.











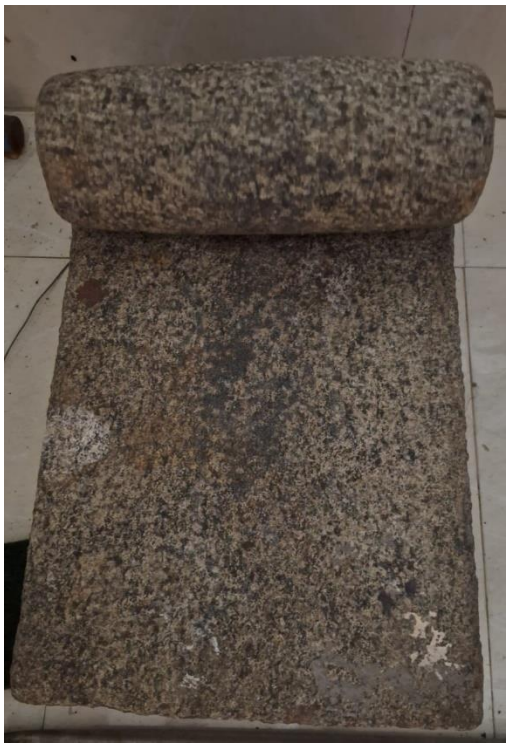


Table 8: List of traditional kitchen utensils and equipment

SL.NO	UTENSILS AND EQUIPEMTS	PURPOSE OF USE
1.	Churner	Used for converting cream into butter. Used for churning
2.	Bharani	Used for storing preserved food items
3.	Manchatti	Used in traditional cooking
4.	Uruli	Used in home for cooking and in ayurveda to make medicines
5.	Naazhi	Used to measure rice and other grains
6.	Arakallu	Used for mashing and grinding

4.2 Nutritive value calculation of traditional foods collected.

Table 9: Nutritive value calculation of traditional foods

SI.no	NAME OF THE FOOD	ENERGY (kcal)	CHO (g)	PROTEIN (g)	FAT (g)	CALCIUM (mg)	POTTASIUM (mg)	IRON (mg)	SODIUM (mg)
1.	Chemb unakkameen curry	140.94	9.1	6.5	8.6	21	330.5	-	20.2
2.	Chena erissery	165	18.51	1.76	10.58	38.06	246.76	1.8	13.65
3.	Thair mulak chammandhi	56.09	8.1	2.19	2.4	98.35	135.44	-	20.81
4.	Vanpayar kaya puzhukk	254.1	32.5	9.5	8.85	43.4	749.7		15.5
5.	Ulli theeyal	251.41	7.61	2.31	23.66	28.92	498.94	3.45	13.98
6.	Mathan erissery	319.34	11.4	17.21	27.7	33	441	3.9	12.5
7.	Aripayasam	197.21	21.86	3.27	11.93	6.7	34.9	-	4.6
8.	Chembila thaalu thoran	143.77	8.63	4.67	9.61	219.3	755	-	13.29
9.	Muringiyilla paripp thoran	355	33.1	20.95	6.94	43	842	2.3	22.5
10.	Beetroot payar thoran	220	27.86	6.88	6.82	92.75	772	4	59

Macro nutrients and micronutrients of 10 different foods are tabled above. Out of these muringiyilla paripp thoran is having high calorie content (355) and thair mulak chammanthi (56.09) are low in calorie.

Mainly from the above dishes vanpayar kaya puzhukk (7.1)and muringiyila paripp thoran (7.61)have rich content of carbohydrates whereas ulli theeyal have low amount of carbohydrate in nature.

Incase of protein content, out of 10 mentioned above muringiyilla paripp thoran (20.95) is rich in protein whereas other food items have low protein content especially in thair mulak chammanthi. In case of fat high amount of fat is present in mathan errissey and ulli theeyal (27.1 and 23.6) and low fat conenet is present in thair mulak chammanthi (2.4).

Incase of micronutrients, muringiyila paripp thoran (842) is rich in potassium whereas aripayasam has very low potassium nature. From the above 10 dishes beetroot payar thoran have high content of iron. Also, chembila thaalu thoran have high content of calcium. Whereas beetroot payar thoran is rich in sodium content and aripaysam have low amount of sodium .

5. SUMMARY AND CONCLUSION

The present study entitled “Documentation and Nutritive Evaluation of Traditional Foods of Kerala – Pathanamthitta District” was done with the aim of collecting details and information’s regarding use of traditional foods and traditional food habits on the basis of differences in community which is associated with religion, cooking methods and ingredients used for preparation. Pathanamthitta district has places known for its historical importance. Therefore, traditional foods have a great influence on the diets of people living in this district. Individuals above the age of 50 was selected as samples for conducting survey of the study. 5 different locations were also selected, and the sample population were chosen from these localities. 10 participants from different communities such as Christians, Hindus, and Muslims were selected for the study.

The result of the study showed that 70% of the participants from Christian community preferred traditional foods, 60% of the respondents from Muslim community and 60% of the respondents from Hindu community preferred traditional foods. They prefer traditional foods due to various factors. All the respondents belong to 3 communities prefer traditional food due to their nutritious benefits. 85 % of Christians, 83 % of Muslims and all the respondents from the Hindus consume this traditional food due to their natural taste they impart. All the respondents from Muslims, and 42 % from Christians and 83 % from Hindus prefer this due to the less expensive factor. In case of quality all the respondents from Hindus, 83% from Muslims, 42 % from Christians prefers. About 28% from Christians, 33 % Muslims and 16 % from Hindus only prefer due to its authenticity factor. 14 % from Christian’s, 66% from Hindus and 50 % Hindus prefer due to great opportunity for rural development. From the survey it is evident that 28% Christian’s and 16% Muslims prepare traditional foods daily. 43 % Christians and 50 % Muslims prepare it weekly thrice. While in case of Hindus 50% prepare daily and 50% prepare weekly. From this it is noticed almost all Hindus prefer traditional foods and prepare daily or weekly.

The traditional foods are also prepared with using various traditional equipment such as, churner, Bharani, manchatti, uruli, naazhi, arakallu. These different equipment’s are used for different purposes such as used for churning, used for storing preserved foods, used for mashing, and grinding, used to measure food items mainly grains and rice’s, also used to make ayurvedic medicines.

Macro nutrients and micronutrients of 10 different foods are tabled above. Out of these muringiyilla paripp thoran is having high calorie content (355) and thair mulak chammanthi (56.09) are low in calorie. Mainly from the above dishes vanpayar kaya puzhukk (7.1) and muringiyila paripp thoran (7.61) have rich content of carbohydrates whereas ulli theeyal have low amount of carbohydrate in nature. Incase of protein content, out of 10 mentioned above muringiyilla paripp thoran (20.95) is rich in protein whereas other food items have low protein content especially in thair mulak chammanthi. In case of fat high amount of fat is present in mathan errissey and ulli theeyal (27.1 and 23.6) and low fat conenet is present in thair mulak chammanthi (2.4).

Incase of micronutrients, muringiyila paripp thoran (842) is rich in potassium whereas aripayasam has very low potassium nature. From the above 10 dishes beetroot payar thoran have high content of iron. Also, chembila thaalu thoran have high content of calcium. Whereas sodium rich is present in beetroot payar thoran and low content is found in aripayasam.

Thus, it can be said that Pathanamthitta has a vast array of traditional dishes that are well-known and have been around for a long time, but many of them are changing. The customary eating habits and patterns underwent changes and adjustments. The goal of documenting traditional foods in this project is to prevent these things from becoming endangered. Future research could be done to record, reproduce, and popularise Pathanamthitta's traditional dishes.

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APPENDIX

Questionnaire for Traditional Recipe

1. Name
2. Age :
3. Sex : Male / Female
4. Mostly used traditional preparations for breakfast?

   ……

5. Mostly used food item for lunch / dinner?

   …….

6. What were the snacks that were used during your childhood?

   ……

7. Do you make it from home?

   Yes / No

8. Do you have any traditional kitchen utensils / equipment's now?

   ……

9. Are you using it now? if no, give reason .

   ……

10. Which type of food do you prefer mostly?

    (Traditional / Non Traditional)

11. Major reason for preferring traditional food ?

    (Healthy / Tasty / No adulteration, Less expensive , Ingredients are locally produced).

12. How often do you prepare the traditional food?

    (Daily, Weekly thrice / weekly twice)