MIXED-METHODS STUDY OF MEDICAL PLURALISTIC PRACTICES AMONG SELF -REPORTED DIABETES PATIENTS AND REASONS FOR THESE PRACTICES IN RURAL KANYAKUMARI DISTRICT,TAMILNADU

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DECLARATION

I hereby declare that this dissertation titled “Mixed-Methods Study of Medical Pluralistic Practices among Self -reported Diabetes patients and reasons for these practices in rural Kanyakumari district, Tamilnadu.” is the bonafide record of my original research. It has not been submitted to any other University or Institution for the award of any degree or diploma. Information derived from the published or unpublished work of others has been duly acknowledged in the text.

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CERTIFICATE

Certified that the dissertation titled "Mixed-Methods Study of Medical Pluralistic Practices among Self -reported Diabetes patients and reasons for these practices in rural Kanyakumari district, Tamilnadu." is a record of the research work undertaken by Nagarajan C S in partial fulfillment of the requirements for the award of the degree of Master of Public Health under my guidance and supervision.

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GLOSSARY OF ABBREVIATIONS

CAM	Complementary and alternative medicine
NCD	Non communicable disease
ICMR-INDIAB	Indian Council of Medical Research–India Diabetes
AYUSH	Ayurveda, Yoga, Naturopathy, Unani, Siddha and Homeopathy
LHT	Local Health Traditions
TM	Traditional Medicine
US	United states
WHO	World Health Organization
HDI	Human Development Index
NFHS	National Family Health Survey
CDB	Community development block
BP	Block Panchayat
GP	Gram Panchayat
ASHA	Accredited Social Health Activist
ICMR	Indian Council of Medical Research
NIH	National Institutes of Health
THP	Traditional Health Practitioner
PHH	Priority Household
NPHH	Non-Priority Household
MGNREGA	Mahatma Gandhi National Rural Employment Guarantee Act
SES	Socio Economic Status

Abstract

Background:

Medical pluralism is defined as the coexistence of multiple medical traditions and practices in local contexts and belief systems. Medical pluralism is common in India. The rising NCD burden in Tamil Nadu pushes people to look for different therapeutic options. The data on the extent of medical pluralism at the community level is very limited in India. This study aims to find the extent of medical pluralism and the reasons for medical pluralism in the rural Kanyakumari district.

Methodology:

It is a mixed-methods study using a multistage cluster random sampling strategy. The quantitative component included 370 self-reported diabetic persons from rural Kanyakumari. Out of that, 18 participants were selected for the qualitative study which focuses on reasons of medical pluralistic practice.

Results:

The extent of medical pluralism is found to be 22.7% among self-reported diabetes patients. The most common medical pluralistic practice among self-reported diabetes patients is modern medicine with herbal medicine (77.4%) followed by modern medicine with herbal medicine and Siddha medicine (4.7%). The co-relates of medical pluralism are found to be gender and comorbidity of heart disease with diabetes. Women were 3 times more likely to engage in medical pluralism when compared to men. Diabetic people with heart disease are 65% less likely to use medical pluralistic practice when compared to diabetic people without heart disease. The reasons for medical pluralistic practice were found to be free from adverse effects, low cost, easy availability and user-friendliness. People use CAM as a self-regulator for managing their diabetes.

Conclusion:

More than one-fifth (22.7%) of the participants adopt medical pluralistic practices which includes modern medicine. CAM medications are used as a self-regulator for modern medication among diabetic patients. More emphasis will need to be given to medical pluralistic practices prevailing in the society while framing policies for diabetes management.

Chapter 1
INTRODUCTION

1.1.Background for the study

Non-communicable diseases are responsible for 74 % of the deaths worldwide. Every year, 17 million people die before the age of 70 due to non-communicable diseases (NCDs). ("Non-communicable diseases-Fact Sheets -WHO," 2023) The rise of NCDs is mainly attributed to the modifiable key behavioural risk factors like tobacco use, unhealthy diet, lack of physical activity, and the harmful use of alcohol, which in turn leads to overweight and obesity, raised blood pressure, raised cholesterol, and ultimately disease. ("Non communicable diseases-Fact Sheets -WHO," 2023)

As per the global NCD progress monitor 2022 report, nearly 66 % of all deaths in India are due to NCD. ("Noncommunicable Diseases Progress Monitor 2022," 2022) Diabetes mellitus represents a chronic metabolic disorder characterised by the persistent elevation of blood glucose level. Prolonged hyperglycaemia leads to diverse microvascular and macrovascular complications affecting multiple organ systems. These encompass the ocular, cardiovascular, renal, nervous, and reproductive systems. Consequently, diabetes may manifest as retinopathy, hypertension, coronary artery disease, nephropathy, peripheral neuropathy, autonomic neuropathy, and disturbances in reproductive function. (Banday et al., 2020) As per the ICMR-INDIAB study conducted from 2008- 2020, the overall prevalence of diabetes in India was 11.4% and that of prediabetes was 15.3% and this encompasses interstate variations in diabetes prevalence. The state of Tamil Nadu had an adjusted prevalence of 10.4%. In rural Tamil Nadu the prevalence of diabetes was 7.8% with prediabetes at 15%. (Anjana et al., 2023, 2011) Diabetes is a chronic disease that has to be managed throughout life with lifestyle changes and diet. With the rising burden of diabetes in India, people tend to seek care from various therapeutic options

available to them. (de-Graft Aikins et al., 2023a; Masola and Sigida, 2021)

Complementary and alternative medicine is one such therapeutic option which people seek care from. India has its own structured AYUSH system of medicine together with a multitude of regional non-organised and unstructured rural medical practitioners and local healing traditions. (Agrawal et al., 2023; Shi et al., 2021)

1.2.Introducing Medical Pluralism

Medical pluralism refers to the coexistence of multiple medical traditions and practices located in local contexts and belief systems. (Asian Medical Systems, 1976; Cant, 2020)

Complementary and alternative medicine (CAM) is the term which includes all the healthcare practices which are not part of the conventional healthcare system. ("Traditional, Complementary and Integrative Medicine," 2024) Complementary medicine is used along with modern medicine while alternative medicine is used instead of conventional medicine. (Aboyade *et al.*, 2016)

Complementary medicine is a term to denote that this medicine is used complementary to other forms of conventional medicine while alternative medicine is used when it is used as an alternative to biomedicine. (Kumar *et al.*, 2006)

Traditional medicines are rooted in culture and usage of local health traditions is associated with the cultural value associated with the native traditional medicine. (Reddy et al., 2023) It is determined by beliefs, culture and theories and philosophies of health care and how it is understood by the community. (Al-Azri, 2020) Every country has its own traditions and culture associated with the medical pluralism that prevailed in that society. Even in developed countries, traditional medicine is use is very common and used regularly. Traditional medicine was regularly used by 42% in the US, 48% in Australia, 49% in France, 70% in Canada and 70% in some African countries, In some countries, CAM utilization was more than 80%. ("Traditional medicine -WHO," 2023)

Traditional medicine is associated with the culture of the population. (Reddy et al., 2023) People tend to seek different therapies for their healthcare needs. It is determined by the structural factors like availability of the medicine, availability of healthcare facility, accessibility, affordability and other interpersonal factors. (Fjær et al., 2020; Khalikova, 2021) Pluralistic health seeking behaviour of the society is driven by belief systems, disease types, livelihood and ethical principles of the community. (Yu, 2021) A study among diabetic patients in Nigeria undertaken in 2020 found that 62 % of diabetic patients use CAM for their treatment. Of those using CAM, 88.4% engaged in concomitant use of CAM and allopathy while 11.6% used CAM as an alternative to allopathy. A study among type 2 diabetes patients in Indonesia in 2020 found 54.3% of diabetic patients using CAM had commonly used herbs and spiritual healing. (Sari et al., 2021) A Hospital based study among diabetics in Beirut, Lebanon found that nearly 38% had ever used CAM for their treatment.(Naja et al., 2014) In UAE a hospital based study undertaken in 2018 showed that CAM use among Type 2 DM patients was 39.3%(Radwan et al., 2020). In 2019 Bangladesh tertiary care-based cross sectional study among diabetic patients, 35.2% were engaged in CAM therapy. (Rafi et al., 2020) Similarly in Palestine 51.9% of the diabetic patients reported taking herbs for their diabetic management. (Ali-Shtayeh et al., 2012) As recently as 2018, a study among diabetic patients in Karachi, Pakistan indicated that 57.8% of diabetic patients use CAM. (Raja et al., 2018) The tertiary care-based study among diabetic patients in Allahabad, India reported that 67.7% diabetic patients used CAM therapy. Naturopathy was the most commonly used CAM therapy for diabetic management in this Allahabad study. (Kumar et al., 2006) The prevalence of CAM use among the general adult population in south India was 62%. (Devi M et al., 2021) In Kerala the prevalence of CAM use among diabetic patients in rural parts of Kollam district was found to be 39%. Among the

diabetic patients, 30% engaged with simultaneous consumption of CAM with modern medicine while 9 % resorted to pure CAM for diabetic treatment. (Vishnu et al., 2017) In Tamil Nadu the prevalence of CAM use among diabetic patients in Madurai was found to be 45.4%. (Devi et al., 2015) Another study In Salem in 2012 among diabetic patients attending a tertiary care centre reported a higher prevalence of CAM use, as high as 70.1%. (Balamurugan et al., 2013)

Many participants engaged in medical pluralistic practice do not report their CAM use to their biomedical physician. (Roy et al., 2015; Sari et al., 2021). There were numerous studies on the herb drug interactions noted in the literatures. (Elmer et al., 2007; Gupta et al., 2010) But an understanding of herbs and drug interactions are not known to most biomedical practitioners. Even though some studies support use of certain CAM options for the treatment of diabetes, there is very limited understanding of herb drug interactions of CAM options. (Elmer et al., 2007)

1.3. Relevance of Kanyakumari district

Kanyakumari is the district in southernmost tip of India. As per 2011 census, the rural population of the Kanyakumari district was 330572 (17.6I%) while that of Urban population is 1539802 (82.33%). Kanyakumari district has the second largest urban population in Tamil Nadu. ("District Statistical Handbook 2022-2023-Kanniyakumari district," 2024; "India - Census of India 2011 - Tamil Nadu - Series 34 - Part XII B - District Census Handbook, Kanniyakumari," 2011) As per the 2017 Human Development Index report the HDI score of Kanyakumari district was 0.944 which is highest in Tamilnadu . ("Tamilnadu Human Development Report 2017," 2017) The literacy rate of Kanyakumari district was 91.7%. Kanyakumari district has various health traditions and region-specific healthcare traditions. (Sieler, 2012; Subramanian et al., 2019)

Kanyakumari district, with high human development index, high literacy rate and

availability of various domains of both biomedicine and AYUSH health care facilities in both private and public domain makes it a suitable site for studying medical pluralism. As per the NFHS -5 report, among adults above 15 years in Kanyakumari district, 27.1 % were reported to be having above high blood sugar or taking tablets for diabetes. ("NFHS-5 District Fact Sheet Kanyakumari, Tamil Nadu," 2021) With rising burden of NCD in Tamil Nadu, people seek care from different health care options for treatment. In Kanyakumari district, with its high literacy and development, it is likely that the reporting on medical pluralistic practices will be better. Therefore, this study of medical pluralistic practices among diabetes patients was located in Kanyakumari district.

In a densely populated (1119/sq km), highly urbanised district (82.3%) with limited rural population (17.7%) and high Human Development Index (0.944) having the presence of various AYUSH medical institutions, as per NFHS -5 27.1 % of the participants were either taking tablets or having high sugar levels. This is likely to yield a relatively higher proportion of persons using medical pluralistic practice among diabetic patients in Kanyakumari district. ("District Statistical Handbook 2022-2023-Kanniyakumari district," 2024; "India - Census of India 2011 - Tamil Nadu - Series 34 - Part XII B - District Census Handbook, Kanniyakumari," 2011; "NFHS-5 District Fact Sheet Kanyakumari,Tamilnadu," 2021; "Tamilnadu Human Development Report 2017," 2017)

1.4. Study rationale

There were many studies related to medical pluralistic practices in different contexts across the world. Though medical pluralism is very prevalent in India, the number of studies regarding medical pluralism is relatively low. Most of the studies among diabetic patients regarding the CAM usage pattern have been conducted across the healthcare institutions in urban areas. (Balamurugan et al., 2013; Itrat and Akhlaq, 2022; Kumar et al., 2006a; Roy et al., 2015) Community-based studies of medical pluralistic practice in

the Indian context are very few. In diabetes management, people tend to seek care from different therapeutic modalities. The extent of medical pluralism in India is not well documented and neither are the reasons for such practices clearly understood. According to NCD monitoring survey, only 36.1% of the diabetic patients were following treatment and out of that, 15.7% had sugar level in control. (Mathur et al., 2022) So a vast majority of the diabetic patients do not follow treatment and another major proportion, that is 84.3% of diabetic population do not have control over their sugar levels and they do have a possibility of engaging in various medical pluralistic self -care practices to manage their diabetes. There is a huge gap in understanding the extent medical pluralistic practice in India especially in rural India because most of the available studies are focused on urban health care units. It is important to study the extent of medical pluralism and the reasons for such practices in rural community to come to grips with medical pluralism in India.

1.5. Justification

This study will help to describe the extent of medical pluralism among rural population of Kanyakumari district. With that, we can begin to understand the patterns of of CAM use in the community and the reasons for such use. This study will help the policymakers to understand the gaps in the diabetic care cascade and to develop programmatic corrections accordingly. This will help communities tackle diabetes in a better way leading to better quality of life. for people with diabetes.

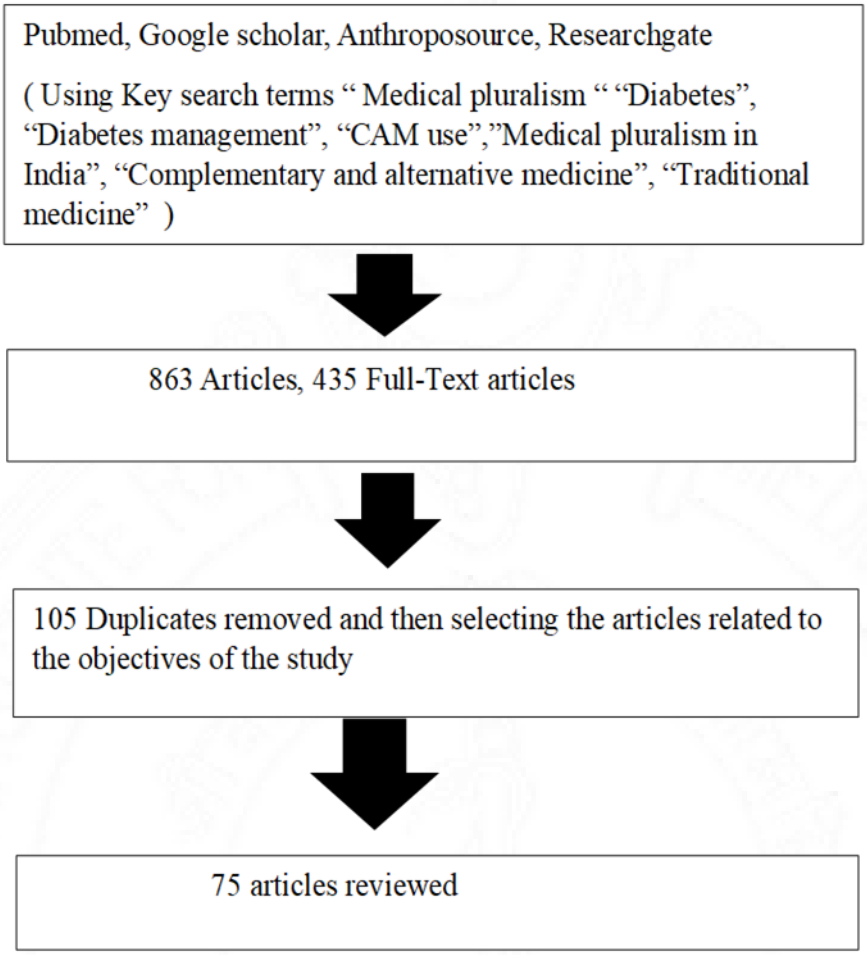
CHAPTER 2

Review of literature

This review attempts to examine the existing literature on medical pluralism among diabetic patients and the reasons for these. This review of literature used search engines and online databases like Pubmed, Google Scholar, Anthrosource, and Research Gate. The keywords used were “Medical pluralism”, “Diabetes” “Diabetes management”, “CAM use”, “Diabetes and CAM use” Complementary and alternative medicine”, “Traditional medicine” “Medical pluralism in India”. The search was restricted to the period 2000 to March 2024 and then government websites and documents of the WHO, Health Ministry, ICMR, AYUSH department, Kanyakumari district-specific documents were also reviewed to get a better idea of the context.

The literature review has been described in the following sections namely 'medical pluralism’, ‘complementary and alternative medicine’, ‘factors associated with practice of medical pluralism’, ‘reasons for medical pluralism’ to get a broad understanding of medical pluralism. The review of literature also elaborates the status of medical pluralism in the global scenario, Indian scenario and Tamil Nadu scenario then policy and programmatic perspective of CAM in India and then ends with diabetic management. All the materials for which abstracts were available, were examined for relevance, listed and read. Relevant abstracts were chosen and the associated full-text availability was verified through multiple sources. Full-text articles that were available and made a significant contribution to the topic were included.

Figure 1. Flow Chart indicating Literature review process



2.1. Medical pluralism

"Medical pluralism can be defined as the employment of more than one medical system or the use of both conventional and complementary and alternative medicine (CAM) for health and illness". (Minocha, 1980)

Medical pluralism refers to the coexistence of multiple medical traditions and practices located in local contexts and belief systems. (Cant, 2020)

In the 1970s Leslie introduced the term "Medical pluralism" while studying the indigenous systems of medicine in Asia. He emphasized the hierarchical position of medical pluralism and noted the subordinate position of non-biomedicine healthcare

modalities. (*Asian Medical Systems*, 1976). Indigenous medicine and conventional medicine coexist in a complex and complementary way. The access to biomedical practices does not lead to the displacement of healing traditions from the community. The people's views about health include prayers, healers, and medicinal plants and vary based on their socio economical background. (Zank and Hanazaki, 2017)

2.2. Complementary and alternative medicine

According to the WHO, "Complementary medicine" or "alternative medicine" includes a wide range of healthcare practices that fall outside a country's traditional or conventional medical system and are not fully incorporated into the mainstream healthcare system. In some nations, these terms are used interchangeably with "traditional medicine." ("Traditional, Complementary and Integrative Medicine," 2024)

Herbal medicine includes herbs, herbal products, herbal formulations or any products with plant based active ingredients or combinations ("Traditional, Complementary and Integrative Medicine," 2024). Traditional medicine is a historical cumulative knowledge, skills, practices rooted in culture based beliefs, theories and evolved from the experiences of the community. It may not be explainable but tend to be used in the maintenance of health care and involved in disease prevention, diagnosis, treatment of physical and mental illness. ("WHO traditional medicine strategy," 2013)

Complementary and alternative medicine (CAM) is a umbrella term used to refer various therapeutic methods, healing philosophies and healing traditions. (Cant, 2020) It differs across region to region across countries. CAM provider or CAM practitioner is a complex term it includes lay caregivers, local healers, traditional priest giving healing traditions to professional CAM doctor or persons with different educational qualifications of providing various CAM therapies. It is determined by the geography, culture, political economy and history associated with the nation. (Koithan, 2009)

NIH has classified CAM therapy into 5 categories namely Alternative medical systems, Mind body interventions, Biologically based therapies, Manipulative and Body based therapies and Energy System based therapies. (Koithan, 2009)

Alternative Medical systems include Ayurveda, Homeopathy, Siddha medicine and Traditional Chinese medicine etc. They have their own philosophies and beliefs.

Biological based systems include herbal supplements, specific diet and dietary supplements. These are highly non-codified and region specific and do change over time.

Mind body interventions include various therapies which aim to enhance the connectivity between mind and body. It includes yoga, meditation, Tai chi, dance, prayers, spiritual healing. Manipulative and body focused therapies focused on physical manipulation by hands includes healing practices of massage, chiropractic, massage, varmam therapy.

Energy based interventions focus on energy fields of the body includes Reiki, Magnet therapy etc. ("Complementary and Alternative Medicine (CAM) - NCI," 1980; Walia et al., 2023)

2.3. Factors determining practice of medical pluralism

Medical pluralism is determined by various factors like historical and political factors, health system factors, cultural factors, socio-economic factors and interpersonal factors.

2.3.1 Historical and political factors: History plays an important role in paving the way for medical pluralism especially colonialism supported the stronghold of western medicine over many nations. (Cant, 2020; Eves and Kelly-Hanku, 2020; Saini, 2016) It sidelined the vernacular native medical practices of many nations. Political economy of the country and the governmental support and its position regarding the CAM plays a important role in determining medical pluralism within nations. (Agrawal et al., 2023; Cant, 2020). Medical traditions are highly dynamic and changed based on the socio-economic progress of the country. (Khalikova, 2021)

Migration of people from one tradition to other traditions leads to medical pluralism while migrating people tend to take their beliefs, perceived etiology and understanding of health to a new tradition leading to medical syncretism. Medical syncretism refers to blending to different medical practices based on diversified cultural beliefs, it includes mixing of biomedicine with traditional medicine. (Porqueddu, 2017) Historical cross-cultural linkages between different communities leads to the formation of different medical systems.(Marco.,2021; Saini, 2016).

2.3.2. Health system factors: Integration of traditional medicines into a country's own health system as promoted by WHO traditional medicine strategy itself leads to medical pluralism.("WHO traditional medicine strategy," 2013) Even though India integrates its own AYUSH System into the government health system, the utilization of the AYUSH services from the government is comparatively very low when compared to biomedicine clinics. In terms of per patient utilization, Government of India spends more in AYUSH when compared to biomedicine because of increased footfall in biomedicine hospitals. (Rudra et al., 2017). Distance of the health centres and urban centres frame the health seeking behaviour of people. (Zank and Hanazaki, 2017)

Inclusivity of CAM therapies in health insurance schemes favours the uptake of CAM therapy by people. In Norway, Sweden and Denmark CAM therapies are well established in their health care system and large number of CAM therapies are reimbursed through health insurance. Whereas in Czech Republic, Poland, Estonia fewer CAM therapies are reimbursed through insurance.(Fjær et al., 2020) In European context, specialist visit, physician density, health expenditure per capita are positively associated with CAM use.(Fjær et al., 2020) The health worker and physicians also influence their patients to use CAM therapies in certain scenarios.(de Medeiros et al., 2016; Devi et al., 2015) Availability of physicians and number of traditional healers is also important determinant

for medical pluralism in a particular region. (Zank and Hanazaki, 2017) Cost of the treatment is a key determinant for people migrating from one therapy to other. (Chary et al., 2012) According to the National Medical Council there are 13,08,009 registered allopathic physicians in India as of June 2022. There are 5.65 lakh AYUSH doctors in India. With assumed a four fifth availability of allopathy doctors together with AYUSH physicians the Doctor- population ratio is 1: 834. ("Update on Ratio of Patients And Doctors Nurses,"2022.) i.e. in India 33% of the doctors are AYUSH doctors. In addition, India has many informal healers and traditional medicine practitioners. This favours medical pluralism in India. (Nahar et al., 2017; Pengpid and Peltzer, 2021a)

2.3.3. Cultural factors: The choice of medicine is shaped by the culture which the person belongs. (Khalikova, 2021; Zank and Hanazaki, 2017) Cultural norms determine how we understand the illness and people's choice of medicine and their behaviours.(Juárez-Ramírez et al., 2019; Nasiruddin, 2018). Migrants prefer to use their medical system of their country of origin. They search for specific herbs to deal with their healthcare needs. (de Medeiros et al., 2016; Khalikova, 2021). Availability of medical plants together with cultural traditions promote people to engage in CAM. (Zank and Hanazaki, 2017). Religion also plays important role in treatment seeking. Muslims tend to use Unani since it is connected with their religion. (Itrat and Akhlaq, 2022). Religious involvement for care seeking is a part of many cultures. (Botchway et al., 2022; Martinson, 2011)

2.3.4. Interpersonal factors: Negative perceptions about state health systems pushes is associated with CAM use. (Fjær et al., 2020) People tend to consider CAM options because of their perceived effectiveness, natural qualities and it is based on subjective experiences and views about disease and CAM. (Khalikova, 2021) Traditional healers

tend to spend more time with the patients when compared to biomedicine physicians and this shapes perceived ideas about quality of care.(Sundararajan et al., 2020)

Highest treatment satisfaction is associated with medical pluralism. (Pengpid and Peltzer, 2021) CAM users experience better treatment satisfaction when compared to non-CAM users in terms of effectiveness, side effects, convenience and overall satisfaction. (Itrat and Akhlaq, 2022) Family, friends, neighbours and peers play important role in determining the choice of treatment. They become significant influencers of indigenous medicines. (de-Graft Aikins et al., 2023b; Devi et al., 2015; Khalikova, 2021) Social media and mass media act as a important source of CAM medications.(Porqueddu, 2017)

2.3.5. Socio economic factors: Age is the important factor in medical pluralism. As age increases people tend to use CAM more frequently. (Balamurugan et al., 2013; Devi et al., 2015) People above 60 years of tend to use AYUSH more when compared to others.(Pengpid and Peltzer, 2021a; Sharma et al., 2017).

Regarding gender, women tend to use more CAM when compared to men. (Aboyade et al., 2016; de Medeiros et al., 2016; Fjær et al., 2020; Pengpid and Peltzer, 2021a; Zank and Hanazaki, 2017) Even women physicians tend to use CAM therapies more frequently than their male peers. (Roy et al., 2015) Increase in education level is positively associated with CAM use (Devi et al., 2015; Fjær et al., 2020; Kumar et al., 2006b). On the other hand, a study in Tamil Nadu. CAM use decreases with increase in education. (Balamurugan et al., 2013) In Vanuatu, people with no formal education use CAM when compared to those with formal education. (Elliott and Taylor, 2021). Employed people tend to seek CAM more frequently than unemployed or retired people. (Fjær et al., 2020). Unskilled workers seek CAM treatment more frequently when compared to semiskilled or skilled workers. (Balamurugan et al., 2013). Changing work patterns have an impact on choice of medicine. (Zank and Hanazaki, 2017). People living in rural areas tend to

use CAM when compared to urban counterparts. (Pengpid and Peltzer, 2021a; Zank and Hanazaki, 2017) Even caste makes difference in local health traditions. (Sujatha, 2007) People's social status is associated their choice of healthcare. (Khalikova, 2021; Saini, 2016) People from middle and high socio economic status are more aware and practicing CAM when compared to low socio economic status. (Itrat and Akhlaq, 2022; Kumar et al., 2006b).

2.3.6. Health related factors: People with poor health, disabled people, sick people, or those with chronic long standing health issues tend to seek CAM more often when compared people with good health. (Fjær et al., 2020) Available information on disease type is the important determinant of medical pluralism.(Khalikova, 2021) Physician fees is also an important determinant of health seeking behaviour of people. In India the cost of seeking biomedicine is much higher when compared to AYUSH treatment. (Pengpid and Peltzer, 2021a). Duration of diabetes is the important factor in diabetes treatment. People having diabetes for below 5 years are more likely to use CAM when compared to those with longer experience with diabetes. (Balamurugan et al., 2013) A study from Madurai district, Tamil Nadu indicates that as duration of diabetes increases CAM use increases. (Devi et al., 2015) People with chronic disease tend to use CAM options when compared to people with other conditions. (Aboyade et al., 2016; Fan et al., 2018; Masola and Sigida, 2021; Walia et al., 2023)

2.4. Reasons for Medical pluralism

People use CAM medications based on their perception regarding their inherent natural qualities and they prefer CAM not for treatment but for also general wellbeing. (de-Graft Aikins et al., 2023b; Porqueddu, 2017a; Sari et al., 2021) Faith in CAM medications, low cost, poor control, side effects and negative perceptions associated with modern medication and state health systems are the important reasons for CAM use among

diabetic patients. (Devi et al., 2015; Fjær et al., 2020; Kumar et al., 2006b; Porqueddu, 2017a; Roy et al., 2015; Samal and Dehury, 2018; Tangkiatkumjai et al., 2020). Easy availability of CAM options and their perceived effectiveness also leads people to choose CAM. (Kumar et al., 2006b; Roy et al., 2015; Samal and Dehury, 2018; Sari et al., 2021) The safety perception and quick relief received CAM therapy is associated with its use.(Kumar et al., 2006b; Porqueddu, 2017b; Sari et al., 2021; Tangkiatkumjai et al., 2020). Families and friends influence people choose CAM therapy and they act as a source of CAM information and potential influencers of initiation of CAM. (de-Graft Aikins et al., 2023b; Khalikova, 2021; Sari et al., 2021). The cultural value associated with the indigenous treatment makes people to prefer indigenous medicine. (Botchway et al., 2022; Chary et al., 2012)

People focused on perceived efficacy of CAM based on their past experiences and cultural ethos. The belief systems and subjective understanding of the illness and ethical values of the society pave the way for medical pluralism. (Khalikova, 2021; Yu, 2021) Among western populations CAM use is considered as the autonomy to control their health. (Tangkiatkumjai et al., 2020) Negative perception of CAM and better satisfaction with biomedicine is associated with not use of CAM.(Tangkiatkumjai et al., 2020) Relief from symptoms, reduction of the progression of disease, reduction of the side effects of allopathic drugs are reported as reasons for CAM use among Palestine diabetic patients. (Ali-Shtayeh et al., 2012)

Distrust with modern medicine, cost effectiveness, easy accessibility, non-availability of other treatment options, perceived less side-effects of AYUSH and personal experiences are the reasons for seeking AYUSH care among the population. (Samal and Dehury, 2018) Family history of CAM use, specific conditions, positive recommendations from

others are the reasons for CAM use among black women in urban south Africa. (Aboyade et al., 2016)

Among Indian and Pakistan migrants with diabetes, CAM intake is due to the perceived inherent danger associated with allopathic diabetic medications. To counter balance the side effects of allopathic medication and to compensate for their failure to adhere to drug and diet regimen they tended to use complementary therapies. (Porqueddu, 2017c)

Lack of drugs and facilities (60%), rude staff behaviour (50.6%), travel costs and distance (43.5%), absence of female doctor and nurses (36.5%), high cost of drugs (20%) and long waiting time (20%) are reported by the rural women in Kanyakumari as the reason for not using government facilities. (Anbu, 2020)

Familiarity of the informal healthcare provider, affordability and accessibility are the important factors associated with informal healthcare provider utilization in India. (Nahar et al., 2017) Patient satisfaction is thus a key determinant of medical pluralism. (Agarwal, 2018)

2.5. Medical pluralism in Global scenario

A systematic review conducted in 2021 on global prevalence of CAM usage among diabetes adults included articles from 25 different countries and determined it to range from 8- 89%. Acupuncture, mind-body therapies, religious and spiritual healing and homoeopathy were the most commonly used CAM options. cinnamon, fenugreek, garlic, aloe vera, black seed are most commonly used herbs for diabetic management. High prevalence of CAM use among diabetes was found in India (89%) and Jordan followed by Tanzania (78%), SriLanka (76%) and Iran (75%). In countries like Jordan (17%), Israel 23%, USA (26%), Saudi Arabia (26%) CAM use was reported to be lower. Prevalence of CAM use as an adjunct therapy was 78%. More than one fifth (21%), used

CAM as an alternative to modern medication for diabetes, nearly two thirds of those who did so did not report this CAM use to their physicians.

In 2014, secondary data analysis of European Social Survey indicated 17.9% prevalence of CAM usage in Europe. Of this, 11% utilized at least one physical treatment, 9.5% opted for consumable CAM, and 2.54% utilized both types simultaneously. (Fjær et al., 2020) A cross sectional study among diabetic patients in Thailand in selected primary healthcare units shows that daonde xinxi (modified Taichi), meditation and prayers were used for diabetic management. (Wanchai and Phrompayak, 2016)

A cross sectional study among diverse rural population in Brazil in 2014 found that people use combinations of pharmaceuticals, plants, prayers and diet for their diabetic management. Use of CAM reduced with increased frequency of visits to the health centre. A majority (60.6%) were involved in medical pluralism while 33.5 % use CAM alone and 5.9% use allopathy alone. Migrants and women tend to use CAM more frequently when compared to non-migrants and men. (de Medeiros et al., 2016)

In lelet pentecostals of Papua New Guinea the church has a stronghold over healthcare institutions and decision of therapy. Vernacular medicine is sidelined by churches as satanic practices but lelet people still believe that the herbs are gifted by God for healing. Due to widespread pentecostalism, lelet people rely on prayers and magical beliefs for their therapeutic needs. (Eves and Kelly-Hanku, 2020)

2.6. Medical pluralism in India

India is a country with diverse culture and medical traditions and healthcare practices. The Indian pattern of medical pluralism involves ethnomedicine and biomedicine. This background does not allow for viewing medical pluralism with the dualistic lens because it is very widely practiced India. There is the intrinsic codified health systems and in addition to these, there are ethnomedicines and folk medications by way of local health

traditions that hold sway in Indian subcontinent. (Borah et al., 2009; Reddy et al., 2023) Folk streams also have classical texts but the local healing traditions are not based on professional texts alone. There are differences between the illness perception and healing by the traditional healer and professional siddha or ayurveda doctor. Traditional healers rely on *manasuththi* (intuition) for choosing the correct therapy for the illness and inherited knowledge passed on through familial traditions that had strengthened them. Thus, medical pluralism differs across different regions and communities in India (Sujatha, 2007)

Based on the 2017-2018 nationwide cross-sectional study (LASI Study wave 1)in India, AYUSH practitioner utilization during the past 12 months was 6.5% while Traditional Health Practitioner (THP) utilization was 7% and either THP or AYUSH utilization found to be 13%. (Pengpid and Peltzer, 2021a). Utilisation of AYUSH practitioners during the past two weeks was found to be lower in Kerala (13.7%) and west Bengal (11.6%). THP utilisation was higher in Bihar (24.3%) followed by Uttar Pradesh (15.3%) In Tamil Nadu the utilization of AYUSH Practitioner and THP is much lower at 0.9% and 0.1%. (Pengpid and Peltzer, 2021)

A hospital based cross sectional study in 1999 in Allahabad showed that the prevalence of of CAM use was 67.7% among diabetic patients. Naturopathy was the most preferred CAM therapy. Nearly half (47%) of the diabetic patients indulged in medical pluralistic practices. This study also found that there was concomitant use of allopathy and CAM while 24.2 % patients using only CAM before formal treatment. (Kumar et al., 2006)

In 2018 a hospital based cross sectional study in Hegganhalli primary centre (Which had a weekly once Unani OPD) in Bangalore found the prevalence of Unani medicine among diabetics was 25.6%. *Qurs ziabetes* is the most commonly used Unani medicine among

the diabetic patients. Glycemic control was better among Unani users compared to non-unani users. (Itrat and Akhlaq, 2022).

In Saudi Arabia, in a hospital-based study regarding CAM usage among diabetic patients, Mind body therapy, (which includes meditation and *Ruqyah* (a Quran based healing method) herbal supplements were the most commonly used CAM therapy among diabetic patients. This study found that among CAM users, 51 % report that their blood glucose level improved due to CAM therapy and 53 % of the CAM users have HbA1c level > 9 % while 62% of the non CAM users have significantly lower HbA1c levels (>8 %) .(Aljulifi et al., 2022)

A 2014 cross sectional study in a tertiary care hospital involving 200 doctors and 403 patients as the study population indicates that among doctors 58% are CAM users and among patients 28% are CAM users. Half (50%) of the doctors who use CAM recommend it to patients. Sixty percent of the patients practice medical pluralism. The overall extent of CAM use among the participants was 38%. (Roy et al., 2015)

A health facility based cross sectional study among patients with non-communicable disease in Rishikesh, India found that 41 % of patients were ever users of CAM and more than half of the study participants used more than one type of CAM for their treatment. More than one-third (35%) of the participants with diabetes used CAM and 43 % of the participants with diabetes and hypertension used CAM for their therapeutic needs. (Nailwal et al., 2021) In 2017, study found that the prevalence of CAM therapy among diabetic patients in Kollam district, Kerala was just 9 % among exclusive CAM users and the combined use of CAM and modern medicine was 30 %. (Vishnu et al., 2017)

2.7. Medical pluralism in Tamil Nadu

A retrospective analysis of the footfalls in the government yoga and naturopathy clinics of Tamil Nadu (Lifestyle clinics) from 2015-2018 shows the positive trend in the

utilization of yoga and naturopathy treatment for lifestyle disorders. In that analysis, nearly 44% of patients visited rural clinics under NRHM. Diabetes is the most common disorder for utilization of yoga and naturopathy treatment from these lifestyle clinics. (Maheshkumar et al., 2020)

The prevalence of CAM use among diabetic patients in a tertiary care hospital-based study conducted in 2011 in Salem showed that it was70.1%. karela juice (60.6%), methi (42.6%) and neem (28.7%) were most commonly used CAM options by the participants. (Balamurugan et al., 2013)

The prevalence of CAM use among type 2 diabetic patients and others who visited a diabetic health camp showed that of the CAM users, 66.7% were involved in concomitant use of allopathy and CAM. The most common of CAM therapies were Biological (84.6%) including herbs, nutritional supplement), mind body system based (59.8%) and whole systems (16.6%). Under whole medical systems 7.4% used acupuncture, 6.1% used Ayurveda and 3.1 % used homeopathy. (Devi et al., 2015)

2.8. Health system evolution in India with respect to CAM

Medical pluralism is very common in India. (Minocha, 1980; Nahar et al., 2017; Ruhil, 2016) Traditional medicine in India has both codified and non-codified systems of medicine. In the codified systems of medicine, knowledge is codified in pharmacopeia and ancient scriptures. In non-codified systems of medicine, the knowledge is transmitted through oral means across generations and it evolved through trial and error approach. It is context specific it differs from region to region and is based on the available resources and local needs. It is known by different names, including ethnomedicine, folklore medicine, little traditions, indigenous medicine, ethnomedicine, bush medicine etc. (Minocha, 1980)

2.8.1. Policy and Programmatic perspectives - CAM In India: In 1835, in pre independence India, Lord Macaulay backed the government support for conventional medicine there by pushing indigenous medicine to the peripheral position. All the regions ruled by East India Company then prioritised biomedicine. (Saini, 2016; Samal and Dehury, 2018) Due to colonialism, the roots of the indigenous medicine in India faded. During the British period, modern medicine was utilised by the wealthy class, elite groups and by the British authorities. The hakims and *vaidhyas* of indigenous medicine were considered subordinate to the biomedical tradition. The masses still depended on the indigenous systems of medicine for their healthcare needs. (Saini, 2016; Samal, 2015). The Madras Government formed the Committee on Indigenous systems of Medicine headed by Muhammed Usman aimed for better understanding of indigenous systems of medicine. It undertook evidence-based data collection on indigenous medicine practitioners of Ayurveda, Siddha and Unani medicine. The Usman Committee report advocated for state support and financial support for the traditional medicine. The committee viewed traditional systems of medicine as valuable and effective and highlighted the limitations of hegemonic western medicine. (Muhammad Usman, 1923; Wujastyk et al., 2022)

The Bhore Committee formed in 1943 gives a critical view on indigenous system of medicine. It quoted indigenous medicine as “unscientific”. It prioritized modern medicine and focused on establishing allopathic health care infrastructure, medical education and healthcare workers training. It recommended the inclusion of ‘dais’ into health services due to the very high maternal and infant mortality rates. (Joseph et al., 1946) While Sokhey committee report of 1948 recognised the *Vaids* and Hakkims of indigenous system of medicine and recommended the integration of indigenous medicine into broader health system of India. It emphasized on the need to enhance public health

outcomes by integrating traditional medicine. ("Sokhey Committee Report," 1948) The Chopra committee recommended mutual learning between allopathy and indigenous systems. But, nevertheless, the Mudaliar committee in 1969 prioritized modern medicine and following this, the National Health Policy of 1983 lead to the creation of department of Indian System of Medicine in 1995. (Minocha, 1980)

During the 7th 5-year plan, India had 4.5 indigenous practitioners. By the 9th 5-year plan, there was a significant increase with 6 lakh indigenous practitioners catering to rural India. However, despite this growth, challenges persisted in terms of standardization and quality education. The 7th 5-year plan emphasized on the importance of enhancing the quality of human resources in indigenous medicine. It aimed to improve the quality of care within indigenous medicine and to safeguard the extensive knowledge of medicinal plants and healthcare traditions. This involved completing the pharmacopeia for various medical systems, encourage good manufacturing practices (GMP) to ensure quality, promoting the cultivation of medicinal plants, and focused on research and development of AYUSH drugs through the establishment of central research councils and improving inputs from indigenous medicine. Their inclusion within national programs was considered under the health domains from the 1st to 12th Planning commissions of India. The 11th 5-year plan addressed the lack of quality education, lack of quality Indian medicine professors and talked about the exploitation of medicinal plants and influx of spurious products in market. The 11th 5 year plan focused on main streaming of AYUSH. (Samal, 2015)

2.8.2. AYUSH in India: The Department of Indian System of Medicine and Homoeopathy (ISM&H) was formed in 1995 and it is renamed as Department of AYUSH (Ayurveda, Yoga, Unani, Siddha and Homoeopathy) in November 2003. The National Rural Health Mission(NRHM) introduced "Mainstreaming of AYUSH and revitalization

of local health traditions" program in 2006 to revitalize public health services.("Ministry of AYUSH," 2024; Samal, 2015) In November 2014, a separate ministry was formed as Ministry of AYUSH which focuses on research and quality education of Ayush systems of medicine in India.("Ministry of AYUSH," 2024) The 5 different research councils are under Ministry of AYUSH which are involved in research on respective systems of medicine. Apart from this, under the Ministry of AYUSH, 8 educational institutes and 5 statutory councils of Indian were identified. ("Ministry of AYUSH," 2024)

As of April 31st, 2014, AYUSH facilities were situated alongside 44.3% of District Hospitals (331), 36.3% of Community Health Centers (1885), and 34.6% of Primary Health Centers (8461).("Ministry of AYUSH," 2024; Samal, 2015)

2.9 Diabetic management

Diabetes is a chronic metabolic disease characterised by impaired secretion of insulin by the beta cells of islets of langerhans it is characterised by hyperglycemia (raised sugar level).In India 66 % of all the deaths are due to NCDs and 22 % of premature mortality due to NCDs happen in India. ("Noncommunicable Diseases Progress Monitor 2022," 2022) The better management of diabetes involves improved quality of life, better glycemic control, relieve from symptoms to prevent micro and macro vascular complications and infections. Healthy lifestyle, healthy diet, exercise and proper adherence to anti-hyperglycaemic drugs help in the better management of diabetes mellitus. Oral anti- hyperglycaemic drugs include biguanides, sulphonyl ureas, thiazolidinediones, SGLT inhibitors, glinides. These are the modern medications used in the diabetic management in India. ("ICMR Guidelines for Management of Type 2 Diabetes," 2018) Metformin is the most common diabetic medication used in India and Insulin is used in hyperglycemia management in diabetes. ("ICMR Guidelines for Management of Type 2 Diabetes," 2018; Singla et al., 2019)

A wide range of treatment modalities are provided by Ayurveda for diabetic management. As per National Ayush Mission in Ayurveda, diabetes is denoted as Madhumeg and it lists many medications based on symptomology and condition. *Nishamalaki churna*/tablet, *Triphala churna*/ tablet, *Shiva gutika, Chandraprabha vati, Silajatvadi vati, Dhanvantara ghrita* (for Diabetic carbuncles), *Kshira baladi taila* (for Diabetic Neuropathy), Saptamrita lauha (for Diabetic Retinopathy) are some of the medicines provided for management of diabetes in ayurveda. ("Diabetes | National AYUSH Mission (NAM)," 2023.). In Siddha, Diabetes is noted as Madhumegam and it has many treatment options namely *madhumega choornam, aavarai kudineer, Abaraga chendooram* for the management of diabetes. (Subramanian et al., 2023) In Unani, Qurs ziabetes, Qurs tabasheer, and Qurs ziabetes kafoori are used for diabetes treatment. (Itrat and Akhlaq, 2022)

A systematic review of CAM for glycaemic control of diabetes in 2022 published in Journal of Public Health Research gives the wide variety of medicines used for glycaemic control and it includes various therapies. Natural products like *Berberis aristata*, black cumin, *Silybum marianum*, fenugreek seed, Bitter melon, cinnamon or whortleberry supplements; *C. spinosa, R. canina, and S. securigera*, *Nigella sativa*, mulberry juice, chicory, chamomile tea, bell pepper juice with integrated yoga therapy were seen as beneficial in reducing blood sugar levels. In a study, 'qigong' has been demonstrated to have better effect in reducing the blood glucose level compared to control group. Acupressure on certain points namely ST36, BL23, and BL13 for 12 weeks, 3 min, three sessions/week had the effect to reduce blood sugar levels in gestational diabetes mellitus compared to the control group. (Setiyorini et al., 2022)

Diabetic persons under CAM therapy show a significant reduction in blood sugar level and glycated haemoglobin levels too, especially when taking Modern medications

together with CAM. (Devi et al., 2015; Itrat and Akhlaq, 2022). In India, *Trigonella foenum-graecum*, *Ocimum sanctum*, *Momordica charantia*, *Eugenia jambolana*, *Allium sativum* and *Ficus religiosa, Pterocarpus marsupium, Gymnema sylvestre, Mormordica chirantia, Eugenia jambolana* herbs are traditionally used for diabetic management. They also help in glycemic control. (Rizvi and Mishra, 2013)

Possible drug interactions are noted by physicians with modern medications and these include gingko biloba interaction with anticoagulants, garlic interaction with antidiabetics, ginger -antiplatelet medications are noted by physicians in the CAM prevalence study in Delhi. (Roy et al., 2015) Simultaneous consumption of herbs or CAM options together with modern medications pose a challenge to the health of the individual since aloe vera interferes with glibenclamide. Certain herbs, particulary *Mimordica charantia,* co-consumption with metformin results in greater reduction of sugar. The interaction of various herbs with the allopathic medications is not clearly known. It may be beneficiary or threatening. (Gupta et al., 2017) Even traditional healer consultation is significantly associated with poor glycemic control from a study among Ghanaian. (Botchway et al., 2022).and also religious participation is associated with better diabetic glycemic control. (Botchway et al., 2022)

The National NCD monitoring survey conducted in 2017-18 in India shows that the prevalence of diabetes among adults was 9.3% but impaired glucose tolerance is high at 24.5% and among people with diabetes mellitus, 45.8% aware of their condition. Only 36.1% were following treatment and only 15.7% have their sugar level in control. (Mathur et al., 2022b)

Chapter 3

Methodology

This chapter describes the methodology followed for the study. I outline the specific objectives, the study design used, the selection of the appropriate sample for the study from the defined population, the data collection techniques, the analysis used and the ethical considerations. Since the study includes a qualitative component, it is relevant to reflect upon the positionality of the researcher and its implications for the specific component of the research. This chapter concludes with the positionality statement of the researcher.

3.1. Objectives

3.1.1. Major objectives: The major objectives of this study were to:

- To determine to what extent do people with diabetes mellitus take recourse to ,'medical pluralistic practices' (MPP) by way of treatment in rural Kanyakumari district and
- To identify the reasons for the use of medical pluralistic practices (MPP) among people with diabetes mellitus

3.1.2. Minor objective : To identify the correlates of medical pluralistic practices.

3.2. Study design

The study was designed as a mixed-methods study, using a sequential explanatory study design. It includes a cross-sectional quantitative study followed by a qualitative exploration amongst selected participants of the quantitative study to assess the reasons for their therapeutic choices including medical pluralistic practices.

3.3. Subject selection

As the study examines the use of medical pluralistic practices for diabetes mellitus patients, the subjects for the study includes self-reported diabetes patients.

3.4 Study setting

The study was undertaken in a community-based setting in rural areas of Kanyakumari district. Kanyakumari district has 9 block panchayats. Kanyakumari district in Tamilnadu. All the 9 blocks were included in the study.

3.5 Study population

The study population consisted of self-reported diabetic patients aged 18 years or more, who were residing in the selected house for at least 5 days a week in rural areas of Kanyakumari district of Tamilnadu. (Defacto population)

Justification: Medical pluralistic practices are region-specific and determined by various factors like education, occupation, and socio-economic status. This study will consider persons who are residing in the house for at least 5 days a week. since Kanyakumari district has a significant volume of people who work or reside in Trivandrum, Tirunelveli and other districts for their occupation, their lifestyle will be dictated by the practices adopted in their usual place of residence. Their consumption pattern will differ from the others in the household. Therefore, the present study excluded the migratory population who stay only a few days a week at home.

3.6 Sample size estimation

3.6.1. For the quantitative component of the study: The sample size was calculated using the formula $(1.96)^2*p*q/d^2$ where 1.96 is the value for a 95% confidence interval under normality, p is the anticipated prevalence of the use of medical pluralism which was taken as 39 per cent from a previous study in Kollam, Kerala(Vishnu et al., 2017), q was equal to 1-p which was 1-0.39=0.61 and d, the half-width of the confidence interval has been taken as 0.05. Using this formula the sample size estimated was 366. The design effect was taken as 1 yielding a final sample size rounded off to 370. Given the limited time availability, the design effect was kept at 1, in spite of the use of cluster sampling. To

minimise the design effect, efforts have been made to keep the cluster size at the minimum possible in the circumstances.

Inclusion criteria: The criteria for inclusion was self-reported diabetic patients aged 18 years or more who are residing in the house for at least 5 days a week in rural areas of Kanyakumari district of Tamil Nadu (De-facto population).

Exclusion criteria: Patients who were not willing, and could not respond to the study due to some disabilities were excluded from the study.

3.6.2. For the qualitative study: The sample size for the qualitative study was 10-12. It included 5-6 self-reported diabetic patients who are following modern medicine treatment alone and 5-6 self-reported diabetic patients who were following medical pluralistic practices identified from those surveyed in the quantitative survey for this component of the study. Of the persons with diabetes enrolled in the quantitative study who demonstrate adherence to modern medication or have different medical pluralistic practices were considered and enrolled in the qualitative part of the study to understand the reasons for their therapeutic choices.

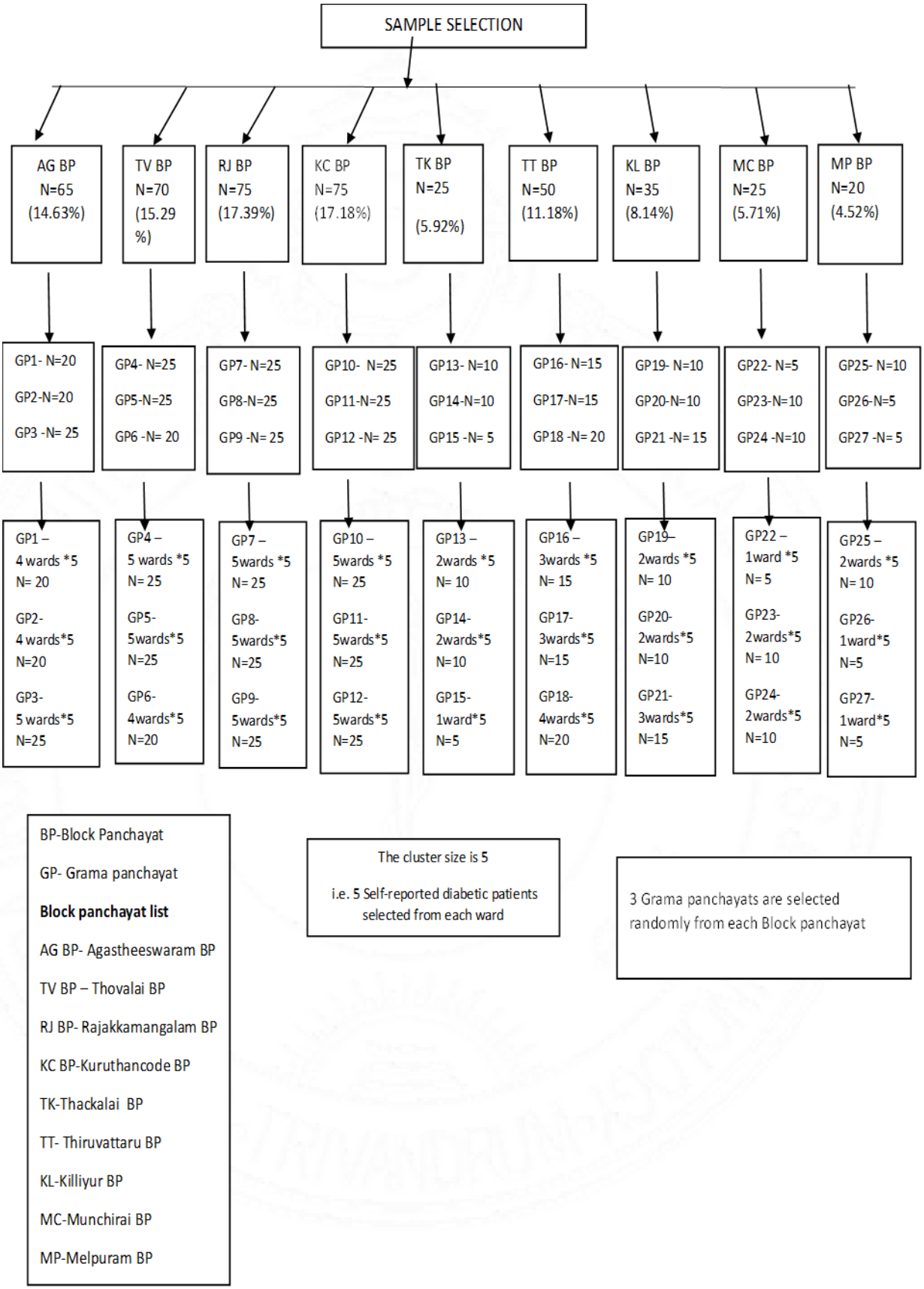
3.7. Sample selection procedure

Patients were selected using a multi-stage cluster sampling technique. There are 9 community development blocks (CDB) in Kanyakumari district. For better representation, the sample size was divided across the 9 blocks based on their rural population proportion in the Kanyakumari district as per the 2011 Census. (“India - Census of India 2011 - Tamil Nadu - Series 34 - Part XII B - District Census Handbook, Kanniyakumari ,” 2011) From each of these 9 CDBs, 3 grama panchayats were selected randomly using the R software version 4.3.1 and based on the required sample size. The number of wards needed per grama panchayat is determined based on the proportion of population in that block. From each ward, 5 self-reported diabetic patients were included.

The wards are also selected randomly using R software. Keeping the cluster size as 5, the number of clusters to be included becomes 74, thereby yielding a total sample size of 74*5 =370. Here, a ward is the cluster.

For the quantitative component of the study, an interview schedule is developed and used to collect information from all the participants. Of the persons with diabetes enrolled in the quantitative study who demonstrate adherence to modern medication (n=5-6) or have different medical pluralistic practices (n=5-6) were considered and enrolled in the qualitative part of the study.

Figure 2. Sample selection process



3.8. Data Collection Techniques

3.8.1 Data Collection for quantitative study: The recruitment was done by the principal investigator. Using a multi-stage cluster random sampling strategy, from each ward, 5 self-reported diabetic patients were selected and enrolled in the study.

The centre of the ward was located with the help of the frontline health worker or ASHA worker. From the centre of the ward by spinning the bottle the direction in which to move was identified. By moving in the direction shown by the bottle the first house was selected. From there, every third house was selected alternatively (systematic random sampling). This was adhered to across all clusters/wards. In case the ward was split into 3-4 numerous distinct regions then the places were numbered and using a random number generator, the distinct site was selected and the centre of the place is determined with the help of ward members. Then the sample selection followed the same pattern as noted earlier.

Within each selected household, using a screening list (attached as annexure XIII), the presence of a diabetic patient in the household was verified. If, after the selection of a diabetic patient, the selected participant was not willing to participate in the study this household was not included. Efforts were made to include the selected participants by conducting interviews at timings convenient to them. The system of going to every third household was continued until 5 diabetic patients were enrolled using the screening list. If the house had at least 1 diabetic person who was residing in the house for at least 5 days in a week was located within it, that household was included in the study. If a house has more than 1 self-reported diabetic patient who is residing in the house for at least 5 days, then one person within the household was selected using a lottery method and enrolled after obtaining their consent.

The consent form and participant information sheet were provided to the participant and a signature from the participant was obtained to ensure their voluntary participation in the study (attached as annexure I and II and V and VI for English and Tamil). All the participants are informed that they may be contacted again to obtain further details for the later part of the study. The data was collected using the structured interview schedule for diabetic patients. The interview schedule was deployed using ODK (attached as annexure

3.8.2. Interview schedule

The interview schedule consists of questions on socio-demographic characteristics, history of the disease and treatment, history of diabetic medication and its adherence in terms of dose, timing and regularity, questions related to CAM usage and other non-pharmacological means of diabetes management questions related to factors associated with medical pluralistic practices, modern medicine treatment and CAM therapy including cost. The interview was conducted in Tamil, the language commonly spoken in the state. The English and Tamil translation of the interview schedule are included in the dissertation as annexures IX and X.

3.8.3. Data Collection for qualitative Study: For the qualitative study, of the participants (i.e. self-reported diabetic patients) who were enrolled in the quantitative study; those who demonstrate adherence to modern diabetic medication or have different medical pluralistic practices were considered and recontacted and after obtaining consent from them (PIS and CF attached as annexure III, IV, VII and VIII for English and Tamil). Such participants were enrolled in the qualitative part of the study. The data was collected using an in-depth interview guideline. copies of the in-depth interview guideline used have been included in the dissertation as Annexures XI and XII. All the interviews were conducted in Tamil.

The consent form, participant information sheet and in-depth interview guidelines were originally drafted in English and translated into Tamil.

Eighteen participants from the quantitative study were re-contacted and re-consented for participation in the qualitative component of the study. The interviews were audio-recorded, ensuring their privacy and confidentiality. In-depth interviews were conducted in Tamil. The audio-recorded interviews were transcribed. The interviews were translated and transcribed verbatim to English for analysis.

3.8.4. In-depth Interview Guidelines for Informants: The In-depth interview guidelines were to identify the reasons for medical pluralistic practices a set of questions for persons who demonstrated adherence to modern medication and questions for persons who were following medical pluralistic practices (attached as annexure XI and XII for English and Tamil).

3.9. Data Collection Period

Data collection was conducted for 2 months between January 12, 2024 to March 5, 2024. The survey and the in-depth interviews proceeded simultaneously. If persons who demonstrated adherence to modern medicine for treating diabetes or to pluralistic practices across a spectrum of socio-economic status, they were interviewed using the in-depth interview guide.

3.10. Data Analysis

3.10.1. Data Analysis for Quantitative Study: Data cleaning and analysis were done by the principal investigator. Data analysis was done with the help of IBM SPSS Version 25. For univariate analysis the socio-demographic variables were grouped across gender to examine if there were any variations. The outcome variable for this study was medical pluralism. Medical pluralism was identified by combining the data of the variable Predominant treatment and predominant CAM Therapy. Cross tabulations for bivariate

analysis on the basis of whether or not the person with diabetes used medical pluralistic practices. The potential associations were examined using Chi square test for association and a multivariate model was built identifying the variables that were significantly associated with medical pluralism in the bivariate analysis. Inductive coding was done for open-ended questions included in the interview schedule.

3.10.2. Data Analysis for Qualitative Study: All the interviews were audio-recorded (with respondent's consent) and translated and transcribed in English. Transcriptions were done manually by the principal investigator and then inductive coding was done with the help of WEFT QDA version 1.0.1 version software. A total of 18 in-depth interviews were needed based on new emerging categories to achieve information saturation.

The interviews were analysed using thematic analysis wherein the transcripts were repeatedly read, analysed and interpreted. The interviews were coded. The primary codes were generated in keeping with the research objectives. Then similar codes were combined, reorganised and examined for emerging patterns to form themes and subthemes. Codes and themes were refined through discussion with the guide. The results are integrated with the quantitative data to form a joint display.

3.11. Operational definitions used

Medical pluralistic practice: For this study, medical pluralistic practice among type 2 diabetic patients is operationally defined as the employment of more than one of the different medical therapies for the management of diabetes during the last 6 months with regularity. Here medical pluralistic practices among diabetic patients include the practice of taking modern medication together with any one of the CAM therapies or taking at least any 2 of the CAM therapies together for the management of diabetes regularly for the last 6 months.

Management of diabetes: Any practice undertaken with the purpose of either reducing the blood glucose level or aimed at reducing the symptoms and complications caused by diabetes

namely the increased frequency of urination, increased appetite, excessive thirst, numbness of the hand and feet, dry skin, unhealing wounds, eye problem, sexual problem caused by diabetes) regularly in the ast 6 months is seen as management of diabetes.

Herbal medicine: Herbal medicine is operationally defined as taking any herbs or herbal products or plant-based formulations with the aim of either reducing the blood glucose level or alleviating the symptoms and complications of diabetes mellitus

3.12. Study Variables

3.12.1. Outcome Variable: Medical pluralistic practice and reasons for it was the main outcome variable. This was determined (Medical pluralism) by using the predominant treatment and predominant CAM therapy variables. Those who were using more than 1 therapy for treatment of diabetes were considered as having medical pluralistic practice.

3.12.2. Predictor Variables: Predictor variables were classified into

a. Socio-demographic variables namely age, gender, marital, status, education, employment, family income, religion
b. History of disease and treatment includes diabetes diagnosis period, first treatment opted, last physician visit, blood glucose levels, hbA1c history and therapy of other diseases and the reason for predominant treatment
c. History of Diabetic medication and their adherence in terms of dose, timing and regularity: It includes the details of Diabetic medications, Alteration of dose, time, regularity and its reasons
d. Non-pharmacological means of diabetic management include exercise, a specific diet and ever-use of CAM
e. Factors associated with medical pluralistic practice medicine treatment include cost of modern medicine, Source of money, source of modern medicine, decision influencer of treatment, friends in the health sector

f. Factors associated with medical pluralistic practice CAM therapy include the cost of CAM medicine, Source of money, source of modern medicine, decision influencer of treatment, friends in CAM therapy

3.13. Ethical considerations

The study was carried out only after review and approval by the Ethics Committee of Sree Chitra Tirunal Institute for Medical Sciences and Technology (Ref number: SCT/IEC/2161/DECEMBER/2023). The participants were voluntarily enrolled in the study after getting informed consent. Participants could withdraw from the study at any time if they wanted to do so. Privacy and confidentiality were ensured during and after the study. The audio for the in-depth interview was recorded after obtaining consent from the informants. The data were accessible only to the primary investigator and the guide. All soft copies of the questionnaire and the audio recorded will be deleted when no longer needed or after three years of completion in keeping with the requirements of the ICMR guidelines in this context, whichever comes first.

3.14. Positionality

Regarding the qualitative study, the researcher was conscious of the fact that his training, professional background and views on the topic could influence the nature of data collection and its interpretation. Being from same context Kanyakumari enabled the researcher to get insider view. Being a Siddha practitioner enabled the researcher to understand the nuances of CAM practices in the community. The possibility of the interpretations of the data being coloured by the researcher's views based on all the points was clarified with the respondents during the interview to report the true account of what was intended in order to avoid any biases due to the researcher’s training. Given my quantitative and qualitative training, I was deeply conscious that my Siddha training

could influence my data collection and I attempted to set aside that specific identify during data collection, particularly, the quantitative data collection.

However, it is important to also report that during the in-depth interviews, the reported levels of blood sugar did cause the researcher to feel some anxiety regarding the locally available CAM therapies being used. This was not merely due to the professional training but also possibly a concern about the potential long-term consequences of the condition (diabetes) for the persons interviewed. That, more than my own professional training did colour my view of the data which veered towards viewing CAM therapies (especially those that I encountered) as being less effective.

3.15. Nonresponse rate

In 1328 households visited and listed, the number of the diabetics identified was 560. From among the 560 diabetic patients identified, only 528 were found to be eligible to participate in the study (due to their categorisation as migrants). Of the 528 eligible participants, 91 declined to participate in the study. Given this, the estimated Nonresponse rate is 17.2% (91 / 528).

Estimated prevalence calculated with the help of cluster listing sheet gives the prevalence of diabetes as 11.6% which is on par with the overall prevalence of diabetes in the Indian population in 2023 (ICMR INDIAB study over 12 years) (11.4%).(Anjana et al., 2023).

3.16. Design effect

The current study is used multistage cluster sampling technique. The design effect used for estimating the sample size was 1. It is therefore important to demonstrate the actual design effect that emerged from the sample. The Intraclass correlation of the sample with variables cluster ID, age, gender, marital status, education and outcome variable medical pluralism was calculated using SPSS as ICC = - 0.011 (p =o.841). Using the formula

DEFF= 1+ (m-1) *ICC with average cluster size m=5, ICC = -0.011 the real design effect is calculated as 0.956 It is very near to the assumed design effect 1.

3.17. Validation for qualitative data

The qualitative data is validated using triangulation of the data collected from the qualitative study with the field notes, in-depth interviews, observation and quantitative findings. For ensuring credibility more time was spent with the participants to make them comfortable. The prolonged engagement with the participants in the field helped to get rid of intruder bias of the researcher. The consistency of the findings from the interviews from the different clusters adds trustworthiness to the findings. The study findings are transferable to other rural parts of Tamil Nadu and the study tool used is also transferable in other contexts. The detailed description of the study participants, research context, data collection methods, study setting are given in the next chapter.

Chapter 4

Results

This chapter describes the results of the study. It was a mixed methods study that used a sequential explanatory study design. The quantitative component of the study describes the extent of use of medical pluralistic practices by persons with diabetes in rural Kanyakumari district and its correlates. In addition, the study also proposed to identify the reasons for such practices. The first of these objectives was to be met using a quantitative approach and is described in the first section and the reasons for medical pluralistic practices were identified using a qualitative approach as an explanation. This is included as the second section. The qualitative analysis that identified the reasons for medical pluralistic practice includes the validation for the qualitative analysis.

I describe the study participants with their socio-demographic and health status profile in the first section. The outcome variable, viz., use of medical pluralistic practices and its correlates are described in the second section. The third section includes the reasons for medical pluralism in the community and this is based on the qualitative component of the study.

4.1. Profile of the study participants – quantitative component

There were 370 persons in the study sample. Of that 157 (42.4%) were males and 213(57.6%) were females. The gender disaggregated socio-demographic characteristics of the study participants is presented in table 4.1. The age distribution of the population ranged between 35 to 92. The mean age of the participants was 62.68 ±0.53 years and median age was 63. Among men, a slightly higher percentage (61.8%) were in the above 60 age group when compared to women. But in terms of absolute numbers more women (114) were in the above 60 age group when compared to men. Nearly two-thirds (70.5%) of the participants were currently married and 27% of participants were

widows/widowers. There were relatively higher number of currently married men (84.7%) when compared to women. One-third of women in the study population were widows (37.1%) and13.4% of the men were divorced. About one-third of the participants had completed primary education. One-fifth of the participants had completed middle school education. More men (31%) had higher secondary and above level of education when compared to women (16%). Seventy percent of the women have less than a middle school education, but among men only fifty five percent have education below the middle school level. The sample consisted of 57.7% participants belonging to the Hindu religious denomination and 44.3 % of the participants were Christians. The type of ration card was used as a proxy for socioeconomic status. Slightly more than half (55.7%) of the participants belong to Priority Household (PHH), while 44.3 % of the participants belong to Non-Priority Households (NPHH). A slightly higher percentage of the men (60.5%) belonged to the Poor (PHH) category, while among women there was a somewhat equal distribution across NPHH and PHH. The household income varied from Rs.0 to Rs.1,50,000 with the mean income of Rs.15262 ±884 and median household income at Rs. 10,000. Half of the participants (55.9%) were unemployed and only 44.1 % were employed. Among the women alone, only one third (33.3%) of the were employed and nearly double that of the men (58.6%) were employed. The type of employment indicated that of the employed women, half of them (52.1%) worked as a casual wage labour in public works (MGNREGA worker) and nearly half of the men (55.4%) were either self-employed or regularly salaried. But only one fourth of women (28.2%) were self-employed or regularly salaried. Among those retired,17.4 % of the men were retired whereas only a minuscule of 2.8% of women were retired/pensioner.

Table 4.1. Percentage distribution of study participants by socio-demographic characteristics and gender

Variables		Gender		Total N=370
Age		**Men N (%)**	**Women N (%)**	
Age Group	<=60	60(38.2)	99(46.5)	159(43)
	>=60	97(61.8)	114(53.5)	211(57)
Marital Status	Currently Married	133(84.7)	128(60.1)	261(70.5)
	Single	3(1.9)	5(2.3)	8(2.2)
	Widow/Widower	21(13.4)	79(37.1)	100(27)
	Divorced	0 (0)	1(0.5)	1(0.3)
Education	Non-literate	13(8.3)	19(8.9)	32(8.6)
	Primary education (1st -5th std)	46(29.3)	87(40.8)	133 (35.9)
	Middle school education (6th – 8th std)	27(17.2)	46(21.6)	73(19.7)
	Secondary education (9th -10th std)	23(14.6)	27(12.8)	50(13.6)
	Higher secondary education (11th and 12th std)	32(20.4)	29(13.6)	61(16.5)
	Graduate	11(7)	3(1.4)	14(3.8)
	Postgraduate	5(3.2)	2(0.9)	7(1.9)
Religion	Hindu	88(56.1)	125(58.7)	213(57.7)
	Christian	68(43.3)	88(41.3)	156(42.2)
	Muslim	1(0.6)	0(0)	1(0.3)
Ration Card Type	NPHH	62(39.5)	102(47.9)	164(44.3)
	PHH	95(60.5)	111(52.1)	206(55.7)
Household income	<5000	47(29.9)	56(26.3)	103(27.8)
	5001-10000	42(26.8)	59(27.7)	101(27.4)
	10001-20000	44(28)	46(21.6)	90(24.3)
	20001-30000	18(11.5)	32(15)	50(13.5)
	>30001	6(3.8)	20(9.4)	26(7)
Employment status	Unemployed	65(41.4)	142(66.7)	207(55.9)
	Employed	92(58.6)	71(33.3)	163(44.1)

Continued

Variable		Gender		
		Male N (%)	Female N (%)	Total N= 370 N (%)
Current Employment	Self-employed	30 (32.6)	8(11.3)	38(23.4)
	Regularly Salaried /Wage employee	21(22.8)	12(16.9)	33 (20.3)
	Casual wage labour in rural areas (In public works)	2(2.2)	37(52.1)	39(23.9)
	Casual wage labour in rural areas (in other works)	21(22.8)	11(15.5)	32(19.6)
	Casual wage labour in urban areas (in other works)	2(2.2)	1(1.4)	3(1.8)
	Retired/pensioned	16(17.4)	2(2.8)	18(11)
Total		157(100.0)	233(100.0)	370(100.0)

4.2. History of diabetes mellitus and its treatment of the study participants

The mean duration of diabetes since diagnosis was found to be 10.7 ±8.7 years. Close to 10 percent more women had been more recently (less than 10 years ago) diagnosed when compared to men. The median of the duration of diabetes since diagnosis was found to be 9.1 years. Nearly 63 % of the participants visited the physician within the last 1 month. More women had visited the doctor within the last 6 months. In terms of first option for treatment, 78.3% participants take modern medicine treatment while 25.2% of the participants use CAM treatment as their first treatment option. Nearly 16.5 % participants did not start with any treatment initially. Among the participants who seek CAM as an initial therapeutic for diabetes, 21.7% used Ayurveda,79.3% used herbal medicines, 6.5% used Homeopathy, 12% used Siddha. Of the men who used CAM as the first treatment option following diagnosis, 30 % sought Ayurveda treatment while among women initial CAM users, just 17.2 % had used Ayurveda treatment. More than half of the participants (51.6%) sought care from the government hospital, while 55.4 % of the participants sought private treatment and 3 % participants sought other facilities like CAM provider, informal

health provider. Nearly 10% of the participants sought care from multiple sources including government, private and others.

4.2. Percentage distribution of study participants by diabetes mellitus treatment status and gender

Variable		Gender		
		Men N (%)	Women N (%)	Total N(%)
Duration of being diabetic	<= 10 years	75 (47.8)	121(56.8)	196(53)
	> 10 years	82 (52.2)	92(43.2)	174(47)
Last visit to the Doctor	Within 1 month	93(59.2)	140 (65.7)	233 (63)
	Within 1-6 months	39 (24.8)	59(27.7)	98 (26.5)
	Within 6 months -1 year	9(5.8)	2(0.9)	11(3)
	More than 1 year	15(9.6)	9(4.2)	24 (6.5)
	Cannot say	1(0.6)	3(1.4)	4 (1.1)
First treatment*	Modern medicine	123(78.3)	167 (78.3)	289 (78.3)
	CAM	35(22.3)	58(27.4)	93(25.2)
	Don't start any treatment at first	26(16.6)	35(16.5)	61(16.5)
	Others*1	0 (0)	2(0.9)	2 (0.5)
First treatment CAM type*	Ayurveda	10 (29.4)	10(17.2)	20(21.7)
	Herbal medicines	27(79.4)	46(79.3)	73(79.3)
	Homeopathy	5(14.7)	1(1.7)	6(6.5)
	Siddha	6(17.6)	5(8.6)	11(12)
	Yoga and Naturopathy	0(0)	1(1.7)	1(1.1)
	Faith healing	0(0)	1(1.7))	1(1.1)
	Others*2	1(2.9)	0(0)	1(1.1)
Total		34(37)	58(63)	92(100)
Recent treatment*	Government Hospital	68(43.3)	123(57.7)	191(51.6)
	Private Hospital	96(61.1)	109(51.2)	205(55.4)
	Others*3	5(3.2)	6(2.8)	11(3)

* - People using more than 1 option are noted with this
Others*1- includes Reducing the food
Others*2-includes CAM option bought from television
Others*3 – includes Informal health provider, Traditional healer, Private lab

Continued

		Men N (%)	Women N (%)	Total N (%)
Multimorbidity*	Diabetic Foot ulcer	3 (1.9)	3(1.4)	6(1.6)
	Elevated Cholesterol	42(26.7)	65(30.5)	107(28.9)
	Heart disease	29(18.5)	26(12.2)	55(14.9)
	High Blood pressure	65(41.4)	114(53.5)	179(48.4)
	Kidney disorders	3(1.9)	5(2.3)	8(2.2)
	Neurological Problem	16(10.2)	14(6.6)	30(8.1)
	Vision impairment	5(3.2)	7(3.2)	12(3.2)
	Amputation of leg	2(1.3)	1(0.5)	3(0.9)
	Bone disorder	5(3.2)	12(5.6)	17(4.6)
	Hypothyroidism	1(0.6)	16(7.5)	17(4.6)
	Others*4	26 (16.6)	18 (8.4)	44 (11.9)
	Total Multimorbid persons	104(66.2)	148(69.5)	252(68.1)
	No Co Morbidity	53(33.7)	65(30.5)	118(31.9)
		157(100.0)	213(100.0)	370 (100.0)

Others*4 – includes other diseases which are less than 1 % of the Count

Nearly half of the participants in the study had hypertension. A higher percentage of women have hypertension when compared to men. More men in the study had heart disease compared to women. Nearly 30 percent of study participants had hypercholesterolemia, 8 percent participants had neurological problem. Study participants with diabetic foot ulcer accounts for 1.6%. Just about a third (32 %) of the diabetic patients are free from other comorbidities.

4.3. Extent of Medical pluralism among Self-reported diabetics in rural Kanyakumari

The extent of medical pluralism is given in table 4.3. Medical pluralism was practiced by 22.7% of the self-reported diabetic persons in rural Kanyakumari district. Concomitant use of modern medicine and CAM is seen in 78 people. Just A small number of the participants, 22 of them use only one of the options under CAM. Among the exclusive CAM users, 21.4% (6) used pluralistic practices, including herbal medicine with other CAM options. Among those who used modern medicine with CAM, 89.7 percent were using only one CAM option with modern medicine, while 10.3% were using 2 CAM therapies with modern medicine treatment.

Table 4.3. Percentage distribution of diabetic persons by their use of therapies, rural Kanyakumari district

Treatment	Single Therapy	Plural Therapy	Total
Modern Medicine	264	78	342
CAM*	22	6	28
Total	***286(77.3%)***	***84(22.7%)***	***370***

Only CAM Therapy	Frequency	Percent	Modern medicine with CAM	Frequency	Percent
Ayurveda	1	3.6%	Modern medicine + 1 CAM	70	89.7%
Faith Healing	1	3.6%	Modern medicine +2 CAM	8	10.3%
Herbal medicine	13	46.4%	Modern medicine + any CAM	78	100%
Others*	7	25.0%			
Herbal Medicine+	6	21.4 %			
Total	***28***	***100%***			

* - 7 persons who are following their own management of diabetes using unknown CAM is included in the CAM

Table 4.4 Patterns of medical pluralistic practices among self-reported diabetes patients in rural Kanyakumari district

Medical pluralistic Combination	Frequency N (%)
Modern medicine +Herbal medicine	65 (77.4)
Modern medicine + Ayurveda	3 (3.5)
Modern medicine + Siddha	2 (2.4)
Modern medicine + Herbal medicine+ Siddha	4 (4.7)
Modern medicine + Herbal medicine + Siddha + Faith Healing	1 (1.2)
Modern medicine +Herbal medicine + Ayurveda	1 (1.2)
Modern medicine +Herbal medicine+ Homeopathy	1 (1.2)
Modern medicine + Faith Healing + Others	1 (1.2)
Herbal medicine + Yoga and Naturopathy	1 (1.2)
Herbal medicine + Ayurveda	1 (1.2)
Herbal medicine + Siddha	2 (2.4)
Herbal medicine + Ayurveda + Siddha	2 (2.4)
Total	84 (100)

Twelve different patterns of medical pluralistic practices were noticed among self-reported diabetes patients in rural Kanyakumari district. Nearly 77.4% of those following medical pluralism have concomitant use of modern medicine and herbal medicine. Herbal

medicine includes folk practices too. It is operationally defined as taking any herbs or herbal products or herbal combinations with the aim of either reducing the blood glucose level or alleviating the symptoms and complications of diabetes mellitus.

Herbal medicine use is dominant among those with medical pluralistic practices (85.7%), apart from modern medicine (92.9%). Ayurveda and Siddha medicine use along with modern medicine is the second most frequent medical pluralistic practice (3.5% and 2.4% respectively) among diabetes patients.

4.4 Examining associations of medical pluralism with socio-demographic characteristics and multi-morbidity

To identify the correlates of medical pluralistic practices in rural Kanyakumari district, bivariate analysis using chi-square tests of association and subsequently binary logistic regression were undertaken.

Table 4.5. Association between medical pluralism and selected socio-demographic characteristics in rural Kanyakumari district

Variable		Engaged in medical pluralism (%)	Not engaged in medical pluralism (%)	Total	Chi-square value	p-value	OR (95%CI)
Gender	Female	65(30.5)	148(69.5)	213(100)	17.46	<0.0001	3.190(1.820-5.592)
	Male	19(12.1)	138(87.9)	157(100)			
Age group	<=60	46(28.9)	113(71.1)	159(100)	6.163	0.013	1.853(1.135-3.027)
	>60	38(18)	173(82)	211(100)			
Marital status	Currently married	53(20.3)	208(79.7)	261(100)	2.89	0.89	0.641(0.383-1.072)
	Others	31(28.4)	78(71.6)	1.9(100)			
Religion	Hindu	52(24.4)	161(75.6)	213(100)	0.837	0.360	1.262(0.766-2.077)
	Others	32(20.4)	125(79.6)	157(100)			
Ration card type	NPHH	36(22)	128(78)	164(100)	0.095	0.76	0.962(0.567-1.513)
	PHH	48(23.3)	158(76.7)	206(100)			

Continued

Variable		Engaged in medical pluralism (%)	Not engaged in medical pluralism (%)	Total	Chi-square value	p-value	OR (95%CI)
Education category	<=Primary education	37(22.4)	128(77.6)	165(100)	0.013	0.90	0.972(0.595-1.586)
	>Primary education	47(22.9)	158(77.1)	205(100)			
Household income	<=10000	46(22.5)	158(77.5)	2.4(100)	0.06	0.93	0.981(0.602-1.59)
	>10000	38(22.9)	128(77.1)	166(100)			
Employment status	Employed	37(22.7)	126(77.3)	163(100)	0.00	0.99	1(0.612-1.632)
	Unemployed	47(22.7)	160(77.3)	2.7(100)			
Current employment status	Casual Wage labour	14(18.9)	60(81.1)	74(100)	1.104	0.29	0.670(0.316-1.419)
	Other professions	23(25.8)	66(74.2)	89(100)			
Exercise status	Yes	35(23)	117(77)	152(100)	0.015	0.90	1.302(0.630-1.690)
	No	49(22.5)	169(77.5)	2218(100)			
Specific diet	Yes	47(24.5)	145(75.5)	192(100)	0.718	0.39	1.235(0.757-2.015)
	No	37(20.8)	141(79.2)	178(100)			
Diabetic persons in the family	1	73(24.4)	229(75.8)	302(100)	2.022	0.16	1.652(0.823-3.317)
	>=2	11(16.2)	57(83.8)	68(100)			
Diabetic years category	<=5years	22(22)	78(78)	100(100)	0.039	0.84	0.946(0.545-1.643)
	>5years	62(23)	208(77)	270(100)			
Last Doctor visit	Within 1month	56(24)	177(76)	233(100)	0.363	0.43	1.232(0.738-2.056)
	More than 1 month	28(20.4)	109(79.6)	137(100)			

4.4.1. Bivariate analysis: The bivariate analysis was done with medical pluralism as the outcome variable and socio demographics and multimorbidity details as the predictor variables. Chi-square test was done to identify the variables that were significantly associated with medical pluralism. Age group, gender and having heart-disease as a co-morbidity were found to be significantly associated with medical pluralism.

4.6. Association between medical pluralism and experience of multi-morbidity in rural Kanyakumari district

Variable		Engaged in medical Pluralism	Not engaged in Medical Pluralism	Total	Chi-square	p-value	OR (95%CI)
Multimorbidity	Yes	56(22.2)	196(77.8)	252(100)	0.104	0.747	0.918(0.547-1.541)
	No	28(23.7)	90(76.3)	118(100)			
Heart Disease	Yes	5(9.1)	50(90.9)	55(100)	6.821	0.009	0.299(0.115-0.775)
	No	79(25.1)	236(74.9)	315(100)			
Elevated Cholesterol	Yes	22(20.6)	85(79.4)	107(100)	0.394	0.530	0.839(0.485-1.452)
	No	62(23.6)	201(76.4)	263(100)			
High Blood pressure	Yes	43(24)	136(76)	179(100)	0.344	0.557	1.157(0.711-1.882)
	No	41(21.5)	150(78.5)	191(100)			
Diabetic foot ulcer	Yes	1(16.7)	5(83.3)	6(100)	0.127	0.722	0.677(0.078-5.877)
	No	83(22.8)	281(77.2)	364(100)			
Kidney disease	Yes	2(25)	6(75)	8(100)	0.025	0.875	1.138(0.225-5.746)
	No	82(22.7)	280(77.3)	362(100)			
Neurological problem	Yes	7(23.3)	23(76.7)	30(100)	0.007	0.931	1.040(0.430-2.515)
	No	77(22.6)	263(77.4)	340(100)			
Vision Impairment	Yes	1(8.3)	11(19.7)	12(100)	1.459	0.227	0.301(0.038-2.367)
	No	83(23.2)	275(76.8)	358(100)			
Bone disorder	Yes	2(11.8)	15(88.2)	17(100)	1.215	0.270	0.441(0.99-1.967)
	No	82(23.2)	271(76.8)	353(100)			
Amputation of leg	Yes	0(0.0)	3(100)	3(100)	0.888	0.346	0.946(0.545-1.643)
	No	84(22.4)	283(77.1)	367(100)			
Hypothyroidism	Yes	5(29.4)	12(70.6)	17(100)	0.457	0.499	1.445(0.494-4.225)
	No	79(22.4)	274(77.6)	353(100)			

The association between medical pluralism and socio-demographic characteristics and experience of multi-morbidity is described in tables 4.5 and 4.6. The variables namely age, gender, having heart disease with diabetes were found to be significantly associated with medical pluralistic practice. A higher proportion of women were engaged in medical pluralism when compared to men. The odds ratio reported was 0.313 (0.179-0.550) and the difference was statistically significant($p<0.0001$). People below age 60 were engaged in medical pluralism when compared to people above 60 years of age. The odds ratio

reported was 1.853 (1.135-3.027) and the difference was statistically significant (p=0.013). Diabetic people with heart disease were less likely to be involved in medical pluralism when compared to those who do have heart disease with diabetes. The odds ratio reported was 0.299 (0.115-0.775) and the difference was statistically significant (p= 0.009). All the other comorbidities were not associated with medical pluralistic practice among diabetic patients.

4.4.2 Binary Logistic regression

Table 4.7. Binary logistic regression of medical pluralism with selected socio-demographic characteristics and heart disease as co-morbidity

Independent variable		Crude Odds ratio (95% CI)	P value	Adjusted Odds ratio (95% CI)	P value
Age Group	< =60	1.85(1.135-3.027)	0.013	1.64 (0.987-2.72)	0.056
	> 60	Reference Category		Reference	
Gender	Female	3.19 (1.820-5.592)	<0.0001	3.03(1.72-5.34)	< 0.0001
	Male	Reference Category		Reference	
Heart disease	Yes	0.30 (0.115-0.775)	0.009	0.35 (0.13-0.93)	0.035
	No	Reference Category		Reference	

The logistic regression analysis with medical pluralism as the outcome variable and age, gender and heart disease as co-morbidity as the dependent variables was considered to examine the correlates associated with the practice of medical pluralism. To examine the potential for multi-collinearity, the associations between age and heart disease was examined. The chi-square value was significant, indicating association (p-value =0.002). Therefore, the interaction effect was included in the model and the odds ratio (Exponential B) was found to be 1.006 with p value near to 1 (p=0.996). Given this result, the interaction effect was dropped from the model only the three main variables were included. This analysis indicates that gender of the person and having heart disease as a co-morbidity with diabetes were significant predictors of medical pluralism. While persons below 60 years of age are more likely to engage in medical pluralistic practices when compared to people above 60 years, this association is not significant. Women tend

to engage in medical pluralism 3.03 times more frequently when compared to men. Heart disease shows a negative relationship with medical pluralism i.e. a diabetic person with heart disease is 65 % less likely to be involved in medical pluralism when compared to a diabetic person without heart disease.

4.5. Reasons for medical pluralism among self-reported diabetes patients in rural Kanyakumari district

The reported reasons for medical pluralism among the self-reported diabetes persons were documented. The major reasons for medical pluralism were free from adverse effects (83.3%), low cost (82.1%), easy availability (78.6%), user-friendly (61.9%), other treatments are not working (20.2%). Other reasons were modern treatment is too toxic (20.2%), friends' influence (6%) and to reduce sugar or symptoms (6%). The predominant reasons among monotherapy users were easy availability (80%), user-friendliness (78.2%), are from adverse effects (57.5%), low cost (53.7%). Other reasons for use of medical pluralistic practices among mono-therapy users were familiarity of physician (4.6%), continual care of multi morbidity (3.2%), fear of interaction of CAM (2.5%), not able to follow food restrictions (2.1%) and specialist care (1.8%). (not shown in the table)

4.6. Rationale for medical pluralistic practices among self-reported diabetic patients in rural Kanyakumari district – explanations from the qualitative study

This component of the results section describes the qualitative component of the study that was undertaken to offer explanations for the use of medical pluralistic choices of treatment for diabetes among rural residents of Kanyakumari district, Tamil Nadu state. The key informants were selected from the initial quantitative study. The people who adhere to modern medication and people who are involved in different medical pluralistic practices were selected from the quantitative study after obtaining consent. Eighteen persons, 9 men and 9 women were interviewed and all of them did take recourse to

medical pluralism occasionally or systematically. The 18 interviews translated and transcribed verbatim for analysis using WEFT-QDA Version 1.0.1. The coding for these interviews has been included as annexure XIV to this dissertation.

To provide a comprehensive understanding of the background of those interviewed, their profile is presented in table 4.8.

Table 4.8 Socio-demographic characteristics of key informants

Socio-Demographics		**Male**	**Female**	**Total N= 18**
Average Age (in years)		60.2	61.77	61
Religion	Hindu	3	6	9
	Christian	6	3	9
Marital status	Currently Married	7	4	11
	Widow/widower	2	5	7
Education	Non-literate	1	0	1
	Primary education	2	4	6
	Middle school education	2	2	4
	Secondary education	0	0	0
	Higher secondary education	2	1	3
	Graduate	1	0	1
Occupation	Casual wage labour	4	2	6
	Self-employed	1	1	2
	Retired	1	0	1
	Unemployed	3	6	9
Ration Card Type	PHH	2	6	8
	NPHH	7	3	10
Household income	<= 10000	4	6	10
	>10000	5	3	8
Duration of diabetes	<= 10 years	3	4	7
	>10 years	6	5	11

The women and men interviewed varied slightly in age. Ten of the 18 informants were from relatively better off households. Almost all were literate barring one informant who

was a 54 years old fisherman. The household income was less than Rs.10,000 per month for 10 of the 18 informants. Six of the participants were working as casual labourers and 9 were unemployed. The current medication status of the key informants is presented in table 4.9. Ten informants were currently using modern medicine alone for their treatment. Four informants were using modern medicine with herbal medicine. Two informants taking Herbal medicine and 2 informants were using multiple CAM therapies for their treatment.

Table 4.9. Current medication status of key informants

Serial No	Participant	Current medication status
1	62 yr. old pastor	Modern medicine
2	53 yr old fisher man	Modern medicine
3	56 yr old widow	Modern medicine with Herbal medication
4	58 yr old self-employed women	Modern medicine with herbal medication
5	53 yr old construction worker	Herbal medicine
6	69 yr old poor women	Herbal medicine
7	49 yr old granite handler	Modern medicine and herbal medicine
8	65 yr old women	Modern medicine
9	54 yr old illiterate fisherman	Modern medicine
10	72 yr old middleclass widow	Modern medicine
11	70 yr old poor women	Modern medicine
12	60 yr old women	Ayurveda, Siddha with Herbal medicine
13	62 yr old Foreign returned graduate	Modern medicine
14	78 yr old high SES retired government employee	Modern medicine
15	51 yr old women	Modern medicine
16	77 yr old man	Modern medicine
17	54 yr old tribal man	Modern medicine with herbal medicine
18	55 yr old widow	Siddha medicine with Herbal medicine and Faith healing

The next segment describes the results of the analysis of these interviews using the themes identified as a result of the analysis.

4.6.1. Perception or understanding of diabetes: The ideas regarding the causes of diabetes were varied. People thought that the tensions in their lives were the cause of diabetes others thought that their altered food habits caused them to develop diabetes.

"so then the doctor said that it was normal. For you, the diabetes didn't come because of familial lineage of diabetic history. (Varisu prakaram vara kudumpa sugar ila). For you diabetes came because of your mistake in food habits (So doctors said nothing to worry about."-**56 yr old woman**

They felt that maintaining equanimity and staying happy and eating proper food will help in the management of diabetes.

"*When I came here My mind is happy, I take my food correctly while in my sister's home No one is there I have to take care of the things. I have severe tension because leaving my house I was staying there. Due to that tension also I got diabetes"*- **60 year old woman**

They recognised certain well-known symptoms of diabetes such as frequent urination, thirst and the tremors. The experience of these symptoms leads to their visiting health care professionals for an initial diagnosis. Through self-experience they have gained an understanding of when they have low-sugar they felt tired, experienced head reeling and also tended to stumble.

"If my sugar level is low means I am not able to stand and sit (enthiruchi iruka vidaathu). It causes stumbling a lot (irukavidaathu remba thadumarum"- **56 yr old woman**

When they experienced these symptoms, they knew that it could be managed with the consumption of sugar or sweets. They have sugar substitutes provided by the hospital or take sugar that is actually available at home. The experience of low sugar also results in a reduction or avoidance of their regular diabetes medication as a part of this management strategy.

"When sugar level is low also it causes head reeling. on those situations…I don't take this CAM options and I didn't take my tablets too "-**56 yr old woman**

4.6.2 Reasons for preference of CAM: People tend to take CAM options for their treatment needs due to their easy availability around the home and neighbourhood. They grow the plants for their therapeutic needs and also collects plants from the neighbourhood.

"If anyone don't get this medicine or anyone who didn't like this medicine they take that medicine …. Guava leaves,silanthi kuzha, adhatoda leaves, red nichi ilai I have it in my field (vilai). I grow them" – **55 yr old woman**

"I live in the village, so I get everything easily so I don't find it difficult to make" – **58 yr old woman**

People with diabetes take CAM medications because they have the time to do so. It could be because they do not work or because they work at home like the one who made papads at home. This paves the way to to make herbal concoctions. CAM medications are manageable when the person tends to stay at home or work from home because these home remedies require processing and that takes time. The way to process these medications are usually learned from peers and friends. Alternatively, CAM medications are also obtained from traditional healers or CAM practitioners.

"These medicine I take in the morning in between my jobs (velaiyoda velaya eduthupen)-" **58 yr old woman**

"*Not daily whenever the time permit I take it. If I take some guava leaves decoction it is enough for 2 days. I keep it there and drink it a little by little. I drink it and do some works and then I drink it like that. like that Sugarkai kuzha it is a good medicine. I take decoction of coriander seeds, Cumin water …In that way When I am at home Whenever I am free I take that herbs I prepare that decoction and drink it* " **- 54 year old tribal man**

The easy availability and low cost associated with the CAM treatment facilitates CAM treatment for their healthcare needs.

"After coming back to home I haven't take those medications. Then I went to one vaidhya's house. In vaidhyasala I see him." – **55 years old woman**

In situations where people felt that their modern medicine treatment is too costly or perceive it to be of substandard quality then they prefer to take CAM options.

"While I am in Dubai there the medicine is very costly. Just like that I take one normal sugar medicine. I haven't take good medicine quality medicine. So I take chinniavarakai thaneer (decoction of a vegetable Cluster beans), amla water…Yeah, there every medicine is costly.

Did you take it because it is not costly? Yeah Yeah "- **62 yrs old foreign returned graduate**

People also resort to CAM options when there are circumstances that take them away from home. It could be a puberty event or a death ceremony which they have to attend. Such occasions include a feast where they cannot adhere to their dietary needs and may not be able to carry their diabetic medications. In those circumstances, they consume available local CAM options suggested by peers and friends.

'If I go to any marriage function, Puberty function, or funerals. On those occasions whatever herb they got near that road some ladies with sugar were there with us. They pick those herbs and eat and they give me those herbs for eating" **-56 yr old widow**

Certain religious groups who may not take formal medications for religious reasons, may find CAM therapy, particularly homebased ones as an option they can use within their religious belief system.

"Yes 'ilaikal ellam marunthu agumae' (Leaves become medicines) is noted in our biblical verses (vasanam)" **-55 year old woman**

People seeking care from a hospital which integrates modern medical practice with AYUSH, the integrative hospital tend to use CAM therapy for their diabetes.

"Doctor Lejo doctor advised me to take 2-3 herbal medicines (pachilai marunthu" **-54 yrs old tribal man**

People perceive biomedical doctor's advice to take vegetables as a facilitator for CAM use. In addition, those who are in the practice of managing co-morbidities with CAM, do consider CAM options for diabetes too.

*"Then the doctor … advised me to take vegetables either raw vegetables or cooked vegetables. After that doctor's advice I started taking these kinds of items intermittently. Intermittently I eat neem leaves, black tulsi -Ocimum tenuiflorum)(Karunthulasi), karunochi (vitex negundo) These herbs can control the sugar."***-56 yr old woman**

People perceive CAM therapy to be safe as it adds a feelgood factor to their treatment options.

"Fenugreek water is powerful. It is not a bad thing for us. It is good. So I drink this fenugreek water…Sugar is in control. fenugreek keeps it in control" **-69 yr old woman**

People tend to use herbs and concoctions for their therapeutic need because of their perceived natural qualities and perceived absence of side effects. This leads them to favour CAM treatment.

"I took guava leave decoction, Athu ennaku kekuthu. Kaatunellaikai Indian gooseberry) juice is also useful for me (kekuthu). Then in food vegetables like bitter gourd, snake gourd is helpful for me… "None of this is toxic (ethuvum visam kedaiyaathulaa)" **-58year old woman**

"Sugar is in control. fenugreek keeps it in control" **-69year old woman**

People hesitate to initiate modern medicine because they think of life long adherence to diabetic medications and possibly the label of being a 'diabetic'. They try to avoid the label and the need for life long adherence. They think that they can avoid this situation through use of CAM options. If they are also taking modern medicines for other conditions, this becomes an added burden too.

"people said if we take tablets lifelong we have to take tablets till our death. If we take naatu marunthu with this naatumarunthu we can control this sugar." **- 56 yr old woman**

"No It don't suit my body. Already I take asthma medicine and inhalers I weaken my nerves. If I take sugar medicines too It may cause difficulties (kastam).so I can follow this continuously." **- 60 yr old woman**

There is also an expectation that modern medicine will alleviate the symptoms even when they have indulged in eating high starch foods. When the symptoms continue, then they feel disheartened and opt for CAM therapy. Poverty or non-availability of food among the elderly pushes them to a situation of dealing with limited food and limited resources. Sometimes, elderly who are living alone with limited familial support do not eat regular or timely meals and they make do with available food. In these circumstances, they are

unable to take the prescribed tablets as they have to be eaten before a meal. Alternatively, they also start to feel uncomfortable, if they have taken it (possibly due to limited food intake).

"This tablet causes indigestion I feel it is difficult (kastama irukum). I feel burning sensation in stomach (vevvu) and veppuralam (heart burn and palpitation). I am not able to take it" **-55 yr old woman**

When people perceive and experience side effects of modern medicine they found that this modern medications as not suitable for them then they tend to look for alternatives for diabetic treatment.

*"Since My English medicine didn't helps me to control my sugar level so I leave it for a few days Then I gone for siddha"***- 62 yrs old pastor**

CAM medications are perceived to be natural and safe and without side effects. This is why CAM is preferred, and it is also used to offset the perceived side effects of modern medicines.

*"Nature (iyarkai)I don't have any side effects (paathipu) with natural treatment."***- 49 yr**

People who take CAM medications along with modern medications, find them both to be equally effective.

"Allopathic tablet controls it and also the natumarunthu which I take amla, neem leaves, karumthulasi,bitter gourd These four will control the sugar. There is no doubt about it. I said this because I experienced it" **56 yr old woman**

"I took daily tablet in night alone. When I took siruthaaniyam (millets) and kashyam (decoction).I feel ok (parava ila konjam parava ila)." **58 yr old woman**

During the COVID-19 pandemic, households began to consume prescribed remedies like *Nilavembu kashayam* and homemade concoctions for general wellbeing and prevention of everyday ailments like cold, this practice then spills over into management of diabetes too with some other concoctions being used as an additional means to manage sugar levels.

"First my sugar level was 480. I take tablets for 2-3 days then I didn't take the tablets I take it only for 3 days. Then I take nilavembu kashyam, fenugreek seeds, curry leave juice. By taking this my sugar level comes in control. Then when I checked my sugar level it is also in good control. It falls below 200 then I stopped taking that tablet. I feel that it will be in control with this CAM options alone. I stopped that medicine." **-49 yr oldman**

The reduction of sugar levels and associated reduction in the perceived symptoms of high sugar levels makes people prefer CAM. This makes think that CAM is effective in managing their diabetes.

"Yes, while taking the tablets whenever the sugar level rise I add a little bit of fenugreek

Due to the fear of side effects of CAM and fear of interaction of CAM with modern medication people altered modern medications doses and CAM medications if they have also been prescribed. Based on the symptoms and perceived experiences people tend to use CAM as alternative or an adjunct therapy when they have symptoms, they take CAM as an adjunct when they perceive no symptoms and feeling better they stopped their modern medication and replace it with CAM options occasionally.

*"If I took (CAM) regularly also it makes me weak (thalarvu) .It makes me ok. It reduces my tablet intake"***-58 yr old woman**

"Have you stopped your medicines while taking that naatumarunthu?

Yes, why you stopped your medicines?

If I take this tablet and that water together. I fear that something will happen (vallathum vanthudumonu)" **– 54 yr old fisherman**

4.6.3. Using CAM therapy due to ease of availability or non-use due to non-availability: The easy availability of CAM products is an important reason for people's preference for CAM. People get information regarding CAM therapy for diabetes from their friends, relatives and neighbours. peers with diabetes act as potential influencers and sources of CAM information. Due to social media and mass media people tend to get CAM medication details from that too and start utilizing the prescribed methods for their

diabetic management. People who seek care from traditional healers and CAM practitioners also learn the CAM medications for diabetic management from them. Locations with women gatherings like Mahatma Gandhi National Rural Employment (MNREGA) Scheme work and Self-help groups act as the Source of CAM medication information.

*"I am in women Self Help group here. One magazine came there every month. In that book(magazine)there is a section named medical notes (maruthuva kuripu). Some people read it I got some notes from that magazine. I now prepare and give those medicines to him "***- wife of a 49 yr old man who was taking CAM medications**

People with diabetes get their diabetic CAM medication from their inherited traditional knowledge systems. They learn the CAM medications and herbs used for their diabetic management. They consciously grow the herbs and plants needed for their CAM therapy or collect them from the neighbourhood where it is found.

"Guava leaves, silanthi kuzha, adhatoda leaves, red nichi ilai I have it in my field (vilai). I grow them in my field. "**- 55 yr old woman**

"*I started to take the root directly from the forest by digging it out of the soil"***-55 yr old woman**

Those who do not depend on herbs buy CAM products from the grocery shop, local herbal shops and sometimes from the Ayurveda hospital. When they didn't get the relevant herbs needed for their CAM therapy they asked their friends, neighbours and relatives to get the herbs.

"From the Normal grocery shop, I bought thippili (piper longum), val milagu (piper cubeba-vaal nalla milaku), sukku (dried ginger)" **-56 yr old woman**

*"Some more medicines which I bought from local herbal store (Naatu marunthu kadai) and crush them into powder and I take it "***-62 yrs old pastor**

Ease of availability of the CAM products favours its intake. People prepare their medication, take the herbs and eat them. For men, wives act as the potential influencers for CAM.

"My wife helps me. Though I forget it she prepares and make the things (CAM medicines) ready for me." **- 49 yr old man**

Non-availability of qualified CAM practitioners or the traditional healer, work related circumstances are not conducive to CAM use.

"Due to my job circumstance, I have been travelling a lot So during that time I am not able to prepare this kashyams and take them to all the places So i didn't take Naatu marunthu" – **78 yr old retired government employee**

4.6.4. Reasons for use of modern medicine or avoiding CAM: Person with diabetes prefer to use either CAM or modern medicine due to their fear of the possible interaction of CAM with modern medicine. People avoid taking modern medication when they are testing their CAM medications and then, they alter their modern medicine doses in keeping with CAM consumption. People with diabetes prefer to stop both their modern and CAM medication when they their sugar levels are low (below normal). They regulate the combination of CAM and modern medicine doses in keeping with their own monitoring practices, but these may not confirm to any specific medical practice.

"Initially For few days When I started taking this fenugreek water I take the single tablet occasionally. When it comes near to normal (odukka normal ana pinadi) Like when they advised me to take half tablet I take fenugreek water alone" **-69 yr old poor widow**

The relatively higher cost associated with conventional CAM treatment is a barrier in continuing CAM therapy for diabetes. In addition, the longer distance that people have to travel to the preferred CAM therapy-providing hospital is also a barrier to continuing it.

"It is like a Siddha kashyam..It is good …But when compared to my salary for 10 days the medicine costs a lot. So due to the high cost of that treatment, I stopped that medicine and went to government hospital treatment." **-54-year-old tribal man**

"It (Ayurveda Hospital) is very far…I am not able to continue it It is a very far distance from here. I have to travel 22 km from here " **- 62 aged Pastor**

Sometimes, CAM therapy does not reduce the sugar levels as desired. There is also effort needed to process the CAM medications and that is also difficult to do all the time. Then they shift to modern medicine and follow the CAM as an adjunct to modern medicine because of the ambiguity over its effectiveness.

"I started naatu marunthu. Due to sugar my tooth started to become shaky ...I am not able to chew and eat the neem leaves. After that, someone has to pick the neem leaves from the trees and have to make a decoction, so I felt it is difficult to do that so then I stopped this naatu marunthu and I shifted to this sugar tablet." **– 56-year-old women**

"With herbal medication I don't get correct relief ...It (Sugar level) may be lower for 2-3 days Then it again shows like previous results. I don't get satisfaction with that" **-77-year old man**

Being at home favours the diabetic person to take the medications correctly because of the time availability and access to the medications.

"If I am in my home and doing household chores I won't miss my tablet. **"**
56-year-old woman

Modern medicine is sometimes preferred as it is seen as effective in controlling sugar levels or controlling the symptoms of high sugar levels as people experience them. This then, leads to preference of modern medicine, particularly when they have co-morbidities.

"After my stroke with the help of doctor-prescribed medicines alone, I am able to control my sugar " **-62 yr old foreign returned graduate man**

"If my sugar level rises I will show that symptoms over my eyes.I know that it is due to the elevated sugar level ... My Body feels weak (udampu thalarthalaa irukum). so I take tablets"
-54 yr old non-literate fisherman

"Since I got a traumatic injury in my hand to prevent further infection (paluthura kudathunu) I am taking the allopathic tablets for the past 5-6 days" – **49 yr old granite worker**

People experience the symptoms of uncontrolled diabetes when they don't take their medications. Eventually then they start taking their drugs regularly when they perceive high sugar due to fear of adverse consequences.

"I take tablets with me. I myself prepared a medicine package (marunthu pottalam). If I go to any place for 5 days I keep the medicines for 5 days within it"- **54 year old tribal man**

"No I won't miss insulin for 1 day. Because if I miss the insulin for 2 times in a day means It may end up in something (sugarla maatrira kudathae)So due to that fear I will take it "-

- 77year old man

Due to the high cost of treatment in the private sector, government hospitals are preferred. Private hospital doctors also recommend dietary management for diabetes and many patients find these difficult to follow. That is yet another reason to shift to Govt hospitals, because doctors only require them to adhere to their medications The government treatment is seen as better when patients experience reduction of symptoms and sugar levels. The new scheme to help people who are unable to travel to the government hospitals of the Government of Tamil Nadu, the *Makkalai thedi maruthuvam* (medicine at door steps) scheme comes in handy to provide drugs at home for some patients.

"Now for the past 3 months I am going to the (Government) hospital Now only my sugar level is back to normal.The sugar level reduced from 365 level to 191 level. so they advised me to take rice one time in a day and They said to me to eat the food that is not a problem but They insisted me to take the tablets regularly on correct time continuously." – **53 yr old fisherman**

"In my village Women health volunteer under "Makalai thedi maruthuvam "gets the medicine from the hospital and give to us at doorsteps. …They give vitamin tablets too. After taking this tablet I am feeling better and my sugar is also reducing "– **53 yr old Fisherman**

Sometimes, government hospital treatment is not preferred because the sugar levels were not reduced even after treatment. Government hospitals also do not offer care during acute events related to diabetes. They are also crowded and busy. This leads to a preference for private hospitals due its perceived quality, user friendliness and approachable in emergency situations. Persons with diabetes also tend to seek private hospital care due their multimorbidity profile and they opt to seek specialist care due to the perceived effectiveness and quality. Even though private treatment is costly, people with diabetes tend to prefer it when compared to government treatment due its perceived

quality and better reduction of blood sugar level. Private hospitals are also seen to be better able to deal with multi-morbidity conditions and achieve reduction in sugar levels.

"I consulted the (Private) doctor … that medicine is also a good medicine, costly medicine. "– **62year old Foreign returned graduate man**

"I got stroke and 14 years before I have some issues with my heart. I have 2-3 blocks in heart. I seek treatment from Ananthapuri hospital (Trivandrum) for that problem." – **70year old upper SES retired government employee**

Person with diabetes uses CAM as a self-regulation measure to manage diabetes in the initial stages. They also consider dietary management as a therapeutic option.

"It was started only few months back…I try to control it with my food habit (akarathula sari panalam)"- **53 yr old Man**

*"If I go to doctor,he advised to take this tablet that tablet. Maximum I take care with own strategies"-***53 yr old man**

People did not actively involve in exercise or waking for their diabetic management. They perceive their minimal walking or involvement in manual job as being sufficient. There is a practice of using different combination of therapeutics to achieve their diabetic management goals, including prayers.

"Walking, this medicine and Jebam (Prayers) helps me to reduce my sugar level."- **55 yr old woman**

"My job itself is like a exercise. In my job I have to handle the weight. we have to lift the big big granite stones. It is like a exercise for me "– **49 yr old granite worker**

Dietary management followed is dependent on their understanding and experience of diabetes. This management includes reduction in the volume of food, replacing refined sugar with brown sugar and avoiding starchy foods like tapioca. The belief that doing manual labour requires a higher volume of starch food to manage the heavy-duty work involved contributes to self-management with respect to diet.

"They said not to eat tapioca but I wish to take 2-3 pieces of tapioca. Today I have eaten the prohited thingsSo I take the tablet" **-54 yr old Non literate fisherman**

There is a degree of frustration with the management of diabetes as they look for a cure for diabetes. When they understand the longstanding nature of the illness they alter the modern medication doses, substitute it with some form of CAM, based on their subjective understanding of their bodily symptoms.

"I don't tell that it is helping. sugar level gets raised and then lowered. It doesn't seems that It will gone."- **58 yr old Self employed woman**

"*Though doctor advised you to take 3 tablets a day you take 2 times in a day right?*

I take 2 times in a day But in some days I take tablets 3 times a day" **-54 yr old Iliterate man**

4.6.5. Reasons for self-regulation of modern medicine consumption: People with diabetes alter their modern medications on various occasions. This happens when they are having to eat tablets for other conditions which may be perceived to affect diabetes. While going for the marriage functions or feasts and they forget to carry their modern medicine tablets, they replace the medications with CAM option. women who are doing their household chores find it difficult to adhere to prescribed medications and they alter the modern medications to suit their timings. In geriatric age group, when people have no one to support them so they alter their diabetic medication.

"But while doing the household chores. I think that I may take it later then I do washing the vessels, washing clothes and other works like that I may forget in between the works"-**72 yr old woman**

"In those marriage functions when I go out with my friends the tablet is at my home. Then I take some neem leaves and karum thulasi and drink water. It controls that sugar"- **56 yr old widow**

"Yes. I reduce the drugs Yeah I think like daily I am taking this tablet daily what will happen if I didn't take it for one day Yes yes If I become unwell since I was staying alone here. If I take more tablets, It causes me to sleep a lot. Because of that I reduce the tablet. "-**72 yr old woman**

People avoid consumption of diabetic medication with alcohol due to the fear of interaction. The higher cost of the modern medication makes people to alter their dose

due to its unaffordability CAM therapy is seen as an adjunct and substitute for modern medication.

"When we take tablet and alcohol together both belongs to hot variety (sudana vagai) . It may causes some side effects to the body (udampula poi vala kulapam kaatum) So I didn't take my tablets when I take alcohol" **- 54 yr old illiterate fisher man**

"When I was fishing I cannot take the tablets. While fishing It takes time If I take tablets now it is not fair (ipo mathirai sapta sari agaathu). The time is already over. so I decided not to take tablet that day. Then in the next morning I take the tablet "-**54 yr old fisherman**

"Instead of taking the allopathy tablet 3 times in a day I take allopathic tablet once in a day and then I take weekly two times guava leaf concoction, taking sprouted lentils (mulaikatiya payaru vaikaigal) like that I follow" **-58 yr old woman**

"I didn't take it every day. I don't take it everything since I am not a bedridden sick patient (keda rogi) I am not a kedarogi So I didn't take tablets every day"- **65 year old women**

4.6.6 CAM as a Self regulation to manage sugar levels:

People with diabetes use different means of self-management of diabetes based on their understanding of the disease and their bodily symptoms. Initial engagement and suggestion by the Physician is important in determining the therapeutic choice for the person diagnosed with diabetes. If the initial treating physician focuses the patient towards the control with non-pharmacological treatment like exercise and diet control, most people prefer to try those non-pharmacological treatment options to take a control over their diabetic status. On the other hand very stringent advice of the physician especially in reducing food intake causes a detrimental effect in the patient's adherence to medication. Due to the perceived side effects of modern medicine some persons with diabetes take recourse to CAM therapy or include their therapy with modern medicine due to their inherent fear of allopathic medications.

If I go doctor he advised to take this tablet that tablet. Maximum I take care with own strategies (namamala mudinja alavula parthutu) – **53 yr old construction worker**

When persons with diabetes find that dietary management is not enough to control their sugar levels they take recourse to modern medication.

"At first I prefer to take the foot control as a option. Then I am not able to control my sugar with my food control. " **54 yr old tribal man**

For managing their diabetes people tend to follow different therapeutic and non-therapeutic combinations and these include exercise, yoga, prayers, diet control and taking herbs and CAM options.

"*First I do exercise, second (Modern) medicine and then food control.* "**- 62 yr old man**

People of certain religious groups tend to use religious practices, prayers because of their strong healing beliefs and perceived benefits in reducing their sugar levels.

"Walking, this medicine and Jebam (Prayers) helps me to reduce my sugar level.
We follow osam (osam irupom) .
What does osam mean?
Osam means we don't take food. We do jebam (prayers), prayers.
How many days you follow it?
Friday I have osam meet (osa kuttam). On that day I won't take food " **-55 yr old widow**

Diet control which people prefer to follow and the actual diet regimen needed to keep diabetes within control has huge differences. Peoples beliefs about diet control emerge from their inherent understanding of diabetes and diet. People take alternatives to sugar namely country sugar, limit consuming sweets, starch and carbohydrate rich food like desserts, tapioca and millets to manage diabetes. If they take this starch rich food, then to manage this risky behaviour they use CAM intake as a coping mechanism to reduce the perceived higher sugar levels that they expect. Instead of taking modern medications people take recourse to diabetic food supplements which are costly but are perceived to be safe.

"Diet control I take Country sugar (naatu sarkarai) instead of sugar. that's too I take a little while drinking (chai or coffee). I take all type of food. I reduce intake of sweet varieties. Then I take D protein. I take it by mixing it with milk apart from this I won't follow any food control." **49 yr old granite handler**

Since allopathic physicians are very strict about diet control in managing the diabetes, people take recourse to CAM as a form of determining autonomy over their food choices under the belief that CAM options do not need dietary restrictions. People find it difficult to change their food habits and their traditional food preferences like rice and tapioca.

"Now I am taking the herbs directly from the hills and making and taking this kashyam. This medicine reduces my sugar level. I can take sweets, I can eat rice, I can drink chaya (with sugar). Everything we can take sweet can do nothing to us. " **55 yr old widow**

When people don't have access to their diabetic medications, to reduce the adverse effects of high sugar levels people reduce their food intake to manage their sugar levels.

"What you will do on those days without tablets?

I didn't do anything I reduce my food intake.

Oh! You reduce the food intake because you didn't have tablet?

Yeah I limit the food intake." - **72 yr old middleclass widow**

The management of diabetes is also gendered. In many homes, the wife helps the husband to control diabetes by providing them with timely medications, good dietary options for diabetes. The wife prepares the CAM medications for the diabetic husband whereas in case of women either the children have to take care of them or they have to care for themselves.

"She cooperates a lot. Even in the medicines also she only knows what are all the medicines I have to take. "-**78 yr old high SES retired government employee**

People get frustrated due to uncurable nature of the diabetes and also they get frustrated because they are not able to control the diabetes.

"For me Sugar has to reduce It has to come to normal. But it is not reducing. To reduce the sugar level only we are taking this tablets. If someone enquire me whether I am taking the tablets I said yes But my sugar level is not reducing " **-54 yr old illiterate fisherman**

"Sugar tablet which I take in the morning. I may take one tablet didn't take other tablet… it is, due to the fear of side effects " – **72 yr old middleclass widow**

People with diabetes, due to multiple reasons start skipping their modern medications. To make up for this, they use CAM as a self-regulator to maintain their sugar levels. People who used to take conventional CAM adhere to CAM to maintain their sugar leve.l But a vast majority of people with diabetes are following medical pluralism and regulate their sugar level based on their CAM use. This is done due to the perceived less side effects , safety perception and beliefs about the inherent natural qualities of CAM. People use CAM as a self-regulator to manage their sugar level. CAM use gives the diabetic person more autonomy over their body. Folk based CAM use gives them a flexibility in their therapeutic choice and adherence so they feel more comfortable with following folk based CAM therapies for their diabetic management.

*"I take the juice from the curry leaves, Guava leave decoction, aloe vera jel then I take amla juice. Mainly I take Nilavembu kashyam (Melia azadirach). If I take one leaf also it brings too much bitter to it. Then I take fenugreek seeds. I take these things alternatively***." 49 yr old granite handler**

People with better modern medication adherence at present from private facilities also do try CAM options to control their sugar levels but when they find that this CAM options are ineffective in managing their sugar level, they stick to modern medicines alone.

"Before my stroke She (wife) used to prepare this CAM Medicines occasionally for me. After I completely stopped it" **- 62 yr old Foreign returned graduate.**

4.7. Reasons for medical pluralism in rural Kanyakumari district

The ideas about diabetes as a disease requiring lifelong management is not acceptable and this results in avoiding the label by managing diabetes through CAM options during the initial diagnosis. CAM options used along with modern medicine provides an easy, less expensive and safe treatment for diabetes. CAM options are also considered as adjunct therapy with modern medicine to alleviate the perceived side effects of modern medicine.

If a person has multi-morbidity that requires specialist care and better management of diabetes, people shift to more conscious use of modern medicine as it enables them to achieve control over sugar levels without the effort of making or processing the herbal concoctions. Others, who find it difficult to manage modern medicine either due to costs or limited resources or other circumstances (like living alone), do use CAM options as a form of self-regulation.

Chapter 5

Discussion and Conclusions

This study is a mixed methods study i.e. sequential explanatory design in which the quantitative study involves cross sectional study to determine the extent of medical pluralistic practices among self-reported diabetes patients followed by the qualitative study to understand the reasons for such practice.

5.1 Medical Pluralism

The combined understanding of the mixed method study is medical pluralistic practice is common but not the principal choice of treatment. The initial diagnosis of diabetes happens with the modern medicine facility. Initially 25.2% of the participants opt for CAM and 16.5% do not start any treatment. More than three-fourths (78.2 %) used modern medicine as initial therapy. The medical pluralistic care for diabetes starts at the initial period of diagnosis itself. In the current study people perceive tension and emotions, altered food habits as the cause of the diabetes. It is comparable with the perceptions from Delhi and other sites where they perceive negative emotions, tension as the cause of diabetes. (Greenhalgh et al., 2011; Mendenhall et al., 2016)

5.1.1. The wavering by use of CAM: Frequency of CAM intake differs across the participants. Diabetic people do not take recourse to CAM on a regular daily as compared to modern medicine users. In a study in Kollam 57% used CAM daily and for the rest, the frequency varied between weekly or occasionally. (Vishnu et al., 2017) For those who use CAM exclusively, there was a certain regularity in use. But for those diabetics who were into medical pluralistic practices, modern medicine was the major treatment option and CAM was the adjunct therapy to manage occasion when modern medicine was not available for a limited period or as a substitute. People engage in CAM to reduce the side effects of modern medicines. It is comparable with available evidence from Europe. (Fjær

et al., 2020) People with diabetes tend to do medical syncretism blending different medical traditions it is understood from studies in England and Mexico. (Gaytán-Hernández and García de Alba-García, 2006; Porqueddu, 2017) This practice has been noted in other sites as well among migrants of Indian or Pakistani origin in England.(Porqueddu, 2017) People are influenced to use CAM options by friends, relatives and neighbours. This has also been observed in in Bangladesh and UAE. (Radwan et al., 2020; Rafi et al., 2020) Altering or moderating the dose of medicine due to the cost factor has also been reported elsewhere in a study from Dong village, China. (Yu, 2021)

5.1.2. Learning about the Therapeutic effect on body through experience : People with diabetes in the current study understand the disease diabetes via its symptoms and not its long term effects and this has been noticed in studies among African communities from developed nations. (de-Graft Aikins et al., 2023) The occurrence of symptoms is a helpful in recognising the disease and seeking treatment. People give more importance to symptoms and their subjective experience with diabetes like increased frequency of urination, heavy thirst, tiredness, palpitation, head reeling are experienced as the symptoms of increased sugar level and more emphasis is on the means to tackle the symptoms by either taking CAM options or modern medications. People know about the side effects of modern medications when they consume it without having food and perceive modern medicine as not being suitable for them. The side effects of the modern medicine are the important reason for people's preference to CAM Others have also found similar reasons in Kerala and elsewhere.(Porqueddu, 2017; Vishnu et al., 2017)

5.1.3. Shift to biomedicine: The gradual shift from the CAM to the modern medicine occurs as the age increases. People with diabetes develop comorbidities either because of poor adherence to medications or due to the age. Comorbidities, especially due to vascular comorbidities leads diabetic patients to seek private modern medicine treatment because of

their perceived quality and the need to manage multimorbidity. People in old age after experimenting the different types of CAM for their diabetic care shift to exclusive modern medicine use because of the need to manage both diabetes and its co-morbidities. As they age, the resource base in terms of supportive families and funds are restricted. Into this breach, the *Makalai thedi maruthuvam scheme* of Tamilnadu government provides better access to modern medications at the home for the NCD care to people above 45 years of age.("Makalai thedi maruthuvam," 2024) That is another reason for higher use of modern medication by older persons and those with multi-morbidity.

5.2. Extent of medical pluralism

There is no clear available study on extent of medical pluralism among diabetes patients in the Indian context in the public domain. The extent of the medical pluralism is found to be 22.7% in the present study. This is lesser than 30.2% concomitant use of allopathy with CAM among diabetic patients in Madurai and that was a health camp-based study in an urban area. The health seeking behaviour of the participants and the bias of biomedical facility and inclusion of special diet, nutritional supplements in that study may overestimate the extent of use of CAM.(Devi et al., 2015) In the current study specific diet, nutritional supplements are not included under CAM. It may underestimate the extent when compared to the Madurai study. The prevalence of CAM use among diabetic patients in a tertiary health care-based study in Salem found that 70.1 % used CAM for their therapeutic needs since it is based on tertiary healthcare facility all the participants would have already been taking allopathic medications. The extent of medical pluralism is much lower than current study compared to the Salem study possibly because the later was based on tertiary care facility. so that is the reason for overestimation of extent of medical pluralism. The concomitant use of modern medicine with CAM in rural Kollam study is found to be 30 %. In the present study in medical pluralistic practice is much lower than the Kollam study.

It may be due to wide spread presence and governmental support for codified CAM like Ayurveda as 26.7 % CAM users in Kollam study used Ayurveda. Herbal medicine usage is predominant (63.2%) among CAM users in Kollam study which is comparable with the higher herbal medicine usage in the current study.(Vishnu et al., 2017)

Herbal medicine usage is predominant among medical pluralistic users (87%) which is in concordance with previous study in Salem where CAM usage pattern noticed were karela juice(60.6%), methi (42.2%), neem(28.7%) and diabetic herbs (12.8%).(Balamurugan et al., 2013) Among CAM users 17% were using homeopathic medicine while in current study it was only a 1.2% of the participants engaged in medical pluralism used homeopathy. It may be due to the relatively less number of homeopathy government facilities in Kanyakumari district. ("District Statistical Handbook 2022-2023-Kanniyakumari district," 2024)

5.3. Correlates of medical pluralism

Previous studies in Saudi Arabia, Madurai and Noida suggests that people above 60 age are more likely to use CAM therapy.(Aljulifi et al., 2022; Devi et al., 2015; Sharma et al., 2017) The present study found that people below 60 age use CAM more frequently when compared to people above 60 .Though not statistically significant, there is an association of medical pluralism and age in the study, with those younger using CAM therapies more frequently in the present study. In Medical pluralistic practice people above 60 years tend to follow a single therapeutic option, usually modern medicine. During old age due to lack of resources people are pushed to take recourse to CAM, but in Tamilnadu due to availability of modern medicine at doorsteps by the *Makkalai thedi maruthuvam (*Doorstep healthcare*)* scheme which provides better access to medication to the people at the community level. The *Makkalai thedi maruthuvam* scheme gives diabetes care services to 4,753,436 people in Tamilnadu as on April 12, 2023.("Makalai thedi maruthuvam," 2024)

For those above 60 years of age, it changes the trend of CAM usage in old age and as understood from the qualitative study. Older people prefer CAM only when there is no supportive environment for modern medicine intake or lack of resources due to poverty or lack of food. Madurai study in Tamilnadu was done in 2015 before the introduction of *Makalai thedi maruthuvam* scheme. In Salem study as the age increases the propensity to CAM use increases(Balamurugan et al., 2013) but in the current study increase in age is inversely proportional to CAM use. As age increases the CAM use decreases.

In the current study women was more likely to take recourse to medical pluralistic practices when compared to men. It is comparable with previous studies from Thailand, India, Europe.(Fjær et al., 2020; Pengpid and Peltzer, 2021b; Wanchai and Phrompayak, 2016b) But studies in Madurai, Salem, Uttarakhand did not indicate any high end use of CAM among women. (Balamurugan et al., 2013; Devi et al., 2015; Walia et al., 2023) In this study, women were more likely to use medical pluralistic practices. It could be due to their employment profile since only one third of women in the study are employed. and among them, half were employed as casual wage labour in public works (MGNREGA workers) Their income is dynamic with employment for a maximum of 100 days per year. So vast majority of the women in the study population depends on husband and family for their healthcare needs. Given that when compared to modern medicine the cost of treatment for CAM options is very less, women were found to be using CAM therapy more often than men.

Being with Heart disease is negatively associated with medical pluralism in the current study. It is comparable with Kollam study in which the presence of any comorbidity is negatively associated with CAM use(Vishnu et al., 2017) The quantitative study indicated a strong association with heart disease as a co-morbidity with non-use of CAM. People

with heart disease tend not to take CAM because of the fear of interaction of CAM with modern medication.

5.4. Reasons for Medical pluralism

The reasons for medical pluralism among diabetes patients in the current study include easy availability, low cost, fear of side effects of modern medicine, user friendliness, free from adverse effects and other treatments are not working. It is comparable with the reasons evolved from the previous study of CAM use among elderly in Noida.(Sharma et al., 2017) Most effective than modern medicine was a predominant reason for using CAM in the Noida study but not reported in the present study. It may be due to the reason that the Noida study was on elderly but this study in on diabetic patients. In Kollam study, ineffectiveness of modern medicine, user friendliness and free from side-effects were the major reasons and these are comparable with the current study.(Vishnu et al., 2017)

Low cost is one of the important reason for CAM use. The median cost of allopathic diabetic treatment reported in the Kollam study in 2017 is nearly 250 rupees. Due to the soaring medical inflation in India(Poongavanam et al., 2023) people may prefer to use low cost options previous studies suggests that cost of CAM therapy for diabetes is much low compared to that of modern medicine. (Vishnu et al., 2017) Low cost, easy access, tradition were significant factors for CAM use among African populations which is comparable with the present study.(Tangkiatkumjai et al., 2020) Dissatisfaction with modern medicine, perceived safety of CAM and expectation of benefits of CAM are the potential factors influencing CAM use found in a systematic review which are compatible with the qualitative findings of the present study.(Tangkiatkumjai et al., 2020)

5.5. Strengths and limitations of the study

5.5.1. Strengths: There are nearly 74 clusters from 27 grama panchayats selected using multistage cluster sampling. It provides detailed geographical spread of the sample which helps in generalizability of the findings.

The methodology use sequential explanatory study provides better understanding of the nuances and reasons and factors associated with medical pluralism.

The design effect was computed to be close to 1 as assumed for the sampling plan. This adds strength to the validity of the findings.

There are only limited number of studies to quantify the extent of medical pluralism in India. This study adds evidence to the extent of medical pluralism in India. Studies on the extent of CAM use in rural population in India is very limited. This research helps to fulfil the gaps in that area.

5.5.2. Limitations: Social desirability bias is a serious limitation in this study as many of the participants may have reported better modern medicine use for this reason. ince the measures are self-reported and recall bias is also another limitation.

5.6. Conclusions

This study found that the extent of medical pluralism among self-reported diabetes patients in rural Kanyakumari is 22.7% Women were more likely to take recourse to medical pluralism because of the lack of resources, particularly when they age and familial support becomes limited. The medical pluralism found in the study is like a tip of iceberg as nearly more than 25% of the participants used the CAM medications as their first treatment and other 16.6% reported not using any treatment initially. The implications of medical pluralism is not clearly understood since people experience side effects in using the CAM medications and the clear understanding of CAM - modern medicine interaction is not very well known either among the lay populations nor among the modern medicine practitioners.

The medical pluralistic way of diabetic management is prevalent in the community and used as a means of self-regulation for diabetic management.

5.7 Policy implications

The *Makkalai thedi maruthuvam* scheme of Tamil Nadu government helps in better access of medications for NCD care at the grass root level. But this scheme is reported to liver medications only once in 2 months at home through the women health volunteer. If the medications are provided every month at home, it would be helpful in ensuring the better quality of life of diabetic patients and reducing their out-of-pocket expenditure. People with diabetes use CAM for their diabetic management in rural community. The policy makers and program managers should be aware of the changes in drug consumption patterns among diabetic patients in rural parts of India. The side effects of CAM reported among the diabetic patients and the efficacy of the CAM in diabetic management is not clearly known. Policy makers should be aware of syncretism practices prevailing in the society in diabetic management in order to better cater to the needs of the communities in rural Kanyakumari district, Tamil Nadu.

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ANNEXURE I

Achutha Menon Centre for Health Science Studies (AMCHSS)
Sree Chitra Tirunal Institute for Medical Sciences & Technology (SCTIMST)
Trivandrum -11

PARTICIPANT INFORMATION SHEET -Quantitative study

Study title:
Mixed-Methods Study of Medical Pluralistic Practices among Self -reported Diabetes patients and reasons for these practices in rural Kanyakumari district, Tamilnadu

Researcher: C.S.Nagarajan

Affiliation: Achutha Menon Centre for Health Sciences Studies, Sree Chitra Tirunal Institute for Medical Sciences and Technology, Thiruvananthapuram

Greetings,

I am Dr C S Nagarajan, pursuing my Master of Public Health degree at Achutha Menon Centre for Health Sciences Studies. As part of my academic research, I am conducting a study titled "Mixed-Methods Study of Medical Pluralistic Practices among Self -reported Diabetes patients and reasons for these practices in rural Kanyakumari district, Tamilnadu " focused on understanding the various treatment methods like modern medicine, siddha , ayurveda and various *nattu vaidhyam* methods used by the self-reported diabetic patients in rural Kanyakumari and also to explore the reason behind the use of various *nattuvaidhyam* and various treatment methods among participants who know they have diabetes in rural Kanyakumari district.

Study objective:

The primary objective of the study is to study the extent do people with diabetes mellitus use different treatment methods like modern medicine ,siddha,ayurveda,nattu vaithyam methods for diabetes treatment in rural Kanyakumari district and to understand the reasons for the use of such practices. This is being done to help public health professionals suggest better ways of managing the diabetes in the community.

Why This Study is Conducted

Diabetes mellitus is a metabolic disease characterized by High blood glucose and it is one of the major long-term diseases affecting the health of the public. The proper management of diabetes is needed to prevent later life complications like kidney diseases, blood vessel diseases, nerve problems, and eye diseases and diabetes affects the quality of life of the people. So therapeutic and non-therapeutic management of diabetes is very important to prevent complications in the later part of life.

Medical pluralism is defined as the employment of one or more systems of medicines simultaneously for healthcare. Medical pluralistic practices prevailing in society are very diverse and rooted in the culture. Medical pluralism affects the health care of the population positively and negatively. This study focuses on understanding the extent of medical pluralistic practices among self-reported diabetic patients to understand the

various reasons behind this practice to get a better understanding of gaps in the diabetic care processes in the community.

How the Study Will Be Conducted?

The People who know they have diabetes from the rural areas of Kanyakumari are selected randomly The people with diabetes who are willing to share their details are enrolled. An interview with the person is done to collect the relevant details. The responses will be kept confidential and if further details are needed later I will contact you for your valuable information.

Requesting to take part in the study

I am inviting you to be part of this study. Before you participate in this, you are free to discuss this study with your households. This information sheet may contain the words that you would feel difficult to understand. If you find anything difficult to understand, you may stop me in between, and I could take time to clarify your doubts before moving ahead. If you have any questions later, you may ask me or contact me. The interview may take about 30-40 minutes and I may have to contact you in the future for any clarifications.

Following this interview, some of you will be re-contacted in a month or so, to follow up on the information already collected for another interview at your convenience.

Voluntary Participation

Your participation in this study is entirely voluntary. It is your choice whether to participate in the study or not. The choice that you make is in no way going to affect you in any manner. If you feel like not responding to the questions in the study in the middle of the survey, you are free to do so. You are free to withdraw at any point during the interview without any consequences. No incentives will be provided for taking part in the study.

Confidentiality

Your privacy is of utmost importance. All information you provide will be treated with the strictest confidentiality. The information you share will only be used for research purposes and will not be disclosed to anyone else.

Risks

There are no known risks associated with participating in this study.

Benefits

While there may not be immediate direct benefits to you, your participation will contribute to a better understanding of the medical pluralistic practices among self-reported diabetic patients in the community and thus help other diabetic patients living in Kanyakumari district. If, after the interview, any of the health care practices described are assessed to be

unhealthy or unsafe, I will provide advice as to the potential risks involved and suggest visiting the nearest Govt Health Centre for follow-up.

Funding

I am doing this research at my own expense.

Contact Information

If you have any questions, or concerns, or require further information about the study, please feel free to contact me and for any queries on the authentication of this study, you can get the Member Secretary, Institutional Review Board (IRB) of SCTIMST

Principal Investigator

Dr C.S.Nagarajan
MPH Student
AMCHSS, SCTIMST,
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IEC Member Secretary

Dr Srinivas G
Member Secretary
Institutional Review Board, SCTIMST, Trivandrum
Contact Number: 04712524689 (office)
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Thank you for considering participation in this study.

Sincerely,

Dr. C.S. Nagarajan

ANNEXURE II

அச்சுத மேனன் சுகாதார அறிவியல் ஆய்வு மையம், ஸ்ரீ சித்ரா திருநாள் மருத்துவ அறிவியல் மற்றும் தொழில்நுட்ப நிறுவனம், திருவனந்தபுரம்

பங்கேற்பாளர் தகவல் குறிப்பு -முதல்நிலை ஆய்வு -Quantitative Study

ஆய்வின் தலைப்பு:
தமிழ்நாட்டின் கன்னியாகுமரி மாவட்டத்தில் நீரிழிவு நோயாளிகள் மத்தியில் நிலவும் மருத்துவ பன்முக தன்மை நடைமுறைகள் மற்றும் அதற்கான காரணங்கள் -கலப்புமுறை ஆய்வு
ஆராய்ச்சியாளர்:சி.எஸ்.நாகராஜன்

இணைப்பு: அச்சுத மேனன் சுகாதார அறிவியல் ஆய்வு மையம், ஸ்ரீ சித்ரா திருநாள் மருத்துவ அறிவியல் மற்றும் தொழில்நுட்ப நிறுவனம், திருவனந்தபுரம்

வணக்கம்,

நான் மருத்துவர். சி.எஸ். நாகராஜன், அச்சுத மேனன் ஹெல்த் சயின்சஸ் ஸ்டடீஸ் மையத்தில் முதுகலை பொது சுகாதாரப் பட்டப்படிப்பைப் படித்து வருகிறேன். எனது கல்வி ஆராய்ச்சியின் ஒரு பகுதியாக, " தமிழ்நாட்டின் கன்னியாகுமரி மாவட்டத்தில் நீரிழிவு நோயாளிகள் மத்தியில் நிலவும் மருத்துவ பன்முக தன்மை நடைமுறைகள் மற்றும் அதற்கான காரணங்கள் -கலப்புமுறை ஆய்வு
" என்ற தலைப்பில் பல்வேறு சிகிச்சை முறைகளைப் புரிந்துகொள்வதில் கவனம் செலுத்தி வருகிறேன். அலோபதி, சித்தா, ஆயுர்வேதம் மற்றும் கன்னியாகுமரி கிராமப்புற சர்க்கரை நோயாளிகள் பயன்படுத்தும் பல்வேறு நாட்டு வைத்திய முறைகள் மற்றும் கன்னியாகுமரி மாவட்டத்தில் உள்ள கிராமப்புறங்களில் சர்க்கரை நோய் இருப்பதாகத் தெரிந்த பங்கேற்பாளர்களிடையே பல்வேறு நாட்டுவைத்தியம் மற்றும் பல்வேறு சிகிச்சை முறைகளைப் பயன்படுத்துவதற்கான காரணத்தை ஆராய வந்துள்ளேன்..

ஆய்வின் நோக்கம்:

கன்னியாகுமரி மாவட்டத்தின் கிராமப்புறங்களில் சர்க்கரை நோய் உள்ளவர்கள் அலோபதி, சித்தா, ஆயுர்வேதம், நாட்டு வைத்தியம் போன்ற பல்வேறு சிகிச்சை முறைகளை சர்க்கரை நோய் சிகிச்சைக்கு எந்த அளவுக்குப் பயன்படுத்துகிறார்கள் என்பதை

ஆராய்வதும், அத்தகைய நடைமுறைகளைப் பயன்படுத்துவதற்கான காரணங்களைப் புரிந்துகொள்வதும் ஆய்வின் முதன்மை நோக்கமாகும். பொது சுகாதார வல்லுநர்களால் சமூகத்தில் நீரிழிவு நோயைக் கட்டுப்படுத்துவதற்கான சிறந்த வழிகளைப் பரிந்துரைக்க உதவுவதற்காக இது மேற்கொள்ளபடுகிறது.

ஏன் இந்த ஆய்வு நடத்தப்படுகிறது

நீரிழிவு நோய் என்பது உடலில் இரத்த சர்க்கரை அளவு உயர்வதால் ஏற்படும் ஒரு வளர்சிதை மாற்ற நோயாகும், மேலும் இது பொதுமக்களின் ஆரோக்கியத்தை பாதிக்கும் முக்கிய நீண்டகால நோய்களில் ஒன்றாகும். சிறுநீரக நோய்கள், இரத்த நாள நோய்கள், நரம்பு கோளாறுகள் மற்றும் கண் நோய்கள் மற்றும் நீரிழிவு நோய் போன்ற பிற்கால வாழ்க்கை சிக்கல்களைத் தடுக்க நீரிழிவு நோயின் சரியான மேலாண்மை அவசியமான ஒன்று. எனவே, வாழ்க்கையின் பிற்பகுதியில் ஏற்படும் சிக்கல்களைத் தடுக்க நீரிழிவு நோய்க்கான சிகிச்சை மற்றும் சிகிச்சை அல்லாத பிற மேலாண்மை முறைகளும் மிகவும் முக்கியமானது.

மருத்துவப் பன்மைமுக தன்மை என்பது ஒன்று அல்லது அதற்கு மேற்பட்ட மருந்து முறைகளை ஒரே நேரத்தில் உடல்நலத்திற்கு பயன்படுத்துவதாக வரையறுக்கப்படுகிறது. சமூகத்தில் நிலவும் மருத்துவ பன்மைமுக தன்மை நடைமுறைகள் மிகவும் மாறுபட்டவை மற்றும் கலாச்சாரத்தில் வேரூன்றியவை. மருத்துவ பன்முக தன்மை மக்களின் உடல்நலத்தை நேர்மறையாகவும் எதிர்மறையாகவும் பாதிக்கிறது. இந்த ஆய்வு சமூகத்தில் நீரிழிவு பராமரிப்பு செயல்முறைகளில் உள்ள இடைவெளிகளை நன்கு புரிந்துகொள்ள இந்த நடைமுறையின் பின்னணியில் உள்ள பல்வேறு காரணங்களைப் புரிந்துகொள்வதற்கு நீரிழிவு நோயாளிகளிடையே மருத்துவ பன்மைமுக தன்மை நடைமுறைகளின் அளவீடைப் புரிந்துகொள்வதில் கவனம் செலுத்துகிறது.

ஆய்வு எப்படி நடத்தப்படும்?

கன்னியாகுமரியின் கிராமப்புறங்களில் இருந்து தங்களுக்கு சர்க்கரை நோய் இருப்பதாகத் தெரிந்தவர்கள் (Random) தற்செயலாகத் தேர்ந்தெடுக்கப்படுகிறார்கள், தங்கள் விவரங்களைப் பகிர்ந்து கொள்ள விரும்பும் நீரிழிவு நோயாளிகள் பதிவு செய்யப்பட்டுள்ளனர். சம்பந்தப்பட்ட விவரங்களைப் பெற அவர்களிடம் கேள்விகள் கேட்கப்பட்டு பதிவு செய்யபடும். பதில்கள் ரகசியமாக வைக்கப்படும், மேலும் விவரங்கள் தேவைப்பட்டால்,

உங்களின் மதிப்புமிக்க தகவலுக்கு உங்களை பின்னர் தொடர்புகொள்வேன்.

ஆய்வில் பங்கேற்குமாறு கேட்டுக்கொள்கிறேன்

இந்த ஆய்வில் பங்கேற்க உங்களை அழைக்கிறேன். நீங்கள் இதில் பங்கேற்பதற்கு முன், இந்த ஆய்வைப் பற்றி உங்கள் குடும்பத்தினருடன் விவாதிக்கலாம். இந்த தகவல்குறிப்பில் நீங்கள் புரிந்து கொள்ள கடினமாக உணரும் வார்த்தைகள் இருக்கலாம். நீங்கள் புரிந்துகொள்வது கடினமாக இருந்தால், நீங்கள் என்னை இடையில் நிறுத்தலாம், மேலும் முன்னோக்கிச் செல்வதற்கு முன் உங்களுக்கு சந்தேகங்கள் இருப்பின் அதை தெளிவுபடுத்தி உதவுவேன் .உங்களுக்கு பின்னர் ஏதேனும் கேள்விகள் இருந்தால், நீங்கள் என்னிடம் கேட்கலாம் அல்லது என்னை தொடர்பு கொள்ளலாம். நேர்காணலுக்கு சுமார் 30-40 நிமிடங்கள் ஆகலாம், மேலும் ஏதேனும் தெளிவுகளுக்கு எதிர்காலத்தில் உங்களை நான் தொடர்புகொள்ள வேண்டியிருக்கும்.

இந்த நேர்காணலைத் தொடர்ந்து, உங்களில் சிலர் உங்கள் வசதிக்கேற்ப மற்றொரு நேர்காணலுக்காக ஏற்கனவே சேகரிக்கப்பட்ட தகவலைப் பின்தொடர, ஒரு மாதத்தில் அல்லது பின்னரோ தொடர்பு கொள்வேன்.

தன்னார்வ பங்கேற்பு

இந்த ஆய்வில் நீங்கள் பங்கேற்பது முற்றிலும் தன்னார்வமானது. ஆய்வில் பங்கேற்பதா இல்லையா என்பது உங்கள் விருப்பம். நீங்கள் செய்யும் தேர்வு உங்களை எந்த வகையிலும் பாதிக்காது. ஆய்வின் நடுவில் ஆய்வில் உள்ள கேள்விகளுக்கு பதிலளிக்கவில்லை என நீங்கள் உணர்ந்தால், நீங்கள் அவ்வாறு செய்யலாம். நேர்காணலின் போது எந்த நேரத்திலும் விருப்பம் இல்லை எனில் நீங்கள் விலகலாம்.இந்த ஆய்வில் பங்கேற்பதற்கு எந்த ஊக்கத்தொகையும் வழங்கப்படாது.

இரகசியத்தன்மை

உங்கள் தனியுரிமை மிகவும் முக்கியமானது. நீங்கள் வழங்கும் அனைத்து தகவல்களும் கடுமையான ரகசியத்தன்மையுடன் நடத்தப்படும். நீங்கள் பகிரும் தகவல் ஆராய்ச்சி நோக்கங்களுக்காக மட்டுமே பயன்படுத்தப்படும் மற்றும் வேறு யாருக்கும் வெளியிடப்படாது.

அபாயங்கள்: இந்த ஆய்வில் பங்கேற்பதால் அறியப்பட்ட ஆபத்துகள் எதுவும் இல்லை.

நன்மைகள்

உங்களுக்கு உடனடி நேரடியான பலன்கள் கிடைக்காவிட்டாலும், உங்கள் பங்கேற்பு, சமூகத்தில் நீரிழிவு நோயாளிகளிடையே மருத்துவப் பன்முக தன்மை நடைமுறைகளைப் பற்றி நன்றாகப் புரிந்துகொள்வதற்கும், கன்னியாகுமரி மாவட்டத்தில் வாழும் மற்ற நீரிழிவு நோயாளிகளுக்கும் உதவும். நேர்காணலுக்கு பிறகு விவரிக்கப்பட்டுள்ள சுகாதாரப் பாதுகாப்பு நடைமுறைகளில் ஏதேனும் ஆரோக்கியமற்றதாகவோ அல்லது பாதுகாப்பற்றதாகவோ மதிப்பிடபட்டால் அதில் ஏற்படக்கூடிய அபாயங்கள் குறித்து நான் ஆலோசனை வழங்குவேன் மற்றும் பின்தொடர்வதற்கு அருகிலுள்ள அரசு சுகதார மையத்தைப் பார்வையிடுமாறு பரிந்துரைக்கிறேன்.

நிதியுதவி எனது சொந்த செலவில் இந்த ஆராய்ச்சியை செய்து வருகிறேன்.

தொடர்பு தகவல்

உங்களுக்கு ஏதேனும் கேள்விகள் அல்லது சந்தேகங்கள் இருந்தால் அல்லது ஆய்வைப் பற்றிய கூடுதல் தகவல் தேவைப்பட்டால், தயவுசெய்து என்னைத் தொடர்புகொள்ளவும் மேலும் இந்த ஆய்வின் அங்கீகாரம் குறித்த ஏதேனும் கேள்விகளுக்கு, நீங்கள் SCTIMST இன் நிறுவன நெறிமுறைக் குழு(IEC) உறுப்பினர் செயலாளரை தொடர்பு கொள்ளலாம்

முதன்மை ஆய்வாளர்

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IEC உறுப்பினர் செயலாளர்
டாக்டர் ஸ்ரீநிவாஸ் ஜி
உறுப்பினர் செயலாளர்
நிறுவன நெறிமுறைக் குழு, SCTIMST, திருவனந்தபுரம்
தொடர்பு எண்: 04712524689 (அலுவலகம்)
மின்னஞ்சல் ஐடி: srinivasg@sctimst.ac.in

இந்த ஆய்வில் பங்கேற்பதைக் கருத்தில் கொண்டதற்கு நன்றி.

உண்மையுள்ள,

டாக்டர் சி.எஸ்.நாகராஜன்

ANNEXURE III

Achutha Menon Centre for Health Science Studies (AMCHSS)
Sree Chitra Tirunal Institute for Medical Sciences & Technology (SCTIMST)
Trivandrum -11

PARTICIPANT INFORMATION SHEET -Qualitative study

Study title:
Mixed-Methods Study of Medical Pluralistic Practices among Self -reported Diabetes patients and reasons for these practices in rural Kanyakumari district, Tamilnadu

Researcher: C.S.Nagarajan

Affiliation: Achutha Menon Centre for Health Sciences Studies, Sree Chitra Tirunal Institute for Medical Sciences and Technology, Thiruvananthapuram

Greetings,

I am Dr. C S Nagarajan, pursuing my Master of Public Health degree at Achutha Menon Centre for Health Sciences Studies. As part of my academic research, I am conducting a study titled "Mixed-Methods Study of Medical Pluralistic Practices among Self -reported Diabetes patients and reasons for these practices in rural Kanyakumari district, Tamilnadu " focused on understanding the various treatment methods like modern medicine , siddha, ayurveda and various *nattu vaithyam* methods used by the self-reported diabetic patients in rural Kanyakumari and also to explore the reason behind the use of various *nattu vaithyam* and various treatment methods among participants who know they have diabetes in rural Kanyakumari district.

Study objective:

The primary objective of the study is to study the extent do people with diabetes mellitus use different treatment methods like modern medicine, siddha, ayurveda,nattu vaithyam methods for diabetes treatment in rural Kanyakumari district and to understand the reasons for the use of such practices. This is being done to help public health professionals suggest better ways of managing the disease in the disease in the community.

Why This Study is Conducted

As I said before Medical pluralistic practices prevailing in the community may affect the management of diabetic treatment so understanding the medical pluralistic practices among the diabetes is much more important in diabetes management. This part of the study tries to explore the various reasons for the usage of medical pluralistic practices among diabetes patients and it will enrich the information which I have already collected to get a better understanding of the medical pluralistic practices prevailing in the society.

How this study will be conducted ?:

As I have conducted a study among self-reported diabetic patients in rural areas of the Kanyakumari district. People with certain special medical pluralistic behaviours who are

willing to share information regarding medical pluralistic practices were selected for conducting in-depth interviews to obtain further information about their medical pluralistic behaviours in managing diabetes. I mentioned this to you in the earlier interview and obtained your consent to contact you.

With your consent, the interviews will be audio-recorded for further study purposes. The interviews will be confidential and conducted in a private setting to ensure your comfort and privacy.

Requesting to take part in the study

As I have already conveyed. I am now inviting you to be part of this study. Before you participate in this, you are free to discuss about this study with your households. This information sheet may contain the words that you would feel difficult to understand. If you find anything difficult to understand, you may stop me in between, and I would take time to clarify your doubts before moving ahead. If you have any questions later, you may ask me or contact me. The interview may take about 35-45 minutes and I may have to contact you in future for any clarifications

Voluntary Participation

Your participation in this study is entirely voluntary. It is your choice whether to participate in the study or not. The choice that you make is in no way going to affect you in any manner. No incentives will be provided for taking part in the study.

Confidentiality

Your privacy is of utmost importance. All information you provide will be treated with the strictest confidentiality. The information you share will only be used for research purposes and will not be disclosed to anyone else.

Risks

There are no known risks associated with participating in this study.

Benefits

While there may not be immediate direct benefits to you, your participation will contribute to a better understanding of medical pluralistic practices among self-reported diabetic patients and their various reasons. If, after the interview, any of the health care practices described are assessed to be unhealthy or unsafe, I will provide advice as to the potential risks involved and suggest visiting the nearest Govt Health Centre for follow-up.

Funding

I am doing this research at my own expense.

Contact Information

If you have any questions, or concerns, or require further information about the study, please feel free to contact me and for any queries on the authentication of this study, you can get the Member Secretary, Institutional Ethics Committee (IEC) of SCTIMST

Principal Investigator

Dr. C.S.Nagarajan
MPH Student
AMCHSS, SCTIMST,
Medical College (PO), Thiruvananthapuram-11
Email id: nagarajancs98@gmail.com
Mobile: +91 9940919061

IEC Member Secretary

Dr. Srinivas G
Member Secretary
Institutional Review Board, SCTIMST, Trivandrum
Contact Number: 04712524689 (office)
Email id: srinivasg@sctimst.ac.in

Thank you for considering participation in this study.

Sincerely,

Dr. C.S. Nagarajan

ANNEXURE IV

அச்சுத மேனன் சுகாதார அறிவியல் ஆய்வு மையம், ஸ்ரீ சித்ரா திருநாள் மருத்துவ அறிவியல் மற்றும் தொழில்நுட்ப நிறுவனம், திருவனந்தபுரம்

பங்கேற்பாளர் தகவல் குறிப்பு -இரண்டாம்நிலை ஆய்வு -Qualitative study

ஆய்வின் தலைப்பு:
தமிழ்நாட்டின் கன்னியாகுமரி மாவட்டத்தில் நீரிழிவு நோயாளிகள் மத்தியில் நிலவும் மருத்துவ பன்முக தன்மை நடைமுறைகள் மற்றும் அதற்கான காரணங்கள் -கலப்புமுறை ஆய்வு

ஆராய்ச்சியாளர்:சி.எஸ்.நாகராஜன்

இணைப்பு: அச்சுத மேனன் சுகாதார அறிவியல் ஆய்வு மையம், ஸ்ரீ சித்ரா திருநாள் மருத்துவ அறிவியல் மற்றும் தொழில்நுட்ப நிறுவனம், திருவனந்தபுரம்

வணக்கம்,

நான் டாக்டர். சி.எஸ். நாகராஜன், அச்சுத மேனன் ஹெல்த் சயின்சஸ் ஸ்டடீஸ் மையத்தில் முதுகலை பொது சுகாதாரப் பட்டப்படிப்பைப் படித்து வருகிறேன். எனது கல்வி ஆராய்ச்சியின் ஒரு பகுதியாக, " தமிழ்நாட்டின் கன்னியாகுமரி மாவட்டத்தில் நீரிழிவு நோயாளிகள் மத்தியில் நிலவும் மருத்துவ பன்முக தன்மை நடைமுறைகள் மற்றும் அதற்கான காரணங்கள் -கலப்புமுறை ஆய்வு
" என்ற தலைப்பில் பல்வேறு சிகிச்சை முறைகளைப் புரிந்துகொள்வதில் கவனம் செலுத்தி வருகிறேன். அலோபதி, சித்தா, ஆயுர்வேதம் மற்றும் கன்னியாகுமரி கிராமப்புற சர்க்கரை நோயாளிகள் பயன்படுத்தும் பல்வேறு நாட்டு வைத்தியம் முறைகள் மற்றும் கன்னியாகுமரி மாவட்டத்தில் உள்ள கிராமப்புறங்களில் சர்க்கரை நோய் இருப்பதை அறிந்த பங்கேற்பாளர்களிடையே பல்வேறு நாட்டு வைத்தியம் மற்றும் பல்வேறு சிகிச்சை முறைகளைப் பயன்படுத்துவதற்கான காரணத்தை ஆராயவும் வந்துள்ளேன்.

ஆய்வின் நோக்கம்:

கன்னியாகுமரி மாவட்டத்தின் கிராமப்புறங்களில் சர்க்கரை நோய் உள்ளவர்கள் அலோபதி, சித்தா, ஆயுர்வேதம், நாட்டு வைத்தியம் போன்ற பல்வேறு சிகிச்சை முறைகளை சர்க்கரை நோய்

சிகிச்சைக்கு எந்த அளவுக்குப் பயன்படுத்துகிறார்கள் என்பதை ஆராய்வதே ஆய்வின் முதன்மை நோக்கமாகும். சமூகத்தில் சர்க்கரை நோயைக் கட்டுப்படுத்துவதற்கான சிறந்த வழிகளைப் பரிந்துரைக்க பொது சுகாதார நிபுணர்களுக்கு உதவுவதற்காக இது செய்யப்படுகிறது.

ஏன் இந்த ஆய்வு நடத்தப்படுகிறது

நான் முன்பே கூறியது போல், சமூகத்தில் நிலவும் மருத்துவ பன்மைத்துவ நடைமுறைகள் நீரிழிவு சிகிச்சையின் மேலாண்மையை பாதிக்கலாம், எனவே நீரிழிவு நோயாளிகளிடையே மருத்துவ பன்மைத்துவ நடைமுறைகளைப் புரிந்துகொள்வது நீரிழிவு நிர்வாகத்தில் மிகவும் முக்கியமானது. இந்த ஆய்வின் பகுதி, நீரிழிவு நோயாளிகளிடையே மருத்துவ பன்மைத்துவ நடைமுறைகளைப் பயன்படுத்துவதற்கான பல்வேறு காரணங்களை ஆராய முயற்சிக்கிறது, மேலும் இது சமூகத்தில் நிலவும் மருத்துவ பன்மைத்துவ நடைமுறைகளைப் பற்றி நன்கு புரிந்துகொள்ள நான் ஏற்கனவே சேகரித்த தகவல்களை மேலும் மேம்படுத்தும்.

இந்த ஆய்வு எவ்வாறு நடத்தப்படும்?:

கன்னியாகுமரி மாவட்டத்தின் கிராமப்புறங்களில் நீரிழிவு நோயாளிகளிடம் நடத்தப்பட்ட எனது முதல் நிலை ஆய்வில் மருத்துவ பன்மைத்துவ நடைமுறைகள் பற்றிய தகவல்களைப் பகிர்ந்து கொள்ளத் தயாராக இருக்கும் சில சிறப்பு மருத்துவ பன்முக தன்மை நடத்தைகளைக் கொண்ட நபர்கள், நீரிழிவு நோயைக் கட்டுப்படுத்துவதில் அவர்களின் மருத்துவ பன்முக தன்மை நடைமுறைகள் பற்றிய கூடுதல் தகவல்களைப் பெற விரிவான நேர்காணல்களை நடத்துவதற்குத் தேர்ந்தெடுக்கப்பட்டனர். முந்தைய நேர்காணலில் இதை நான் உங்களிடம் குறிப்பிட்டேன், உங்களைத் தொடர்புகொள்வதற்கு உங்களின் சம்மதத்தைப் பெற்றேன்.

உங்கள் ஒப்புதலுடன், மேலதிக ஆய்வு நோக்கங்களுக்காக நேர்காணல்கள் ஆடியோவில் பதிவு செய்யப்படும். நேர்காணல்கள் இரகசியமானவை மற்றும் உங்கள் வசதி மற்றும் தனியுரிமையை உறுதிப்படுத்தும் வகையில் தனிப்பட்ட அமைப்பில் நடத்தப்படும்.

ஆய்வில் பங்கேற்குமாறு கேட்டுக்கொள்கிறேன்

நான் ஏற்கனவே தெரிவித்தது போல். இந்த ஆய்வின் ஒரு பகுதியாக நான் இப்போது உங்களை அழைக்கிறேன். நீங்கள் இதில்

பங்கேற்பதற்கு முன், இந்த ஆய்வைப் பற்றி உங்கள் குடும்பத்தினருடன் விவாதிக்கலாம். இந்த தகவல் தாளில் நீங்கள் புரிந்து கொள்ள கடினமாக உணரும் வார்த்தைகள் இருக்கலாம். நீங்கள் புரிந்துகொள்வது கடினமாக இருந்தால், நீங்கள் என்னை இடையில் நிறுத்தலாம், மேலும் முன்னோக்கிச் செல்வதற்கு முன் உங்கள் சந்தேகங்களைத் தெளிவுபடுத்துவதற்கு நான் நேரத்தை எடுத்துக்கொள்கிறேன். உங்களுக்கு பின்னர் ஏதேனும் கேள்விகள் இருந்தால், நீங்கள் என்னிடம் கேட்கலாம் அல்லது என்னை தொடர்பு கொள்ளலாம். நேர்காணல் சுமார் 35-45 நிமிடங்கள் ஆகலாம், மேலும் ஏதேனும் விளக்கங்களுக்கு எதிர்காலத்தில் உங்களைத் தொடர்புகொள்ள வேண்டியிருக்கும்

தன்னார்வ பங்கேற்பு

இந்த ஆய்வில் நீங்கள் பங்கேற்பது முற்றிலும் தன்னார்வமானது. ஆய்வில் பங்கேற்பதா இல்லையா என்பது உங்கள் விருப்பம். நீங்கள் செய்யும் தேர்வு உங்களை எந்த வகையிலும் பாதிக்காது. ஆய்வில் பங்கேற்பதற்கு எந்த ஊக்கத்தொகையும் வழங்கப்படாது.

இரகசியத்தன்மை

உங்கள் தனியுரிமை மிகவும் முக்கியமானது. நீங்கள் வழங்கும் அனைத்து தகவல்களும் கடுமையான ரகசியத்தன்மையுடன் நடத்தப்படும். நீங்கள் பகிரும் தகவல் ஆராய்ச்சி நோக்கங்களுக்காக மட்டுமே பயன்படுத்தப்படும் மற்றும் வேறு யாருக்கும் வெளியிடப்படாது.

அபாயங்கள்

இந்த ஆய்வில் பங்கேற்பதால் அறியப்பட்ட ஆபத்துகள் எதுவும் இல்லை.

நன்மைகள்

உங்களுக்கு உடனடி நேரடியான பலன்கள் இல்லாவிட்டாலும், உங்கள் பங்கேற்பு, நீரிழிவு நோயாளிகள் மத்தியில் காணப்படும் பல்வேறு மருத்துவப் பன்முகதன்மை நடைமுறைகளை நன்கு புரிந்துகொள்ள உதவும். நேர்காணலுக்கு பிறகு விவரிக்கப்பட்டுள்ள சுகாதாரப் பாதுகாப்பு நடைமுறைகளில் ஏதேனும் ஆரோக்கியமற்றதாகவோ அல்லது பாதுகாப்பற்றதாகவோ மதிப்பிடபட்டால் அதில் ஏற்படக்கூடிய அபாயங்கள் குறித்து நான் ஆலோசனை வழங்குவேன் மற்றும் பின்தொடர்வதற்கு அருகிலுள்ள அரசு சுகதார மையத்தைப் பார்வையிடுமாறு பரிந்துரைக்கிறேன்.

நிதியுதவி

எனது சொந்த செலவில் இந்த ஆராய்ச்சியை செய்து வருகிறேன்.

தொடர்பு தகவல்

உங்களுக்கு ஏதேனும் கேள்விகள் அல்லது சந்தேகங்கள் இருந்தால் அல்லது ஆய்வைப் பற்றிய கூடுதல் தகவல் தேவைப்பட்டால், தயவுசெய்து என்னைத் தொடர்புகொள்ளவும் மேலும் இந்த ஆய்வின் அங்கீகாரம் குறித்த ஏதேனும் கேள்விகளுக்கு, நீங்கள் SCTIMST இன் நிறுவன நெறிமுறைக் குழு(IEC) உறுப்பினர் செயலாளரை தொடர்பு கொள்ளலாம்

முதன்மை ஆய்வாளர்

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உறுப்பினர் செயலாளர்
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இந்த ஆய்வில் பங்கேற்பதைக் கருத்தில் கொண்டதற்கு நன்றி.

உண்மையுள்ள,

டாக்டர் சி.எஸ்.நாகராஜன்

ANNEXURE V

Achutha Menon Centre for Health Science Studies (AMCHSS)
Sree Chitra Tirunal Institute for Medical Sciences & Technology (SCTIMST)
Trivandrum -11

Mixed-Methods Study of Medical Pluralistic Practices among Self -reported Diabetes patients and reasons for these practices in rural Kanyakumari district, Tamilnadu

CONSENT FORM -Quantitative study

I have been invited to participate in the thesis titled" Mixed-Methods Study of Medical Pluralistic Practices among Self -reported Diabetes patients and reasons for these practices in rural Kanyakumari district, Tamilnadu

I have read the information provided regarding the study, or it has been read to me**.** I got the opportunity to ask questions about it and the questions which I have been asked have been answered to my satisfaction.
I am aware that there is minimal risk in participating in the study. I understand there is no immediate direct benefit in the study.
I know I will not be incentivized to participate.
I understand my personal information will remain confidential.
I know that I can withdraw my consent at any point of the study
I consent voluntarily to be a participant in this study and I give permission to contact me for further details if needed for the later part of the study

Participant ID: Name of the participant:

Mobile Number: Signature

Place:

Date:

I (The researcher) confirm that the participant was allowed to ask questions about the study, and all the questions asked by the participant have been answered correctly and to the best of my ability. I confirm that the individual has not been coerced into giving consent and the consent has been given freely and voluntarily.

Name of the Researcher……

Date…….

Signature of the Researcher

ANNEXURE VI

தமிழ்நாட்டின் கன்னியாகுமரி மாவட்டத்தில் நீரிழிவு நோயாளிகள் மத்தியில் நிலவும் மருத்துவ பன்முக தன்மை நடைமுறைகள் மற்றும் அதற்கான காரணங்கள் -கலப்புமுறை ஆய்வு

ஒப்புதல் படிவம் - முதல்நிலை ஆய்வு For Quantitative study

" தமிழ்நாட்டின் கன்னியாகுமரி மாவட்டத்தில் நீரிழிவு நோயாளிகள் மத்தியில் நிலவும் மருத்துவ பன்முக தன்மை நடைமுறைகள் மற்றும் அதற்கான காரணங்கள் -கலப்புமுறை ஆய்வு" என்ற தலைப்பில் ஆய்வில் பங்கேற்க எனக்கு அழைப்பு விடுக்கப்பட்டுள்ளது.

ஆய்வு தொடர்பாக வழங்கப்பட்ட தகவல்களை நான் படித்திருக்கிறேன் அல்லது எனக்கு வாசிக்கப்பட்டது. அதைப் பற்றிய கேள்விகளைக் கேட்கும் வாய்ப்பு எனக்குக் கிடைத்தது, நான் கேட்ட கேள்விகளுக்கு எனக்கு திருப்திகரமாக பதிலளிக்கப்பட்டது.
ஆய்வில் பங்கேற்பதில் குறைந்த ஆபத்து உள்ளது என்பதை நான் அறிவேன். ஆய்வினால் உடனடி நேரடி பலன் இல்லை என்பதை நான் புரிந்துகொள்கிறேன்.
பங்கேற்பதற்கு எனக்கு எந்தவித ஊக்கத்தொகையும் வழங்கபடாது என்பது எனக்கு தெரியும்
எனது தனிப்பட்ட தகவல்கள் ரகசியமாக இருக்கும் என்பதை நான் புரிந்துகொள்கிறேன்.
ஆய்வின் எந்த நேரத்திலும் எனது ஒப்புதலை திரும்பப் பெற முடியும் என்று எனக்குத் தெரியும்
இந்த ஆய்வில் பங்கேற்பதற்கு நான் தானாக முன்வந்து சம்மதிக்கிறேன்
மேலும் ஆய்வின் பிற்பகுதிக்கு தேவைப்பட்டால் மேலும் விவரங்களுக்கு என்னைத் தொடர்பு கொள்ள அனுமதி அளிக்கிறேன்

பங்கேற்பாளர் ஐடி: பங்கேற்பாளரின் பெயர்:

மொபைல் எண்: கையொப்பம்
இடம்:

தேதி:

ஆய்வைப் பற்றிய கேள்விகளைக் கேட்க பங்கேற்பாளர் அனுமதிக்கப்பட்டார் என்பதை நான் (ஆராய்ச்சியாளர்) உறுதிப்படுத்துகிறேன், மேலும் பங்கேற்பாளர் கேட்ட அனைத்து கேள்விகளுக்கும் சரியாகவும், என்னால் முடிந்தவரை சிறந்த பதில் அளிக்கப்பட்டுள்ளது. ஒப்புதல் வழங்குமாறு தனிநபர் வற்புறுத்தப்படவில்லை என்பதையும், ஒப்புதல் சுதந்திரமாகவும் விருப்பமாகவும் வழங்கப்பட்டுள்ளது என்பதை உறுதிப்படுத்துகிறேன்.

ஆய்வாளரின் பெயர்……
தேதி……

ஆய்வாளரின் கையொப்பம்

ANNEXURE VII

Achutha Menon Centre for Health Science Studies (AMCHSS)
Sree Chitra Tirunal Institute for Medical Sciences & Technology (SCTIMST)
Trivandrum -11

Mixed-Methods Study of Medical Pluralistic Practices among Self -reported Diabetes patients and reasons for these practices in rural Kanyakumari district, Tamilnadu

CONSENT FORM -Qualitative study

As I(Participant) have already participated in the initial part of this study. Now I have been invited to participate again in the thesis titled "Mixed-Methods Study of Medical Pluralistic Practices among Self -reported Diabetes patients and reasons for these practices in rural Kanyakumari district, Tamilnadu"

I(Participant) have read the information provided regarding the study, or it has been read to me**.** I got the opportunity to ask questions about it and the questions which I have been asked have been answered to my satisfaction.
I am aware that there is minimal risk in participating in the study. I understand there is no immediate direct benefit in the study.
I know that the audio of the responses which I have spoken has been audio recorded
I know I will not be incentivised to participate.
I understand my personal information will remain confidential.
I know that I can withdraw my consent at any point of the study
I consent voluntarily to be a participant in this study and I consent to use the audio recordings recorded during the session

Participant ID: Name of the participant:

Mobile Number: Signature

Place:

Date:

I (The Researcher) confirm that the participant was allowed to ask questions about the study, and all the questions asked by the participant have been answered correctly and to the best of my ability. I confirm that the individual has not been coerced into giving consent and the consent has been given freely and voluntarily.

Name of the Researcher……

Date…….

Signature of the Researcher

ANNEXURE VIII

தமிழ்நாட்டின் கன்னியாகுமரி மாவட்டத்தில் நீரிழிவு நோயாளிகள் மத்தியில் நிலவும் மருத்துவ பன்முக தன்மை நடைமுறைகள் மற்றும் அதற்கான காரணங்கள் -கலப்புமுறை ஆய்வு

ஒப்புதல் படிவம் இரண்டாம் நிலை ஆய்வு-Qualitative Study

இந்த ஆய்வின் ஆரம்பப் பகுதியில் நான் (பங்கேற்பாளர்) ஏற்கனவே பங்கேற்றுள்ளதால். " தமிழ்நாட்டின் கன்னியாகுமரி மாவட்டத்தில் நீரிழிவு நோயாளிகள் மத்தியில் நிலவும் மருத்துவ பன்முக தன்மை நடைமுறைகள் மற்றும் அதற்கான காரணங்கள் -கலப்புமுறை ஆய்வு " என்ற தலைப்பில் இப்போது நான் மீண்டும் பங்கேற்க அழைக்கப்பட்டேன்.

நான் (பங்கேற்பாளர்) ஆய்வு தொடர்பாக வழங்கப்பட்ட தகவலைப் படித்திருக்கிறேன் அல்லது எனக்குப் படிக்கப்பட்டது. அதைப் பற்றிய கேள்விகளைக் கேட்கும் வாய்ப்பு எனக்குக் கிடைத்தது, நான் கேட்ட கேள்விகளுக்கு எனக்கு திருப்திகரமாக பதிலளிக்கப்பட்டது.
ஆய்வில் பங்கேற்பதில் குறைந்த ஆபத்து உள்ளது என்பதை நான் அறிவேன். ஆய்வினால் உடனடி நேரடி பலன் இல்லை என்பதை நான் புரிந்துகொள்கிறேன்.
நான் அளித்த பதில்களின் ஆடியோ ஒலிப்பதிவு செய்யப்பட்டுள்ளது என்பதை நான் அறிவேன் பங்கேற்பதற்கு எனக்கு எந்தவித ஊக்கத்தொகையும் வழங்கபடாது என்பது எனக்கு தெரியும்
எனது தனிப்பட்ட தகவல்கள் ரகசியமாக இருக்கும் என்பதை நான் புரிந்துகொள்கிறேன்.
ஆய்வின் எந்த நேரத்திலும் எனது ஒப்புதலை திரும்பப் பெற முடியும் என்று எனக்குத் தெரியும்
இந்த ஆய்வில் பங்கேற்பதற்கு நான் தானாக முன்வந்து ஒப்புக்கொள்கிறேன் மற்றும் அமர்வின் போது பதிவுசெய்யப்பட்ட ஆடியோ பதிவுகளைப் பயன்படுத்த நான் ஒப்புக்கொள்கிறேன்

பங்கேற்பாளர் ஐடி: பங்கேற்பாளரின் பெயர்:
மொபைல் எண்:
கையொப்பம்இடம்:
தேதி:

ஆய்வைப் பற்றிய கேள்விகளைக் கேட்க பங்கேற்பாளர் அனுமதிக்கப்பட்டார் என்பதை நான் (ஆராய்ச்சியாளர்) உறுதிப்படுத்துகிறேன், மேலும் பங்கேற்பாளர் கேட்கும் அனைத்து கேள்விகளுக்கும் சரியாகவும் என்னால் முடிந்தவரை சிறந்த பதில் அளிக்கப்பட்டுள்ளது. ஒப்புதல் வழங்குமாறு தனிநபர் வற்புறுத்தப்படவில்லை என்பதையும், ஒப்புதல் சுதந்திரமாகவும் விருப்பமாகவும் வழங்கப்பட்டுள்ளது என்பதை உறுதிப்படுத்துகிறேன்.

ஆய்வாளரின் பெயர்……
தேதி..... ஆய்வாளரின் கையொப்பம்

ANNEXURE IX

Mixed-Methods Study of Medical Pluralistic Practices among Self -reported Diabetes patients and reasons for these practices in rural Kanyakumari district, Tamilnadu.

Quantitative study -Interview schedule

Sl.NO.	Question	Coding Criterion	Code Options
	Questions 1 – 18 Socio-Demographic characteristics		
1.	Participant Id Number		
2.	Block name	Agastheeswaram	1
		Thovalai	2
		Rajakkamangalam	3
		Kuruthancode	4
		Thackalai	5
		thiruvattaru	6
		Killiyur	7
		Munchirai	8
		Melpuram	9
3.	Grama panchayat name		
4.	Ward number		
5.	Participant name		
6.	Address /Location		
7.	What is your age? (Please tell me the age in completed years as of 01-01-2024)		
8.	How would you identify yourself in terms of your sexual identity? Gender	Male	1
		Female	2
		Transgender	3
		Non specified	4
9.	What is your Marital Status?	Married	1
		Single	2
		Widow/widower	3
		Divorced	4
		Others (Specify☐	5
10.	What is the highest Educational status you have attained? (class or degree obtained)	Non-literate	1
		Primary education(1^{st} -5^{th} std)	2
		Middle School Education (6^{th} – 8^{th} std)	3
		Secondary education (9^{th} - 10^{th} std)	4
		Higher secondary education(11^{th} and 12^{th} std)	5
		Graduate	6
		Postgraduate	7
		Others (specify)	8
11.	How many years of education have you completed? (Till the		

	highest level of education you have successfully completed)		
12.	Are you employed now?	Yes	1
		No	2
(If the Answer to question 12 is 2 then skip question number 13 and move to question number 14)			
13.	What is your Current Profession/Occupation)	Self-employed	1
		Regular salaried/wage employee	2
		Casual wage labour in rural areas(In public works)	3
		Casual wage labour in rural areas (in other works)	4
		Casual wage labour in urban areas(In public works)	5
		Casual wage labour in urban areas (in other works)	6
		Unpaid Family worker	7
		Homemaker	8
		Retired/pensioned	9
		Others (specify)☐	10
14.	How many members live in this household, including only those who stay for at least 5 days a week in this household? (Do not include temporary visitors or those who work, coming in the morning and leaving in the evening)		
15.	Among the members listed in question 14, how many are earning wages or salaries?		
16.	How many of the members residing in this household have been diagnosed as being diabetic? (check against the screening instrument to see if the number matches. If not reconcile the numbers through clarification)		
17.	What is the total monthly income of the household considering the members who live here (mentioned in question 14)		
18.	What is the type of ration card	AAY	1

		BPL	2
		APL	3
	If there is more than 1 diabetic patient who stays for at least 5 days in the household using the Lottery method the relevant person was selected randomly and the below questions from question number 19 are continued to be asked to them		
	Questions 19-35: History of the disease and treatment		
19.	When were you told by a healthcare provider that you have diabetes?	Month_____ Year _____	
20.	What is the first treatment option that you used when you were diagnosed with diabetes?	Allopathy	1
		CAM	2
		Both	3
		Don't start any treatment at first	4
		Others specify:	5
	If the answer to question 20 is CAM-2 or both -3 then move to question number 21 otherwise skip question number 21 and move to question number 22		
21.	If you started your diabetic treatment with CAM therapy which CAM therapy did you use as your first treatment?	Ayurveda	1
		Homeopathy	2
		Unani	3
		Siddha	4
		Yoga and naturopathy	5
		Acupuncture	6
		Herbal medicines	7
		Reiki	8
		Varmam therapy	9
		Faith healing	10
		Others (specify)☐	11
22.	When did you last visit your physician/clinic for diabetic care?	Within one month	1
		Within 1-6 months	2
		Within 6 months to 1 year	3
		More than 1 year	4
		Cannot say	5
23.	Where did you seek treatment for diabetes most recently?	Government including ESI and the cooperative sector	1
		Private	2
		Both	3
		Others(Specify) ☐	4
24.	Why did you use the above sector? (Multiple answers possible)	Easy to access	1
		Better treatment	2
		Better facilities	3
		Low cost	4
		Others (specify)☐	5
25.	Which system of medicine do you use predominantly?	Allopathy	1
		CAM	2
		Both	3
26.		Easy availability	1

	What are your reasons for the use of that system of medicine? (multiple answers possible)	Low cost	2
		Free from adverse effects	3
		Other treatments are not working	4
		Conventional treatment is too toxic or dangerous	5
		User friendly	6
27.	When did you start formal treatment for diabetes?	Month _____ Year _____	
28.	Have you ever checked your blood sugar level?	Yes	1
		No	2
29.	When did you last check your blood sugar level?	Within the last two weeks	1
		1 month	2
		Within 1-6 months	3
		6 months to 1 year	4
		More than one year ago	5
		Cannot say/can't remember	6
30.	What was your blood sugar when you last checked it?		
31.	When was the blood glucose level measured?	Fasting	1
		Random	2
		Postprandial	3
32.	Have you ever checked HbA1c in the last 3 months	Yes	1
		No	2
	If the answer to Question number 32 is option-2 then skip Question number 33,34 and move on to 35		
33.	What was the HbA1c value when you checked it?		
34.	HbA1c value verified by seeing the reports available	Yes	1
		No	2
35.	Do you currently have any of the following health conditions?		

Sl.NO	Name of the Disease	Disease Present	Disease absent	Treatment yes/No	Type of treatment	CAM treatment yes/No
1	Heart or circulatory system diseases					
2	Elevated cholesterol					
3	High blood pressure					
4	Neurological problem					

	5	Diabetic foot ulcer					
	6	Kidney disorders					
	7	Vision impairment					
	8	Sexual dysfunction					
	9	Liver disease					
	10	Others (Specify)					

	(If the answer for question number 25 is 2, then skip the question number from 36 to 42 and move to question number 43)		
	Questions 36-42 History of Diabetic medication and their adherence in terms of dose, timing and regularity		
36.	What are all the allopathic medicines you are taking for regulating your blood sugar level?	Oral hypoglycaemic drugs	1
		Insulin Injection	2
		Insulin pumps	3
		Vitamin supplements	4
		Others (specify)	5
	(If the answer for question number 36 is option 1,2, then move to Question number 37 otherwise skip to Question number 41)		
37.	Did you ever change the dose of your medications prescribed in the last 6 months based on your own intuition (Without your Physician's advice)?	Yes	1
		Sometimes	2
		Always alter the dose as per my intuition	3
		No	4
	(If the answer for question number 37 is option 4 then skip the question number 38 and move to question number 39)		
38.	What is the reason for you changing the dose of your medications prescribed in the last 6 months?	Forgetfulness	1
		Poor economic situation	2
		Due to a change in my diet pattern	3
		Fear of side effects	4
		Instructed by the CAM practitioner	5
		Felt that it interfered with CAM medicine	6
		Was told my friends that it interferes with CAM medicine	7
		Others specify ☐	8
39.	How often did you take your diabetic medication at the correct time as it is prescribed during the last 6 months?	Always take on time	1
		Sometimes forget to take on time	2
		Always forget to take on time	3

	(If answer for the question number 39 is 1, then skip question number 40 and move to question number 41)		
40.	What is the reason for you changing the timing of your medications prescribed in the last 6 months?	Forgetfulness	1
		Poor economic situation	2
		Due to a change in my diet pattern	3
		Fear of side effects	4
		Instructed by the CAM practitioner	5
		Felt that it interfered with CAM medicine	6
		Was told my friends that it interferes with CAM medicine	7
		Others specify ☐	8
41.	In the past 6 months did you ever skip your diabetic medicine for a short period of 1 week up to 1 month If yes What is the frequency of skipping the medicine in the last 6 months?	I don't skip my medicine	1
		Sometimes I skip my medicines	2
		I always used to skip the medicine for a short while	3
		Others Specify	4
If the answer for question number 41 is 1 No then skip question number 42 and move to question number 43			
42.	What is the reason that you are skipping your medications prescribed for a short period of 1 week to 1 month in the last 6 months?	Forgetfulness	1
		Poor economic situation	2
		Due to a change in my diet pattern	3
		Fear of side effects	4
		Instructed by the CAM practitioner	5
		Felt that it interfered with CAM medicine	6
		Was told my friends that it interferes with CAM medicine	7
		Others specify ☐	8
	Question 43-49 **Non-pharmacological means of diabetes management**		
43.	Do you exercise regularly to control your diabetes like walking for exercise, yoga, or other activities?	Yes	1
		No	2
	If the answer to question 43 is option 2 then skip Question number 44 -46 and move to question number 47		

44.	If yes What form of exercise do you most frequently do?	Yoga	1
		walking	2
		Running	3
		Working out in the gym	4
		others	5
	For every option selected in question number 44 question number 45 and 46 are repeated		
45.	In a week How often do you engage in these activities?	Daily	1
		1-3 days a week	2
		3-6 days a week	3
46.	In a day how many minutes do you do this activity?		
47.	Do you follow any specific diet for the control of diabetes?	Yes	1
		No	2
48.	Do you use CAM therapy for your Diabetic treatment?	Yes	1
		No	2
	(If the answer for question number 48 is 2, then skip question number 49 and move to question number 50)		
49.	If you use CAM, what among the following do you use regularly during the last 6 months?	Ayurveda	1
		Homeopathy	2
		Unani	3
		Siddha	4
		Yoga and naturopathy	5
		Acupuncture	6
		Herbal medicines	7
		Reiki	8
		Varmam therapy	9
		Faith healing	10
		Others (specify)_____	11
	Questions 50-54 **Factors associated with Medical pluralistic practice: Allopathic treatment**		
50.	How much did you spend during the last month on your allopathic treatment for Diabetes Mellitus? (Including Medicines, consultation for treatment and testing)		
51.	What is the source of money for this treatment?	Own Salary	1
		Family members residing with me	2
		Family members, but not currently residing with me	3
		Pension or govt aid	4
		Others (Specify)	5
52.	How did you make the decision to take allopathic treatment?	Self-decision	1
		Suggested by Family member	2
		Suggested by Friends	3
		Health worker (nurse)	4

		Others (specify)	5
53.	Where did you get your allopathic medication during the last month ?	Govt hospital	1
		Private hospital	2
		Provided by the health worker at home	3
		Nearby pharmacy	4
54.	Do any of your friends/relatives/ neighbours work in the health sector (Allopathy)?	Yes	1
		No	2
	Question 55-61 **Factors associated with Medical pluralistic practice: CAM Therapy**		
55.	How much did you spend during the last month for your Diabetic treatment using CAM therapy?		
56.	What is the source of money for CAM therapy?	Own Salary	1
		Family members residing with me	2
		Family members, who but not currently residing with me	3
		Pension or govt aid	4
		Others (Specify) ☐	5
57.	How did you make the decision to take CAM therapy for your diabetic treatment?	Self-decision	1
		Family member	2
		Friends	3
		Health worker (nurse)	4
58.	Did any of your friends/relatives/neighbours work in the CAM?	Yes	1
		No	2
59.	Where did you get your CAM therapy medication for your diabetes treatment during the last month?	Prepare on my own	1
		Friends	2
		Relatives	3
		CAM practitioner	4
		Market – formal shop	5
		Others (specify) ☐	6
60.	Thank you very much for answering all my questions. If I need any clarifications, can I contact you?	yes	
		no	
	If yes coded in Question no 60 then move on Question number 61 otherwise it is ended		
61.	Can you please give me a contact number that I can use to do so? Please give me only the number that you yourself have access to or give me one which you trust.	Enter the contact number	

ANNEXURE X

“தமிழ்நாட்டின் கன்னியாகுமரி மாவட்டத்தில் நீரிழிவு நோயாளிகள் மத்தியில் நிலவும் மருத்துவ பன்முக தன்மை நடைமுறைகள் மற்றும் அதற்கான காரணங்கள் -கலப்புமுறை ஆய்வு”

அளவு ஆய்வு- நேர்காணல் கேள்வி குறிப்பேடு

வ.எண்	கேள்வி	குறியீட்டு அளவுகோல்	குறியீடு விருப்பங்கள்
	கேள்விகள் 1 - 18 சமூக-மக்கள்தொகை பண்புகள்		
1	பங்கேற்பாளர் அடையாள எண்		
2	ஊராட்சி ஒன்றியம் பெயர்	அகஸ்தீஸ்வரம்	1
		தோவாளை	2
		ராஜாக்கமங்கலம்	3
		குருந்தன்கோடு	4
		தக்கலை	5
		திருவட்டாறு	6
		கிள்ளியூர்	7
		முன்சிறை	8
		மேல்புரம்	9
3	கிராம பஞ்சாயத்து பெயர்		
4	வார்டு எண்		
5	பங்கேற்பாளர் பெயர்		
6	முகவரி /இடம்		
7	உங்களின் வயது என்ன ? (1-1-2024 அன்றைய நாளின் கணக்கின் படி தங்களின் நிறைவடைந்த வயதை கூறவும்)		
8	நீங்கள் உங்களை எந்த பாலினமாக அடையாளபடுத்திகொள்வீரகள்?	ஆண்	1
		பெண்	2
		திருநங்கை	3
		குறிப்பிடப்படவில்லை	4
9	உங்களின் தற்போதைய திருமண நிலை என்ன?	திருமணமானவர்	1
		திருமணம் ஆகாதவர்	2
		விதவை	3
		விவாகரத்தானவர்	4
		மற்றவை ☐ (குறிப்பிடவும்)	5

10	நீங்கள் அடைந்த மிக உயர்ந்த கல்வி நிலை என்ன? (வகுப்பு அல்லது பட்டம் பெற்றது)	எழுத்தறிவு இல்லாதவர்	1
		ஆரம்பக் கல்வி (1-5 வகுப்பு)	2
		நடுநிலைப் பள்ளிக் கல்வி (6வது - 8வது வகுப்பு)	3
		இடைநிலைக் கல்வி (9வது -10வது வகுப்பு)	4
		உயர்நிலைக் கல்வி (11 மற்றும் 12 ஆம் வகுப்பு)	5
		பட்டதாரி	6
		முதுகலைப் பட்டதாரி	7
		மற்றவை (குறிப்பிடவும்)	8
11	நீங்கள் எத்தனை வருட கல்வியை முடித்திருக்கிறீர்கள்? (நீங்கள் வெற்றிகரமாக முடித்த கல்வியின் மிக உயர்ந்த நிலை வரை)		
12	நீங்கள் தற்போது வேலையில் இருக்கிறீர்களா?	ஆம்	1
		இல்லை	2
(கேள்வி 12 க்கு பதில் 2 எனில் கேள்வி எண் 13 ஐ தவிர்த்துவிட்டு கேள்வி எண் 14 க்கு செல்லவும்)			
13	உங்களின் தற்போதைய தொழில் என்ன ?	சுயதொழில்	1
		வழக்கமான சம்பளம்/கூலி ஊழியர்	2
		கிராமப்புறங்களில் சாதாரண கூலித் தொழிலாளர் (பொதுப் பணிகளில் ஈடுபடுபவர்)	3
		கிராமப்புறங்களில் சாதாரண கூலி தொழிலாளர் (மற்ற வேலைகளில் ஈடுபடுபவர்)	4

		நகர்ப்புறங்களில் சாதாரண கூலித் தொழிலாளர் (பொதுப் பணிகளில் ஈடுபடுபவர்)	5
		நகர்ப்புறங்களில் சாதாரண கூலி வேலை (மற்ற வேலைகளில் ஈடுபடுபவர்)	6
		ஊதியம் பெறாத குடும்பப் பணியாளர்	7
		இல்லத்தரசி	8
		ஓய்வு பெற்றவர்/ ஓய்வூதியம் பெறுபவர்	9
		மற்றவை ☐ (குறிப்பிடவும்)	10
14	இந்தக் குடும்பத்தில் வாரத்தில் குறைந்தது 5 நாட்கள் தங்கியிருப்பவர்களில் எத்தனை உறுப்பினர்கள் இங்கே வசிக்கிறார்கள்? (தற்காலிக வருகையாளர்களையோ அல்லது வேலை செய்பவர்களையோ, காலையில் வருபவர்களையும் மாலையில் செல்வோரையும் சேர்க்க வேண்டாம்)		
15	கேள்வி 14 இல் பட்டியலிடப்பட்டுள்ள உறுப்பினர்களில் எத்தனை பேர் ஊதியம் அல்லது சம்பளம் பெறுகிறார்கள்?		
16	இந்த வீட்டில் வசிக்கும் உறுப்பினர்களில் எத்தனை பேர் நீரிழிவு நோயாளிகள் என கண்டறியப்பட்டுள்ளனர்? (எண் பொருந்துகிறதா என்பதைப் ஸ்கிரீனிங் கருவிக்கு எதிராகச்		

	சரிபார்க்கவும். முரண்படின் தெளிவுபடுத்தி கொள்ளவும்)		
17	இங்கு வசிக்கும் உறுப்பினர்களைக் கருத்தில் கொண்டு குடும்பத்தின் மொத்த மாத வருமானம் என்ன (கேள்வி 14 இல் குறிப்பிடப்பட்டுள்ளது)		
18	ரேஷன் கார்டு என்ன வகை	AAY	1
		BBL	2
		ABL	3
	வீட்டில் குறைந்தபட்சம் 5 நாட்களுக்கு மேல் தங்கியிருப்பவரில் ஒன்றிற்கு மேற்பட்டவர் நீரிழிவு நோயாளியாக இருப்பின் , சரியான நபரை குலுக்கல் சீட்டு முறையில் தேர்ந்தேடுக்கபட்டு, கேள்வி எண் 19 ல் இருந்து பின்வரும் கேள்விகள் தொடர்ந்து அவரிடம் கேட்கப்படும்		
	கேள்விகள் 19-35: நோய் மற்றும் சிகிச்சையின் வரலாறு		
19	உங்களுக்கு நீரிழிவு நோய் இருப்பதாக எப்போது கண்டறியப்பட்டது"?	மாதம்_____ ஆண்டு _____	
20	உங்களுக்கு நீரிழிவு நோய் இருப்பது கண்டறியப்பட்டபோது நீங்கள் தேர்ந்தெடுத்த முதல் சிகிச்சை என்ன?	அலோபதி	1
		மாற்று மருத்துவம்	2
		இரண்டும்	3
		முதலில் எந்த சிகிச்சையையும் தொடங்கவில்லை	4
		மற்றவை (குறிப்பிடவும்)	5
	கேள்வி 20 க்கு பதில் 2 அல்லது இரண்டும் -3 எனில் கேள்வி எண் 21 க்கு செல்லவும் இல்லையெனில் கேள்வி எண் 21 ஐ தவிர்த்து கேள்வி எண் 22 க்கு செல்லவும்		
21	நீங்கள் உங்கள் நீரிழிவு சிகிச்சையை மாற்று மருத்துவ சிகிச்சையுடன் தொடங்கினால், உங்கள் முதல் சிகிச்சையாக எந்த மாற்றுமருத்துவ சிகிச்சையைப் பயன்படுத்தினீர்கள்?	ஆயுர்வேதம்	1
		ஹோமியோபதி	2
		யுனானி	3
		சித்தா	4
		யோகா மற்றும் இயற்கை மருத்துவம்	5
		அக்குபஞ்சர்	6
		மூலிகை மருந்துகள்	7
		ரெய்கி	8
		வர்மம் சிகிச்சை	9
		நம்பிக்கை குணப்படுத்துதல்	10

		மற்றவை ☐ (குறிப்பிடவும்)	11
22	நீரிழிவு சிகிச்சைக்காக உங்கள் மருத்துவர்/மருத்துவமனையிக்கு கடைசியாக எப்போது சென்றீர்கள்?	ஒரு மாதத்திற்குள்	1
		1-6 மாதங்களுக்குள்	2
		6 மாதங்கள் முதல் 1 வருடம் வரை	3
		1 வருடத்திற்கு மேல்	4
		சொல்ல இயலாது	5
23	சர்க்கரை நோய்க்கு சமீபத்தில் எங்கு சிகிச்சை எடுத்தீர்கள்?	அரசு மருத்துவமனை (இ. எஸ்.ஐ , கூட்டறவு மருத்துவமனை உட்பட)	1
		தனியார் மருத்துவமனை	2
		இரண்டும்	3
		மற்றவை (குறிப்பிடவும்)	4
24	மேற்படி மருத்துவமனையை ஏன் பயன்படுத்தினீர்கள்? (பல பதில்கள் சாத்தியம்)	அணுக எளிதானது	1
		சிறந்த சிகிச்சை	2
		சிறந்த வசதிகள்	3
		குறைந்த செலவு	4
		மற்றவை ☐ (குறிப்பிடவும்)	5
25	நீங்கள் எந்த மருத்துவ முறையை முக்கியமாகப் பயன்படுத்துகிறீர்கள்?	அலோபதி	1
		மாற்று மருத்துவம்	2
		இரண்டும்	3
26	அந்த மருத்துவ முறையைப் பயன்படுத்துவதற்கான உங்கள் காரணங்கள் என்ன? (பல பதில்கள் சாத்தியம்)	எளிதாக கிடைக்கும்	1
		குறைந்த செலவு	2
		பக்க விளைவுகள் அற்றது	3
		மற்ற சிகிச்சைகள் பலன் அளிக்கவில்லை	4
		வழக்கமான சிகிச்சையானது மிகவும் நச்சுத்தன்மை வாய்ந்தது அல்லது ஆபத்தானது	5
		பயன்படுத்த தொதானது	6
27	நீரிழிவு நோய்க்கான முறையான சிகிச்சையை எப்போது ஆரம்பித்தீர்கள்?	மாதம் _____ ஆண்டு _____	
28		ஆம்	1

	நீங்கள் எப்போதாவது உங்கள் இரத்த சர்க்கரை அளவை பரிசோதித்திருக்கிறீர்களா?	இல்லை	2
29	உங்கள் இரத்த சர்க்கரை அளவை கடைசியாக எப்போது பரிசோதித்தீர்கள்?	கடந்த இரண்டு வாரங்களுக்குள்	1
		1 மாதம்	2
		1-6 மாதங்களுக்குள்	3
		6 மாதங்கள் முதல் 1 வருடம் வரை	4
		ஒரு வருடத்திற்கு முன்பு	5
		சொல்ல முடியவில்லை/நினைவில் இல்லை	6
30	நீங்கள் கடைசியாகப் பரிசோதித்தபோது உங்கள் இரத்தச் சர்க்கரை அளவு என்ன?		
31	இரத்த குளுக்கோஸ் அளவு எப்போது அளவிடப்பட்டது?	Fasting	1
		Random	2
		உணவுக்குப் பின்	3
32	கடந்த 3 மாதங்களில் நீங்கள் எப்போதாவது HbA1c ஐ சோதித்திருக்கிறீர்களா?	ஆம்	1
		இல்லை	2
	கேள்வி எண் 32 க்கு பதில் விருப்பம்-2 எனில், கேள்வி எண் 33,34 ஐ தவிர்த்துவிட்டு 35 க்கு செல்லவும்.		
33	நீங்கள் பரிசோதித்தபோது உங்களின் HbA1c மதிப்பு என்ன?		
34	HbA1c மதிப்பு இருக்கும் அறிக்கைகளைப் பார்த்து சரிபார்க்கப்பட்டது	ஆம்	1
		இல்லை	2
35	உங்களுக்கு தற்போது பின்வரும் நோய் நிலைகள் ஏதேனும் உள்ளதா?		

Sl.NO	நோயின் பெயர்	நோய் தற்போது	நோய் இல்லை	சிகிச்சை ஆம்/இல்லை	சிகிச்சை வகை	மாற்று மருத்துவ சிகிச்சை ஆம்/இல்லை
1	இதயம் அல்லது					

	இரத்தநாள நோய்கள்						
2	உயர்ந்த கொலஸ்ட்ரால்						
3	உயர் இரத்த அழுத்தம்						
4	நரம்பியல் பிரச்சனை						
5	நீரிழிவு கால் புண்						
6	சிறுநீரக கோளாறுகள்						
7	பார்வை குறைபாடு						
8	பாலியல் செயல்பாடு பாதிப்பு						
9	கல்லீரல் நோய்						
10	மற்றவைகள் (குறிப்பிடவும்)						

(கேள்வி எண் 25க்கான பதில் 2 எனில், கேள்வி எண்ணை 36 முதல் 42 வரை தவிர்த்துவிட்டு, கேள்வி எண் 43க்கு செல்லவும்)

கேள்விகள் 36-42 நீரிழிவு மருந்துகளின் வரலாறு மற்றும் அவற்றின் டோஸ், நேரம் மற்றும் ஒழுங்குமுறை ஆகியவற்றின் அடிப்படையில்

36	உங்கள் இரத்த சர்க்கரை அளவைக் கட்டுப்படுத்த நீங்கள் எடுத்துக் கொள்ளும் அலோபதி மருந்துகள் யாவை?	இரத்தச் சர்க்கரைக் குறைக்கும் மாத்திரைகள்	1
		இன்சுலின் ஊசி	2
		இன்சுலின் பம்புகள்	3
		வைட்டமின் சப்ளிமெண்ட்ஸ்	4
		மற்றவை (குறிப்பிடவும்)	5

(கேள்வி எண் 36க்கான பதில் விருப்பம் 1,2 எனில், கேள்வி எண் 37 க்கு செல்லவும் இல்லையெனில் கேள்வி எண் 41 க்கு செல்லவும்)

37	உங்கள் சொந்த உள்ளுணர்வின்	ஆம்	1
		சில சமயம்	2

	அடிப்படையில் (உங்கள் மருத்துவரின் ஆலோசனையின்றி) கடந்த 6 மாதங்களில் பரிந்துரைக்கப்பட்ட மருந்துகளின் அளவை நீங்கள் எப்போதாவது மாற்றியுள்ளீர்களா?	எனது உள்ளுணர்வின்படி எப்போதும் அளவை மாற்றுவேன்	3
		இல்லை	4
	(கேள்வி எண் 37க்கான பதில் விருப்பம் 4 எனில், கேள்வி எண் 38ஐத் தவிர்த்துவிட்டு, கேள்வி எண் 39க்கு செல்லவும்)		
38	கடந்த 6 மாதங்களில் பரிந்துரைக்கப்பட்ட மருந்துகளின் அளவை மாற்றியதற்கான காரணம் என்ன?	மறதி	1
		மோசமான பொருளாதார நிலை	2
		என் உணவு முறையில் ஏற்பட்ட மாற்றத்தால்	3
		பக்க விளைவுகள் பற்றிய பயம்	4
		மாற்று முறை மருத்துவரால் அறிவுறுத்தப்பட்டது	5
		இது மாற்று மருந்தை பாதிப்பதாக உணர்ந்தேன்	6
		இது மாற்று மருந்தை பாதிப்பதாக என் நண்பர்களால் கூறப்பட்டது	7
		மற்றவை (குறிப்பிடவும்)	8
39	கடந்த 6 மாதங்களில் பரிந்துரைக்கப்பட்டபடி எத்தனை முறை சர்க்கரை நோய்க்கான மருந்தை சரியான நேரத்தில் எடுத்துள்ளீர்கள்?	எப்போதும் உரிய நேரத்தில் எடுத்துகொள்வேன்	1
		சிலநேரங்களில் உரிய நேரத்தில் எடுப்பதில்லை	2
		எப்பொழுதுமே உரிய நேரத்தில் எடுப்பதில்லை	3
	(கேள்வி எண் 39க்கான பதில் 1 எனில், கேள்வி எண் 40ஐத் தவிர்த்துவிட்டு, கேள்வி எண் 41க்கு செல்லவும்)		
40	கடந்த 6 மாதங்களில் பரிந்துரைக்கப்பட்ட மருந்துகளின் நேரத்தை	மறதி	1
		மோசமான பொருளாதார நிலை	2

	நீங்கள் மாற்றியதற்கான காரணம் என்ன?	என் உணவு முறையில் ஏற்பட்ட மாற்றத்தால்	3
		பக்க விளைவுகள் பற்றிய பயம்	4
		மாற்று முறை மருத்துவரால் அறிவுறுத்தப்பட்டது	5
		இது மாற்று மருந்தை பாதிப்பதாக உணர்ந்தேன்	6
		இது மாற்று மருந்தை பாதிப்பதாக என் நண்பர்களால் கூறப்பட்டது	7
		மற்றவை (குறிப்பிடவும்)	8
41	கடந்த 6 மாதங்களில் நீங்கள் உங்கள் நீரிழிவிற்கான மருந்துகளை 1 வாரம் முதல் 1 மாதம் வரையான குறுகிய கால அளவில் எடுப்பதை தவிர்த்ததுண்டா ? ஆம் எனில் கடந்த 6 மாத காலத்தில் எப்பொழுதெல்லாம் மருந்துகளை தவிர்த்துள்ளீர்கள் ?	நான் என் மருந்தைத் தவிர்க்கவில்லை	1
		சில நேரங்களில் நான் என் மருந்துகளைத் தவிர்க்கிறேன்	2
		நான் எப்பொழுதும் சிறிது நேரம் மருந்தைத் தவிர்ப்பேன்	3
		மற்றவை (குறிப்பிடவும்)	4
கேள்வி எண் 41க்கான பதில் 1 இல்லை எனில் கேள்வி எண் 42 ஐ தவிர்த்துவிட்டு கேள்வி எண் 43 க்கு செல்லவும்.			
42	கடந்த 6 மாதங்களில் 1 வாரம் முதல் 1 மாதம் வரையிலான குறுகிய காலத்திற்கு பரிந்துரைக்கப்பட்ட மருந்துகளை நீங்கள் தவிர்த்தமைகான காரணம் என்ன?	மறதி	1
		மோசமான பொருளாதார நிலை	2
		என் உணவு முறையில் ஏற்பட்ட மாற்றத்தால்	3
		பக்க விளைவுகள் பற்றிய பயம்	4
		மாற்று முறை மருத்துவரால் அறிவுறுத்தப்பட்டது	5

		இது மாற்று மருந்தை பாதிப்பதாக உணர்ந்தேன்	6
		இது மாற்று மருந்தை பாதிப்பதாக என் நண்பர்களால் கூறப்பட்டது	7
		மற்றவை (குறிப்பிடவும்)	8
	கேள்வி 43-49 **நீரிழிவு மேலாண்மைக்கான மருந்தல்லாத பிற வழிமுறைகள்**		
43	உங்கள் நீரிழிவு நோயைக் கட்டுப்படுத்த தவறாமல் உடற்பயிற்சி செய்கிறீர்களா? (உடற்பயிற்சி, யோகா, நடைபயிற்சி அல்லது பிற செயல்பாடுகள் போன்றவை)	ஆம்	1
		இல்லை	2
	கேள்வி 43 க்கு பதில் விருப்பம் 2 எனில் கேள்வி எண் 44 -46 ஐ தவிர்த்துவிட்டு கேள்வி எண் 47 க்கு செல்லவும்		
44	ஆம் எனில் நீங்கள் எந்த வகையான உடற்பயிற்சியை அடிக்கடி செய்கிறீர்கள்?	யோகா	1
		நடைபயிற்சி	2
		ஓடுதல்	3
		ஜிம்மில் உடற்பயிற்சி	4
		மற்றவைகள்	5
	கேள்வி எண் 44 இல் தேர்ந்தெடுக்கப்பட்ட ஒவ்வொரு விருப்பத்திற்கும் கேள்வி எண் 45 மற்றும் 46 ஆகியவை மீண்டும் மீண்டும் செய்யப்படுகின்றன		
45	ஒரு வாரத்தில் நீங்கள் எவ்வளவு நாட்கள் இந்த நடவடிக்கைகளில் ஈடுபடுவீர்கள்?	தினசரி	1
		வாரத்தில் 1-3 நாட்கள்	2
		வாரத்தில் 3-6 நாட்கள்	3
46	ஒரு நாளில் எத்தனை நிமிடங்கள் இந்தச் செயலைச் செய்கிறீர்கள்?		
47	சர்க்கரை நோயைக் கட்டுப்படுத்த ஏதேனும் குறிப்பிட்ட உணவு முறையைப் பின்பற்றுகிறீர்களா?	ஆம்	1
		இல்லை	2
48	உங்கள் நீரிழிவு சிகிச்சைக்கு மாற்று மருத்துவ	ஆம்	1
		இல்லை	2

	சிகிச்சையைப் பயன்படுத்துகிறீர்களா?		
	(கேள்வி எண் 48க்கான பதில் 2 எனில், கேள்வி எண் 49ஐத் தவிர்த்துவிட்டு கேள்வி எண் 50க்கு செல்லவும்)		
49	நீங்கள் நீரிழிவு சிகிச்சைக்கு மாற்று மருத்துவ சிகிச்சையைப் ப் பயன்படுத்தினால், கடந்த 6 மாதங்களில் பின்வருவனவற்றில் எதைத் தொடர்ந்து பயன்படுத்துகிறீர்கள்?	ஆயுர்வேதம்	1
		ஹோமியோபதி	2
		யுனானி	3
		சித்தா	4
		யோகா மற்றும் இயற்கை மருத்துவம்	5
		அக்குபஞ்சர்	6
		மூலிகை மருந்துகள்	7
		ரெய்கி	8
		வர்மம் சிகிச்சை	9
		நம்பிக்கை குணப்படுத்துதல்	10
		மற்றவை ☐ (குறிப்பிடவும்)	11
	கேள்விகள் 50-54 **மருத்துவ பன்முகதன்மை நடைமுறையுடன் தொடர்புடைய காரணிகள்: அலோபதி சிகிச்சை**		
50	நீரிழிவு நோய்க்கான அலோபதி சிகிச்சைக்காக கடந்த மாதத்தில் எவ்வளவு செலவு செய்தீர்கள்? (மருந்துகள், சிகிச்சை மற்றும் பரிசோதனைக்கான ஆலோசனைகள் உட்பட)		
51	அலோபதி சிகிச்சைக்கான பணத்தை எதன் மூலம் அல்லது யாரிடம் இருந்து பெற்றீர்கள்?	சொந்த சம்பளம்	1
		என்னுடன் வசிக்கும் குடும்ப உறுப்பினர்கள்	2
		குடும்ப உறுப்பினர்கள், ஆனால் தற்போது என்னுடன் வசிக்கவில்லை	3
		ஓய்வூதியம் அல்லது அரசாங்க உதவி	4
		மற்றவை (குறிப்பிடவும்)	5
52	அலோபதி சிகிச்சை எடுக்கும் முடிவை எப்படி எடுத்தீர்கள்?	சுய முடிவு	1
		குடும்ப உறுப்பினரால்	2

		பரிந்துரைக்கப்பட்டது	
		நண்பர்களால் பரிந்துரைக்கப்பட்டது	3
		சுகாதார பணியாளர் (செவிலியர்)	4
		மற்றவை (குறிப்பிடவும்)	5
53	கடந்த மாதத்தில் அலோபதி மருந்தை எங்கிருந்து பெற்றீர்கள்?	அரசு மருத்துவமனை	1
		தனியார் மருத்துவமனை	2
		வீட்டில் சுகாதார பணியாளர் மூலம் வழங்கப்பட்டது	3
		அருகிலுள்ள மருந்தகம்	4
54	உங்கள் நண்பர்கள்/உறவினர்கள்/ அண்டை வீட்டாரில் யாராவது மருத்துவத் துறையில் (அலோபதி) பணிபுரிகிறார்களா?	ஆம்	1
		இல்லை	2
	கேள்வி 55-61 **மருத்துவ பன்முகதன்மை நடைமுறையுடன் தொடர்புடைய காரணிகள்: CAM சிகிச்சை**		
55	மாற்று மருத்துவத்தில் உங்கள் நீரிழிவு சிகிச்சைக்காக கடந்த மாதத்தில் எவ்வளவு செலவு செய்தீர்கள்?		
56	மாற்று மருத்துவத்தில் நீரிழிவு சிகிச்சைக்கான பணத்தை எதன் மூலம் அல்லது யாரிடமிருந்து பெறுகிறீர் ?	சொந்த சம்பளம்	1
		என்னுடன் வசிக்கும் குடும்ப உறுப்பினர்கள்	2
		குடும்ப உறுப்பினர்கள், ஆனால் தற்போது என்னுடன் வசிக்கவில்லை	3
		ஓய்வூதியம் அல்லது அரசாங்க உதவி	4
		மற்றவை ☐ (குறிப்பிடவும்)	5
57		சுய முடிவு	1

	உங்கள் நீரிழிவு சிகிச்சைக்கு மாற்று மருத்துவ சிகிச்சையை எடுக்க எப்படி முடிவு செய்தீர்கள்?	குடும்ப உறுப்பினர்	2
		நண்பர்கள்	3
		சுகாதார பணியாளர் (செவிலியர்)	4
58	உங்கள் நண்பர்கள்/உறவினர்கள்/அண்டை வீட்டுக்காரர்கள் யாரேனும் மாற்றுமருத்துவ துறையை சார்ந்தவரா?	ஆம்	1
		இல்லை	2
59	கடந்த மாதத்தில் உங்கள் நீரிழிவு சிகிச்சைக்கான மாற்று மருத்துவ சிகிச்சை மருந்தை எங்கிருந்து பெற்றீர்கள்?	நானே மருந்தை தயார் செய்தேன்	1
		நண்பர்கள்	2
		உறவினர்கள்	3
		மாற்று மருத்துவ பயிற்சியாளர்	4
		சந்தை - முறையான கடை	5
		மற்றவை ☐ (குறிப்பிடவும்)	6
60	எனது எல்லா கேள்விகளுக்கும் விடை அளித்தமைக்கு நன்றி எனக்கு ஏதேனும் தெளிவுபடுத்த வேண்டி இருப்பின் நான் தங்களை மீண்டும் தொடர்பு கொள்ளலாமா ?	ஆம்	1
		இல்லை	2
	கேள்வி எண் 60 யின் விடை ஆம்-1 எனில் கேள்வி எண் 61 க்கு செல்லவும் இல்லையேல் நிறைவுற்றது		
61	நீங்கள் பயன்படுத்தும் அல்லது உங்களை தொடர்புகொள்ள உகந்த தொடர்பு எண்ணை கூறமுடியுமா ?	தொடர்பு எண்ணை பதிவிடவும் ☐	

ANNEXURE XI

Achutha Menon Centre for Health Science Studies (AMCHSS)Sree Chitra Tirunal Institute for Medical Sciences & Technology (SCTIMST) Trivandrum -11

Mixed-Methods Study of Medical Pluralistic Practices among Self -reported Diabetes patients and reasons for these practices in rural Kanyakumari district, Tamilnadu

In-depth Interview Guidelines for Key Informants

STUDY TOPIC:

Hello, I am Nagarajan C S. I am a final year student doing my post-graduation in Master of Public Health (MPH) at Achutha Menon Centre for Health Science Studies in Sree Chitra Tirunal Institute for Medical Sciences and Technology, Thiruvananthapuram. As part of my thesis titled "Mixed-Methods Study of Medical Pluralistic Practices among Self -reported Diabetes Patients and reasons for these Practices in rural Kanyakumari district, Tamilnadu "

I am here to study how people with diabetes mellitus use various treatment options in the rural Kanyakumari district and how using various medical pluralistic practices changes the way they take their prescribed allopathic diabetic medication.

We'll get started immediately with your consent to participate in this study. The interview will last between 30 and 40 minutes. Is it okay for me to continue the interview?

A. **. Warming up**:

1. You said that you had diabetes mellitus. How did you get diagnosed as having diabetes?

2. For treatment and control of your diabetes, What are all the various methods you are using now? It can be anything like medicines, exercise, cycling, diet, prayers, etc

B. For self-reported diabetic people following Allopathic care:

3. What are all the medicines prescribed by your physician for your diabetes?

4. Usually how many days in a month do you take all the medicines as prescribed by the physician (without failure)?

5. You have been diagnosed as having Diabetes and you are taking treatment for it. Sometimes you manage to take your medicines as prescribed, but sometimes you do not. Can you tell me, when you are not able to take it as prescribed and what are the reasons for your variation in taking the prescribed drugs?

6.Why is it that sometimes you are able to take it as prescribed and sometimes you are not? How does this happen?

7. What happens when you do not take the medication as prescribed?

8. How have your sugar levels changed since you started these allopathic medications? How have they helped?

9. Have you had to change the doctors for your diabetic treatment? If So Why did you change?
10. Some people take other medications along with DM allopathic treatment like CAM treatments while others do not. Can you tell me why you have not used CAM?

11. Who helps you to manage your DM and how do they help you?

12. When would you have considered CAM options (for those not using it)?
13. What are the Various other methods that you are using now to manage your diabetes? How do they help?

C. Regarding Medical pluralistic practice:(Self-reported diabetic patients who are taking Allopathic treatment together with CAM or any other Medical Pluralistic practice)

14. Are there any other treatments that you currently take for your diabetes mellitus? What are they? Could you please explain?

15. Have you had to change the doctors for your diabetic treatment? If so Why did you change?
16. When did you start these treatments and who helped you to start these?
17. Have you taken any other treatment for your diabetes treatment? When did you start this other treatment? What are the additional benefits you got with this therapy?
18. How did you identify this treatment or method as the other option for Diabetes? Who helped you to find this and how do you get the medications prescribed by this other doctor?
19. Some people take other medications along with DM allopathic treatment like CAM treatments while others do not. Can you tell me why you have started CAM/?
20. Who helped you to get these (CAM) treatments and how did they help you?
21. How have your sugar levels changed since you started these medications/ other CAM medications? Have they helped? If so, how?
22. Which of these two options do you think helps you to manage your diabetes? Why?
23. Between the two treatment options, which do you tend to miss taking? Why is it that you miss taking ……..medications more frequently?
24. For example, sometimes, when people find that treatments do not suit them, they also consult religious or faith-based healers for support to resolve the health problem. Because of the problems with Diabetes you have been talking about has anyone advised you to consider such options? Have you considered them and gone to such healers?
25. How did it help you in the management of Diabetes mellitus?

ANNEXURE XII

அச்சுத மேனன் சுகாதார அறிவியல் ஆய்வு மையம், ஸ்ரீ சித்ரா திருநாள் மருத்துவ அறிவியல் மற்றும் தொழில்நுட்ப நிறுவனம், திருவனந்தபுரம்

தமிழ்நாட்டின் கன்னியாகுமரி மாவட்டத்தில் நீரிழிவு நோயாளிகள் மத்தியில் நிலவும் மருத்துவ பன்முக தன்மை நடைமுறைகள் மற்றும் அதற்கான காரணங்கள் -கலப்புமுறை ஆய்வு

<u>முக்கிய தகவல் தருபவர்களுக்கான நேர்காணல் கையேடு</u>

வணக்கம், நான் நாகராஜன் சி எஸ். நான் திருவனந்தபுரத்தில் உள்ள ஸ்ரீ சித்ரா திருநாள் மருத்துவ அறிவியல் மற்றும் தொழில்நுட்ப நிறுவனத்தில் உள்ள அச்சுத மேனன் மருத்துவ அறிவியல் ஆய்வு மையத்தில் முதுகலை பொது சுகாதாரத்தில் (எம்பிஎச்) முதுகலைப் படிப்பின் இறுதியாண்டில் படித்து வருகிறேன். எனது இறுதியாண்டு ஆய்வின் ஒரு பகுதியாக "நீரிழிவு நோயாளிகள் மத்தியில் நீரிழிவு நோயை நிர்வகிப்பதற்கான மருத்துவ பன்முகதன்மை நடைமுறைகள் மற்றும் தமிழ்நாட்டின் கிராமப்புற கன்னியாகுமரி மாவட்டத்தில் இத்தகைய நடைமுறைகளுக்கான காரணங்கள்" என்ற தலைப்பில் ஆய்வு செய்ய வந்துள்ளேன்

கன்னியாகுமரி மாவட்டத்தின் கிராமப்புறங்களில் சர்க்கரை நோய் உள்ளவர்கள் எப்படி பல்வேறு சிகிச்சை முறைகளைப் பயன்படுத்துகிறார்கள் என்பதையும், பல்வேறு பன்முக சிகிச்சை நடைமுறைகளைப் பயன்படுத்தி அவர்களுக்கு பரிந்துரைக்கப்பட்ட அலோபதி நீரிழிவு மருந்துகளை எப்படியான மாறுதல்களுக்கு உட்படுத்துகிறார்கள் என்பதையும் ஆய்வு செய்ய நான் இங்கு வந்துள்ளேன்.

இந்த ஆய்வில் பங்கேற்க தங்களின் சம்மதம் உண்டெனில் உடனடியாகத் தொடங்குவோம். இந்த நேர்காணல் 30 முதல் 40 நிமிடங்கள் வரை நீடிக்கும். நான் நேர்காணலை தொடங்கலாமா?

A. உரையாடல் தொடக்கம் :

1.உங்களுக்கு சர்க்கரை நோய் இருப்பதாகச் சொன்னீர்கள். உங்களுக்கு சர்க்கரை நோய் இருப்பது எப்படி கண்டறியப்பட்டது?

2.உங்கள் நீரிழிவு நோய்க்கான சிகிச்சை மற்றும் கட்டுப்பாட்டிற்கு, நீங்கள் இப்போது பயன்படுத்தும் பல்வேறு முறைகள் யாவை? அது மருந்துகள், உடற்பயிற்சி, சைக்கிள் ஓட்டுதல், உணவுமுறை, பிரார்த்தனை போன்ற எதுவாகவும் இருக்கலாம்

B. அலோபதி சிகிச்சையைப் பின்பற்றும் நீரிழிவு நோயாளிகளுக்கு:

3. உங்கள் மருத்துவர் உங்களுக்கு சர்க்கரை நோய்க்காக பரிந்துரைக்கும் மருந்துகள் என்னென்ன?

4. வழக்கமாக ஒரு மாதத்தில் எத்தனை நாட்கள் மருத்துவரால் பரிந்துரைக்கப்பட்ட அனைத்து மருந்துகளையும் (தவறுதல் இன்றி) எடுத்துக்கொள்வீர்கள்?

5. உங்களுக்கு சர்க்கரை நோய் இருப்பது கண்டறியப்பட்டு, அதற்கான சிகிச்சை எடுத்து வருகிறீர்கள். சில நேரங்களில் உங்களுக்கு பரிந்துரைக்கப்பட்டபடி மருந்துகளை முறையாக எடுத்துக்கொள்கிறீர்கள், ஆனால் சில நேரங்களில் நீங்கள் முறையாக மருந்துகளை எடுக்கமுடியவில்லை.

பரிந்துரைக்கப்பட்ட மருந்துகளை எப்பொழுது உங்களால் எடுக்க முடிவதில்லை மற்றும் பரிந்துரைக்கப்பட்ட மருந்துகளை உட்கொள்வதில் நீங்கள் மாறுபாடுவதற்கான காரணங்கள் என்னென்ன என்று சொல்ல முடியுமா?

6. சில சமயங்களில் நீங்கள் பரிந்துரைத்தபடி மருந்துகளை எடுத்துக்கொள்ளகூடும் மற்றும் சில சமயங்களில் நீங்கள் எடுக்கமுடிவதில்லை ஏன்? இது ஏன் நடக்கிறது?

7.பரிந்துரைக்கப்பட்ட மருந்துகளை நீங்கள் எடுக்காவிட்டால் உங்களுக்கு என்னென்ன நிகழும்?

8 நீங்கள் இந்த அலோபதி மருந்துகளை எடுத்துகொள்ள ஆரம்பித்ததில் இருந்து உங்கள் சர்க்கரை அளவு எப்படி மாறியுள்ளது? இந்த மருந்துகள் உங்களுக்கு எப்படி உதவியது?

9. உங்கள் நீரிழிவு சிகிச்சைக்காக மருத்துவர்களை மாற்றியுள்ளீர்களா? அப்படியானால் நீங்கள் ஏன் மாற்றினீர்கள்?

10. சிலர் மாற்றுமருத்துவ சிகிச்சைகள் போன்றவற்றை அலோபதி சிகிச்சையுடன் எடுத்துக்கொள்கிறார்கள், சிலர் அப்படி எடுத்துகொள்வதில்லை. நீங்கள் ஏன் மாற்று மருத்துவத்தைப் பயன்படுத்தவில்லை என்று சொல்ல முடியுமா?

11. உங்கள் நிரிழிவு நோயை நிர்வகிக்க யாரெல்லாம் உங்களுக்கு உதவுகிறார்கள் மற்றும் அவர்கள் உங்களுக்கு எப்படி உதவுகிறார்கள்?

12.நீங்கள் மாற்று மருத்துவ சிகிச்சை எடுப்பதை பற்றி எப்போது யோசிப்பீர்கள் ? (மாற்று மருத்துவ சிகிச்சை பயன்படுத்தாதவரிடம் கேட்கவேண்டியது)

13. உங்கள் நீரிழிவு நோயைக் கட்டுப்படுத்த இப்போது நீங்கள் பயன்படுத்தும் பல்வேறு முறைகள் யாவை? அவை உங்களுக்கு எப்படி உதவுகிறது?

C. **மருத்துவ பன்முக தன்மை நடைமுறையைப் பற்றி:** (மாற்று மருத்துவம் அல்லது வேறு ஏதேனும் மருத்துவ பன்முக தன்மை நடைமுறையுடன் சேர்ந்து அலோபதி சிகிச்சை எடுத்துக் கொள்ளும் நீரிழிவு நோயாளிகள்)

14 உங்கள் நீரிழிவு நோய்க்கு நீங்கள் தற்போது எடுத்துக் கொள்ளும் வேறு ஏதேனும் சிகிச்சைகள் உள்ளதா? அவை என்னென்ன? அதை பற்றி கொஞ்சம் விளக்கமுடியுமா?

15 உங்கள் நீரிழிவு சிகிச்சைக்காக மருத்துவர்களை மாற்றியுள்ளீர்களா? அப்படியானால் நீங்கள் ஏன் மாற்றினீர்கள்?

16.இந்த சிகிச்சைகளை நீங்கள் எப்போது ஆரம்பித்தீர்கள், இதைத் தொடங்க உங்களுக்கு யார் உதவினார்கள்?

17.உங்கள் நீரிழிவு சிகிச்சைக்கு வேறு ஏதேனும் சிகிச்சை எடுத்துக் கொண்டீர்களா? இந்த மற்ற சிகிச்சையை எப்போது ஆரம்பித்தீர்கள்? இந்த சிகிச்சை மூலம் நீங்கள் பெற்ற கூடுதல் பலன்கள் என்னென்ன?

18.இந்த சிகிச்சை அல்லது முறையை நீரிழிவு நோய்க்கான சிகிச்சையாக நீங்கள் எவ்வாறு கண்டறிந்தீர்கள்? இதை கண்டுபிடிக்க உங்களுக்கு யார் உதவினார்கள் மற்றும் இந்த மற்ற மருத்துவர் பரிந்துரைத்த மருந்துகளை நீங்கள் எப்படி பெறுவீர்கள்?

19 சிலர் மாற்றுமருத்துவ சிகிச்சைகள் போன்றவற்றை நீரிழிவிற்கான அலோபதி சிகிச்சையுடன் மற்ற மருந்துகளையும் எடுத்துக்கொள்கிறார்கள், சிலர் அப்படி எடுத்துக் கொள்வதில்லை . நீங்கள் ஏன் மாற்று சிகிச்சை முறைகளை ஆரம்பித்தீர்கள் என்று சொல்ல முடியுமா?

20 இந்த மாற்று சிகிச்சை முறைகளை எடுத்துகொள்ள உங்களுக்கு யார் உதவினார்கள் மற்றும் அவர்கள் உங்களுக்கு எப்படி உதவினார்கள்?

21.இந்த மாற்று சிகிச்சைமுறைகள்/மருந்துகளை நீங்கள் ஆரம்பித்ததில் இருந்து உங்கள் இரத்த சர்க்கரை அளவு எப்படி மாறியுள்ளது? அது உங்களுக்கு உதவி செய்ததா? எப்படி உதவியது?

22. இந்த இரண்டு சிகிச்சைமுறைகளில் எது உங்கள் நீரிழிவு நோயைக் கட்டுப்படுத்த உதவும் என்று நீங்கள் நினைக்கிறீர்கள்? ஏன்?

23 இரண்டு சிகிச்சை முறைகளில், நீங்கள் எதை எடுத்துக்கொள்வதை தவறவிடுகிறீர்கள்? அப்படி அந்த மருந்துகளை எடுத்துக்கொள்வதை ஏன் தவறவிடுகிறீர்கள்?

24.உதாரணமாக, சில நேரங்களில், சிகிச்சைகள் தங்களுக்குப் பொருந்தாது என்று மக்கள் கண்டறிந்தால், உடல்நலப் பிரச்சனையைத் தீர்ப்பதற்காக சாமியார்கள் அல்லது நம்பிக்கை அடிப்படையிலான குணப்படுத்துபவர்களையும் அவர்கள் அணுகுகிறார்கள். நீங்கள் பேசிக்கொண்டிருக்கும் சர்க்கரை நோயினால் ஏற்படும் பிரச்சனைகள் காரணமாக, அத்தகைய நபர்களிடம் பரிசீலிக்க யாராவது உங்களுக்கு அறிவுறுத்தினார்களா? நீங்கள் அவற்றைக் கருத்தில் கொண்டு அத்தகைய குணப்படுத்துபவர்களிடம் சென்றிருக்கிறீர்களா?

25. நீரிழிவு நோயை நிர்வகிப்பதில் அது உங்களுக்கு எவ்வாறு உதவியது

ANNEXURE XIII

Cluster listing sheet

Cluster ID/Name of village/panchayat: Ward number:

Sl no	HH address	No of persons living in the household	Any diabetic Yes /no	If yes Total number of persons with diabetes in the house	No of people with diabetes who is staying in the house for atleast 5 days in a week (Eligible)	If eligible willing to participate in the study Yes/no

ANNEXURE -XIV

List of Themes with Axial codes and Primary codes from the qualitative study

Sl No	Theme	Axial Codes	Primary codes
1	Understanding or Perception of Diabetes	Perceived reasons for diabetes mellitus	Tension is the Cause of diabetes
			Happy mind and Proper food helps in reduction of Sugar level
			Altered Food is the reason for diabetes said by doctor
		Perceived symptoms indicative of High sugar levels	Symptomatic Understanding of High Sugar level
			Perceived illness (diabetes) only when become sick
			Perceived Symptoms at initial diagnosis of diabetes
		Recognising and managing low sugar levels	Symptomatic understanding of Low sugar level
			Management of Perceived low sugar levels with sugar or sweet
			Avoid taking tablets and CAM options when perceived sugar level is low
2	Reasons for Self-regulation of Modern Medicine Consumption as Prescribed	Reasons for Self-regulation of Modern Medicine Consumption as Prescribed	Altering the Modern medication while attending Marriage functions or fests
			Forgetfulness as a Reason for Skipping the tablet
			Feeling Healthy is the reason for skipping the tablet

			Altering the modern medicines and Physician advice
			Taking too many tablets (polypharmacy) is the reason for skipping the medicine
			Tiredness and lying on bed as the reason for Skipping the tablet
			Household chores as the reason for skipping the tablet
			Lack of support and skipping the tablet
			Change in food is the reason for altering the tablet
			Skipping sugar tablet when having fever
			Not Controlling the sugar level is the reason for altering the modern medicine
			Altering the drug as per their wish and emotions
			Low sugar perception is the reason for altering the tablet
			Alcoholism affecting the Drug intake
			Job circumstances is the reason for skipping the tablet
			Non availability of tablet as the reason for skipping
			Taking Half tablet as per Friends(PhD) Suggestion
			High Cost as a determinant of Skipping the tablet
			CAM therapy affecting Modern medicine intake

3	Using CAM Therapy due to ease of availability or Non use due to nonavailability.	Sources of CAM Medication	CAM use due to Familial Traditional Knowledge
			Preparation of CAM Medicine by wife
			Self Preparation of CAM Medicine
			Growing herbs in the garden for CAM therapy
			Vaidhyasala or Country raw drug store is the Source of CAM medicine
			Asking Relatives to get the CAM medicine
			Kottar Ayurveda Hospital is the source of CAM medicine
			Friends as the source of CAM medicine
			Neighbours as the Source of CAM medicine
			Collecting herbs for CAM therapy
			Buying CAM products from Grocery shop
			Availability of CAM options at home
		Reason for Non-use of any medication (CAM or Modern medication)	Perceived sugar level is not very high
			Avoid taking tablets or CAM options when perceived sugar level is low
		Source of Information about CAM	CAM Knowledge as Family tradition
			MGNREGA work is the Source of CAM Medicine information
			Other People with diabetes is the source of CAM Medicine information
			Relative is the source of CAM Medicine information

			Traditional knowledge is the source of CAM Medicine information
			Neighbours as the source of CAM medicine Information
			Social media is the Source of CAM therapy information
			Friends as the Source of CAM information
			Traditional Healer or CAM Practitioner is the Source of CAM medicine information
		Reasons for Not Preferring CAM	Non availability of Good Professional CAM Practitioner nearby is the reason for not taking CAM
			My circumstance not favour CAM intake
			Not seeking care from faith healers
			Not approaching Vaithyar or CAM practitioner for CAM treatment
4	Reasons for use of modern medicine or avoiding CAM	Not using CAM due to fear of side effects ambiguity over effectiveness, cost and distance of travel involved in seeking Care	High cost of CAM medicine
			Shaky tooth due to CAM intake is the reason for stopping CAM therapy
			Negative perception on CAM
			Ambiguity over working nature of CAM medication
			Perceived side effects of CAM
			CAM therapy didn't suits me so I stopped it
			Distance of the hospital (too far) is the reason for stopping CAM therapy

		Reason for use of Modern medicine-Ease of use due to being at home	Availability at home facilitates regular intake of tablet
		Reason for Choice of Modern medicine For diabetic treatment -Effectiveness	Better perception on modern medicine treatment
			Reduction of sugar level with modern medicine
			Therapy for diabetic wound
			Decision to take Modern medicine
			Preference to Single doctor and Single therapy – Modern medicine
			Management of perceived High sugar levels using Modern medicine
			Stopped CAM therapy because started following Allopathy medicine
		Rare Skipping of modern medicines(Occasional)	Rare Skipping of Modern medicines (Occasional)
		Reason for Choice of modern medicine -Fear of adverse consequences	Taking the modern medicine precautionary while going out
			Regular intake of Tablets When perceive High sugar or perceive symptoms
			Perceived symptoms when not taking tablets
			Tackling the risky behaviour in diet by taking Modern medicine regularly
			Fear of skipping the Modern medications
		Reason for Shifting from private hospital-Cost	High cost is the reason for shifting the hospital
			Familiarity of the doctor is the reason for seeking care at the hospital

			Distance is the reason for shifting the hospital
			Not reducing the sugar level is the reason for shifting the hospital
		Use of Government hospitals for modern medicine treatment	Low cost is the reason for Seeking treatment at Government hospital
			Good treatment is the reason for seeking care at Government hospital
			Makkalai thedi maruthuvam Health service at home
			Better Perception on kerala Govt tablet when compared to tamilnadu government tablet
			High cost associated with private care
		Source of Information about CAM	CAM Knowledge as Family tradition
			MGNREGA work is the Source of CAM Medicine information
			Other People with diabetes is the source of CAM Medicine information
			Relative is the source of CAM Medicine information
			Traditional knowledge is the source of CAM Medicine information
			Neighbours as the source of CAM medicine Information
			Social media is the Source of CAM therapy information
			Friends as the Source of CAM information
			Traditional Healer or CAM Practitioner is the Source of CAM medicine information

		Preferring to Choose either CAM or Modern medicine due to fear of interaction	Stopping the modern medicine while taking CAM
			Fear of interaction of CAM and modern medicine
			Fear of side effects of CAM
			CAM therapy affecting modern medicine intake
			Avoid taking tablets and CAM options when perceived sugar level is low
			Stopped CAM therapy because my sugar level is below normal
		Use of Private Hospital due to Perceived quality	High Cost associated with Private Hospital care
			Negative perception about Government hospital treatment
			Government tablet didn't control the sugar level
			Busy hospital not getting tablets is the reason for shifting to other hospital
			Multimorbidity is the reason for seeking care at private hospital
			Emergency care and user friendliness of Private hospital care
			Good treatment is the reason for seeking care at private hospital
			Seeking Specialist's care for diabetes treatment
5	CAM as Self-Regulation to manage Sugar levels	Use of Alternative means of Self management of diabetes mellitus	Initial Suggestion of Doctor about various therapeutic options
			Initial preference to food control as a therapeutic option

			Hesitate to consult a doctor managing DM using own strategies
			Combination of Therapies in management of Diabetes
			Walking and exercise for diabetes management
			Prayers as a therapeutic option
			Food control for diabetic management
			Persons who help to manage diabetes
		Frustration over Persisting increased Sugar levels	Frustration about not curing
			Frustration over not Controlling the diabetes
		Frequent skipping of intake of modern medicine	Frequent skipping of intake of modern medicines
		Everyday Consumption of Some form of CAM	Every day Consumption of Some form of CAM
		Occasional Consumption of Some form of CAM.	Occasional Consumption of some form of CAM
6	Reasons for preference to CAM Medication	Reasons for Preferring CAM therapies (Availability and low cost)	Free at-home favours CAM intake
			Approaching vaidhyar or CAM practitioner for CAM treatment
			CAM therapy is not costly
			Going to marriage function or fests with peers having sugar favours CAM intake
			Job circumstances (Self employed women at home) favouring CAM intake
			Bibilical verse is the facilitator of CAM intake

			Doctor's advice to take vegetable favours CAM intake
			Taking Care at Integrative Hospital Favours CAM
			Taking CAM therapy for Co-morbidity
			Traditional healer or CAM practitioner is the Source of CAM medicine information
			Growing herbs in the garden
			Collecting herbs for CAM Therapy
		Reasons for Preferring CAM - Safety	Better Perception and Perceived Safety on CAM therapy
			Herbs and Concoctions used for Diabetic management
			CAM don't have side effects
		Reasons for Preferring CAM - Modern medicine requires lifetime adherence and may not be effective	Negative Perception on Modern medicine
			Modern medicine won't help me to control the sugar level
			In Modern medicine life long adherence is needed so prefer CAM
		Reasons for Preferring CAM - Modern medicine does not produce Symptomatic relief	Modern medicine didn't give symptomatic relief
			Reduction of Sugar level with CAM therapy
			Taking CAM to reduce the risk of Carbohydrate diet
			Taking CAM is the Own decision
		Reason for Preferring CAM - Fear of Side effects of Modern medicine	Fear of side effects of modern medicine
			Consequences of non suitable modern medicine
			Fear of side effects of modern medicine

			Taking CAM to reduce Side effects of modern medicine
			CAM therapy don't have side effects
		Reason for preferring CAM As effective as Modern medicine	Same Control with CAM and allopathy so prefer to use CAM
			Avoid taking tablets and CAM options when Perceived sugar level is low
			Better Perception on taking CAM and Modern medicine together
		Reason for Preferring CAM - CAM is effective	Managing Perceived High sugar with CAM
			Taking CAM for general well being
			Reduction of Sugar level with CAM therapy
			CAM Therapy for Symptomatic Management
			Taking CAM when Perceived Symptoms
		Preferring to choose either CAM or Modern medicine due to fear of interaction	Stopping the modern medicine while taking CAM
			Fear of interaction of CAM and modern medicine
			Fear of side effects of CAM
			CAM therapy affecting modern medicine intake
			Avoid taking tablets and CAM options when perceived sugar level is low
			Stopped CAM therapy because my sugar level is below normal

ANNEXURE XV

श्री चित्रा तिरुनाल आयुर्विज्ञान और प्रौद्योगिकी संस्थान, त्रिवेन्द्रम
तिरुवनन्तपुरम - ६९५०११, केरल, इंडिया
SREE CHITRA TIRUNAL INSTITUTE FOR MEDICAL SCIENCES AND TECHNOLOGY, TRIVANDRUM
Thiruvananthapuram - 695 011, Kerala, India
(An Institute of National Importance under Govt. of India)
Grams : Chitramet, Phone : +91-471-2443152, Fax : +91-471-2550728 / 2446433, E-mail : sct@sctimst.ac.in, Website : www.sctimst.ac.in

Institutional Ethics Committee

CDSCO Registration No: ECR/189/Inst/KL/2013/RR-21
DHR Registration No:EC/NEW/INST/2022/2775

SCT/IEC/2161/DECEMBER/2023 11.01.2024

Dr. C.S. Nagarajan
MPH Student, AMCHSS
SCTIMST, Thiruvananathapuram

Dear Dr. Nagarajan,

The Institutional Ethics Committee held on 30th December, 2023, reviewed and discussed your application to conduct the study titled "**MIXED-METHODS STUDY OF MEDICAL PLURALISTIC PRACTICES AMONG SELF - REPORTED DIABETES PATIENTS AND REASONS FOR THESE PRACTICES IN RURAL KANYAKUMARI DISTRICT, TAMILNADU (IEC /2161)**".

Principal Investigator	Dr. C.S. Nagarajan, MPH Student, AMCHSS, SCTIMST
Co-Principal Investigator(s)	Dr Mala Ramanathan, Professor Senior grade, AMCHSS, SCTIMST
Duration of the study	4 months

The following members of the Ethics Committee were present at the meeting held on 30th December, 2023

SL. No.	Member Name	Highest Degree	Gender	Scientific /Non Scientific	Affiliation with Institution(s)
1.	Smt. Sathi Nair	MA (English Literature)	Female	Lay Person	No
2.	Dr. Kala Kesavan P	MBBS,MD	Female	Basic Medical Scientist	No
3.	Adv. Priya Kaimal	LLM, MBL	Female	Legal Expert	No
4.	Dr. P. Manickam	BSMS, MSc (Epid).,PhD	Male	Health Science Expert/ Social Scientist	No
5.	Dr. Christina George	MD Psychiatry	Female	Clinician	No
6.	Dr. Narayanan Namboodiri. K K	MBBS,MD,DM	Male	Clinician	Yes
7.	Dr. Biju Soman	MBBS,MD, DPH, MSc, DLSHTM	Male	Basic Medical Scientist	Yes

The following documents were reviewed:

Original submission

1. *Checklist Form*
2. *Covering letter addressed to the Chairman, IEC, SCTIMST dated 30.11.2023*
3. *Responses /amendments made based on the Reviewer's comments*
4. *IEC Application Form*
5. *Research Proposal*
6. *Declaration Form*
7. *Participant Information Sheet Quantitative study in English and Tamil*
8. *Participant Information Sheet Qualitative study in English and Tamil*
9. *Consent Form Quantitative study in English and Tamil*
10. *Consent Form Qualitative study in English and Tamil*
11. *Quantitative study -Interview schedule in English and Tamil*
12. *In-depth Interview Guidelines for Key Informants in English and Tamil*
13. *CV of Principal Investigator and Co-PI*
14. *SRC Recommendation Letter*

Revised submission

1. *Checklist Form*
2. *Covering letter addressed to the Chairman, IEC, SCTIMST dated 10.01.2024*
3. *Responses /amendments made based on the Reviewer's comments*
4. *Copy of IEC Recommendation letter dated 09.01.2024*
5. *Responses /amendments made based on the Reviewer's comments*
6. *IEC Application Form*
7. *Research Proposal*
8. *Declaration Form*
9. *Participant Information Sheet Quantitative study in English and Tamil*
10. *Participant Information Sheet Qualitative study in English and Tamil*
11. *Consent Form Quantitative study in English and Tamil*
12. *Consent Form Qualitative study in English and Tamil*
13. *Quantitative study -Interview schedule in English and Tamil*
14. *In-depth Interview Guidelines for Key Informants in English and Tamil*
15. *Cluster listing sheet*
16. *CV of Principal Investigator and Co-PI*

IEC Decision
The IEC approved the conduct of the study in the present form.

Remarks:
The Institutional Ethics Committee expects to be informed about the progress of the study, any SAE occurring in the course of the study, any changes in the protocol and patient information/informed consent and asks to be provided a copy of the final report.

There was no member of the study team / Guide who participated in voting / decision making process. The ethics committee is organized and operated according to the requirements of Good Clinical Practice and the requirements of the Indian Council of Medical Research (ICMR).

Sincerely,

Dr. G. Srinivas
Member Secretary, IEC

MEMBER SECRETARY
INSTITUTIONAL ETHICS COMMITTEE (IEC)
SCTIMST, THIRUVANANTHAPURAM

SREE CHITRA TIRUNAL INSTITUTE FOR MEDICAL SCIENCES & TECHNOLOGY
INSTITUTIONAL ETHICS COMMITTEE (IEC)
SCTIMST
THIRUVANANTHAPURAM

Annexure XVI -Orginality report

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Submission Information

Author Name	Nagarajan
Title	Thesis merged V2
Paper/Submission ID	1709272
Submitted by	mala@sctimst.ac.in
Submission Date	2024-04-28 14:57:02
Total Pages	74
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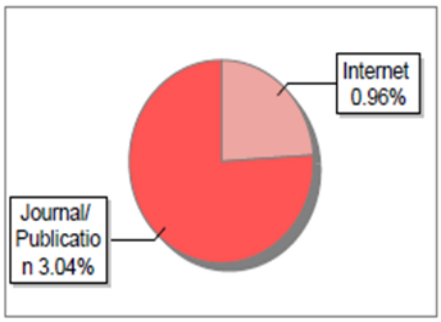

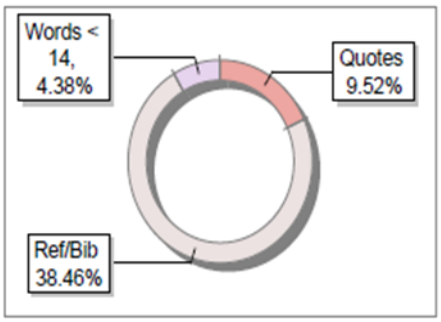

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1	repository.unn.edu.ng	1	Publication
2	bmccomplementmedtherapies.biomedcentral.com	<1	Publication
3	etd.aau.edu.et	<1	Publication
4	ro.uow.edu.au	<1	Publication
5	ayushdhara.in	<1	Internet Data
6	Thesis Submitted to Shodhganga, shodhganga.inflibnet.ac.in	<1	Publication
7	www.ncbi.nlm.nih.gov	<1	Internet Data
10	www.ijcmph.com	<1	Internet Data
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12	www.ncbi.nlm.nih.gov	<1	Internet Data
13	www.psychology.org.nz	<1	Publication
14	scholar.uoc.ac.in	<1	Publication
15	Does positive affect change in old age Results from a 22-year longitudinal stud by Gana-2015	<1	Publication
17	erepository.uonbi.ac.ke	<1	Publication