
**EXPOLRING SELF-RELIANCE IN PRIMARY HEALTHCARE AMONG
FAMILIES AND COMMUNITIES USING TRADITIONAL MEDICINE IN
KARNATAKA AND KERALA**

**A THESIS TO BE SUBMITTED TO
THE UNIVERSITY OF TRANS-DISCIPLINARY HEALTH SCIENCES
AND TECHNOLOGY**



**FOR THE AWARD OF THE DEGREE OF
DOCTOR OF PHILOSOPHY**

BY

SHIVANAND B SAVATAGI

UNDER THE GUIDANCE OF

DR. PRASHANTH N S

THE DIRECTOR

INSTITUTE OF PUBLIC HEALTH BENGALURU &

VISITING FACULTY

**THE UNIVERSITY OF TRANSDISCIPLINARY HEALTH SCIENCES AND
TECHNOLOGY, BENGALURU**

NAME OF THE CO-GUIDE AND ADDRESS

DR. UNNIKIRISHNAN PAYYAPPALLIMANA

PROFESSOR AND HEAD OF THE DEPARTMENT

CENTRE FOR COMMUNITY HEALTH, CLINICAL RESEARCH AND

EDUCATION

**THE UNIVERSITY OF TRANSDISCIPLINARY HEALTH SCIENCES AND
THECHNOLOGY, BENGALURU**

**THE UNIVERSITY OF TRANS-DISCIPLINARY HEALTH SCIENCES AND
TECHNOLOGY**

**Private University Established in Karnataka by ACT 35 of 2013
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DECLARATION BY THE CANDIDATE

I declare that this thesis entitled **“EXPOLRING SELF-RELIANCE IN PRIMARY HEALTHCARE AMONG FAMILIES AND COMMUNITIES USING TRADITIONAL MEDICINE IN KARNATAKA AND KERALA”**. submitted for the award of Doctor of Philosophy to THE UNIVERSITY OF TRANS-DISCIPLINARY HEALTH SCIENCES AND TECHNOLOGY, Bengaluru, is my original work, conducted under the supervision of my guide Dr Prashanth N S and co-guide Dr Unnikrishnan Payyappallimana. I also wish to inform that no part of the research has been submitted for a degree or examination at any university. References, help and material obtained from other sources have been duly acknowledged.

I hereby confirm the originality of the work and that there is no plagiarism in any part of the dissertation.

Place: Bengaluru

Candidate

Date: 04-03-2024

Signature of the

Name of candidate: Shivanand B Savatagi

Reg. No.: 20518010222

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CERTIFICATE

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Research Supervisor: Dr Prashanth N S

The Director

Institute of Public Health Bengaluru

Visiting Faculty

The University of Trans-disciplinary Health Sciences and Technology

Bengaluru

Date: 04-03-2024

Signature

**THE UNIVERSITY OF TRANS-DISCIPLINARY HEALTH SCIENCES AND
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Co-Supervisor: Dr Unnikrishnan Payyappallimana

Professor and Head
Centre for Community Health, Clinical Research and Education
The University of Trans-disciplinary Health Sciences and Technology
Bengaluru

Date: 04-03-2024

Signature

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List of Acronyms

ASHA – Accredited Social Health Activist

AWW – Anganwadi Worker

AYUSH – Ayurveda, Yoga, Unani, Siddha, and Homeopathy

CAM – Complementary and Alternative Medicine

CHH – Community Herbal Healthcare

CHO – Community Health Officer

CMPPC – Communes Medicinal Plant Conservation Centre

FRLHT – Foundation for Revitalization of Local Health Traditions

FGD – Focus Group Discussion

FMD – Foot and Mouth Disease

HD Kote – Heggadadevan Kote

HH – Household

IPH – Institute of Public Health

IDI – In-depth Interviews

LMIC – Low- and Middle-Income Countries

NGO – Non-governmental Organization

NHP – National Health Policy

PHC – Primary Healthcare

RBSK – Rashtriya Bala Swasthya Karyakram

SAP – Structural Adjustment Policies

SCT – Social Cognitive Theory

SDT – Self Determination Theory

SEAR – South East Asia Region

SSRN – Social Science Research Network

SVYM – Swami Vivekananda Youth Movement

TBP – Theory of Planned Behavior

TDU – The University of Transdisciplinary Health Sciences and Technology

THI – Tribal Health Initiative

TM – Traditional Medicine

TRA – Theory of Reasoned Action

UHC – Universal Health Coverage

VRP – Village Resource Person

WHO – World Health Organization

ABSTRACT

Title: Exploring Self-reliance in Primary Healthcare among Families and Communities Using Traditional Medicine in Karnataka and Kerala

Background

The Alma-Ata Declaration 1978 emphasizes primary healthcare that is accessible, affordable and cost-effective for the community. An emphasis on primary healthcare is essential to achieve Universal Health Coverage (UHC) and sustainable development goals pertaining to health in Low and Middle-Income Countries (LMIC) especially in resource (financially) poor settings. Self-reliance with its philosophy of empowering people and communities aims to create an ecosystem where people and communities share the responsibility of achieving healthcare while being dependent on the institutional healthcare. In LMICs like India, intergenerational knowledge of traditional medicine among families and communities is a vital source of self-care practice that enables self-reliance in primary healthcare. Development of a self-reliance framework providing interrelation of different factors in the emergence of self-reliance is vital for designing health interventions that contributes to self-reliance in primary healthcare.

Methodology

We conducted case study research in two Southern states of India between September 2021 to November 2022 to explore self-reliance for primary healthcare among families and communities (rural, semi-urban, and tribal) using TM, and co-develop a self-reliance framework to assess its application in community health interventions. Two case studies in HD Kote, Karnataka, and Aluva, Kerala were conducted. We collected data through 30 in-depth interviews and three focus group discussions in HD Kote, and 22 in-depth interviews in Aluva, Kerala. Participatory research was conducted to attain contextual diversity and application of self-reliance framework. The study obtained ethical clearance from ethics committee for human research, The University of Transdisciplinary Health Sciences and Technology, Bengaluru.

Results and Discussion

The meaning of self-reliance was navigated within the understanding of health and illness by the study participants. Study identified different healthcare approaches adopted at household and community level to address their illnesses. The self-reliance framework explains interaction of

various factors in the emergence of self-reliance. The factors at environmental, household, and individual level were identified. The autonomy, competency, decision making ability in association with values, and cultural practices emerged as core components of self-reliance.

Capturing context specific lived experiences of the people help policymakers to understand the gaps concerning scientific perspective and experiential knowledge. Self-reliance needs to be contextualized in an intersectoral and integrated space within the health system. The evidence generation should address the complexity of the healthcare choice embedded among the people and communities. Self-reliance if enabled among people and communities, could be a significant contributor to build people centric, just and equitable health system.

Chapter 1: Introduction

Summary

The chapter starts with describing the historical journey of concepts of self-care, and self-reliance in relation to primary healthcare and traditional medicine (TM). Following this, the chapter then goes on to explain the importance of self-reliance in the context of integrative healthcare approaches. Later, the chapter highlights the gaps and limitations in comprehending and applying the self-reliance concept in the context of primary healthcare and the health system. In the later section, specific focus is given on TM and its relevance to self-reliance and how the TM interventions provide an opportunity to understand factors contributing to its emergence. Subsequently, the chapter explains the relevance of using the case study and participatory research methods to derive the self-reliance understanding through a framework. The chapter concludes with the explanation of theoretical framework (self-determination theory) and its relevance in the case study research to understand the self-reliance concept.

1.1. The concept of self-care and self-reliance

The World Health Organization (WHO) defined self-care as “the ability of individuals, families, and communities to promote and maintain health, prevent disease, and to cope with illness and disability with or without the support of a healthcare provider (1).” The scope of self-care broadly covers all the facets of care, including the promotive, preventive, and curative aspects. Self-care ranges from a set of activities to a set of capacities (2). Many high-income countries have established policies and practices around self-care (3). These countries have demonstrated the role of self-care in reducing catastrophic healthcare expenditure, enhancing people's competencies, and thereby giving relief to healthcare providers (4). For instance, the UK and the USA have established self-care health policies. Studies on self-care in Brazil showed that for every one dollar investment in self-care, there is a reduction of at least six dollars in health expenditure (4,5). Over a period of time, developments are also seen in upper- and low-middle-income countries concerning institutionalizing self-care that emphasizes standardization and authentication of self-care practice for disease management (5). In addition to this, policies related to self-care are emerging to enable an environment for practicing self-care. For example, the self-care index report in 2021 showed that Thailand acquired the first rank in self-care health policy, surpassing other developed countries (5). Of the 11 WHO South-East Asia Region (SEAR) countries, 10 reported national health policies on Traditional Medicine (TM) for self-care (6). Despite these initial developments, self-care implementation is in its infancy in the low-middle-income countries (LMICs) compared to the advances in the high-income countries (7). The health system with a lack of human resources, weak financing, and a limited capacity to handle health related crisis, there is an urgent need in the LMICs to build the capacities of the people in self-care and its implementation (7). The COVID-19 pandemic reiterated the need to empower people to practice self-care and to reduce the burden on the health system (8,9). The universal health coverage and sustainable development goals concerning health can only be achieved through a strong emphasis on self-care and empowering individuals, families, and communities (4,7,10).

The capacity and ability of an individual to make informed health decisions and use available health resources are crucial components for the effective prevention and management of a health condition. Autonomy and personal agency are important factors determining health outcomes

(2). A substantial proportion of the mortality from the leading causes of death (e.g., cardiovascular diseases and cancer) is driven through specific behaviour patterns. The morbidity and mortality pattern from such diseases is preventable and modifiable through changing lifestyles, and dietary habits, and increasing the health literacy of individuals (11). Such practices in health literature are called by different terminologies that include self-care, self-reliance, self-efficacy, and self-management. Although these terms have slight differences,¹ they are interconnected. Their common focus remains on enhancing the use of local resources and the individual's responsibility towards one's health (13). The interchangeable use of different terms (self-care, self-efficacy, self-management, and self-reliance) in health literature reflects a lack of clarity and confusion around integrating self-care, self-reliance, self-efficacy, and self-management. Self-reliance is a broader concept and incorporates all other terms (12). Self-reliance is the most commonly used term in the global policy documents in the context of primary healthcare and TM.

1.2. Self-reliance and primary healthcare

The Alma Ata Declaration of 1978 emphasizes on accessibility, availability, and cost-effective primary healthcare for the people (14). Inequities in these (accessibility, availability, and affordability) continue to be significant challenges in giving people quality care in recent days (15). Primary healthcare addresses the health problems in the community by incorporating promotive, preventive, curative, and rehabilitative services accordingly. To make primary healthcare universally accessible in the community, there is a need for maximum community and individual self-reliance which helps in making informed health decisions and using local resources to achieve an optimum level of health (16). The 1970s and 80s were a period of public interest in health, with self-reliance as a significant theme of discussion in health debates (17). The Alma Ata Declaration introduced self-reliance and emphasized its importance at the local, national, and international levels (18). However, there was no clarity on what it means and how it should be enabled at different levels. The National Health Policy (NHP) 1983 in India also

¹ Self-care, self-efficacy, and self-management are all related in the process of achieving self-reliance. Savatagi et al differentiate these terms as – self-care is an attitudinal component where an individual trusts his/her ability towards action, self-efficacy is the confidence through which an action is carried out and self-management is the ability to manage unanticipated consequences in the process of an action. Self-reliance is a state of mind an individual reaches after acquiring self-management skills where one trusts and believes in their skills. Thus, self-reliance encompasses all other terms in it (12).

briefly mentions self-reliance as the need to achieve primary healthcare without much elaboration (19). Although both documents brought the connection of self-reliance with local resources, health literacy, community empowerment, individual responsibility, active interest of people, self-determination, and social awareness at the broader level, they lacked the conceptual and practical clarity on how self-reliance could be enabled.

Following this, the 1990s witnessed an avalanche of self-reliance projects in response to the impact created by structural adjustment program policies (a set of reforms that a country must adhere to secure a loan from the International Monetary Fund and the World Bank) to meet the demands and expectations of the health services of the people (20). The Structural adjustment programs (SAPs) emphasized privatization that necessitated the purchase of healthcare from the private health sector, resulting in increased cost expenditure (21). SAP also led to many indirect effects on health, mainly malnutrition due to the increased cost of food grains. SAP created inequalities and inequities in purchasing power of individuals that affected the poor and marginalized people (21,22). Thus, due to rapidly changing needs, the health system was ineffective in meeting society's demands, needs, and expectations related to healthcare (23). The changing scenarios in health from an economic perspective (increased healthcare expenditure), the medicalization perspective (overemphasis on biomedical approach), the socio-cultural perspective (influence of socio-cultural determinants on health) (23), and the epidemiological shift from communicable diseases to chronic diseases are increasingly demanding centering the health system from disease to the individual (24,25). Hence, there has been a need for new thinking to address the challenges of the health system.

Self-reliance projects that emerged during the 1990s provided new thinking and direction towards empowering people and communities, especially the vulnerable population. Empowerment of people and the community became the core value of self-reliance projects and that attracted the attention of policymakers and implementers as a new strategy to strengthen the health system. During the post-neoliberal period (a period that emphasizes a decentralized approach to implementing welfare activities and enhances state intervention in the economy) (26), the self-reliance strategy continues to remain as an effort towards achieving primary healthcare, especially in settings where resources and health services are limited (27).

1.3. Integrative healthcare approaches and self-reliance

According to the WHO, health is influenced by physical, mental, social, and spiritual factors (28). Health results from harmonious and balanced interaction with living beings and the environment (29). The medicalization perspective overlooks the interrelation between the environment and other beings while defining health; resulting in a narrowed approach to addressing health problems (30,31). The understanding of balance within the biological system (microcosm) and the balance between the biological system with the external ecosystem (macrocosm) is missing in the linear understanding of modern health and healthcare (30,32). In contrast, the ancient systems of medicine like Ayurveda, which originated in the Asian countries, provide a multidimensional understanding of health in its '*Svasthya*' philosophy. The '*Svasthya*' philosophy explains health as a balanced interaction and interrelation between living beings and the surrounding environment (33). The '*Svasthya*' understanding of health relates to the principles of self-reliance of using local resources, enhancing self-agency, and autonomy (34). Emerging concepts like One Health, Planetary Health, and Eco Health call for initiatives and policies that emphasize an individual's responsibility towards her/his health in connection with animal health, environmental health, and the ecosystem in which an individual lives (35).

Due to the influence of multiple factors on health, there is a need to adopt integrative approaches, i.e., healthcare approaches that aim for coordinated care among different healthcare providers and institutions by bringing conventional (bio-medical) and alternative approaches (TM) together to care for the whole person (36). Integrative approaches also consider human, animal, and environmental components that influence the health of an individual (37). For the individual to understand these different deliberations of health, self-reliance plays a crucial role in facilitating informed health decisions while adopting integrative healthcare approaches.

TM is defined as "the sum total of the knowledge, skill, and practices based on the theories, beliefs, and experiences indigenous to different cultures, whether explicable or not, used in the maintenance of health as well as in the prevention, diagnosis, improvement or treatment of physical and mental illness" (38). TM practitioners treat an illness from a holistic perspective. Hence TM adopts integrative approach in its practice. With this, in this research, we considered TM interventions for investigating the phenomenon of self-reliance.

1.4. Traditional medicine and self-reliance

TM in India has a long history. It is embedded within the culture of every community. More than 70% of the people in India treat common ailments using TM (15). It is estimated that there are approximately 400 million traditional health practitioners worldwide, often providing access to health care in remote and rural areas (39). TM includes both codified and non-codified systems (40). In India, the codified system has acquired legitimacy, and formal recognition of the practice (e.g., Ayurveda, Yoga, Unani, Siddha, and Homeopathy (AYUSH)). The non-codified or folk medicine includes bone setters, birth attendants, local healers, and home remedies used by mothers or elders in the family who address common illnesses (41). In folk medicine, knowledge including that which is gained from household medicinal plants, food recipes, customs and rituals, is transmitted orally through generations and embedded in the lifestyles of many rural communities in India (42). It represents generations of empirically-grounded knowledge validated through shared experiences through the ages (43). Intergenerational knowledge of TM among families is an essential source of primary healthcare (44). Thus, TM comprises health practices with a significant degree of self-treatment (45). The family, the first and foremost custodian of health, acts as a primary healthcare unit with beliefs and procedures rooted in its culture (23). It is estimated that 65–85% of healthcare for common ailments is provided by the individual or the family without professional intervention using traditional, non-allopathic, or allopathic intervention (23). Thus, TM is one of the predominant sources of self-care that enables the self-reliance of individuals in treating common ailments that contributes to primary healthcare.

TM interventions introduced in a few countries through non-profit organizations used the concept of self-reliance in their health interventions. For instance, Community Herbal Healthcare (CHH) in Bangladesh (46), the family medicine box project by the Nippon Foundation in Mongolia (47), traditional knowledge and conservation of local bio-diversity by the Globinmed organization in Malaysia (48), the herbal garden project by Foundation for Revitalization of Local Health Traditions (FRLHT), an NGO now named as The University of Trans-disciplinary Health Sciences and Technology (TDU) in India (49), the Tribal Health Initiative (THI) organization in Sittlingi, India (50), the local knowledge legitimation efforts from an NGO Rural Communes Medicinal Plant Conservation Centre (CMPCC) in Pune, India are a few examples.

These interventions aim to promote the use of medicinal plants, herbs, and local resources to ensure the responsibility of individuals towards health and thereby make them and their families self-reliant in primary healthcare. However, there is a little explanation of self-reliance in these interventions and less clarity on the different factors involved in the emergence of self-reliance. Considering the fragmented understanding of self-reliance, the lack of clarity in relation to other relevant terms, and the need to delineate different factors while conceptualizing self-reliance, this research intended to develop a self-reliance framework. The framework provides an opportunity to look into different factors and their interrelation in the emergence of self-reliance; help in developing self-reliance interventions at different levels; and provide what appears to be a productive direction to incorporate the self-reliance concept in achieving primary healthcare. Hence, the research questions and objectives of the study were:

1.5. Research questions

1. How could using TM at the household and community level contribute to self-reliance in primary health care?
2. How could we co-develop a self-reliance framework for community health interventions utilizing TM?

1.6. Objective

1. To explore self-reliance among households (families) and communities using TM
2. To co-develop a self-reliance framework and assess its application in community health intervention utilizing TM.

1.7. Approach to Research

In the beginning, a scoping review was conducted to understand the concept self-reliance from the existing literature. The review intended to capture the current gaps in conceptualizing self-reliance. The scoping review came out with a conceptual framework of self-reliance that provided an understanding of the role of different factors in the emergence of self-reliance (the details of scoping review is provided in the chapter 2). The framework helped in developing topic guides to conduct qualitative research.

For the first objective, a case study method is used to generate an in-depth and multifaceted understanding of a complex phenomenon in a real-life context (51); case study method offers an opportunity to learn from experiences and influence the practice of theories (51). Self-reliance is embedded in the experiences of individuals; therefore, the case study method was adopted to investigate the phenomenon of self-reliance.

As part of the second objective of this research, we tested the self-reliance framework in a non-research study site (a study site other than where the case study was conducted) using the participatory research method to understand the application of self-reliance framework. Participatory research methods aim to bridge the gap between research and practice, considering social and environmental factors, and aims to provide a self-reliance framework that can be implemented at the ground level (52). The following steps (Figure 4) were followed to develop a self-reliance framework in this research:

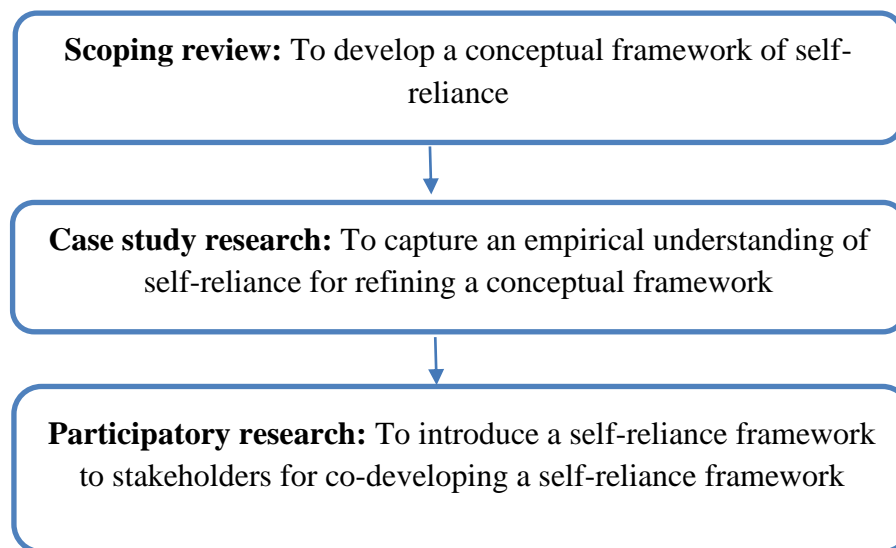


Figure 1: Steps followed for developing self-reliance framework

1.8. Theoretical framework

The behavioural change theories (e.g., health belief model, transtheoretical model) that focus on an individual level undermine the influence of complex interaction between the individual health behaviour and the social context (53,54). The interpersonal theories (e.g., social cognitive theory) assume that changes in the environment lead to a change in the person, which is not

always the case (55). Hence, it is imperative to understand both individual and social components to determine an individual's health behaviour (56).

The biomedical theory assumes a patient or individual is a passive recipient of the doctor's instructions (57). The non-adherence is assessed by patient's characteristics. Hence, the other factors ignored are the behaviour of a patient. For instance, the theory ignores the influence of a patient's perception (58) and psychosocial impact on health and illness (59). The Behavioural Learning Theory (BLT) focuses on providing an enabling environment for the change of behaviour (58). With BLT lacking an individualized approach, it does not address the challenges of the patient's past behaviour and the lack of acceptance of environmental interventions (59). The health belief models (HBM), Social-Cognitive Theory (SCT), the Theories of Reasoned Action (TRA), and the theory of planned behaviour (TBP) consider cognitive variables to change the behaviour of an individual while ignoring all other factors (60). Each one has its individual limitations to provide a comprehensive approach to changing the behaviour of an individual.

One of the leading behavioural theories – the self-determination theory focuses on an individual and his/her social environment for sustainable behaviour change. SDT considers a comprehensive approach to changing the behaviour of an individual (61). SDT has been used in various domains like health, education, and psychology (62). The three factors that SDT targets in its approach: are autonomy, competency, and relatedness (63). The concept of autonomy oriented in the SDT relates to the various abilities that a person is expected to acquire to self-manage her/his behaviour, the competency concept refers to knowledge and skills, and relatedness connects with social components of human behaviour. SDT focuses on the individual and his social environment (61). The theoretical framework of SDT connects several individuals' social environment with their motivation and behaviour change (64). As explained above, many theories of human behavior account for the direction of the behaviour but fail to explain how that behaviour is energized. SDT with its emphasis on achieving quality motivation by measuring autonomy, competence, and relatedness, stands out as a relevant theory to adopt the motivation for changing the human behaviour. Along with studying the individual components, emphasis on social context is the strength of the SDT (61). Self-reliance relates to the health behaviour of an individual. Self-reliance includes informed health decisions, the ability to use local resources, health literacy, and social awareness (12). These attributes result from a complex interaction

between individual and social factors. The SDT framework helps understand the complex nature of self-reliance in relation to health behaviour of an individual and aids in delineating various factors involved in the manifestation of self-reliance. Therefore, as a theoretical framework, the SDT is used as a guiding tool to analyze results to understand the emergence of self-reliance.

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Chapter 2: Development of a Self-reliance Conceptual Framework

Summary

A scoping review was conducted considering the ambiguity and confusion around the integration of self-care, self-reliance, and self-management. The scoping review explored the current understanding of self-reliance in primary healthcare using TM and developed a conceptual framework. This framework described the influence of diverse factors such as pre-disposing, environment, household, community, and the health system at the different levels in the emergence of self-reliance. The review also attempted to delineate the differences between self-care, self-efficacy, self-reliance, and self-management used in literature in relation to self-reliance.

2.1. Introduction

The philosophy of the *'self'* is traced to various ancient systems of medicine globally. Ayurveda's focus on health within the self reflects in the Sanskrit word for health, *'Svasthya'* (*'Sva,'* the *'self'*); it means being well-established in oneself – a deep awareness of the self (1). In Western academia and development practice, priority for the self (or the individual) reached heights, particularly during the 1960s civil rights movement when the voice of the masses was heard (2). During the 1990s, varied community development programs and global health initiatives emphasized the community participation, enabling self-reliance to strengthen primary healthcare (2).

Self-reliance is a state of mind that regards one's own mental and material resources as the primary stock to draw on in the pursuit of one's objectives and finds emotional fulfillment not only in achieving the objectives but having achieved them primarily by using one's resources (3). The definition highlights the need to enhance the individual's competencies in using local resources. The principles of self-reliance are coherent with the principles of primary healthcare envisaged in the Alma Ata Declaration, where community participation and individual responsibility are mentioned as major components for strengthening the health system (3). Hence, the scope of self-reliance is viewed largely in the context of community development. Self-reliance is used in the broader context of sustainable development, localization, indigenous participation, and primary healthcare (3). Self-reliance also relates to the patient's decisions influenced by various social, economic, political, and human agency factors (4). The self-reliance concept used in the current health policy documents and literature does not sufficiently provide a multidirectional understanding of self-reliance. Hence, we must expand our analytical understanding of the systemic underpinning of self-reliance in health policy and systems practice.

The goal of the Alma Ata declaration, "Health for all by 2000", did not turn into reality due to a lack of community participation, a top-down approach in policy design, and the inability of the health system to provide an enabling environment to enhance competency and capacities of people in managing their health (5). It necessitated the redesign of policies and innovative approaches to achieve primary healthcare focusing on people and communities. Hence, the early 21st century witnessed developments in community health, TM, people-centered approaches, and

sustainable initiatives in a more systematic way that focused on enabling self-reliance. For instance, the TM strategy 2002-2005 and 2014-2023 relates to TM health services and self-health care (6,7). In India, the National Health Policy (NHP) 2002 and 2017 reiterated the integration of TM practices by identifying the best practices in the community (8,9). AYUSHMAN BHARAT health and wellness program in India emphasizes self-care and informed health decisions to achieve universal health coverage (10).

In many low-middle-income countries (LMICs), the practice of TM is an essential source of primary healthcare for several individuals and households and is very much part of their lifestyle, culture and traditions (11). The preference to use TM is mainly where resources and conventional medicine health services are limited (12). With its emphasis on local resources, culture, traditions, and beliefs, TM is an important treatment modality for primary healthcare (13). TM interventions designed for primary healthcare often link self-reliance in their approach. Thus, there is a historical use of the self-reliance concept in health interventions, policy documents, community development programs, TM interventions, and other disciplines as well. However, as explained in the first chapter, there is ambiguity in integrating different terms (self-care, self-efficacy, self-management, and self-reliance) without clarity in their understanding and application. This review attempts to delineate the different factors involved in the emergence of self-reliance through a conceptual framework and to clarify the relation between different terms that are used interchangeably.

Considering significant developments in the last two decades concerning primary healthcare, self-care, and community developments, papers from the last two decades (the year 2000 to May 2020) have been included to look at the developments with understanding and application of self-reliance in health interventions, especially concerning TM and primary healthcare.

2.2. Review question

What are the factors enabling the emergence of self-reliance in primary healthcare using traditional medicine in resource-poor settings?

2.3. Methods

2.3.1. PRISMA guidelines

We adopted the 2018 PRISMA scoping review guidelines and followed the steps as described under these guidelines (14).

2.3.2. Identification of relevant studies

2.3.2.1. Data sources

Articles were studied systematically using keywords with the Boolean operators (Table 1). The appropriate keywords in different databases are used based on their scope of coverage of articles. The articles mainly available through open access are studied. With the use of (1) Google and (2) websites of the institutions (NGOs, private and public) that worked on traditional medicine, primary healthcare, local health traditions, and community development, grey literature articles were also studied. The screening process led to a selection of 401 articles for the review (Table 1).

Table 1: Data Bases and Number of Articles Selected

Sl. no	Type of database	Keywords used	No. of articles found
1	Pubmed	(("Primary Health Care"[Mesh]) AND "Medicine, Traditional"[Mesh]) AND "Self-Care"[Mesh]	10
2	Google Scholar	"self-care" AND "Traditional Medicine" AND "Primary healthcare" AND "Policy" AND low middle-income countries	355
3	Google (Grey literature)	self-care, primary healthcare, simple ailments, traditional medicine	22
4	Social science research network (SSRN)	"Self-reliance", "self-care", "community development", "community participation"	10
5	Reference tracking of selected articles	Selected articles were scanned for references to identify any relevant article to include in the study	4
Total			401

2.3.3. Study selection

2.3.3.1. Inclusion and exclusion criteria

The articles selected had to: (1) describe the practice of self-care and self-reliance, community participation, primary healthcare, and local health traditions; (2) be published between the years 2000 and 2020 May; (3) be peer-reviewed papers or book chapters, conference proceedings, and reports; (4) be policy documents;(5) texts from LMICs. Articles published prior to year 2000, and explaining self-care and self-reliance as a concept alone but without a practice element were excluded from the review.

2.3.4 Screening process

The steps of screening articles using PRISMA guidelines are illustrated in Figure 5.

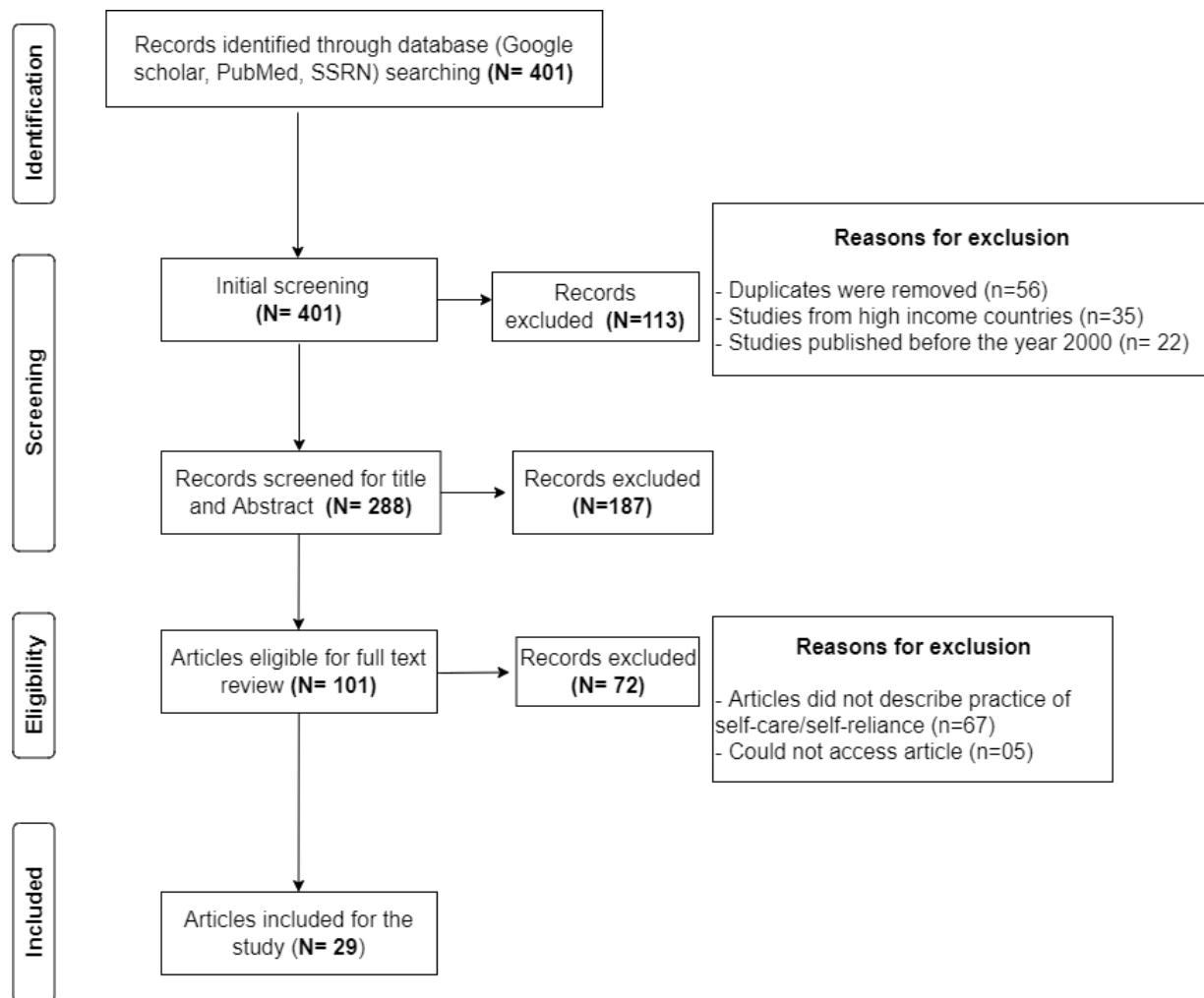


Figure 1: Articles screening process using PRISMA guidelines

2.4. Results

2.4.1. Characteristics of selected articles

Among 29 selected articles, six (20%) were qualitative studies, five (16.67%) were review articles, four (13.3%) used a cross-sectional design, and three (10.01%) used a mixed method of study design. Of articles selected, 11 (37.93%) were from the Asian region and eight (27.59%) were from the African region, one review article captured perspectives on self-care practice from the LMIC context, and two review articles captured perspectives on self-care practice from both high-income and LMICs.

2.4.2. Different levels of practice of self-reliance

The selected papers for the review described three levels of self-reliance, i.e., individual, community, and institutional. The health interventions that explicitly targeted enabling self-reliance at the individual's level were most represented (six papers), and those targeted at the institutional level (one paper) were most under-represented. It may be due to the complexity of institutional arrangements in implementing programs or interventions that focus on enabling the self-reliance of individuals or communities. Majority of the papers reviewed had a combination of one or two levels, i.e., ten papers illustrated both individual and community levels and four papers related to all three levels. The below is the list of papers that explained individual and community level self-reliance:

Sl. No	Title of Literature	Authors & Year	Study Design	Context	How Self-reliance is Explained?
1	The concept self-reliance in community development initiatives in the Cameroon Grass fields	Charles C, Fonchingong, et al, 2003	Cross sectional	The paper examines the role of village development associations in national and community development.	Use of local resources has been identified as a major strategy to promote self-reliance
2	Applying a basic development needs approach for	M Asadi Lari et al, 2005	Report of Iranian projects	Concept of community self-help, self-reliance was promoted through	Community participation by creating an environment to take part in

	sustainable and integrated community development in less developed areas			intersectoral collaboration. The purpose of these projects was to provide an environment in which people take active part in the development process.	development process.
3	Reviving local health knowledge for self-reliance in primary healthcare	P M Unnikrishnan and G. Hariramamurthy, 2007		Promotion of traditional health knowledge and making communities self-reliant through use of local resources	Promotion of traditional medicine and use of local resources
4	The use of indigenous knowledge for primary healthcare among the northern sotho in Limpopo province.	SA Rankoana. 2012 (Unpublished M.Phil. thesis)	Mixed method	The study describes the indigenous knowledge for preventive and curative care and to measure the extent of herbal medicine used for self-care and dispensed by traditional health practitioners for primary care.	Emphasises indigenous knowledge as a basis for self-sufficiency and self-determination.
5	Empowering community health workers with technology solutions	Brianna Buehler et al, 2013	Report	Explains the status of community health workers in developed and developing countries and how CHW concept has helped in achieving better healthcare in rural settings to promote self-reliance.	Self-reliance through the channel of community health worker

6	Enabling people to manage health and well-being: Policy approaches self-care	Becca Lipman, 2019	Qualitative study	It considers the key elements and drivers for self-care and examines the political and regulatory response across three global market: Us, Europe and BRICS.	This report has examined different definitions that are adopted already and what are the drivers to practice self-care.
7	The conservation of traditional medicine knowledge and practices in the north western region of Sabah	Report by Globinmed organization, 2019	NA	Study explains the methods adopted by local traditional medicine practitioners to conserve local knowledge and protect local diversity to use in a responsible way for maintaining the health of the people.	The concept of preservation and conservation of local knowledge and culture to protect health is important method that this study has explained.
8	Key influences on self-care behaviour	Dave Wendland & David Skinner, 2020	Review	Review has enumerated factors that influence self-care practice.	It has identified factors such as information, experiences, key influencers as drivers of self-care.
9	Annual report of Nippon foundations' traditional medicine projects - Thailand	Nippon foundation, Annual report 2019	NA	The report explains the use of traditional medicine to meet primary health needs of the community using their resources.	Promotion of traditional knowledge and practice, and community health worker as a channel

10	The use of medicinal plants in self-care in the Agonlin region of Benin	Aurel constant Allabi et al, 2010	Cross sectional study	* 1.04% used herbal medicine for self-care * 2.86% consulted traditional medicine practitioners * 114 species belonging to 69 families were used for self-care * Headache, shivers, transient disorders, dyspeptic disorders, and anaemia were the common ailments	It has demonstrated self-reliance through the use of locally available medicinal plants
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2.4.3. Factors influencing the emergence of self-reliance in primary healthcare

We adopted the Anderson model for healthcare utilization to develop a conceptual framework of self-reliance (15). The model describes different factors (environment, predisposing, and enabling factors) involved in health behaviour while utilizing healthcare services. Since self-reliance is also related to healthcare utilization, we used this model as a guide to categorize different factors involved in the emergence of self-reliance. Structural and agency factors are the additional components included in our framework.

2.4.4. A self-reliance conceptual framework

The conceptual framework located various macro (environment and enabling factors) and micro-level (structural and agency) factors influencing the emergence of self-reliance. The components of the framework are:

Environment: Environmental factors are categorized into the health system factors and geographical factors.

Health system factors: Self-care practices were in response to the challenges of the modern health service delivery system (institutional-based approach). These challenges acted as push

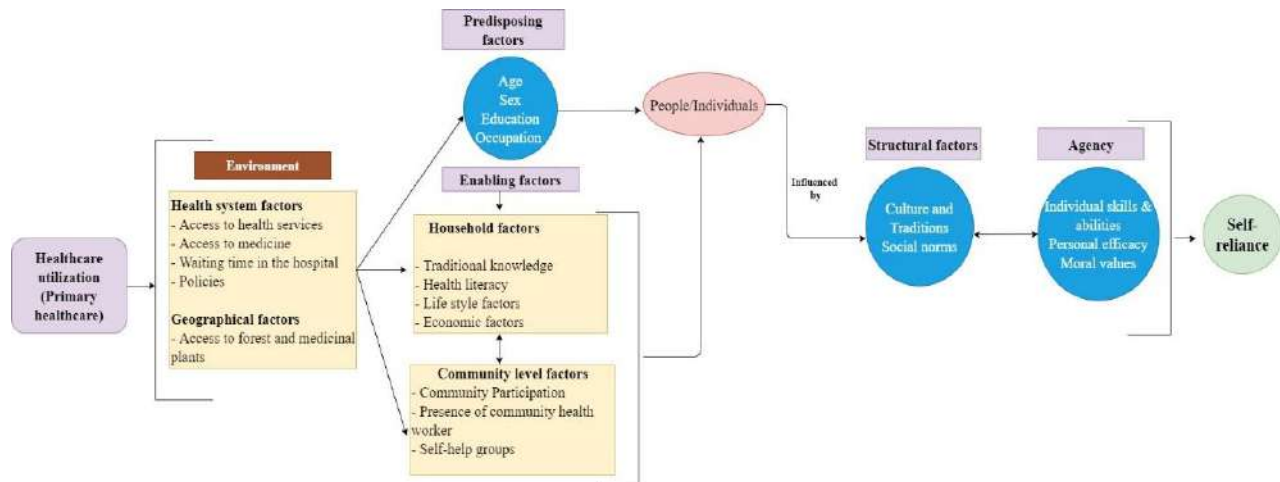


Figure 2: A self-reliance conceptual framework derived from scoping review

factors for adopting practices that enabled self-reliance. The long distances to the health facilities and long waiting times influenced opting for self-care (16). Having accessibility to medicine acted as a pull factor and led to self-medication using herbal medicine for acute and minor conditions (17,18). Policies played a crucial role in facilitating the practice of self-care and self-reliance by giving due consideration to these concepts in their design.

Geographical factors: Refer to the availability of TM in specific contexts or settings. Being near forests (source of medicinal plants) facilitated the practice of TM, particularly medicines based on medicinal herbs (19).

Predisposing factors

Most health practices, including self-care, vary depending on the age, gender, and stage of life of the individual (20). Elders (age more than 60 year) (21) appeared to be using TM more than other age groups (18,22). Age and gender factors were reported in two studies (23,24). Apart from these, education also influenced the emergence of self-reliance (18,22,25). However, there appears to be a lack of consensus on whether education or illiteracy influenced self-reliance. Occupational factors like long or busy work hours and daily wage work hindered access to institutional health services, possibly driving a choice for home-based interventions for acute and minor conditions (16,18).

Household factors: TM knowledge influenced the use of local resources and contributed towards enabling self-reliance among people and the community (26–32). Invariably, traditional

knowledge lies within the families (especially mothers and elders), and community members, including trained community health workers (where TM integrated into the health service delivery). Apart from traditional knowledge, health literacy, i.e., information about the availability of health services (25,28,32–35), lifestyle factors, especially occupation, and an individual's economic circumstances influenced the practice of self-care.

Community factors: Seven (24.1%) papers mentioned community participation as an enabler for self-care. Having a community health worker and self-help groups in the community were also identified as enablers (2). Seven (24.10%) articles identified the presence of local health workers as an essential enabler for the community's self-reliance (3,19,29,31,35–37).

Structural and agent factors

Six articles (20.07%) mentioned culture and traditions as influencing factors for self-care. Several attributes at the individual level (personal skills and abilities), confidence in carrying out actions (self-efficacy), and moral values that constantly interact with structural factors influence decisions and actions. For instance, better health, associated with good moral values (27,29,38,39), was accepted by the societal consensus and adopted at the individual level, i.e., adhering to accepted social norms is considered as a good moral value.

2.5. Discussion

2.5.1. Synthesis of self-reliance framework

The review identified that traditional knowledge distribution varied across age groups (18,22,40). Some reasons were the reluctance to share knowledge by elders, lack of interest in TM among younger generations, and lack of documentation. The ability to use TM and local resources came from both intellectual and experiential knowledge. Since knowledge of TM passes through intergeneration, an individual's education level showed less influence in acquiring TM knowledge. However, integrating such knowledge into the educational curriculum could help the younger generation learn and apply it (9). Occupational factors (long or busy work hours, and daily wage work) identified in this review influenced the adoption of self-care practices. These occupational factors highlight the failure of the delivery of health services to meet the needs of the working people. Using TM in primary healthcare is rewarding; however, it should be out of choice rather than as an alternative to systemic issues (12). The health system needs to recognize

the best practice of TM and integrate them into health policy to leverage this with well-informed decisions.

In this review, studies that described the specific pathways through which interventions enabled self-reliance at various levels (individual, community, or institutional) neither identified reasonable end-points for determining the emergence of self-reliance nor identified how to sustain them. Hence, we contend that there is a need for having a practical approach to identifying and differentiating different levels of self-reliance practice which currently seems to be ambiguous.

Health service delivery factors described in this review could act as the push and pull factors of self-reliance. While push factors like unaffordability, non-availability, and non-accessibility (16) could facilitate the practice of self-care as an alternative, they also reflect systemic gaps, which may not necessarily have been chosen if individuals lived in a more equitable health system. On the other hand, if self-care is influenced by pull factors (easy accessibility, aligning with culture, values, and traditions) (16), they need to be strengthened to address equity and equality issues by enabling self-reliance (41). Therefore, there is a need to assess these factors while facilitating self-reliance. The articles included in the review described self-reliance as a resource-intensive strategy. However, merely making accessibility and availability of resources (health services, information, financial resource, medicines, etc.) may not result in self-reliance since structural and agency factors influence its emergence within health systems. These factors are underrepresented in literature or explained in silos without properly linking macro and micro-level contexts.

2.5.2. Deciphering the ambiguity between the different terms

The review identified the interchangeable use of self-care, self-help, self-management, self-efficacy, and self-reliance. Self-care is "the ability of individuals, families, and communities to promote health, prevent disease, maintain health, and cope with illness and disability with or without the support of healthcare provider" (42). Critical analysis of self-care and self-reliance definitions showed that using local resources and seeking a balance between dependency and independency have commonalities between the two terms. Self-care is an attitudinal component wherein the major focus lies on an individual believing in his ability. Self-efficacy is confidence

through which an individual's skills are manifested, and there is the strong belief in his thoughts, actions, and behaviour. Managing physical and psychological consequences in the event of achieving self-care ability is called self-management (43). When an individual attains the stage of self-management, he has reached the state of mind where he trusts his skills; such a state of mind is termed self-reliance. Hence, self-reliance is a broader concept comprising all other terms (3,43). Therefore, the interchangeable use of terms continues to exist in the literature as one leads to another. The use of interchangeable terms denotes the interrelation between them rather than the difference.

2.5.3. The need for empirical studies for the application of the self-reliance conceptual framework

To apply the self-reliance concept to health interventions, there is a need to relook at the conventional epidemiological methods used to investigate a complex phenomenon like self-reliance (44,45). The articles chosen in this review mainly adopted a qualitative, cross-sectional, and mixed-method approach to explain self-reliance, which we feel is insufficient. Articles mentioned the use of experimental methods to generate evidence on self-care and self-reliance (20). However, due to its psychosocial construction and complexity, a social science research approach capturing people's lived experiences could explain the interaction of various factors of self-reliance.

2.6. Strengths and limitations

The main strength of this review is the conceptual framework that provided an understanding of self-reliance in primary healthcare using TM. Limiting our scope to the LMICs' setting, primary healthcare and TM, and the inclusion of select grey literature are the limitations of this review. Self-reliance is a social construct. Academically, self-reliance is used as a catch-all term for various individual and community perceptions and practices, especially those concerning TM. A more comprehensive effort at collating keywords that integrate the breadth of community practices concerning TM might have yielded more articles that better reflect the practice of self-reliance. The scope of self-reliance could also cover chronic conditions and mental health, which our review did not cover.

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Chapter 3: Case Study and Participatory Research to Understand Self-reliance

Summary

The scoping review highlighted the need for conducting empirical studies to understand self-reliance from the lived experiences of people. The chapter three describes the case study method adopted to conduct case study research in H D Kote, Karnataka, and Aluva, Kerala to address the first objective of the study on developing self-reliance framework. The later section of the chapter describes the participatory research method used to co-develop a self-reliance framework for community health interventions utilizing TM.

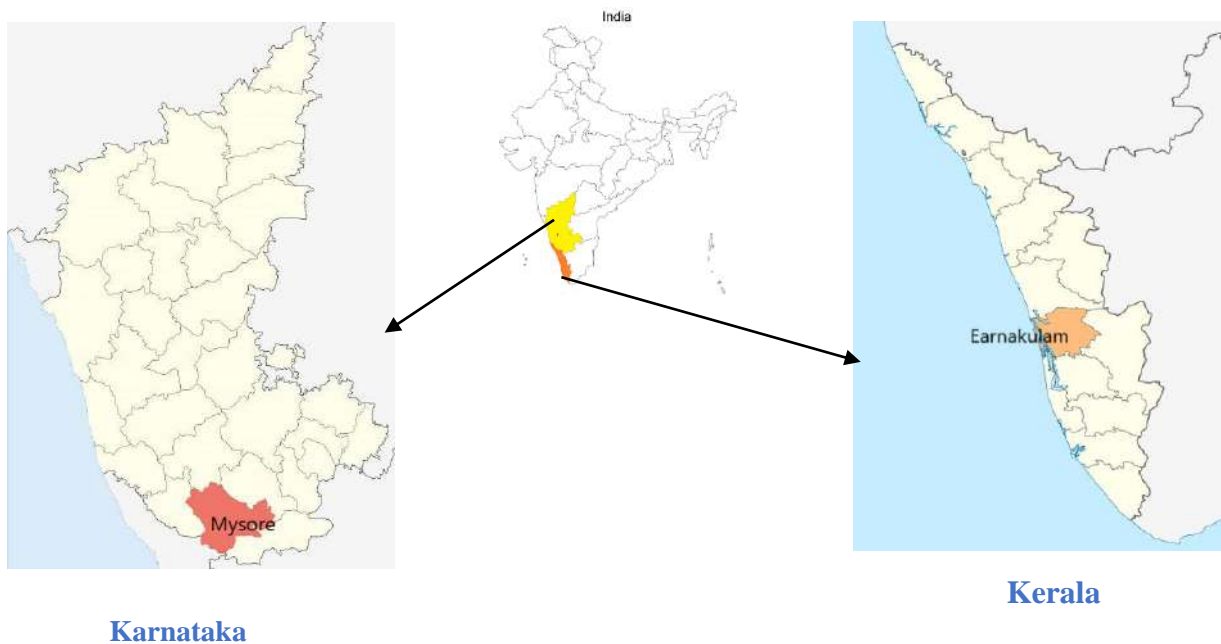
3.1. Methodology

Study sites

The study looked at two levels of interventions (household- and community-level) to examine self-reliance.

Household level: Practice of TM at the household level for human healthcare in HD Kote, Mysore district, Karnataka

Community level: Practice of TM at the community level for animal healthcare in Aluva, Ernakulam district, Kerala



Source: Google Map open-source

Figure 4: Study sites

Household-level case study (Human healthcare): TDU assessed knowledge, attitude, and practice (KAP) on local health traditions and documented local health knowledge and their practices in primary healthcare conditions in the HD Kote taluka of Mysore district in Karnataka in 2017. Therefore, TDU's study at HD Kote was an opportunity to study factors influencing self-reliance in primary healthcare using TM at the household level.

Heggadadevana (HD) Kote

Heggadadevana (HD) Kote is a taluka located in Mysore district, Karnataka. A taluka (also known as **taluk**) is a local administrative division in a few countries of South Asia. It is a subdistrict of the area within a district, including the designated populated place that serves as its administrative centre, with possible additional towns and usually a number of villages) (1). As per the census 2011, HD Kote has a population of approximately 263,000. The majority (95.29%) of the population identified their religion as Hindu, followed by Islam (~3%) and Christianity (1.05%). The average sex ratio of the taluka is 987 females per 1000 males. Most of the population (90.02%) live in rural areas, and 9.80% live in urban areas. About 23% of the population belong to scheduled tribes (ST) (2), and 27.8% belong to scheduled caste (SC) [ST: Scheduled tribe and scheduled caste: SC are officially designated groups of people and are among the most disadvantaged socio-economic groups in India (3,4)]. The total literacy rate of the taluka is 64.11%. Kannada is a language spoken by a majority of villagers. In a few villages that share borders with Kerala, people speak Kannada and Malayalam. HD Kote has a mix of tribal, rural, and semi-urban populations. The main occupation of the population is agriculture and daily wage. Government and private health facilities provide health care in the taluka.

Community-level case study (Animal healthcare): Mastitis among cattle is prevalent in Kerala (Aluva) and is an economic and social concern for the farmers. The financial loss due to mastitis in India in the last three decades (2020 to 2022) is approximately 71 million (5). TDU conducted a study on mastitis that demonstrated using local formulations with (*Aloe barbadensis miller* (*Aloe vera*), Calcium hydroxide, and *Curcuma (turmeric)*) to treat mastitis. TDU study showed that the average expense for treating mastitis using conventional medicine (modern medicine) is Rs.3000, and the same reduced to Rs.120 when treated with indigenous traditional formulation (6), and 87% of milk samples did not show any detectable antibiotic residue in the milk in the end-line survey compared to 7.85% in the baseline (6). Thus, there is evidence that using TM

significantly reduces the cost of mastitis treatment and antibiotic residue in the milk. The mastitis project considered under the concept of One Health in which interventions on animal health impacted human health by providing nutritious milk, and meat, which are daily consumptions in Aluva. These interventions in animal health led to improving human health. Although mastitis project had focused its intervention on the cattle, however, the intention of the project was to see the impact of an intervention on human health with cross sectoral interventions. This project from TDU was selected to see if the TM intervention implemented in Aluva enabled people to use their local resources to treat mastitis and thereby establish self-reliance in taking care of their health. The purpose was to derive an explanation on the barriers and facilitators of using TM and embedded meaning of self-reliance within their integrative healthcare practice with TM as a point of entry. The mastitis project, implemented at the community level through a health worker by creating a new cadre called the village resource person (VRP). A VRP was responsible for training farmers to use local formulations to treat mastitis and monitor project activities at the community level. The mastitis project was considered to explore factors influencing self-reliance in primary healthcare using TM at the community level.

Aluva

As per the 2011 census, the total population of Aluva is 22,428 (11,031 males and 11,397 females). The majority (41.83%) of the population self-identify as Hindus, followed by Christians (38.86%) and Muslims (18.93%). The SC constitutes 3.7%, and ST constitutes 0.7%. The average sex ratio of Aluva taluka is 1033 females per 1000 males. People in Aluva taluka speak the Malayalam language. Agriculture is the main occupation of the people residing in Aluva. Aluva has semi-urban and rural populations.

3.2. Study methods

3.2.1. For objective 1:

3.2.1.1. HD Kote case study

Definition of a case: A case was defined as a household practicing TM and residing in HD Kote. The study participants from such households are referred as cases.

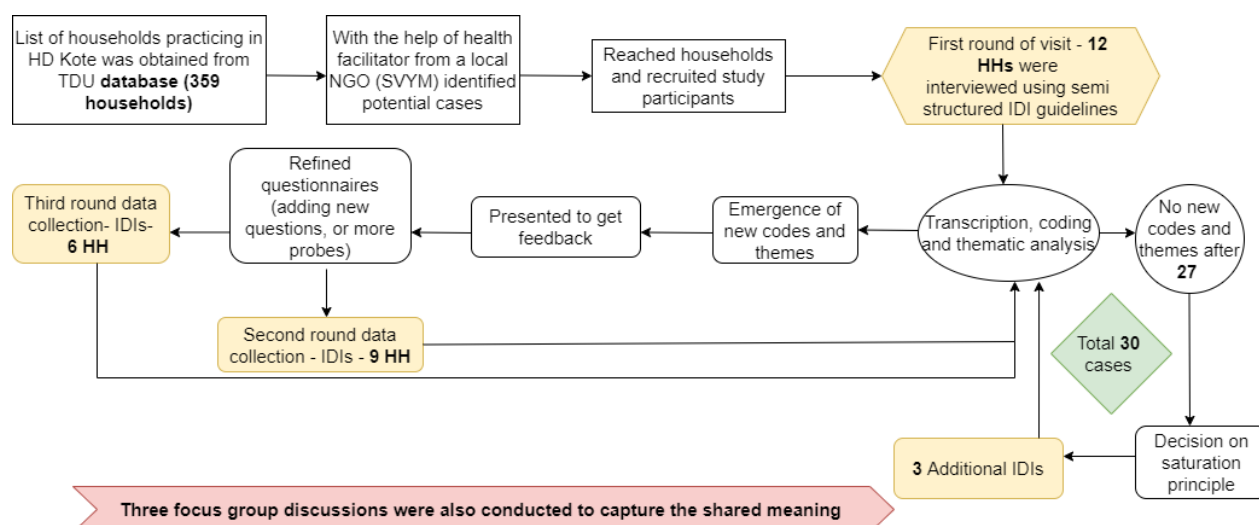
Criteria for selecting cases:

1. Should be practising TM in their household
2. Should be residing in H D Kote
3. Should be willing to share their experiences and knowledge about traditional medicine and other healthcare practices.

Sampling technique: The study participants were selected using purposive sampling. Purposive sampling involves selecting individuals or groups who are knowledgeable, interested and volunteer to share their experiences on the phenomenon of investigation and communicate effectively (7). Hence, the purposive sampling method was adopted for this research study.

Data collection: The data was collected using an in-depth interview (IDI), focus group discussion (FGD), and observation. Semi-structured topic guides were developed for collecting data. Each interview lasted a maximum of one hour and 30 mins. The local language, Kannada, was the medium to record the interviews, and later translated into English for analysis. The data captured was primarily about understanding the health and illness, self-care practices, healthcare approaches adopted by study participants, their intergenerational knowledge of TM and how they use it, and reasons to use it, along with its advantages and challenges. The observation involved collection of the data such as pictures of medicinal plants, capturing community events (fair, cultural practices, spiritual practices, customs, and traditions), formulation of medicinal preparation, and other events related to healthcare (visit to health service centres, and home-based practices).

Sampling size: In case-study research, replication logic is used as a sampling technique to obtain adequate study participants (8). The replication logic involves an iterative process of collecting samples and reaching saturation based on the emerging themes. The replication logic also involved selecting contrasting cases to support or reject the initial theory (8). The analysis was conducted to arrive at an explanation of the phenomena of interest. From the secondary data of TDU, it was observed that out of 650 households surveyed in HD Kote, 359 households were using TM for minor health conditions (those conditions that can be managed at house, e.g., fever, cold, cough, diarrhea, dysentery, etc.). From 359 household database, 30 cases were included using replication logic. Figure 5 is a replication logic followed in this research.



* SVYM – Swami Vivekananda Youth Movement

Figure 5: Replication logic for H D Kote case study

A non-government organization Swami Vivekananda Youth Movement (SVYM) working in HD Kote was approached with the list of households practicing TM. The list of households was obtained from TDU. The field coordinator of SVYM allocated a health facilitator to identify cases. A health facilitator works at the field level in SVYM, and he/she covers a particular village to implement health programs. Hence, he/she could trace cases from the list. Participants from rural, tribal, and semi-urban areas were selected to gather a broader perspective of self-reliance in HD Kote. In the first round of data collection, 12 participants were interviewed. A preliminary analysis was then carried out to understand emerging themes. Subsequent rounds of data collection were carried out based on the emerging themes after discussing them with the supervisors (PNS and UPM)¹. After 27 IDIs, there were no new emerging themes, and the data was redundant. Three additional interviews were conducted to confirm the redundancy and saturation point. Hence, a total of 30 cases became the sample size of this study. Three participants did not agree to participate in this research despite giving adequate explanation about the research. Three FGDs were also conducted with groups other than participants from the IDIs to capture the differences and shared meaning of self-reliance. In addition to the IDI and FGD, the observation method was used as a supplement for the data collection. Field notes were

¹ PNS – Prashanth Nuggehalli Srinivas, UPM – Unnikrishnan Payyappallimana

prepared and expanded on the day of data collection and used for the analysis. SS² conducted interviews in the Kannada language. SS transcribed and translated into English the interviews and wrote field notes.

² SS - Shivanand Savatagi

3.2.1.2. Aluva case study

Definition of a case: A case was defined as a location where TM interventions are practised for treating minor health conditions in humans and animals. Participants from such a community were cases (study participants).

Table 2: Criteria for selecting study participants

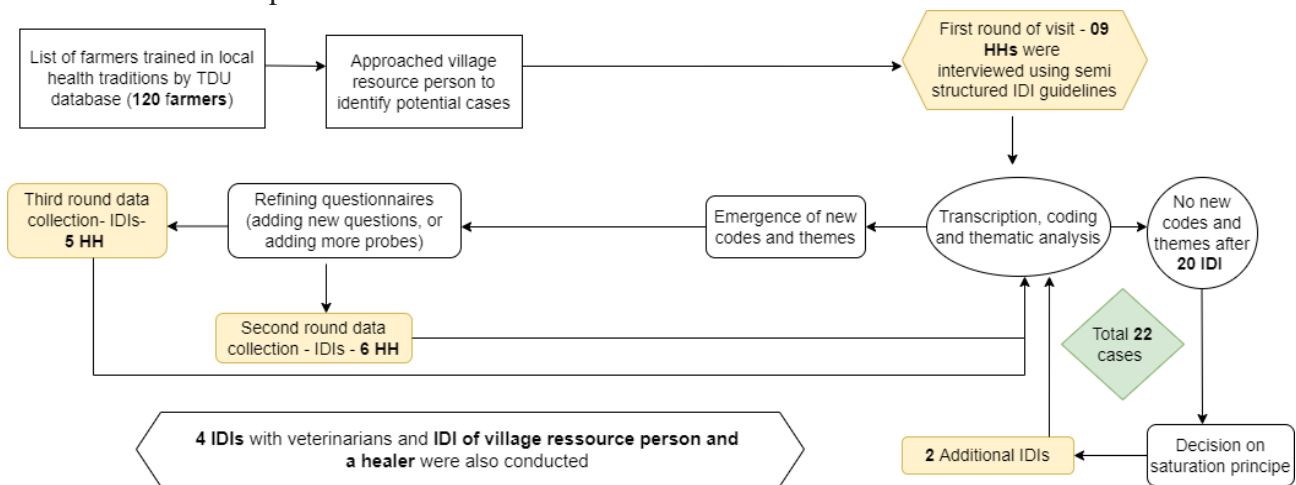
Type of Data	Type of study participants	Criteria	Data collection method
Qualitative data	Farmers	<ul style="list-style-type: none"> - It should be in the study area - Should be using TM to treat common animal health conditions - They should be willing to share their experiences and knowledge of traditional medicine - Should have been the part of TDU intervention project on mastitis 	IDI and observation
	Veterinarian	Residing in Aluva and involved in the TDU intervention project	IDI and observation
	Village resource person (VRP)		
	Healer		

Sampling technique: Purposive sampling method was used to select the study participants. The justification for using this technique is the same as the household level (HD Kote case study).

Data collection: Data was collected using IDI and observation methods. Each interview lasted from 40 min to one hour. Data collectors and translators were hired who knew to read and write Malayalam and English to collect the data and then translate the same into English. All interviews were conducted in the Malayalam language and recorded and then translated into English for analysis. Before the beginning of data collection, training on data collection methods, purpose of the study, and topic guides were given to the data collectors to clarify doubts and make familiar with the research. The collected interviews were shared with the Malayalam to English translator. The translated scripts were verified for their accuracy by SS. Later, SS shared transcripts with PNS and UPM for the cross-validation. UPM is aware of the Malayalam

language and hence, was able to connect with the conversation. PNS verified at the level of supervision (English version) to check on the quality.

Sampling size: As in the HD Kote case study, using the replication logic helped to arrive at the adequate sample size. From the secondary data of TDU, we observed that 120 farmers trained in Kerala and Aluva used local formulations to treat mastitis in cattle. The VRP received the research details before seeking his help. Since the VRP was familiar with the Aluva taluka farmers, he was able to trace the study participants. In the first round of data collection, the data analyzed was of nine households. The subsequent data collection was held based on the emerging themes following discussion with the supervisors. After 20 IDIs, there were no new emerging themes, and the data was redundant. Two additional interviews confirmed the redundancy and saturation point. Hence, this case study had a total of 22 cases. Figure 6 depicts the data collection process.



*HH: Household

Figure 6: Replication logic for Aluva case study

In addition to interviews with farmers, other stakeholders (veterinarians, healers, and a village resource person) were interviewed to capture the community perspectives on using TM to explore the meaning of self-reliance in primary healthcare. The selection of four veterinarians from Aluva, and conducting IDIs helped to understand the systemic approaches and challenges in implementing TM interventions. A village resource person who had an experience of implementing TM intervention in Aluva, also shared ground realities of integrating TM practices at the community level.

Data analysis: All interviews were translated into English before exporting to the QDA Miner lite 2.01 software for analysis, and there was a thorough check of the validity of the data before analyzing it. We used QDA Miner lite 2.01 version (9) software for creating codes and themes. The periodic discussion of the codes and themes with the supervisors helped to refine them. The data analysis also included understanding the lived experiences of study participants and comprehending the meaning of local dialects related to self-reliance using TM. The analysis focused on understanding of health and illness from the participants' perspective as a starting point, since this drives their practices related to health. Subsequently, we focused on understanding healthcare approaches adopted by the study participants. The analysis also captured factors that facilitate self-care practices and why study participants practice the way they do. The 'why' component of the analysis focused on push factors (health systems challenges) and pull factors or facilitating factors (local resources, culture, traditions, chemical-free, and holistic approach). The further abstraction of our analysis provides how self-care practices enhance and eventually lead to self-reliance. Figure 7 depicts the analysis approach.

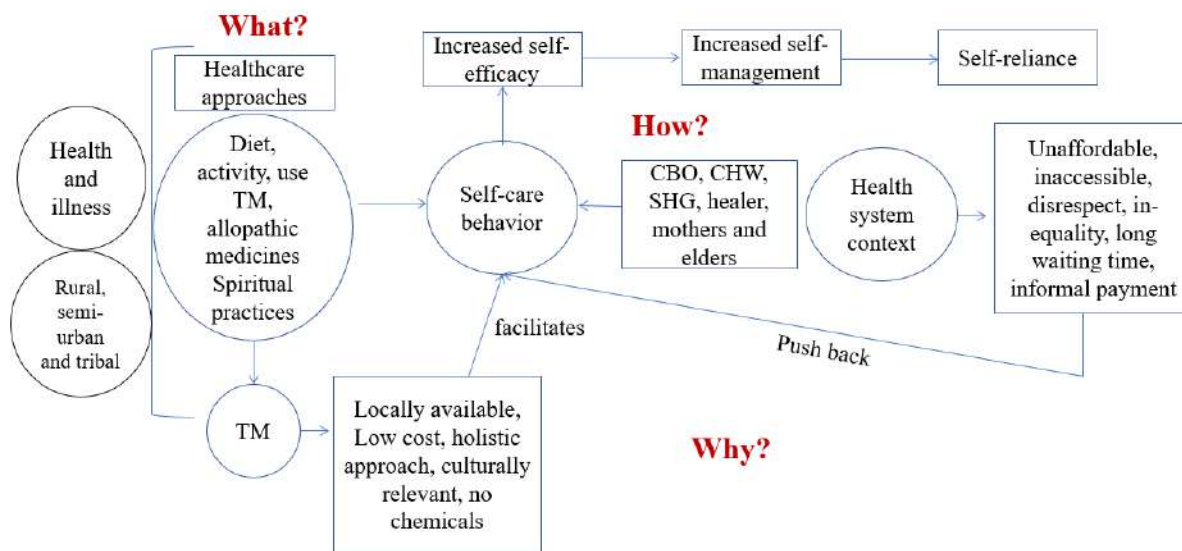


Figure 7: Analysis approach to HD Kote case study

With regards to the positionality of researcher is concerned, SS (I) as a doctoral researcher, led the study. He grew up in a rural setting with Kannada as his mother tongue. He gained knowledge about local health traditions as part of his earlier work at the University of

Transdisciplinary Health Sciences and Technology (Bengaluru), so he could relate and engage with the study respondents well. He acquired degrees in nursing and public health with formal training in qualitative and health systems research. While investigating self-reliance, an attempt was made to avoid subjective interpretation by being an outsider in the study.

3.2.2. For objective 2:



Figure 8: Group activity during participatory research in Ooty

The second objective was addressed using the participatory research method. Participatory research attempts to negotiate a balance between developing valid knowledge and benefitting the community that is being researched. This approach validates the research findings through mutual discussion with community participants and enhances local applicability (10). Cornwall (2008) identifies six participatory approaches and two among them are consultation and co-learning. the present study adopted consultation and co-learning which endorse sharing of knowledge by the local people and outsiders to produce a new understanding. Researchers facilitate such discussions in these methods. Since self-reliance framework was already developed from the case study approach, this step was the third step in the process of developing self-reliance framework. A one-day workshop consisting of different stakeholders was conducted

to hear opinions and co-learn to further refine the self-reliance framework. The findings of participatory workshop helped to refine the self-reliance framework (11).

Figure 9 shows steps of participatory research followed for this study.

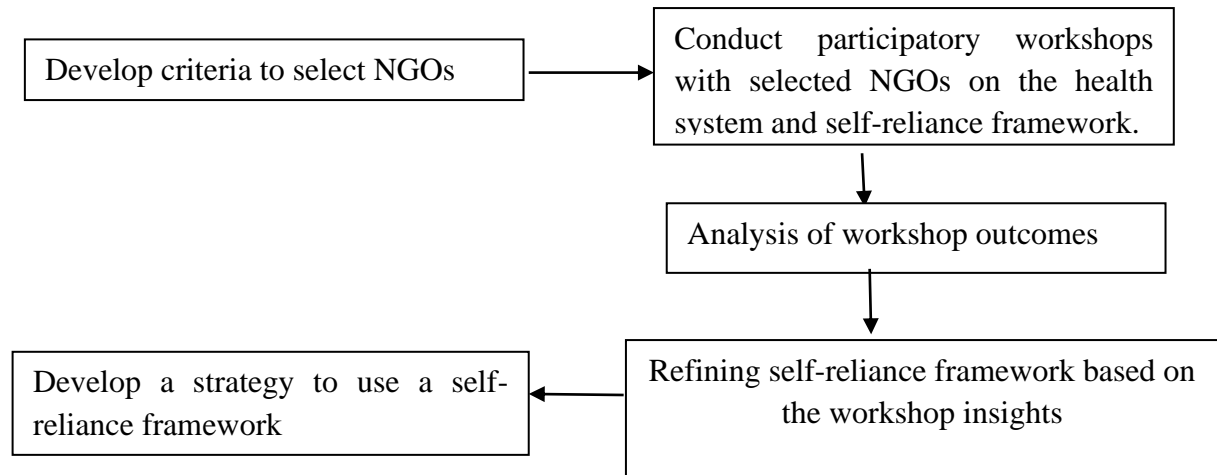


Figure 9: Steps of participatory research

Criteria for the selection of NGOs

The following criteria were set to select NGOs.

- An NGO must be working with TM interventions
- Should be working with the community for at least more than five years.

Based on the above criteria, we selected the following organizations to conduct a participatory workshop:

- Nilgiris Adivasi Welfare Association (NAWA)
- Garden of Hope Trust (GOHT)
- Action for Community Organization and Rehabilitation (ACCORD)
- Association for Health Welfare in the Nilgiris (ASHWINI)
- Keystone Foundation.

In addition to local NGOs, the participatory workshop had the following stakeholders from the region who involved in giving inputs and feedback:

- Doctors (General practitioners)
- Pharmacists

- Community members
- Forest officers
- Self-help group members
- Healers practicing TM.

A total of 36 people participated in the workshop. Participants were encouraged to share their knowledge and experience during the workshop through group discussions and brainstorming exercises.

Introducing the self-reliance framework: The self-reliance framework was introduced to all the workshop participants through a power point presentation. All participants were encouraged to ask questions and clarify their doubts during the presentation regarding the self-reliance framework.

Group discussions: After presenting the self-reliance framework to the participants, they were divided into three groups for the group discussion activity. Each group was assigned a moderator to lead the discussion and a note-taker to take notes. Participants were expected to share their experiences using TM to contrast or build on the self-reliance framework. Each group was given a theme for the discussion. The first group was assigned with the theme '*Drivers of using TM*', second group was assigned with '*Challenges of the health system*' and the third group was asked to discuss on '*Challenges of using TM*'.

Brainstorming session: After the group discussion activity, all the groups reassembled to share reflections on the discussion. The moderator of each group presented the critical discussions and asked for feedback from the other groups. Any additional thoughts or points that emerged were noted down. The session also focused on getting suggestions for developing self-care guidelines using TM.

Feedback session: At the end of the workshop, participants were asked to share views and opinions on the discussion topics and gather consensual and contrasting opinions about the self-reliance framework.

Analysis of workshop outcomes: The workshop outcomes were analyzed using a thematic approach. Themes were extracted from the self-reliance framework. A report was generated, and the framework was revisited for the opportunity to revise it further.

3.3. Ethical considerations

This research obtained ethical clearance from the ethics committee for human research, Trans-disciplinary Health Sciences and Technology (TDU), Bengaluru (study protocol number: TDU/IEC/11/2020/PR38). All the ethical guidelines were adhered to during the research. Adequate information about the research was provided to participants before obtaining written consent. Voluntariness for the participants was facilitated to decide their participation in the study after clarifying their doubts about the research. Potential risks and benefits were explained. An opportunity to withdraw from the research was also given in case a participant wished to do so. A compensation for the participation was provided that covered food and travel costs for IDI and FGD. We sought permission from the study participants to take pictures, document their knowledge of TM, and publish the findings. The collected data was coded, anonymized, and confidentiality was ensured to protect the autonomy, respect, and privacy of the study participants.

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Chapter 4: Case Study and Participatory Research Findings

Summary

This chapter describes the findings of both the case studies conducted in two sites in southern India. The first section of this chapter provides results from the first case study (HD Kote) that focused on the household level factors in relation to practice of TM in the context of self-reliance in primary healthcare. The subsequent section describes the findings from the second case study (Aluva) that focused on capturing community-level factors in the emergence of self-reliance in primary healthcare using TM. The later section explains the self-care practices adopted by the people for promotive and preventive purposes of primary healthcare. The following section details the output of the two case studies – self-reliance framework. The last section discusses the findings of participatory research.

The HD Kote case study results begin with giving the details of the study participants. The subsequent sections describe the perception of health and disease from the study participants, causes of disease as perceived by the participants, healthcare pathways adopted by the study participants, healthcare facilities available in the study area as described by the study participants, common disease conditions and their treatment using TM, health systems challenges in choosing a healthcare approach, influence of sociodemographic factors on the use of TM, and cultural, ritual, spiritual, and value-based practices for prevention of illness and promotion of health. Lastly, the chapter describes how a healer emerges in a community in the process of addressing one's health problem which eventually became a norm in a community for a similar health problem.

The Aluva case study results were organized similar to the HD Kote case study. Following was the flow: the summary of the characteristics of the study participants; and the following sections describe the perception of health and disease by the study participants; causes of disease as perceived by the study participants; common disease conditions and their treatment using TM; challenges of using modern medicine; and influence of socio-demographic factors on the use of TM. Additionally, since the Aluva case study involved a veterinarian and a village resource person as a stakeholder, the chapter has described the perception of the veterinarian on the use of

TM, the challenges of using TM among the veterinarian, and ways to enhance the use of TM in a community - highlighting the systemic challenges in introducing a new cadre in the community. The VRP's narrative highlights the challenges, possibilities, and new directions while integrating TM to enable self-reliance within a community.

Following the description of two case studies, the synthesis of the self-reliance framework. The self-reliance framework emerged from the factors identified from the HD Kote and the Aluva case study. The framework locates factors that interact at different levels in the emergence of self-reliance. The self-reliance framework was further refined through the participatory research method for better application of the self-reliance framework in the health interventions is described in the last section of this chapter. The chapter also provides a definition of self-reliance that is framed based on the findings of the HD Kote and the Aluva case study, and participatory research.

4.1. HD Kote case study

As explained in the methodology Chapter 3, TDU's project on the assessment of knowledge, attitude, and practice (KAP) on local health traditions documented local health knowledge and practice for primary healthcare conditions among households in HD Kote in 2017. Therefore, TDU's project at HD Kote provided an opportunity to reach households practising TM and study factors influencing self-reliance in primary healthcare. In Chapter 3 (methodology), the demographic characteristics of HD Kote are described in the Chapter 3. From the secondary data of TDU, we obtained a list of households practising TM. A health facilitator from SVYM helped to identify study participants who could provide rich information on the phenomenon of self-reliance using TM (Chapter 3 has the selection process explained in detail). The results are organized as below:

4.1.1. Characteristics of study participants

HD Kote taluka constitutes a semi-urban, rural, and tribal population. The age range of study participants was 30–78 years. Of the total 30 participants, 16 were from the rural population, 12 were from the tribal population and two were from semi-urban. There were 20 (64.51%) men and 10 (35.48%) women. Only 5 (16.23%) participants were educated up to 10th grade while 25 (67.74%) participants did not attend school. The main occupation of men was agriculture and women engaged either in household activities or daily wage work. All the majority of study participants belonged to the Hindu religion. Among castes, there were subcategories mainly *Okkaliga Gowda* 7 (22.5%), *Lingayats* 6 (19.35%), *Kuruba Gowda one* (3.2%), and *Shettaru or Kumbar* (3.2%). Scheduled tribes 12 (38.07%) were most represented. Among scheduled tribes, *Jenu kuruba*, *Kadu kuruba*, *Betta kuruba*, *Soliga*, and *Erava* were different categories. Only a few participants were scheduled caste 3 (9.67%). Table 1 provides the details of the study participants.

Table 3: Characteristics of HD Kote study participants

Name	Village	Age (year)	Sex	Education	Religion	Caste	Occupation	Context
X1	Chakkur	52	F	No schooling	Hindu	Kuruba Gowda	Daily wage worker	Rural
X2	Chakkur	40	M	9th std	Hindu	Lingayat	Agriculture	Rural
X3	Hatwal	50	M	10th Std	Hindu	Okkaliga Gowda	Agriculture /Business (A small shop or general store)	Rural
X4	Hatwal	72	F	No schooling	Hindu	SC	Daily wage worker	Rural
X5	Hatwal	50	M	No schooling	Hindu	Okkaliga Gowda	Daily wage worker	Rural
X6	Hirehalli - A	51	M	3rd std	Hindu	Okkaliga Gowda	Agriculture	Rural
X7	Hirehalli - B	40	F	7th std	Hindu	Lingayat	Homemaker	Rural
X8	Jeeyera	70	M	No schooling	Hindu	Okkaliga Gowda	Agriculture	Rural
X9	Saragur town	62	M	7th std	Hindu	SC	Agriculture	Semi-urban
X10	M C Tholalu	60	M	No schooling	Hindu	ST (Jenu Kuruba)	Agriculture	Tribal

X11	Anemala	51	M	No schooling	Hindu	ST (Jenu Kuruba)	Agriculture	Tribal
X12	Anemala	68	F	No schooling	Hindu	ST (Jenu Kuruba)	Daily wage worker	Tribal
X13	Basvangiri A	50	F	No schooling	Hindu	ST (Erava)	Homemaker	Tribal
X14	Basvangiri A	38	F	No schooling	Hindu	ST (Erava)	Homemaker	Tribal
X15	T. Hosahalli	65	F	No schooling	Hindu	ST (Betta Kuruba)	Daily wage worker	Tribal
X16	Saragur town	36	M	10th Std	Hindu	Lingayat	Business	Semi-urban
X17	Yashwantapura	52	M	10th Std	Hindu	Lingayat	Agriculture	Rural
X18	Hettige	65	M	No schooling	Hindu	Lingayat	Agriculture	Rural
X19	Channagundi	40	F	No schooling	Hindu	ST (Betta Kuruba)	Anganwadi Helper	Tribal
X20	Kebbepura	78	M	No schooling	Hindu	ST (Jenu Kuruba)	Daily wage worker	Tribal
X21	Chikkabargi	70	M	1st std	Hindu	Lingayat	Agriculture	Rural
X22	Mulluru	57	M	No schooling	Hindu	Shettaru (Kumbar)	Agriculture	Rural
X23	R G Hundi	60	M	No schooling	Hindu	Jenu Kuruba	Daily wage worker	Tribal
X24	Muskere	72	M	10th Std	Hindu	Okkalig	Agriculture	Rural

						a Gowda		
X25	Muskere	42	M	No schooling	Hindu	Soliga	Daily wage worker	Tribal
X26	Muskere	32	F	No schooling	Hindu	Okkalig a Gowda	Agriculture	Rural
X27	B.D. Munte	36	M	No schooling	Hindu	ST (Jenu Kuruba)	Daily wage worker	Tribal
X28	Kalasuru	77	M	No schooling	Hindu	Okkalig a Gowda	Agriculture	Rural
X29	Brahmagiri	32	M	10th Std	Hindu	ST (Kadu Kuruba)	Medicine preparation at the Ayurveda Centre	Tribal
X30	Magudilu	76	F	No schooling	Hindu	SC	Daily wage worker	Rural

4.1.2. Perception of health and disease by study participants

Health definitions of study participants ranged from being in a state of absence of disease to being happy and satisfied as shown in Figure 10. The big font size letters in the figure show the recurrent occurrence of a definition by the study participants. Colors in the diagram show codes of interviews.

Absence of diseases and happy and satisfied

Figure 10: The word cloud image containing codes of health definitions that are derived from IDIs.

The study participants gave importance to personal hygiene and food habits for maintaining their health. They considered health as a part of life's needs. Their explanation of health was related to environmental factors, food habits, and lifestyles. The understanding of health was similar across the rural, tribal, and semi-urban populations. The following quotes are few expressions of the rural, tribal and semi-urban communities:

“Health means to be pure. This is the village environment, it is pure. We don't go to the city a lot. We work a lot in the field. Both men and women work hard. For us, diseases come rarely because we eat healthy food and take fresh air.”

- 50-year male participant, Hirehalli -A village

"Health means, protecting our health. We should know how we should be and what to eat and all. If we know about all these, tell me why we don't remain healthy? No disease will come to us if we manage to maintain good food, air, and regular work”

- 50-year female participant Basavanagiri, a tribal colony

“Not having any disease or illness, and moreover being satisfied with what we have are important to be healthy”

- 62-year male participant Saragur (semi-urban)

4.1.3. Cause of disease as perceived by the participants

The perceptions of people on the causes of disease related to their explanations on change in lifestyle, seasons, location, environment, and habits associated with health. The different factors described by the study participants as causes of disease are explained below:

a) Changing lifestyle

There was a tendency to compare the current and earlier lifestyles among the participants. The mixed opinion about the current lifestyle adopted by the people is reflected in their comparative explanation between the current and earlier lifestyle. Participants believed that the earlier lifestyle had a lot of positive impact on health, whereas, over a period of time, the changes in lifestyle have impacted health negatively. However, this understanding was not the same for all. A few participants opined that the current lifestyle also has a lot of advantages and hence has a positive impact on health today.

With increased access to primary health centers, mobile health units, and community-based health interventions, participants perceived better availability of health services. However, the participants mentioned that these developments have made them rely on hospitals even for minor health ailments. Their observation is that they have been using antibiotics extensively due to their easy access. The shift in agriculture, overuse of chemical fertilizers, and ultra-processed/deep-fried diet (e.g., *Bajji* (a south Indian snack made of chickpea flour and fried in edible oil), *Gobi manchuri* (a south Indian snack made of maida and cauliflower and then deep fried in edible oil), Chips, and bakery items were a few factors mentioned as a reason for a change in the health status of the people. Of the 30 participants, 11 (33.3%) mentioned the invasion of chemicals in the body due to changing lifestyle, and food habits as reasons for a disease or illness.

“Sir, now everyone is using chemical fertilizer for agriculture but earlier organic fertilizer was being used. The food used to be very tasty and there was no disease. Now there are many different types of fertilizers sir, so now there are many diseases.”

- A 60-year-old participant from MC Tholalu village

“People don’t want to wait. So, they neglect home remedies and go to the hospital. The hospital is near and gives treatment immediately. Their mindset is like – why should we take treatment for three days of fever, instead if we take one injection, it gets cured in one day. The result is our body is having more chemicals.”

- A 50-year-old male participant, Hatwal village

“When forest department was created, they prevented the entry of cattle to a forest. We used to eat ghee in a bowl of rice not in fingers. Now everything is restricted, we can't keep cattle, and we can't enter the forest. Even with meat also, we used to make nati (local) farm chicken and we used to eat them a lot but now they give injections to them and they become fat in three days and we eat it and that increases a chemical in the body.”

- 70-year-old participant, Jeeyera village

Thus, the participants compared their earlier lifestyles with the current lifestyle. During the comparison process, study participants were able to reflect on their lives. This self-reflection provided a new broader perspective of their life rather than health alone. They perceived improved technology, increased health services, and other new developments as an opportunity to enhance their well-being. This newer perspective was accepted by the study participants without compromising their traditions and beliefs. One participant expressed:

“See, earlier we were not watching TV. Now we get every information from the TV itself, which is very nice. Schools have come, and are giving our children good education, but whatever we watch, we should follow our tradition. For example, we worship God, which should continue, and we can't leave ‘God just because we are watching TV. We should not get influenced by it.”

- 65-year-old woman, Thimmanhosahalli village

Thus, the comparative self-reflection of their past and their current life, gave hope and a better feeling to participants. However, this always happened with the existential struggle between the ‘ought to live’ and ‘actual living’. Health, as defined by the people, is connected with their life. The study participants enjoyed the establishment of new adaptability to the situation in response to reducing uncertainty and vulnerability. This new adjustment created a positive feeling among

people and brought a new perspective on their lives. Therefore, changing lifestyle was not merely a cause for a disease as mentioned by the study participants, but it was a process of adaptability that they negotiated with their transition.

b) Environmental factors

The respondents recognized that different regions and places have diverse environmental and atmospheric conditions. Participants expressed that along with the location, water and air, any slight variation in the season would entail an attack from some ailment, disease or illness for most people. 10 (30.3%) out of the 30 respondents mentioned ecological factors as a reason for disease conditions – diseases like cough and cold are commonly around due to weather changes during winter and summer; rainy season also led to fever, cold, and cough. The understanding of ecological factors as the cause of the diseases was the same across rural, semi-urban, and tribal populations.

Participants expressed that they are able to anticipate their health problems if any change in the weather happens. This understanding helps them to be prepared *a priori* to avoid disturbances in the body and hence avoid disease occurrences. For instance, they said that a headache is the first indicator to anticipate fever and cold. Participants mentioned that they chose to skip meals if it is an inappropriate time to eat when they go to other places and survive only on water since otherwise their digestive system gets disturbed. *The below quote is highlighting ecological factors as a reason for diseases.*

“Due to changes in seasons, too much rain or less rain and too much cold during winter – all these lead to diseases, sir. We prepare ourselves for the seasons to prevent occurrences of disease. Nowadays, there is improper time for the season and it fluctuates, it has become difficult to understand our own bodies. Suddenly we become sick. We are farmers and have a routine to grow our crops to get our income through agricultural products. If there is a variation in the season, it not only affects our health, it affects our livelihood as well.”

- 50-year-old man, Hirehalli-A village, HD Kote

-

The *Jenu Kuruba*, *Betta Kuruba*, and *Yerava tribal communities* who migrated from the forest due to the enforcement of the Forest Rights Act (2) to a settlement area mentioned that they found it difficult to adjust for the first two years. The climate was too hot compared to the forest and they suffered from fever, cold and cough. Many a time they felt like going back to the forest.

“When we came here, the initial one year was a lot of struggles because of too much sunlight that we were not able to tolerate. In the forest, it was all shade and it was not a problem. Because of too much sunlight, we started becoming black and suffered from illnesses like fever, cold, cough, headache, skin allergies, etc. but this year no problem, sir. Now the wind is blowing and cool climate, so no problem now. At some point of time, we were like why did we come here, and felt like going back to forest.”

- 65 yr. old woman, *Thimmanahosahalli village, HD Kote*

The connotation ‘*felt like going back to forest*’ connected with meaning of wellness rather than health and illness alone. When asked why they felt like going back, the participants mentioned that *“our roots lie in the forest, our God is in the forest, we celebrate our festival in the forest, we connect well with our culture and hence the feeling of belongingness comes when we are in forest. We are like a king in the forest. Here, everything is government rules, and we are dependent on them. See there (showing tress in front of her house), I have brought as many trees as possible and grown them in front of our house. It is not easy to live without the forest for us. However, we have adapted in the last year.”*

The above statement reflects feelings of helplessness and navigation of a capacity to adjust and adopt to a new lifestyle. Thus, the environmental factors played a crucial role in the health and well-being of the study participants.

c) Unhealthy habits

The study participants identified unhealthy habits such as beedi smoking, tobacco chewing, cigarette smoking, and drinking alcohol as the reasons for causing diseases or illnesses. For instance, when asked about the reason for these habits, they mentioned that due to rising unemployment in recent times, the youths get addicted to these habits and suffer from health

problems. Of the total 30 participants, 7 (21.2%) participants expressed unhealthy habits as a reason for causing a disease. These bad habits were mainly prevalent among males according to study participants. Below are a few quotes, reflecting the same.

“Now bar shops are easily available and that makes people go and buy. When we were in the forest itself, there was nothing. Now what they do, they pay Rs10 or 20rs for the auto and they go to a bar shop and drink. Because of all these reasons, it has become problematic.”

- 50-year-old woman, Basvanagiri-A tribal colony, HD Kote

“Even during corona, also many youths found a way to drink alcohol. There are local brands, they were getting them to drink. For government brands, there is a government seal. For local brands, there is no seal. These people (pointed to a person who was sitting there) found a way get them addicted to that habit. Also, sir, in the government brands, the alcohol content is less but in a rural area, it is more. If the cost of government is Rs36, the local brand is Rs50. But people don't stop, they take it no matter what.”

- 50-year-old man, Hirehalli-A village

4.1.4. Healthcare pathways adopted by the participants

A healthcare pathway is a mode of treatment/health seeking behaviour adopted by the study participants. During interviews, their regular answer to: ‘What do you do when ill?’ came up with seven healthcare pathways based on the interview data. The healthcare pathways varied from denial of treatment to reaching a hospital, a TM practitioner, a healer or faith healer or sometimes a combination of one or more modes of treatment. Figure 11 shows different health-seeking pathways that people adopt for minor health conditions. The study participants from rural and semi-urban populations adopted Pathways 1, 2, 3, 4, 5, or 7 based on their disease conditions. In Pathway-1, participants did not take any treatment for minor health conditions as they did not believe in this. Of the total 30 study participants, 14 (42.4%) said that they were able to cure minor health conditions using TM and they did not approach the hospital, 18 (54.5%) mentioned that they used both treatment approaches on a sequential basis, i.e., the participants tried treating their health problems using TM for 2 to 3 days, and if symptoms did not subside,

they went to a hospital. They mentioned that they could not rely on only one, and having options always helped them.

Participants switched themselves between different healthcare approaches based on their needs. Families aware of TM used it as a first response to a health condition and followed by using other alternatives as next responses to their health problem. Below are the quotes illustrating the same:

"Home remedies are helpful at the first stage of illness. If the health problem is beyond our control, then we have to go to the hospital. We can't say one is good over the other. If the illness is at the early stage, it is better to use Ayurvedic only."

- 29-year-old male participant, Brahmagiri village

"Sir, there are good practices and we have learnt them and we are continuing them. We should not neglect them; we should do whatever is possible from our end first and then visit the hospital. For common health conditions, we practice at home itself. For cough, we use Ganake soppu, if we use it, it will reduce cough."

- 36-year-old female participant, Saraguru town

Pathway 6 was specific to tribal families, where the decision to get admitted to a hospital was decided by their God's advice (*Guddappa or Ajjappa* – in their language). This belief was similar across all participants in the tribal population. Below is a quote from a participant from a tribal colony. He says:

There is one person sir. He is like God for our community. When we want to talk to God, we ask them to come and he comes by wearing our tribal dress and calls God in his body. They come and examine the person to see if the disease is of medicine or God. If they say they should not go to the hospital, then we don't go. Once God tells, it will cure. We have a belief that it will cure itself without the hospital. It has never failed sir.

- 40-year-old female participant Channagundi tribal colony

A contrasting case was also selected, i.e., a household not using TM as a treatment modality. In such household, they gave priority to allopathic medicine, and TM was the last resort. The attitude towards TM was that “Let’s use it and see if it helps.”

“Sir, we use these home remedies after trying multiple hospitals and could not get cured. That is our last option sir. We try it because someone suggested doing so. Just as the last option sir, it has helped sir sometimes.”

- 47-year-old participant from Muskere village

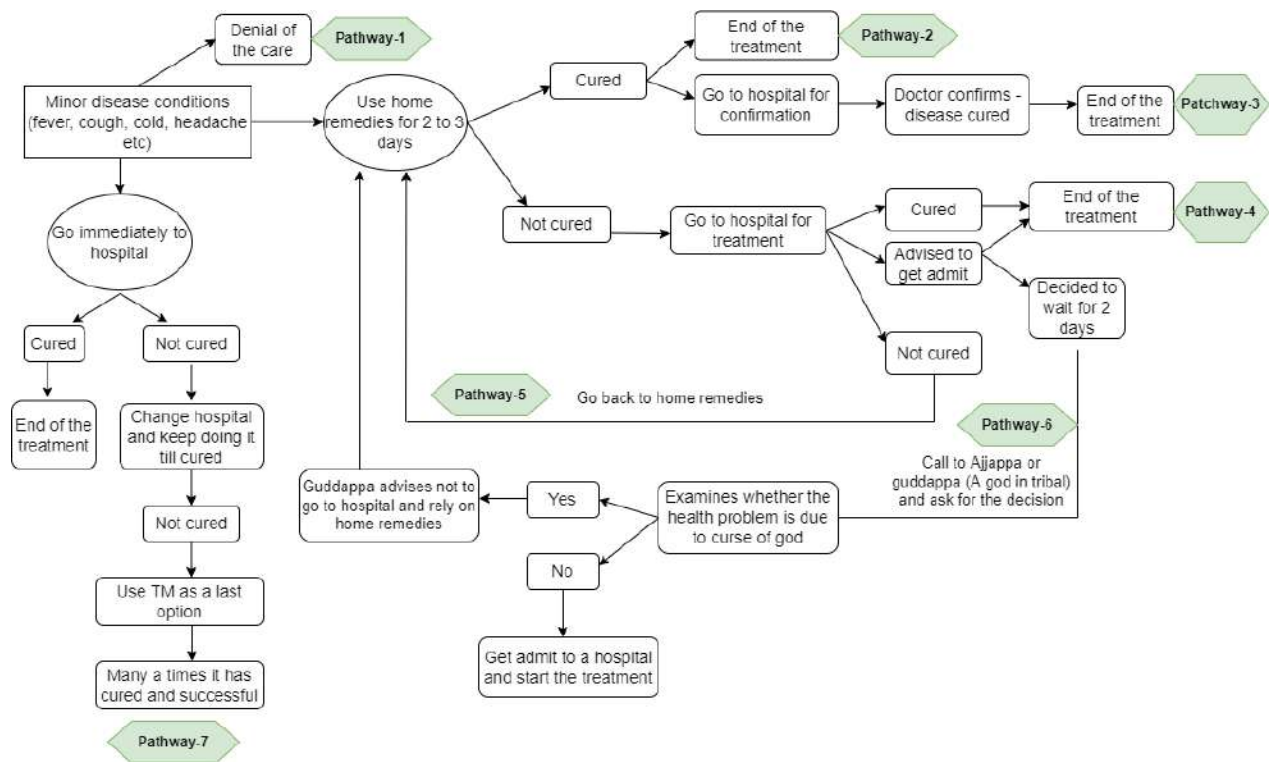


Figure 11: Healthcare pathways identified based on the IDIs conducted with study participants in HD Kote. Each arrow beginning from the box (minor health conditions) shows a healthcare pathway

Healthcare pathways described by the study participants denote the complex nature of health decisions happen within the individual and the community. These were most often through the trial-and-error approach. On a few occasions, participants made informed decisions (those decisions that emerged out of health information). For instance, a person knowing and having experienced the use of medicines (modern or traditional) in the family, elders aware of

traditional medicine, and a self-help group in the community were more likely to facilitate people in their health decisions. Apart from knowledge of health and other accompanying factors, culture and tradition influenced the choice of healthcare (ref. Pathway 6). Thus, various factors (health information, a health worker, an NGO or a self-help group) denoting the complex nature of a health decision influence the pathways identified in this study. If healthcare decisions made in panic, anxiety, or due to firmly rooted cultural and spiritual beliefs increased the complexity of healthcare choice.

4.1.5. Healthcare facilities available in the study area

In this study, 21 villages were covered during our data collection. As per the interaction with participants and health facilitators, there are two primary health centres and one community health centre in the study area. There are three mobile health units that serve both tribal and rural villages on a specific day. The mobile health units visit the villages weekly once to deliver treatment for minor health conditions at the community level. The NGO, SVYM, initiated the mobile health unit for delivering health services at the community level and to reach remote areas. The ambulance services take care of the emergency services and connect people with health centres for necessary health services. The Auxillary Nurse Midwife (ANM) and Accredited Social Health Activist (ASHA) workers serve in a community. For instance, we observed the ASHA worker making a post-natal visit to a house in Anemala village where a home delivery had happened. Anganwadi and ASHA workers mainly deliver services for mother and child health, adolescent girls, and minor health conditions in the respective villages for immediate management. In HD Kote, we identified a taluka government hospital and three private hospitals at Saraguru providing multispecialty services. The district hospital in Mysore district and other private hospitals offered additional health services. The study area (HD Kote) is 60 km from the Mysore district. Apart from these healthcare services, a few healers using TM, faith healers, and elders in the community were also delivering health services based on their local knowledge of specific disease conditions. The first response to treat minor ailments was to use medicinal plants. These medicinal plants were available locally. Table 2 lists a few medicinal plants used for treating disease conditions.

Table 2: Disease conditions identified in the study area and their treatment using local

The study identified approximately 66 medicinal plants that were used for treating specific disease conditions (Annexure 1 lists the medicinal plants and disease conditions). The scientific names of 33 plants were traced, but could not trace for the remaining. The English language did not recognize some of the local dialects (names) used for some medicinal plants. Hence, it was difficult to trace names of such medicinal plants. Annexure 1 details how to use medicinal plants for treating a disease condition. Participants used a single medicinal plant for treating a specific disease condition or sometimes they used a combination of one or more. Many medicinal plants were found in the backyard or near an agricultural area. From the nearby forests, participants accessed specific medicinal plants. These locally sourced medicinal plants helped to treat the disease conditions of the study participants.

4.1.6. Health systems challenges and healthcare choice

Figure 12 depicts six phrases expressed by the study participants when asked about the health system challenges. The large font letters indicate a maximum number of participants mentioned as a challenge, and the smaller font size shows the few study participants who had a challenge. Colours of



Figure12: Word cloud image contains codes for the theme challenges of the health system. Each code determines a challenge as expressed by the study participants

the word cloud indicate codes that emerged during the interview. The participants had challenges accessing institutional health services. For instance, a visit to the hospital involved spending money. That investment on hospital visits was the major hurdle mentioned by all participants as a reason to rely on TM.

“We have to spend huge money if we go there, so, we use these medicines as much as possible and reduce costs. I went to Hullolli Hospital to meet Dr. X along with one person from Rampur. We both went and sat there in the hospital. The doctor is neither calling me nor the person who came with me (Rampur person). Some MLAs came at that time; the doctor called them and started discussing business issues with them. I went and told them that it is ok even if you don't see me sir but please see that person (indicating Rampur person) who had a little severe problem. The doctor asked me, do you have money to give for the expense? It will cost 5000 Rs.

Let him pay 5000Rs, I will give treatment right away. Sir, this was just for a case of jaundice case."

- A 72-year-old respondent from a rural context, HD Kote Taluka

In addition to challenges of cost, lack of adequate information, misinformation by healthcare providers, mistrust, and disrespect to patients were a few reasons enumerated as challenges. The following narration provides an instance of the struggle patients experience when they visit a healthcare facility:

"What I am trying to tell is that people should not be deceived. People should be well-informed and should be provided the correct service. If normal delivery is possible, do that, and if not, do a caesarean. But if normal is possible and you are doing a caesarean, then it is problem for us. We are from a rural area and what the doctor says, we just follow but we should be given the right information. One more example, I will explain: husband and wife are doctors in Madhapur. When I went there one day, they saw a patient and gave a bill of Rs 450; I was observing it and they gave all medicines. The doctor's wife came that time and said to her husband: "Why did you take 450, you should have done it a round figure." They think that, if they say a round figure, we don't understand. The round figure here means 500. See sir, how it is? For them is 500Rs important or correct treatment for the patient important? This is how it works; I have witnessed it with my eyes and ears. One should not do that. If it is 450, take 450 that's all."

- A 51-year-old respondent from Chakkur village, HD Kote taluka, Karnataka

4.1.7. Influence of socio-demographic factors on the use of TM

Elders are a source of TM knowledge

The elders (above 60 years) were the ones to use TM predominantly. Whenever the attempt was made during the interview to extract required information on the usage of TM, instead of an adult (20 to 35 years) providing the input, a senior parent/participant (60yrs plus) provided the relevant answers. The children in the family felt their parents would know better since they use TM more often. A 32-year-old tribal participant said as below when asked to share the information on TM:

"See, in our community, elders might be knowing it and we as youngsters understand from them and get the knowledge. Any work like documenting knowledge and giving education would help a lot of people like us to gain knowledge and practice. It reduces our health expenses also. If you meet such people, you get rich information. I am not the right person to talk about TM."

Another participant 44-year-old from the village Yashwantapura said: *"For these kinds of questions, I am not the right person to answer; if my father would have been there, he would have answered you nicely."*

In both rural and tribal populations, elders were using TM, whereas in the semi-urban, we did not elicit the difference in age as we interviewed two participants aged 36 and 64 yrs. and both were using TM.

Gender role

The study participants were ~65% men and 35% women. Men believed that apart from using TM for themselves, they needed extra time to practice TM and serve their communities. Women felt the need to practice it within their families, and it was not a burden on them. The quote that follows highlights the role of gender in the use of TM:

"See, I being a woman can take care of my family. When it comes to serving others or treating others, first they call me and ask me to come to their house but I don't go because I have restrictions in my house and I should not go outside. I will ask them to come to my house and give treatment. When they come, I ask about the history of their illness and examine it. We give that medicine only on Sunday. I don't give it on any other day."

- 52-year-old woman, Chakkur village, HD Kote

A woman provided TM treatment beyond her family if the community expects it. However, women offered TM service to the community without compromising household activities. The quote that follows illustrates the same:

"Sir... I am a little social and happy to help others. Many people call me to help, so I go there and help. I don't do much sir and it doesn't take much time also. Sometimes my husband scolds but I convince him and go and come. He bothers only if I have work at home and go. Otherwise,

he also supports me in helping others. Sir, this practice we started also helps our own family. Now, people have started asking me, so I am just helping them.”

- 47-year-old woman, Muskere village, HD Kote

In a few families, both husband and wife were practising TM. They felt that this practice is beneficial, and serving others with TM helps them continue their family legacy (a family known for using TM for treating health problems of people in the community) in the community. Below is the conversation with a study participant in Yashwantapura village. It illustrates how the family legacy plays a significant role in sustaining the practice of TM:

I: So, when you are not there, who will give the medicine?

R: Ha sir, I also give (points to his wife who is sitting there). Sir, when I am not there, she also has given medicine. Even our daughter also gives these medicines. Sir, this is good for our family and meanwhile, we can help others also. God has given us this knowledge and we as family members have the responsibility to continue it.

I: Ok, so anyone in your family can give it. All of you have learnt it?

R: Ha, sir, anyone can give it. we have learnt it.

I: Have you taught others? Other than your family members?

R: No sir, we have not taught. Even if we teach, it won't work. It is the family's tradition sir.

- 44-year-old man of the house from Yashwantapura village

In another instance, in a semi-urban population, the husband and wife were jointly prepared the medicine to use for their family members. A participant said that preparing everything earlier reduces the time spent later. It then becomes readily available for use at all times and even for his family. He also mentioned that his wife prepares the medicine, and he sources the necessary

materials. Most of the practices were also part of their daily activities, so, according to him, it did not consume too much time. He says:

“We both practice together sir. My wife knows about TM more than me. She knows 70% and I know 30%. Some couples go to work together and they don't have time to prepare medicine, take it, and wait for the result. However, if we make a little effort, we can prepare these. There is nothing much. There should be interest sir. If there is an interest, then it doesn't affect us, we plan it and prepare.”

- A 36-year-old male participant, Saraguru town

Role of occupation on the use of TM

The main occupation of men participants was agriculture, and that of women was daily wages or as coolies. Occupational factors did not influence the practice of TM when practicing for their family. However, three participants found it difficult to spare time for outside the family patients as it interrupted their regular work timings. They mentioned that they attended to patients only after working hours. One participant shared how he collects 200 to 300 rupees as he invests the whole day in preparing TM tablets and recovers the loss of daily wage from his patient's fees. This charge is, however, minimal compared to the regular hospital charges. He also mentioned that sometimes patients express their inability to pay, and he does not mind giving it free of cost.

"I take fees for the treatment that I give (around 200 to 300 rupees) and it is very minimal. If I spend three hours preparing tablets, that much charge I take as I have to leave my work and prepare those tablets. Some patients can't give; I give them free of cost.”

- 40-year-old participant, Chakkur village

4.1.8. Cultural, ritual, spiritual, and value-based practices for promotive and preventive purposes

The respondents provided a set of belief systems and practices specific to their culture that have a preventive and protective function. A few explanations were captured below:

a) Cultural and ritual belief practices

Culture, traditions, and religious practices were part of self-care. For participants to be healthy, they had to adhere to their culture, norms, and traditions. Vital practices of community healthcare follow:

i) Washing hands and legs

Washing hands and legs on entering one's house is a practice in many communities. This is related to the practice of preventing many diseases. A quote from a 40-yr-old male participant from the Chakkur village said: *"We always wash hands and legs when we come in from outside so that no bacteria or microorganisms enter our house. This is an important practice in our culture as this could prevent transmission of many diseases to our family members."*

ii) Isolation

Isolation is related to a few cultural norms and customs specific to caste and religion. According to a participant, Isolation starts when a girl attains puberty. The study participants believe that a girl who goes through puberty is impure and it is *soothaka* (a bad sign) and has the potential to cause health problems to other family members if she starts living along with the rest of the family. Hence, a girl is isolated for a few days and allowed to mingle with others only after the rituals are over. For instance, in the semi-urban and rural population, a girl who attains puberty stays in a separate room for 12 days, and on the 13th day, she has an oil bath, followed by going to the temple to receive blessings from God. After performing all these, she is allowed to mingle with others. Once this is done, for at least one month, relatives and village people prepare special food and bring it to the girl's house to celebrate her new phase of life. While attaining puberty is considered the cause of disease for the initial few days, later it is celebrated as a new phase in a girl's life.

This isolation period was even more strict in the *Jenukuruba* and *Bettakuruba* tribal populations. When she reached puberty, a girl lived in isolation for one month in a separate hut and even received her food separately. One tribal from the Kebbepur tribal colony narrated how they welcome puberty and about the rituals performed:

"Girls attain puberty (Doddvaru aad mele) at 11 years, we make a separate hut and keep them there for a month. We give food there only. We don't allow her to come to our house. After a month, we call Yajamana (leader in the community) and there will be a few rituals that he will perform along with pooja and he removes the hut where the girl was kept in isolation. He gives new clothes to the girl and she has to wear them. From there onwards, she is pure and can come to the house and be like others. This is our tradition during that time."

Study participants were quite alert about maintaining physical distance during cough, cold, and other contracting diseases like TB, and respiratory disorders. This isolation practice was evident while collecting the data due to the COVID-19 pandemic. A 50-year-old participant from Hatwal village mentioned that COVID-19 reminded us of isolation as a preventive for many diseases.

“We used to be very close like holding hands together, etc., but this corona has taught lessons that whatever we were doing was wrong. All these physical connections (shaking hands, hugging, kissing, etc.) by doing so either our health will not be good or the opposite person's health will not be in good condition, hence there is always a chance that we get a disease. That's why this corona has taught this lesson that we should maintain distance as much as possible.”

When you return from attending a funeral, keeping a safe physical distance from others is encouraged. The belief is that you are impure and should not touch anybody else until you have a bath. You can only bathe outside the house. A death in the family means that any food cooked in the house is contaminated. Hence, they do not prepare food. After the funeral, Holy water is brought from a ‘Guddappa (a priest)’ and sprayed around the entire house before you do anything else. Thus, isolation was a part of taking care of health among the study participants.

iii) Traditional dietary practices

A few respondents believed that traditionally domesticated and gathered food materials are good sources of a balanced diet, strengthening the body and increasing immunity. A few study participants mentioned ragi, millet, nuts, sweet potato, curd, ghee, buttermilk, green leafy vegetables, eggs, meat products, and other local foods as their principal food giving them energy. Of all the 30 participants, 23 (69.7%) mentioned healthy dietary practices as vital for keeping good health. Apart from these regular diet patterns, participants narrated the importance of the festival food they prepare during celebrations and other ceremonies in their families. These add on extra nutrients. Festivals bring all of them together, and they consider it a vital aspect of being healthy. Below are the quotes by participants about healthy dietary practices:

“Ragi mudde (Karnataka dish) is very strong. If you prepare a day before and eat it the next day, it is very strong. Now also many people drink ambali (a liquid made from ragi). that is very nice. Even for cattle, ragi ambali is the best. If you add salt and give it, it will cure fever.”

- 70-year-old participant, Jeeyera village

"Ragi, green gram, groundnut. We eat green veggies. We eat seed items a lot (Bengal gram, green gram, groundnut). Mudde is the main sir for us. We villagers, prefer to have this food a lot sir. rice and green leaves are a must sir. They keep us in sound health a lot. A lot of vegetables are available in the field itself. We don't buy it from the market. It grows naturally in the field and we eat that."

- 47 yr. old participant, Muskere village

The understanding of healthy dietary practices was similar across semi-urban, rural, and tribal contexts. However, the possibility of diversity in food items depended on the locality, the context, caste, and religion. For instance, as for the tribals, the staple food was mutton (sheep and goat meat). Also, in the rural and urban areas, the *Gowda community*, principally the *Kuruba Gowdas*, ate the meat of sheep and goat.

b) Spiritual beliefs

Apart from these practices, the spiritual practice was an integral part of the promotive and preventive practices. A few study participants attributed their health to the blessing of God. Every village had a temple that represented the God of a village. Worshipping on a specific day was a ritual and the belief is that the God is protecting their health and life as a whole. This practice they related to the use of medicinal plants practice. They said that praying to God before using medicinal plants gave good results. According to the participants, this practice is a must whether they were practicing it for their family members or for other patients.

"We worship Chikkadevamma (our god). We pray to her (Chikkadevamma) and we offer coconut and some fruits; if we do that, the disease will cure. After praying only, we give medicine, we don't give without doing prayer to God. After doing all this, we take medicine in hand and once worshipping is done, we don't keep it on the floor and we ask the patient to take it immediately".

- 52-year-old female participant, Chakkuru village

This spiritual belief goes beyond the use of medicinal plants. All participants considered faith in God a must in everything they perform. It had a positive outcome in what they intended to achieve in life, including health.

C) Values

i) Acculturation

Acculturation is the process of educating children about cultural values. Participants expressed that the food they consume, medicinal plants they use for treating minor health conditions, behaviour, attitude, and actions all run in the family. These are learned within the family, imbibed and then they play a significant role in an individual's life. They are usually guidelines specific to the individual's culture about the correct behaviour for preventing ill health in you and others. A participant from the Hirehalli village mentioned that there is no need for any extra effort for these mechanisms to sustain as they automatically transfer within the family.

"Our village is surrounded by forest. See if you brush your teeth with Colgate, it is not good but we use neem for brushing our teeth. We also use Tulsi which is good for cough. This way we show to our children and that's how it goes on. Sir, it goes on commonly. No need to put in the extra effort. This is being practised even in the city."

- 50 yr. old study participant, Hirehalli-A village

Thus, acculturation was part of the preventive and promotive strategy when it came to taking care of health in the study area.

ii) Moral behaviour

All the participants of the study across rural, semi-urban, and tribal contexts mentioned that being good to oneself and others has a positive impact on one's health. Every community has its own defined values of good and bad. The study participants believed that adhering to good behaviour leads to better health and happiness. The conversation below illustrates how moral behaviour plays an important role in their health.

I: What do you mean by having good behavior?

R: It means being honest with everyone. You have to speak with everyone in the same way. We should be with Dharma. This protects our health and our life sir. Wherever you go, if you follow this, you will always be happy and health problems will never come to you.

I: How can you say that?

R: Our mind and heart should be clean to be healthy. If we are with dharma, Nyaya, and neeti, then it is shown in our health itself. Sir, hurting others, and giving unnecessary problems to others, will create problems for us only. Someone might feel happy by disturbing you, but in the long run, it will show sir. This is what we believe sir.

I: but sometimes, good people also suffer no, what do you say about that?

R: yes sir, that is also true. But that doesn't mean we have to forget God and our dharma. We have to stick to it, if we follow it, one or another way, good things start happening. If not for us, at least our children will be happy.

- 50-year-old male participant, Yashwantapura village

Participants believed that, for example, disease, misfortune, mental illness, physical deformity, and experiencing unpleasantness are because of disrespect to God, to elders and disobedience to cultural values. About 14 participants (45.16%) believed that a person's dreams have an implication on health. Dreams are a manifestation of your good and bad deeds. For instance, a study participant from a village B D Munte, mentioned that dreaming of a snake is an ill omen, and it indicates that the person has broken a promise and bad luck or some dark incident will befall him or the family.

Another instance described by a female participant in Channagundi village was that the satisfaction of the soul after death is a vital indicator of a particular family's health where death has occurred. The soul is satisfied if you follow certain cultural rituals. It is a belief among the study participants that an unsatisfied soul brings health and family problems. Below is the explanation of how to assess soul satisfaction:

“Sir, we call Guddappa our god, when he comes, he calls all god, Bailukoppe, Guddad devaru, everyone, and at last, he calls those who have died and they come and speak. What we do is we

keep ede (a plate of food) around the samadhi (funeral place) and we mark it. If the soul comes and eats it or even touches it, it is good for us and it indicates no mistake from us. If it doesn't touch and eat, it shows we have done a mistake. Whatever they used to like, all those items we keep sir. Juice, bajji, bonda, even if they were taking drinks, that also we keep it. Among all these items, they should eat at least one item. If they eat, it is good for us. What we do know sir, after keeping that ede, we do some marking to identify if it has eaten or not. After some time, we go and see. Nobody goes to that place sir. Only the soul can come to eat it. They have to come and eat it. then only it is good for us. If it doesn't eat, it is not a good sign for us. When we keep, we count it and keep it so that it is easy for us to identify it. When we die, there will be atma no, when we keep it there, if atma comes and eat it, that means we don't have any problem. If it doesn't eat, Gali (devil's effect) comes to their house.”

4.1.9. A healer takes birth in a community

While practising different healthcare approaches, the participants have identified suitable solutions to their health problems. Making full use of their own local resources, the quest for remedies to health problems in the community persists through the trial-and-error method. It happens due to the inability to access institutional health services. The previous experiences of seeking healthcare from hospitals have also failed to solve their problems. One of the modalities discussed throughout this study is the use of TM. This study reveals that if an institutional-based health service approach is unsuccessful in finding a solution to the health needs of the people, they will definitely find an alternative solution. The use of TM is one such attempt. The success of newer solutions through 'experiential knowledge' by a person eventually becomes a solution to similar health problems in the community. This kind of approach enhances confidence, autonomy, competency, and the ability of an individual to deal with health consequences.

The case presented below tells you how a patient in a community has turned healer and identified the solution to a health problem he was suffering from. Eventually, this became the solution for people having a similar health problem.

Case: Mr. X 50-year-old male participant, Chakkur village, HD Kote

Mr. X was suffering from piles problems for the last three years (point of reference 2020). He experienced symptoms of irritation in the anus, unable to defecate, redness in the anus, body heat, loss of appetite, and pain. When he discussed his health problems with his family members and neighbours, he was advised to take tablets and to visit a hospital. He took tablets and visited many hospitals quite often. He even went to a multispecialty hospital in Mysore located 60 km from HD Kote. However, his problem was not resolved. He experienced recurrent infections with no improvement or rather the condition was worsening. A doctor suggested getting it operated for which Mr. X was not ready. One day he met with his father and shared his problem. His father was a practitioner of TM. He advised him to use medicinal plants (*Uttarani, Chitramoolika, Tulsi*, and cow urine) for his problem. Mr. X decided to shift to TM treatment. After two weeks of treatment, he started feeling better, his appetite increased and he was able to defecate. Due to this positive response, he continued the same treatment and got completely cured. Mr. X also decided to serve with his experiential knowledge to treat people with piles problems. As a result of which he treated 64 patients in three months and all were a success. When asked about his experience (Mr. X), he said as below:

*“Sir, kayile annodu onda tara **haadta, haadta, raag anno tara**. Naav pade pade adanne vichar madta iddare, adu namman weak madi bidutte, nammalli nave solution kandkond bittare, sammassene irolla. Naav idann heegu helbahud **‘Manassinante Mahadev’**”.*

(Translation – sir, a health problem is like singing, singing becoming music. If we keep thinking about that, it weakens our bodies. If we can find a solution to that, there won't be any problem. We can say this as ‘As is the mind, so is the person’.)

Box 1: A case story of a 50-year-old male participant

4.2. Aluva case study

The Aluva case study context has been given in the methodology section (Ref. Chapter 3 for details)

4.2.1. Characteristics of study participants

Farmers, veterinarians, and a village resource person were selected as study participants. Of the total, 27 participants, 22 were farmers, four were veterinarians, and one was a village resource person. The age range of study participants was 20–80 years. The majority of the participants were: Hindus 9 (~40%), Christians 9 (~40%), and others belonging to the Islam religion. The educational level ranged from 6th standard to post-graduation. Of the total 22 farmers, 11 (50%) were males, and 11 (50%) were females. Farming was the main occupation for both males and females i.e., of the total 22 farmers, 21 (99%) were engaged in farming and only 1 (1%) was engaged in teaching along with farming.

Table 4: Characteristics of Aluva study participants

Sl. No	Name	Place	Age (yrs.)	Sex	Education	Religion	Caste	Occupation
1	X1	ChoorNIKarna	48	F	Nursing	Christian	Catholic	Farming
2	X2	Kudugallor	19	F	SSLC	Muslim		Farming
3	X3	Udaymperoor	44	F	Post-graduation	Hindu	Nair	Farming
4	X4	Angamaly	52	M	SSLC	Christian		Farming
5	X5	Thuravoor	58	M	9 th std	Hindu	Ezhava	Farming
6	X6	Angamaly	47	M	Degree	Hindu	Ezhava	Farming
7	X7	Aluva	46	M	MVSc (Vet)	-	-	Veterinarian doctor
8	X8	Aluva	45	M	BVSc	Hindu	-	Veterinarian doctor
9	X9	Aluva	29	M	Diploma	Hindu	Ezhava	Ethnoveterinary practitioner
10	X10	Aluva	31	M	SSLC	Hindu	Gowdar	Farming
11	X11	Aluva	53	M	5 th	Muslim	-	Farming
12	X12	ChoorNIKarna	36	M	8 th	Hindu	Ezhava	Farming
13	X13	Muthukulam	32	M	BVSc	Hindu	Brahmin	Veterinarian
14	X14	Aluva	45	M	BVSc	Hindu	-	Veterinarian

15	X15	Champanad	51	F	SSLC	Muslim		Farming
16	X16	Aluva	56	M	3 rd std	Hindu		Farming
17	X17	Aluva	61	M	5 th std	Hindu	Yadavar	Farming
18	X18	Aluva	66	F	6 th std	Christian	Catholic	Farming
19	X19	Manikyaman galam	53	F	PUC	Christian	-	Farming
20	X20	Manikyaman galam	62	F	3 rd std	Christain		Farming
21	X21	Manikyaman galam	68	M	PUC	Christain		Farming
22	X22	Manikyaman galam	55	F	10 th std	Hindu	Veerasha iva	Farming
23	X23	Perumbavoor	55	F	SSLC	Muslim	-	Farming
24	X24	Arakkpaddy	65	M	SSLC	Hindu	-	Farming
25	X25	Manikya mangalam	80	M	6 th std	Christain	-	Farming
26	X26	Mattor	61	F	10 th std	Christain	-	Farming
27	X27	Aluva	61	F	6 th std	Christain	Catholic	Farming

The subsequent section of results of Aluva case study are organized in the following ways:

1. The first part describes the themes emerged from the in-depth interviews conducted with the farmers
2. Veterinarians' perspective on the use of TM
3. A village resource person as a channel to enable TM practice

Themes emerged from the in-depth interviews with the farmers

4.2.2. Perception of health and disease by the study participants

The word cloud figure 13 depicts the six phrases that were used when the participants were asked to define health.



The bigger font in the image represents the maximum times that response

Figure 13: Health definition by the study participants obtained from codes of IDIs

appeared. The lower font represents the minimum times that phrase appeared as a definition among the study participants. Colours in the figure indicate different codes.

As shown in Figure 13, the majority of participants opined that being free from disease is termed healthy. This understanding varied among the participants. Other definitions given were doing physical activity, being free from medicines, and alteration in *vata* (combination of air and ether), *pitta* (fire), and *kapha* (phlegm). Participants described these as principles taught in Ayurveda and they know them quite well. Participants mentioned that for a body to be healthy, *vata*, *pitta*, and *kapha* should be balanced.

The understanding of health ranged from the mere absence of disease to a broader connection with lifestyle, culture, state of the body, and spiritual practice. The following quote defines health by a 19-year-old participant from Kadungallur village in Aluva taluka.

“Health is something we get when we move forward without weakness or any other disease and grow healthily.”- 19-year-old participant from Kadungallur village in Aluva taluka.

Another participant described health in relation to prayers, animals, and physical activity.

“A person wakes up, prays, cleans the cow, gets the milk, makes and then drinks the tea, serves it to everyone, does other farming activities, and has rested after working. Since we do all this with full heart, we can be happy. That is health.”

- 55-year-old participant from the village of Perumbavoor

4.2.3. Causes of disease as perceived by the study participants

When asked about the causes of disease, the majority of participants expressed that change in food habits is the main reason for a disease. Apart from this, the extensive use of chemicals in farming, being unhygienic, lack of physical activity, and the climate change were also mentioned as reasons for the disease (Figure 14). This understanding



Figure 14: Causes of disease enumerated by the study participants during IDIs.

was common across all participants belonging to the rural and semi-urban populations. When asked about specific names of chemicals, participants mentioned two fertilizer names Urea, and Diammonium phosphate (DAP). Their understanding of the body getting chemicalized was also

related to the extensive use of tablets, and injections for treating a disease. Apart from this, participants had an understanding of bacteria and viruses as the cause of a disease. However, when asked about specific names, they were unable to name the same. When it comes to a virus, they mentioned the corona virus as the study was conducted when the second wave of COVID-19 had just finished in India and people were attributing flu-like symptoms (fever, cough, cold) to COVID-19. Two quotes that highlight reasons for the disease according to participants are given below:

"Why I am saying so is because weather changes matter. In summer, the heat is extreme. In monsoons, rains are unstoppable. When such things come in, we can't control things, the diseases that pop up during these seasons are such that we can't treat them by ourselves. because there are many reasons."

- 61-year-old participant, Mattor village

"Fodder from earlier days was fine, but if they take it now, the cows can't conceive. Urea content is more in the feed. Apart from urea, mud, and arakka podi are there in the cattle feed. These chemicals also enter the human body through the milk and other products, and we also get disease madam."

- 61-year-old male participant, Aluva

While the above understanding was about causes for general disease conditions, the study participants also expressed specific causes for mastitis among cattle. A few causes mentioned by participants for mastitis were mainly excessive storage of milk in the udder, irregular intervals of feeding, improper way of milching, and unhygienic conditions. Below are a few quotes that highlight the causes of mastitis according to the study participants:

"Whenever we become late in milching, we have experienced this issue of Akidu Veekkam. If we don't manage our schedule in feeding them water and fodder, they find difficulty with digestion which will further lead to diseases like Akidu Veekkam (mastitis)."

- 52-year male participant, Angamaly village

“How much ever we take care, if an outsider comes to do the milking, cows are prone to this disease because we don't know his hygienic measures, also sometimes he milches late, he feeds them whenever he wishes. They can't take care of in the way we take care of them. So, it is also one of the reasons.”

- 61-year female participant from Aluva town

4.2.4. Disease conditions and treatment process

Participants mentioned a few disease conditions common in Aluva. They also described the treatment process they follow for those diseases.

Table 4: Traditional medicine and treatment of disease conditions

Approximately 45 medicinal plants were identified that were used by the study participants for treating specific disease conditions (details in **Annexure 2**). The scientific names of 43 out of 45 medicinal plants were traced. The participants used a single medicinal plant for treating a specific disease condition, or sometimes the combination was with one or more medicinal plants. Many medicinal plants were weeds found in the backyard or near agricultural field areas. The nearby forests also had some specific medicinal plants. A few participants showed ayurvedic formulations which they kept in their homes to treat their health problems.

4.2.5. Healthcare pathways adopted by the study participants

Similar to the HD Kote case study, the healthcare pathways were identified that were adopted by the participants. The existence of a pluralistic health system was clearly evident in Aluva. Figure 15 depicts healthcare pathways practised by the participants to treat minor diseases for human and animal healthcare in Aluva. In-depth interviews with the participants revealed their dependency on three medical practices: Allopathy, Ayurveda, and Homeopathy. The observation made was that home remedies often overlapped with ayurvedic treatment. Study participants prioritized TM and allopathy medicine equally. 8 (30%) of participants mentioned that their priority is home remedies, and the same number of participants chose allopathic medicine as a priority. Around 4 (15%) of the participants chose different approaches based on their needs. Of the study participants, 8 (30%) practised self-medication and took tablets from the local shops. In addition to these practices, two participants followed risky treatment (e.g., use of kerosene and

DDT (Dihydro diphenyl trichloroethane) to treat an injury. The ability to choose different treatment modalities was evident among the participants, either through a trial-and-error approach or through informed decisions. As the following goes:

"For Mastitis, injection is not necessary, I have felt that aloe vera gave good results. We haven't tried these Ayurveda medicines; rather, we rely on English medicine. We started understanding Ayurveda remedies slowly for other disease conditions. We give betel leaves and pepper for indigestion, which is quite effective."

- 51-year-old participant, Champanad village, Aluva.

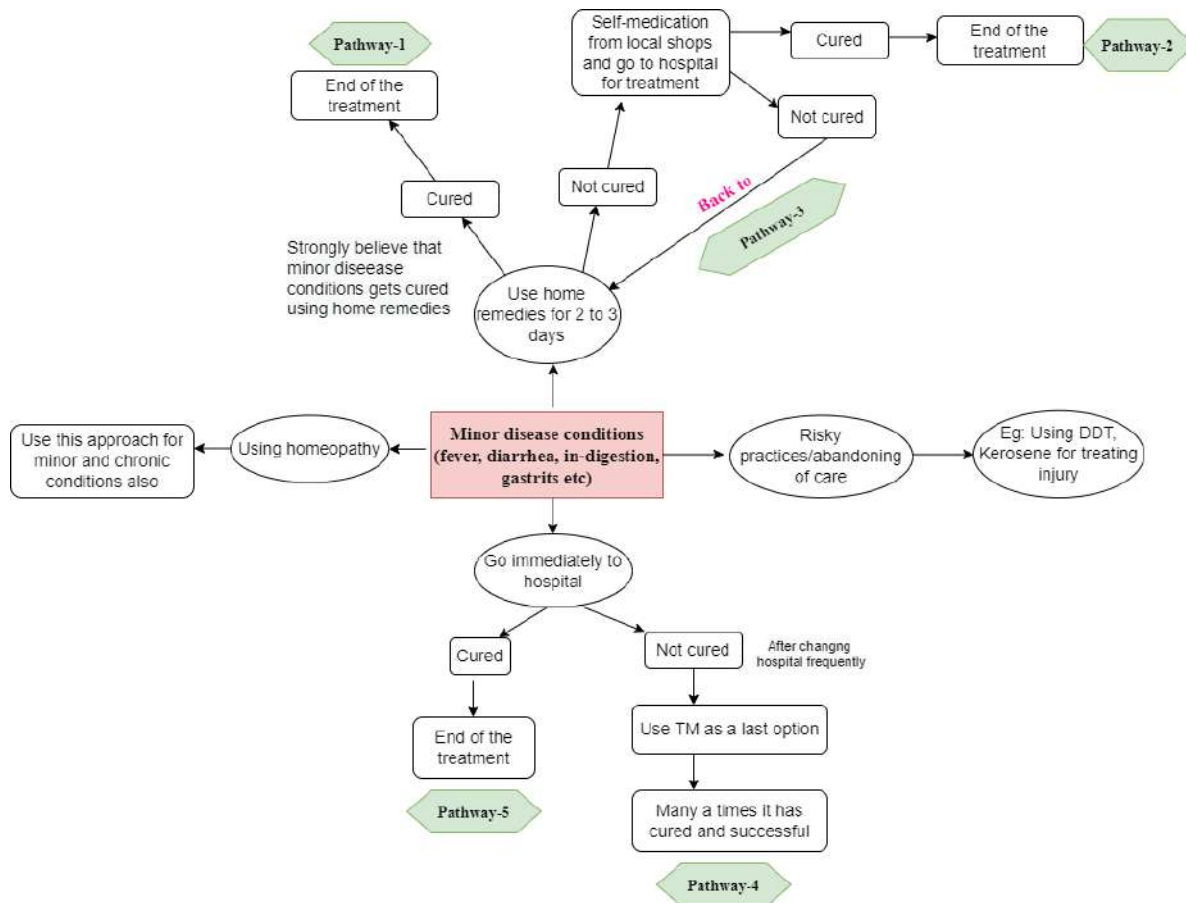


Figure 15: Healthcare pathways identified based on the IDIs conducted with study participants (farmers) in Aluva. Each arrow beginning from the middle box shows the process of respective healthcare pathway

4.2.6. Influence of socio-demographic factors on the use of TM

Among the study participants, knowledge and practice of TM were evident in all age groups. We could not elicit any difference between the young and elderly. Regarding gender, although TM was evident in both men and women, three women participants expressed that as homemakers, the responsibility of using TM comes to them by default since they stay home. The below statement supports the same:

“I being a homemaker, have to apply the medicine to a cow. I get up at 4 am, and my husband does all the cleaning activities in the cow shed, but when it comes to applying medicine, I prepare it and apply it. I only milch out, so I observe the quantity of milk every day. Our cows are also our family members, I understand their behavior also, especially their food and discomfort feelings. My husband tells me, you are at home, so you do it, I need rest. Madam, I also assist him in farming activities. But in the end, I have to apply the medicine. My cows also like me a lot.”

- A 51-year-old female participant, Champanad village

4.2.7. Perceptions of veterinarians on the use of TM

Perception of veterinarians on the use of TM are described based on the themes emerged from the interviews. They are: a) challenges of using modern medicine for farmers, b) factors influencing the use of TM, c) challenges of using TM, d) ways to enhance the use of TM, and e) existence of TM practice. These themes are depicted in the below illustration (Figure 16):

The bold letters in Figure 16 explain the themes and codes. Each text box provides the relevant explanation. Every arrow connects to the practice of TM. The dotted lines between ‘ways to enhance TM practice’ and ‘existence of TM practice’ indicate gaps between them.

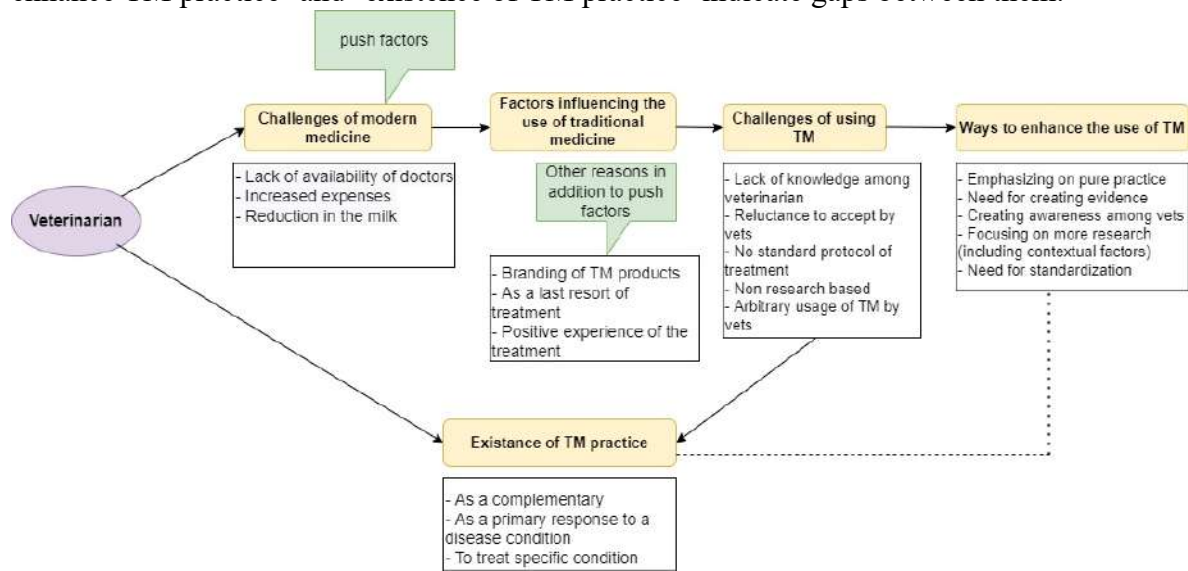


Figure 16: Veterinarians' perspectives on the use of TM. Themes were obtained from IDIs with veterinarians in Aluva

a) Challenges of using modern medicine for farmers

The interviews revealed the following challenges: Lack of veterinarians, increased expenses, and reduced milk production among cattle due to the overuse of modern medicine. Among the four veterinarians, two mentioned the availability of a veterinarian as a challenge, especially for those who live in a village. In contrast, the other two veterinarians believed that since they reside in the city, it is easy for the people to access them since they always attend cases beyond working hours.

A veterinarian from a village mentioned that since people do not reach them at the appropriate time and they communicate poorly with them regarding their health problem without understanding its seriousness which results in a delay in treatment and its success. A veterinarian said as:

“They will tell us that the doctor didn't come, but if I tell them you haven't called me at the proper time, it will become their fault too. But it is better to not mutually blame each other. We can say that, if proper diagnosis happens, it is easier to save the animal.”

- A 32 year old veterinarian from Muthukulam village

The four veterinarians highlighted the challenges of rising cost of modern medicines and people sometimes are unaffordable and decreased milk production due to overusage of antibiotics was also another challenge mentioned by a veterinarian. Two of the veterinarians said:

“As far as the farmer is concerned, frankly telling, rearing a cattle is very challenging. So once the farmer met with mastitis, that's the end of his business. So increased cost with a veterinarian is also the reason for inclining towards TM.”

- 46 year old veterinarian, Felican Hospital, Aluva

“Farmers were very paranoid about using allopathy medicines, mostly they were worried about the decrease in milk quantity after applying English medicines. Even if they take an injection for FMD, they keep asking if the milk will reduce or not.”

- A 32 year old veterinarian, muthukulam village, Aluva

There is a lack of awareness about timely accessing institutional services, which also increases the cost of modern medicine. The veterinarians stated that the farmers do not realise that once they identify the cattle as unwell, they should immediately bring the animal to the veterinarian for diagnosis and treatment. Instead, they allow three to four days to pass, expecting the cattle to recover. But by then, the infection is beyond control, and the veterinarian has no choice but to administer antibiotics. This antibiotic is then impacting the milk yield of the cattle and reducing the output.

“Once they do some traditional thing, they will wait for the response. Because they keep in mind that, going to a doctor in a hospital, especially in a city is an expensive affair. So they may have to spend 1000–2000 rupees in the hospital. So, it is better to look for one hour and go to a doctor. This delayed approach from people makes us use different medicine because already the disease has progressed a lot.”

- A 36 year old veterinarian, Cochin Hospital, Aluva

Health systems challenges (lack of availability of veterinarians, increased expenses, and decreased milk production among cattle due to overuse of modern medicine) mentioned by the farmers acted as push factors for relying on TM for participants. To counter the health system challenges, farmers used TM due to its easy availability, lower expenses, increased milk production, maintaining good health of the cattle, and due to unavailability of veterinarians. Of the total 22, 12 (54.5%) farmers mentioned increased milk production as a reason to use TM, followed by 5 (18.50%) mentioned lower expenses, 5 (18.50%) mentioned easy accessibility, 5

(18.50%) mentioned unavailability of veterinarians, and 4 (14.80%) mentioned that they use TM since it maintains good health of a cattle. Quotes by farmers highlight reasons to use TM:

“We spent about 100 Rs. only when we used Ayurveda medicine suggested by VRP. If you look at it, the expense got reduced drastically and disease also got cured.”

- 48-year-old female participant, Choornikarna village

“We don’t get doctor’s service on time, so try to do whatever we know to our best.”

- 56-year-old male participant, Aluva village

“For permanent cure and milk quantity, TM is better.”

- 53-year-old female participant, Manikyamangalam village

-

b) Factors influencing the use of TM among veterinarians

TM was used by a veterinarian as a complementary to their allopathy. When it comes to the use of TM, veterinarians mentioned that branded Ayurveda products attracted them as part of their treatment process and a few positive past experiences of using TM for treating a specific disease conditions. However, besides this, veterinarians suggest TM as a last resort in the treatment process. The following statements highlight how a veterinarian decides to use TM:

“Himalaya, they have a range of products like gastric sedatives, carminatives, appetite stimulants, liver supplements, medicines for diarrhoea, vomiting, and all those things. So, being a practitioner in the city, I rely on such things rather than relying on some traditional things that the old generation believes in. I find it authenticated. Being an urbanite, that works for me.”

- 36 year old veterinarian, Cochin Hospital, Aluva

“Even after repeated trials, there are incidents when the animal can’t be cured, at that time, we advise using some herbal medicine.”

- 76 year old veterinarian practitioner (private), Aluva

“If we have received a good effect through a medicine, we tend to repeat that remedy. Similarly, homeo is also used in a parallel way. In some cases, we see good changes, even looking like a

miracle at times. So, why don't we emphasize if it is giving a solution to their problem? it is all about their experience. I think relief is what is required at the end."

- 76 year old veterinarian practitioner (private), Aluva

c) Challenges of using TM for a veterinarian

All four veterinarians acknowledged a lack of knowledge about the use of TM. Even though they understand the value of TM in curing certain disease conditions, they believe that they lack knowledge about the same. Other challenges mentioned by veterinarians were lack of research on TM, not having standard protocol, lack of evidence to practice, and the inability of veterinarians to accept TM practices despite positive results.

"Unfortunately, the thing is that veterinarians are less aware and nobody is taking interest in doing research work in traditional knowledge to document that kind of knowledge. Though it is very promising, unless there is evidence and research, it is difficult to practice and also promote as a modern practitioner."

- 46 year old veterinarian, Felican Hospital, Aluva

One of the veterinarians expressed the difficulty in evaluating the impact of TM treatment because people adopted these practices at the household level arbitrarily. Veterinarians emphasized the need for informed decisions in choosing TM treatment.

d) The current practice of TM among veterinarians

Despite the challenges of practicing TM, veterinarians were using TM in different forms. For instance, as a complementary, to treat a specific disease condition, or as a primary response to a disease condition. A veterinarian said *"These practices always exist and there is no harm in using these as they help their treatment output"*. He mentioned that 40% of all medicines in the veterinary hospital are Ayurvedic. He also mentioned that Ayurveda products are converted into branded products and hence people accept those prescriptions. Below are the quotes that highlight the existence of TM practice by veterinarians:

"See, what I am telling is that still, in 2021 also, if you go to any veterinary hospital, 40% of medicines given are ayurvedic medicines. They are still Ayurvedic, and a lot of powders are

there. Veterinarians are using these medicines as complementary, and immunity booster because they yield good results when given in combination”.

- A 46 year old veterinarian, Felican Hospital, Aluva

“This Danthapala oil. I so and so brand names, almost all doctors have who manufacture medicines, almost all have. Now, I am getting it from a place Thodupuzha, one Dr. XX is there. I used to call him, and he will send it by courier, like that. I keep this, and people also know about that because for skin conditions, and chronic conditions very long-term medication is required, so this is very effective. And it removes dryness of the skin, and also scaling. there is no itching. so, this helps us in our actual treatment process.”

- A 36 year old veterinarian, Cochin Hospital, Aluva

"If someone asks me to come for an emergency, and if I am not available, what can they do? So if the cow has shown symptoms of indigestion, they take some ginger, garlic, asafoetida, lemon juice, and betel leaves, crush it and give. Then they will tell me that they have done this remedy, and even though there will be a difference, they wouldn't be satisfied. So, I will give my medicines or an injection for better recovery. When they don't do anything in timely action, the state of the cow tends to worsen, it will face suffocation, the stomach will bulge and such factors tend to happen. Farmers try some remedies as first aid. Since these are first aid, we can never say that it is wrong.”

- A 32 year old veterinarian, Muthukulam village

e) Ways to enhance the practice of TM

The dotted lines in the figure 7 between ‘ways to enhance TM use’ and ‘existence of TM practice’ indicates gaps exist between them. This means, emphasizing on pure practice (medicine practice that aligns with their professional training), need for creating evidence in relation to TM practice, creating awareness among veterinarians about TM, emphasizing research to delineate contextual factors, and standardization of TM practice are grey areas to be addressed to enhance the practice and acceptance of TM practice among healthcare providers. To integrate and promote the use of TM, veterinarians mentioned the importance of adhering to pure practice,

research on TM, and the need for creating awareness among veterinarians, evidence generation, and standardizing the treatment protocol. Below are the quotes relating to this:

“If I got a rheumatic problem, I should consult an ayurvedic man. That type of system should be there. What are the advantages and disadvantages of a system? All systems cannot cure all diseases. That basic idea should be there. If some people ask, along with allopathy can I give supportive medicines in Ayurveda? Or in Ayurveda, if I can give supportive allopathy medicine.”

- 46-year-old veterinarian, XX hospital, Aluva

“As in modern medicine, I can use all such things as supplementary. But I don't want to promote it, because, to promote it, I should be convinced of each and every active principle. If a question comes as to why as a doctor, I have applied this thing and it has created a such and such problem, if they ask me, I won't be able to answer that. Immediately stop is the only thing I can say. Why it happened, I don't know, because I don't know what the active principle in every product or ingredient, or what is the action and contraindication, food interaction, or something like that. So, without knowing that, how can I promote that?”

- 36-year-old veterinarian, Cochin Hospital, Aluva

4.2.8. Village resource person as a channel to enable TM practice

A village resource person (VRP) is a new cadre created in the mastitis project. The VRP works closely with the community to enable the TM practice. Before being deployed into the community, the VRP underwent training on the use of TM for minor health conditions with a specific focus on mastitis by TDU. The VRP facilitated promoting the use of TM. We use the journey of the VRP to capture factors influencing the emergence of self-reliance at the community level among farmers using TM in Aluva. The story of the VRP is narrated in the below box:

The story of VRP is narrated in the below box:

A story of VRP

TDU began the mastitis project in 2017 to implement TM practices at a community level through a new cadre, the VRP (explained the role of VRP in methodology). The VRP was deployed in Aluva after giving adequate training and building competencies and skills to train farmers on the use of TM. The VRP began his work in 2018. He identified that 90% of farmers were complaining of uterus involution resulting in infertility of cows. When he explored reasons for the same, he found wrong procedures were adopted for the insemination in the community. This was the major problem. At this time, more than promoting TM practice, addressing the existing problem was the need. So, VRP started addressing the existing problem. He invested his earned money and did insemination free of cost to address the problem of infertility of the cows. He did it for a year and in 2019, all inseminated cows delivered. The VRP was applauded in the community for his service. This approach helped the VRP to gain the trust of the community.

He began talking about TM to treat mastitis. However, the farmers did not show interest in this as it was not a need for the community. In 2019, the Foot and Mouth disease (FMD) affected the majority of cows. In addition to this, the floods that came towards the end of 2018, disturbed the life of farmers and there were many viral diseases. There was an inadequate number of veterinarians to treat cattle. He used this opportunity to treat cows using TM. With his effort and dedication, he convinced farmers to accept the TM treatment for their cows. As a result of this intervention, he was able to save 150 cows in one year. This resulted in the popularity spread of the VRP and his treatment. However, his treatment approach was questioned by the scientific community, especially by veterinarians and livestock inspectors. They called the TM practice as useless, baseless, nomadic, and *lada chikitsa*.

(Continued... in the next page)

Cows that received the TM treatment were immune to with Foot and Mouth Disease (FMD) vaccination by the veterinarian hospitals. The VRP was disappointed with this. However, farmers who got benefitted from his treatment came in support of his treatment. This further increased the publicity of VRP in Aluva and people started accepting his treatment. The Farmers from different villages kept calling him to treat their cows. The scientific community kept questioning him but he continued his service with the support of farmers. During the same year, there was the death of a cow in the house of a livestock inspector who used modern medicine to treat his cows. He requested the VRP to give his treatment to saved his other two cows. This incident further increased the trust in TM among Aluva farmers and acceptance slowly penetrated. Along with FMD, the cows were also suffering from mastitis and they were affected economically. The VRP started treating mastitis using a combination of aloe vera, calcium hydroxide, and turmeric. This treatment helped farmers in reducing the cost in comparison to allopathy, increase milk production, and reduce antibiotic residue in the milk. Thus, by 2019, there was a good awareness among farmers. VRP continued creating awareness and encouraged the growing of medicinal plants in the courtyard by providing saplings of medicinal plants. However, the VRP is still concerned with the sustainability of the TM practice and his job in particular since it is a temporary post. However, his path is an example of how one could begin a new journey in the midst of a market-oriented and socio-political context. If one VRP can bring about so much change, why not many?

Chapter 5: Co-development of a Self-reliance Framework

Summary

The chapter describes the process involved in the development of self-reliance framework. In the beginning, the chapter connects with the conceptual framework described in the second chapter of the thesis, and then connect with the second step (case study research) in the development of self-reliance framework. The later section describes the components of self-reliance framework and their relation to each other in understanding the self-reliance. While describing the components of the self-reliance framework, the elements of self-determination theory have been explained to understand the process of self-reliance and achieving sustained health behavior. The subsequent section of the chapter describes co-development of self-reliance framework using participatory research method which is the third step in the development of self-reliance framework. It provides an insight on the importance of adopting participatory research in testing the framework to enhance the applicability of self-reliance framework in TM interventions. The chapter ends with describing the refinement of different components of self-reliance framework to arrive at the final version of the self-reliance framework. The chapter also provides a definition of self-reliance that derived from the case study and participatory research.

5.1. Derivation of self-reliance framework from HD Kote and Aluva case study

In the first step of self-reliance framework development, a conceptual framework was developed through scoping review (Chapter 2). A conceptual self-reliance framework helped to develop topic guides to conduct an empirical study using qualitative research methods (case studies in HD Kote and Aluva). In the second step, further development and refinement of the framework continued by comparing the conceptual framework with the findings of HD Kote and Aluva case study. The conceptual framework and case study findings were discussed with the research team to brainstorm on the modifications of the framework. This brainstorming helped to understand the limitations of the conceptual framework and to seek an opportunity to refine it further. The research team consisted of experts from the health systems research (PNS, JP)¹, integrative health (UPM, JP)², the health policy (UB, PNS, JP)³, and environmental health (HN)⁴. Through the combination of perspectives from different disciplines, the framework was refined with a new way of looking at the understanding of self-reliance. We also looked at the self-determination theory (explained in the first chapter of the thesis) to compare elements that explain the mechanism of an individual's health behavior and their relevance in the emergence of self-reliance. The framework integrates the components of self-determination theory with the elements of health behavior of an individual.

The left side of the framework incorporates physical, health system, and socio-cultural factors. The framework is based on the idea that self-reliance results from a continuous and reciprocal interaction between the individual and the individual's proximal environment, including the health system, sociocultural factors, and physical factors (description of these factors is given in **box 4**). As such, the framework describes three levels (community, household, and individual) at which different factors influence the emergence of self-reliance. Towards the right side, the framework boils down to individual-level factors (autonomy, competency, decision making, and relatedness) that contribute to the manifestation of self-reliance. Due to the focus of this study on TM and primary healthcare, factors mentioned in the framework relate to TM and primary

¹ PNS – Prashanth Nuggehalli Srinivas (Ph.D. supervisor)

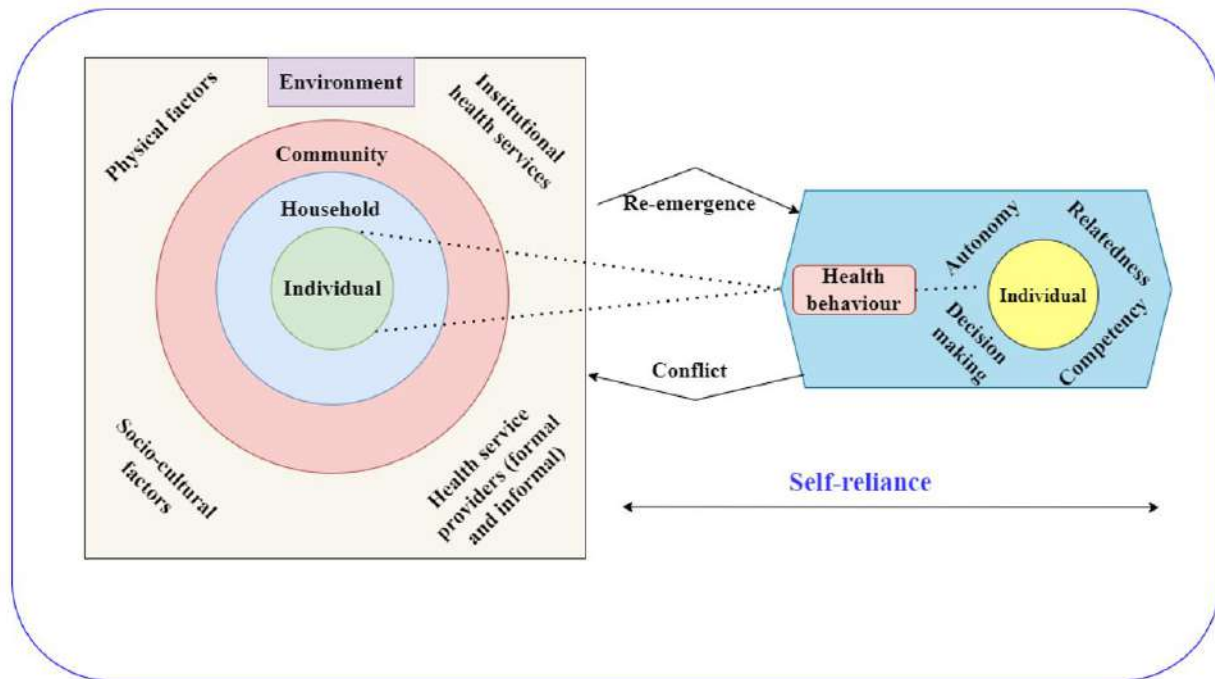
JP – John Porter (Doctoral committee member)

² UPM – Unnikrishnan Payyappallimana (Ph.D. co-supervisor)

³ UB – Upendra Bhojani (Doctoral committee member)

⁴ HN – Harini Nagendra (Doctoral committee member)

healthcare. However, this framework can also be applied to any health intervention that aim for enabling the self-reliance of individuals, and communities with the relevant changes as per the intervention package.



The framework has two components; the environment, and the individual. The negotiation process between different factors (Table 6) is existing within the environment and within the individual. As explained in the case study results, issues associated with the health care delivery system in terms of accessibility, availability, and affordability are considered as physical factors, the health systems factors refer to the availability of institutional health services (public, private, dispensaries, NGOs, and clinics) and healthcare providers (doctors, nurses, healers, and community health workers). Going beyond physical and health systems factors, the environmental component of the framework also talks about socio-cultural factors which a community, household, and individual believe in. Thus, the environmental component of the framework describes broader level factors that transit through a community, household, and individual level while taking healthcare decisions.

Figure 17: Self-reliance framework depicting different factors involved in the manifestation of self-reliance. The framework is derived from HD Kote and Aluva case studies after identifying interaction of various factors in the emergence of self-reliance

The right side of the framework focuses on the individual. Framework describes that an individual is not only part of the environment in which he/she lives but also of one's individualistic nature. The level of competency, ability to take decisions, ability to relate to the environment, and the autonomous nature of an individual influence one's health behavior as described in the self-determination theory (4). The conflict and re-emergence words in the framework denote an individual's struggle to sustain their health behavior due to conflict between environmental and individual factors (Table 5). The bidirectional arrow along with the self-reliance tag in the framework depicts that self-reliance is a negotiation between the environment and the individual and it is a continuous process. For an individual to be self-reliant, he/she must acquire skills of resource utilization, informed decisions, and problem-solving (5). The emergence of these skills depend upon how an individual is provided with an enabling environment. Thus, environment and individual are inseparable in the emergence of self-reliance. However, the execution of skills happens at the individual level. Therefore, health interventions that target enabling self-reliance should provide an environment that fosters change at the individual level where the actual manifestation of self-reliance happens.

Physical factors: Denotes distance to travel to reach a health facility, (non) availability, and (in) accessibility of doctors, healers, medicinal plants, and time spent in availing health services.

Institutional health services: Refers to hospital services (public, and private), mobile health units, non-governmental organizations, dispensaries, and clinics.

Health service providers: Refers to doctors (formal and informal), nurses, pharmacists (certified and non-certified) community health workers, and healers.

Socio-cultural factors: Refers to customs, traditions, religious beliefs, relationships, and values.

Box 4: Description of environmental factors of self-reliance framework

Based on the factors identified in the framework, self-reliance can be defined as “the ability of an individual to make informed health decisions through the use of local resources (formal and informal health services, and medicinal plants) by aligning social and cultural beliefs of an individual to achieve sustainable health behaviour that is flexible and adaptable to a particular context.”

5.2. Participatory research findings



Figure 18: A feedback and brainstorming session during participatory research

The co-development process using participatory research method was the third step in developing the self-reliance framework. The purpose was to refine the framework from an implementation perspective. The self-reliance framework was introduced to stakeholders who were involved in TM interventions to seek inputs and feedback (details of participatory research have been given in chapter 3 of the thesis). The findings of participatory research are described under the following themes; a) drivers of using TM, b) challenges of the health system, and c) challenges of using TM.

Drivers of using TM

Study participants mentioned TM being part of their culture due to intergenerational knowledge is the major reason for using TM. In addition to this, the local availability of medicinal plants, less cost, fewer side effects, and the success rate of TM treatment were other reasons mentioned

by the participants. These factors were similar to the findings of the HD Kote and Aluva case study.

Challenges of the health system

The study participants mentioned the inaccessibility of hospital services due to long distances, the non-availability of doctors, and increased healthcare costs as major challenges of the health system. With respect to TM, lack of knowledge among healthcare providers was also one of the reasons why TM is not accepted as a practice.

Challenges of using TM

Availability: Some plants/trees/herbs are difficult to find and highly scattered within the forest

Accessibility: Plants/trees/herbs are mostly found deep within the forest, making them difficult to access. Thorny plants in the forest make it hard to access sometimes.

Weather: Rainy seasons make the rocks slippery and the soil muddy, making walking difficult.

Beliefs: Some beliefs also require collecting the materials in a specific way; failing to do so will require one to return to the same tree/plant/area a few days after checking the right time using astrology, thus delaying treatment.

Adhering to a regimen: Patients are required to follow a strict regimen which they often fail to do so, thus affecting an outcome. Patients also drop out sometimes due to the long course of treatment.

Compensation to assistants: Assistants and people who help to extract plants need to be compensated appropriately and healers expressed that it is challenging to do all the time.

Defining self-reliance

The participants were asked to define self-reliance after discussing a self-reliance framework. The purpose of this activity was to understand self-reliance from the participant's perspective and what factors they consider while defining self-reliance. Table 5 provides a list of definitions and a number of participants who agreed to a similar definition.

Table 5: Definition of self-reliance given by workshop participants

Sl. No	Definition of self-reliance	Number of participants
1	Using suitable herbs and healing people	3
2	Self-reliance is being competitive and winning with one's abilities	4
3	Cultivating our crops, following traditional food, keeping the environment and surrounding clean, and believe in our traditions. One must earn one's own money.	6
4	Self-reliance is being independent, bold, and courageous, being less dependent on others, and being responsible.	8
5	Self-help	2
6	Being positive and a good thinker	1
7	Self-reliance is self-confidence, using our resources, living happily	6
8	Self-reliance is having clarity with our thoughts, decisions, and actions and achieving our goals.	4

Based on the findings of participatory research findings, definition of self-reliance was relooked. Research participants added new attributes of independency, competency, and responsible behavior while defining self-reliance. Hence, the revised definition of self-reliance is:

“The ability of an individual to make informed health decisions to use local resources (formal and informal health services, and medicinal plants) considering social and cultural beliefs to achieve sustainable health behavior through which an individual achieves a state of autonomy, competent, and responsible towards his/her health that gives a sense of empowerment to an individual. Such a state of health behavior that is flexible and adaptable to a particular context is termed as self-reliance.”

5.3. Refining the self-reliance framework based on participatory research findings

Self-reliance framework was revisited to compare with the factors that emerged in the participatory research. The comparison showed that the self-reliance framework had covered almost all factors that determine the emergence of self-reliance. However, the participation of different stakeholders in the participatory research identified the need for intersectoral coordination to deal with environmental factors (for instance, to deal with the distance issue among tribal people, the forest department involved along with the health department and provided a transport facility to tribal people for accessing the institutional health service in Nilgiris district. In such a situation, the role of panchayat leaders in facilitating transportation was crucial to access health services. The coordination between panchayat leader and forest officer was hard to establish and many political and social factors influenced the operation of this interdepartmental coordination). The framework seemed to miss the socio-political context in which different actors and departments influenced an individual's health decisions. Therefore, a refined framework included socio-political context as a new element covering the environmental and individual components of the framework.

In addition, the components of conflict and re-emergence were further explored to understand how the process of conflict and re-emergence plays a role in the manifestation of self-reliance. the participants described a few instances in which they felt the conflict. For instance, a doctor not accepting people's practice as part of treatment process. When doctor asked people to follow what he/she believes is the right treatment, people felt it as a disrespect towards their belief system. This passive approach of the treatment by a doctor resulted in the participants believing that the treatment was not according to the illness experienced by the patient. It appears that it is as per the knowledge that the doctor has. The difference between these belief systems of the people and the healthcare providers pushes people to seek an alternative solution to their health problems. As a result, the coping mechanisms play a crucial role in the re-emergence of self-reliance. Table 6 provides the list of negotiating factors mentioned by the participants as a cause of conflict.

Table 6: Negotiating factors between study participants and healthcare providers on healthcare approaches

Negotiating factor	Healthcare (modern medicine)	Study participant's perspective
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	provider's perspective	
Validity of a treatment	A trained doctors seek for evidence-based medicine. Some untrained practitioners provide treatment based on their experience.	Does not bother as long it cures their health problem. It can be medicine, injection, or any other form of treatment. Sometimes participants have waited for a few days allowing the body to respond to an illness to attain self-healing capacity. Therefore validity
Health intervention design	Based on guidelines and general principles	Based on what works in a particular context considering cultural, religious, and traditional belief factors and past experiences of self and generations.
Source of health information	Accepts if it is validated and agreed as a practice to be incorporated. However, doctor's own experience, and patient's feedback also serve as a source of health information.	Accepts only if it is applicable to them and helps to solve their problem irrespective of whether it is validated or not. Any information is also accepted even if it is giving a partial solution to people.
Respect and dignity of a patient during the treatment	Believes important as part of the treatment process. However, due to challenges of spending adequate time, and other additional responsibilities, respect and dignity are overlooked sometimes.	Participants expect respect and dignity when visiting any healthcare provider/hospital/clinic/healer/any other health institution.
Cost of treatment	Cost varies based on public or private hospital or independent practice. The cost is also influenced by factors such as designation of a doctor, years of experience, drug manufacturing company, and hospital infrastructure. They believe people always seek treatment that they believe could cure the disease.	Participants expect the cost to be affordable to get quality healthcare. However, this is not always the case since many participants expressed that health is the priority over the cost in critical situations. So, the cost as a challenge depends on the condition to be treated. The burden of the cost was felt when it affected their earning capacity.

<p>Culture, values, and traditions</p>	<p>They believed that they respect culture, values, and traditions as much as patients respect them since all doctors too come from a particular culture, belief, traditions, or values. However, they believed that an effort to understand the patient’s beliefs, and traditions is not adequately incorporated as a practice. This is also because of various constraints like time, multi task handling responsibilities that a doctor faces during his practice.</p>	<p>Participants expect their culture, values, and traditions to be respected in the treatment they receive.</p>
<p>Waiting time in the hospital</p>	<p>Believes that it is not in their control as every day the number of patients vary.</p>	<p>Believes that there should be priority-based treatment approach to avoid long waiting hours.</p>

The identification of conflicting factors by the study participants prompted them to identify a solution to their health problem. Identifying solution comes from various ways (**Figure 19**).

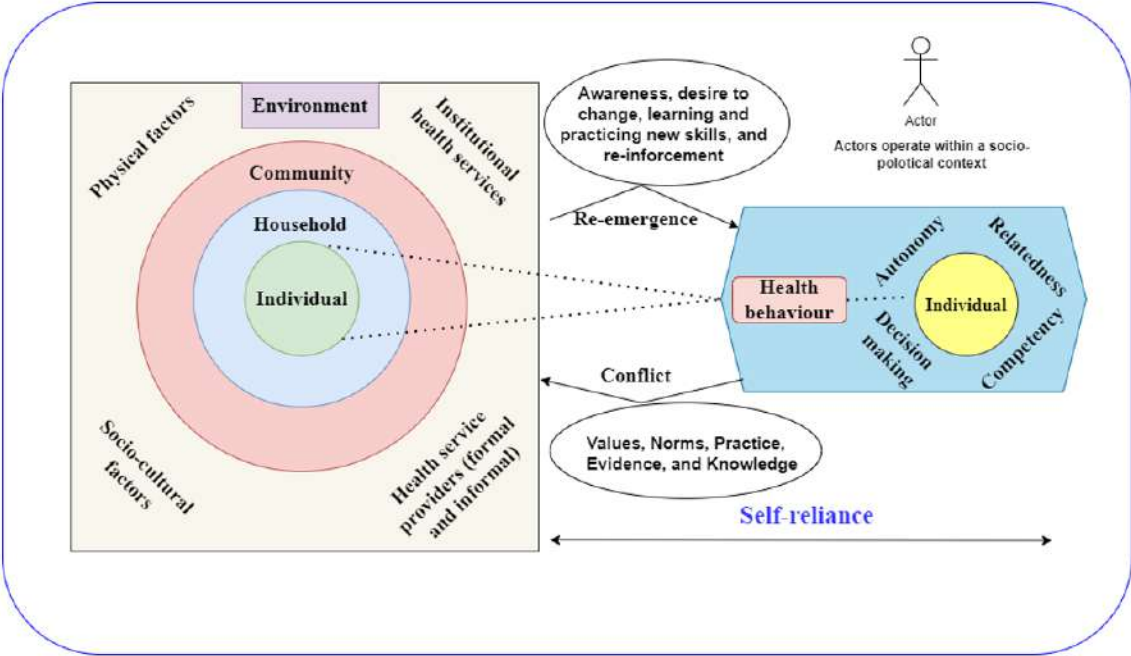


Figure 19: A Modified self-reliance framework. Framework was refined based on the participatory research findings. The additional components of the refined framework are socio-political context and conflicting and re-emerging factors.

The framework describes that re-emergence of a new behavior comes from identifying a potential solution for the existing conflict between individual and environmental factors. Here, the new solution that is recognized by the participants was driven by their autonomous decision considering their skills and related environmental factors for the long term and sustained solution for their health problem. According to SDT, a health behavior that is expected to be long term and sustained, should consider autonomy, competency, relatedness components in developing a new health behavior (6).

The re-emergence process in the framework highlights important factors for acquisition of a new behavior. This involved a significant shift in the mindset, behavior, and overall way of life. Participants described their complex lived experiences of seeking healthcare to navigate solution to their health problem. From the description of experiences, elements that contribute to self-reliance were extracted to incorporate them in the self-reliance framework. They included mainly, awareness, desire to change, learning and practicing new skills, and reinforcement. These elements are described below:

Awareness: This involved recognizing the need for new pathway or solution. The awareness often stems from the dissatisfaction with environmental factors or when there is a mismatch between individual beliefs and the environmental factors.

Desire to change: A motivation with strong desire to change propelled study participants to practice a new behavior that helped them to remove the obstacles in the process of attaining a new behavior.

Learning and practicing new skills: This involved learning new skills, behavior, or new ways of thinking. This involved a process of reflecting on earlier practices and new practices. After a great deal of self-reflection, the new habit was acquired and continued to practice.

Reinforcement: Participants mentioned that the success of their new behavior, treatment approach, or solution to a problem built their confidence and motivated to sustain a new behavior. Here, reinforcement was coming from their own success.

The factors that were highlighted by the study participants correlated with the theory of self-determination. Their explanation of self-reliance was manifested by acquiring new skills,

improve relations, enhancing self-esteem, and feeling of being independent in handling health problems which are covered under our final definition of self-reliance. The self-reliance framework provides a logical approach to design health interventions. Framework suggests health intervention designers to consider multiple factors to enable self-reliance of individuals and communities.

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Chapter 6: Discussion

Summary

This chapter discusses the findings of the study in relation to the current context and the relevance of the research in primary healthcare and the health system. At the beginning of the chapter, multidimensional understanding and various causes described by the participants have been discussed concerning its relevance in the design of health interventions and its importance in dealing with the influence of different factors on health. Going forward, the chapter describes the complex nature of healthcare approaches and the importance of accepting different forms of practice to help people make informed health decisions. This section also discusses the need for creating evidence amidst the complex healthcare approaches. The next section of the chapter discusses a comparative analysis of HD Kote and Aluva's case study to provide insight into the interaction of different factors and also the importance of individual and environmental influence in the manifestation of self-reliance. After having understood the process of emergence of self-reliance, the chapter explains about self-reliance as a strategy in various health interventions and their role in the context of the health system. In various parts of the thesis, the self-reliance has been connected with self-determination theory to comprehend it from sustainable behaviour perspective. Towards the end, the chapter discusses the importance of incorporating self-reliance in health policies and its implication on strengthening the health system. The chapter also discusses strengths and limitations of the research to provide future directions of scope to engage in research on self-reliance.

6.1. Multidimensional understanding of health by the study participants

The present study revealed the different dimensions of understanding health. Health was not about physical or biological state alone but also to function harmoniously within the ecosystem that one lives by a virtue of adaptability. While a small section of the participants had an understanding of health as being absent from the disease, the majority of participants were linking health with multiple factors. The explanation of health also varied depending upon the context, age, and stage in the life of the participant. Defining health by participants was also an opportunity to evaluate their life. When asked about health, participants compared their past and present life and reflected on their understanding of health. This reflection consisted of looking back at their lifestyles, habits, the food they were eating, and the physical activity they were engaged with. This comparison involved feelings of disappointment for the transition from their existing lifestyle and acceptance of a new lifestyle in the process. The underlying principle in participants' understanding of health seems to be a negotiation between their bodily requirements and the environmental factors that influence them. This negotiation allowed participants to bring a new perspective to their health. These new perspectives sometimes were experienced as uninspiring by the participants. However, this also provided a better meaning to their understanding of health. Participants struggled to define their health with every new change in their context, or sometimes it was just moving with the flow of life. According to this study, the meaning creation to health came from self-reflection of one's thoughts, and actions concerning the environment where study participants lived. The new meaning was enjoyed if that provided new hope and positive feeling; otherwise, an act of creating meaning to health continued.

A health behavior of an individual is shaped by meeting everyday needs which comprise bodily needs (food, water, and rest), economic needs (daily wage, or any other activity of earning), social relations (meeting with people and relatives), emotional needs (being connected with emotions with loved ones), and therapeutic needs (medical treatment if required). Meeting of all these needs did not happen in a linear or parallel approach, rather happened with everyday struggles and compromises. Therefore, assessing well-being based on all the needs may not be the right criteria rather a felt need and ability to achieve the same to be taken into consideration to understand one's well-being. For instance, in HD Kote a participant mentioned that sitting in the healer's house makes him feel happy and healthy and he forgets all his sorrows. In this case,

the well-being is achieved through psychological satisfaction of sitting in healer's house where he experiences the emotion of being healthy. This finding coincides with the that of Debra and Jennifer who spoke about the importance of social relations, religious factors, and cultural factors in maintaining one's health (1). Multidimensional perspective of health emerged in this study reiterates the need for adapting a comprehensive approach that considers different factors (physical, psychological, emotional, spiritual, and social) to achieve holistic health (2). The trial-and-error approach towards health by the people reveals people's abilities to manage health while also struggling to find a solution to their health problem. There is a need for emphasizing self-management in the face of rising social, cultural, spiritual, and emotional challenges (3). This study re-iterates the strong connection between how an individual understands one's health and the ability to manage health through sustained behavior. Therefore, the multidimensional perspective of health seeks the attention of health policymakers to reevaluate various factors including contextual and individual abilities in defining health (2,3). For healthcare providers, a multidimensional understanding of health allows for a more comprehensive assessment of an individual's well-being or health problem. This further helps to develop personalized and targeted interventions to address multiple factors of a health problem (3).

A multidimensional understanding of health by an individual is the first step towards individual empowerment. By recognizing the various dimensions of health, policies can be framed to help individuals in making informed health decisions and help them engaging in behavior that promotes health. This further helps an individual to adopt self-care practices, encourages them to take ownership of their health, and helps individuals to prioritize different aspects of their life to achieve balanced and optimum health (4). The multidimensional understanding of health by the participants was driven by their lived experiences (5). Experiential knowledge is valuable in healthcare since it provides realistic perspectives of healthcare that contribute to the development of evidence-based research and informs health policy (6–9). Bridging the gap between biomedical knowledge and the patient's knowledge in understanding health could be a positive direction to build a patient-centered health system (9).

This study has revealed how different determinants, like changes in lifestyle and environmental factors (place, seasons, and climate), connect with the community's multidimensional approach to health and illness. Participant's understanding of occurrence of cold, cough, and fever as a

result of weather change, and change in food habits coincide with the principles of *Ritucharya* (seasonal regimen) and *Dinacharya* (daily regimen) concepts of Ayurveda (10–12). The inability of an individual to understand seasonal and climate change results in the imbalance of homeostasis which further leads to the causation of disease or illness (13,14). The need for adopting lifestyles to accustom with the change in the environment is imperative for the health and well-being of individuals. Participants' understanding on the importance of being in the same place to remain healthy denotes their long-term engagement with particular climate, food, water, culture, beliefs, and contextual knowledge in predicting their health and disease. As observed in this study, tribal people had a unique affinity with their environment. Their interpretation of health concerning their place, religious and spiritual beliefs, and cultural practices denoted their broader approach to health and well-being. While this knowledge is vital for managing disease conditions, it might also restrict the individual's ability to cope with the sudden consequences of changes in place, weather, culture, and water. The tribals in this study expressed on the difficulties faced when they migrated from forest to a settlement area. Hence, the need for adaptability for an individual concerning change in the environment is necessary to maintain optimum health and well-being (15,16). Anna Le Gouais et al also highlights the importance of creating healthier places and empowering people to manage unintended consequences of the environment for the health of individuals (17). The principles of Ayurveda on balancing microcosm and macrocosm for one's health and well-being correlate with peoples' understanding of health which reflects the relevance of Ayurveda knowledge in modern science (11). The perception of study participants towards health was not about dealing with the disease alone. Instead, it was dealing with multiple factors. Hence, the need is to question the linear approach of institutional healthcare based on biomedical knowledge that creates a massive gap between what people expect from the system versus what the system delivers (20). The mismatch between the expectations of people and the delivery of services should be addressed to empower people and contribute to self-reliance.

6.2. Complexity of healthcare approaches and need for self-reliance

Healthcare decisions were the result of push and pull factors. Push factors denote challenges of the health system and pull factors denote cultural practices, values, and beliefs relevant to healthcare practice. Participants expressed helplessness and hopelessness if their decision was

due to push factors. However, a positive feeling and confidence were expressed if the decision was taken based on pull factors. This confidence and positive feeling impacted their overall well-being. Besides easy availability, and accessibility, the synchronization with one's values, beliefs, intergenerational experience, family legacy, self-experience or experience of community members influenced the adoption TM practices. The use of the term '*hasiru aushadi*' (green medicine) for the TM by a participant in the HD Kote case study, denoted a strong connection between their environment, TM, and beliefs. The usage of '*our hasiru aushadi*' (our green medicine) against modern medicine denotes their close connection with their immediate surroundings and a sort of regret towards interference of newly introduced treatment (modern medicine) in their existing lifestyle. One of the critical factors that influenced the health decision was 'the speed of recovery'. Whether one took a tablet, TM, or any other mode of treatment, the preference favored the modality that cured the health problem quickly. For participants, it was efficiency (ability to achieve desired health outcomes i.e., getting cured from symptoms of a particular illness, it could be pain relief, or stoppage of symptoms, or complete cure of a disease) that bothered them the most rather than authenticity (proof or evidence backed by science). The trust towards a particular treatment developed on attaining desired health outcomes. Study participants considered experiential treatment that cured their health problems as an authentic form of treatment. However, verification of the authenticity was vague and complex due to their variations in beliefs. For instance, participants who took a treatment using TM, met a doctor to confirm whether they are cured or not; a spiritual belief that endorsed a denial of treatment was considered authentic, and people considered branded ayurvedic and homeopathic products as authentic for treating their disease condition as observed in Aluva case study. As witnessed in both HD Kote and Aluva case studies, individuals with illnesses are more likely to try multiple practices to get rid themselves of the problem, be it a medical or non-medical solution. It is difficult to judge such practices as self-care or delay in seeking health care as they may have both benefits and harmful effects (18).

The challenges of availability, accessibility, increased waiting hours, and affordability identified in this study, align with the findings of Braddock et al. who found that a physician spends less than a minute with patients due to long queues in a hospital resulting in the provision of inadequate information to patients about their disease condition (19). Braddock et al. also emphasize the importance of being available in the context where people feel more comfortable

for the better exchange of health communication between healthcare providers and patients that enables individuals and healthcare providers to understand health problems in a better way (20). Due to the intricate nature of the healthcare system, the vast array of treatment options, and the potential risks and benefits associated with each decision, there is a need to empower individuals to make informed decisions for choosing a healthcare approach (20,21).

As witnessed in the Aluva case study, the use of different modalities of treatment was also existing among healthcare providers. According to veterinarians in Aluva, people expect veterinarians to use TM along with their allopathic treatment as an immunity booster or sometimes people believe TM works better along with allopathic treatment. As stated by a veterinarian, 40% of medicines in veterinary hospital in Aluva are Ayurvedic. It speaks aloud of how a pluralistic health system exists in a community among the people and healthcare providers. Although people and healthcare providers perceive medical knowledge as superior than other systems of medicine, there is also a realization that one modality of treatment or intervention is not always the best. The need to respect other forms of knowledge is imperative to take advantage of the strengths of different modalities of treatments for the better health and well-being of individuals and communities (22). Although this study revealed the existence of pluralistic healthcare approaches in both HD Kote and Aluva, the majority of healthcare choices by the study participants were based on the trial-and-error approach except on a few occasions in Aluva where the knowledge about a particular modality of treatment was strong and study participants made an informed decision to choose a healthcare approach. Trial and error approaches seemed to be out of tension to overcome a particular health problem. Thus, there is a complex nature of pluralistic healthcare in the community that triggers the debate around evidence-based practice and practice-based evidence. Many of the healthcare choices in this study, were also due to variations in health literacy leading to disagreements among family members, community health workers, and even healthcare providers. This study's findings are in sync with the review by Laxmi et al that described how disagreements within a community and family stimulate health seeking behavior. Thus, choice as such is a complex phenomenon that is influenced by health literacy, beliefs, individual experiences, and cultural practices (23–25). For instance, the use of TM in this study reflects a complex combination of religion, identity, beliefs, and economic and health systems constraints. Due to the influence of various factors, we must broaden our lens to visualize healthcare choice before we even interpret choice as a mere trial

and error approach. We contend that the notion of scientific evidence has narrowed approach to delineate the complexity of healthcare approaches and is therefore a problem. This correlates with the argument by Ken Wilber who mentions that scientific principles stigmatize the other forms of knowledge without acknowledging the limitations of conventional scientific approaches to investigate other forms of knowledge (26,27). We also argue that it is not wise to assume that people make choices systematically about their healthcare in the discourse of a pluralistic healthcare system. Instead, this study emphasizes the importance of being open to different forms of choices and making a thorough assessment of the healthcare choice before interpreting it as good or bad over the other modes of healthcare options. Thus, amid the complexity of healthcare approaches persisting in communities and people, the creation of evidence should focus on assimilating different practices rather than differentiating them. This process enhances acceptance and mutual respect between different forms of practice. While we emphasize pluralistic healthcare approaches for better health outcomes, one must be aware that the ability of an individual to make informed decisions significantly impacts health outcomes (28,29). Therefore, there is a need to empower people to be able to make informed decisions, that further enhance self-reliance of individuals and contribute to strengthening the health system.

6.3. Analysis of case studies to delineate factors influencing the emergence of self-reliance

The present study involved two levels of case studies i.e., individual level and community level. Self-reliance is a complex phenomenon and the meaning and practice of self-reliance embedded within people's health experiences at different levels. Addressing various level factors and focusing on co-production of knowledge and practice is imperative in self-reliance (30,31). Empowerment of individuals and communities continues to remain as a strategy for attaining sustainable health behavior to promote self-reliance in primary healthcare (30,31). Self-reliance calls for individuals, and communities to be owners of their health through informed decisions that is driven by various proximal and distal factors as observed in this study. This study's findings align with various discussions that are happening at the national and global health policy context in relation to self-reliance and primary healthcare. Many policy documents used self-care term which is the precursor for self-reliance (32). Indian National Health Policy (NHP) 2002 emphasized local self-government institutions for health interventions, Indian NHP 2017 mentions documentation of local knowledge, farming herbal gardens, and building the credibility

of the alternative systems of medicine through evidence-based research (33)(34). The Behvarz program in Iran is another policy approach for enhancing self-care through community participation and utilizing local resources (35). At the global level, a conceptual framework for self-care interventions was developed by the World Health Organization (WHO) (36). Global policy roadmap for self-care by Bayer and White ribbon alliance in the year 2018 recommended integrating self-care with health policy, and encouraged evidence-based self-care practice (37). WHO PEN (Package for Essential Non-communicable disease interventions) strategy for primary care in low resource countries recommends early detection, community engagement, and self-care practice by the people (38). WHO traditional medicine strategy 2014 – 2023 emphasized developing tools for educating and disseminating information about self-care (39). Thus, policies play a vital role in pushing states and institutions towards creating an enabling environment for self-reliance (32,35,40). Self-reliance framework that was developed as part of this study, incorporated policy level factors under the environmental factors as part of the health systems component. Apart from broader policy level discussions, interventions that targeted at the household and community level demonstrated the involvement of various factors in the manifestation of self-reliance that coincide with the findings of this study. For instance, the present study revealed economic constraint as a challenge to reach institutional health services that necessitated the use of TM to manage health conditions. The same challenges have been identified from previous studies where TM use was observed mainly among families belonging to low socio-economic status (41–44) in response to affordability challenges of the institutional health service. The interventions targeted at the household, mainly incorporated lifestyle messages in addition to instructions on the use of home remedies (41,44–50) to enable self-reliance (51). Family medicine box project by Nippon Foundation in Mongolia (52), home herbal garden project by Foundation for Revitalization of Local Health Traditions (FRLHT) in India (45) developed intervention that target at the household level to empower families to manage primary health care conditions.

The majority of health practices including self-care vary depending upon the age, gender, and stage of life of the individual (53). In HD Kote, elders were the main source of traditional knowledge while in Aluva, traditional knowledge was evident across all age groups. This difference was because in Aluva the practice of TM is familiar and comes from its historical roots. People in Kerala knows the strength of TM and they use it because of TM's inherent

strengths unlike in HD Kote majority of study participants mentioned that TM was practiced out of necessity either as a last resort or due to systemic issues. The same finding was observed from the previous studies which revealed that elders use TM more than other age groups (54,55) and also in African countries TM is used because of its inherent strength (27). This dichotomy of usage due to inherent strength versus necessity should be addressed to facilitate informed decision to practice TM. If the decision is driven due to inherent strength, the possibility of attaining sustained use of TM is more than if it is used out of necessity. In this study, there was no clarity whether education or lower level or illiteracy influenced the use of TM as it is underexplored in both HD Kote and Aluva case study. However, in contrast, previous studies have identified the role of education on choosing a healthcare, in particularly TM (54–56). The current study revealed occupational factors influence the practice of TM and self-care as witnessed in HD Kote and Aluva where men expressed that they had to spend extra hours to prepare medicine using medicinal plants. Also, women participants expressed that since they stay at home all the time, they know about using TM to treat common health conditions. Thus, occupation appeared to be another important factor influencing the adoption of self-care. Previous studies also revealed occupational factors (long or busy work hours, and daily wage work) as hinderance to access institutional health services which eventually pushed individuals to choose home-based interventions for health problems (43,54).

The creation of new cadre in the form of village resource person in Aluva, and the emergence of local healers in HD Kote as narrated by the study participants, demonstrate the need for a channel that facilitates the adoption of particular health intervention to address health problems of individuals and communities (57). However, sustainability of such initiatives depends on socio-political factors in a particular context in which the initiatives are started (30,31,58,59). There are many efforts that facilitated community participation and aims at empowerment of people and community. For instance, community health programs like ASHA program under NRHM in India (60), village midwife program in Indonesia, community midwives program in Sri Lanka and female community health volunteer in Nepal (61), Behvarz community health program in Iran, etc.(42), and traditional knowledge and conservation of local biodiversity project by Globinmed organization in Malaysia (62) are few examples which facilitated the participation of people and promoted the use of local resources to enable self-reliance of communities. To make easy accessibility of medicinal plants, many countries have implemented

household and community-based interventions. For instance, successful integration models in countries like Vietnam, the Lao people's Democratic Republic, and Thailand have established community herbal gardens to aid the practice of TM (63,64).

HD Kote and Aluva case studies focused on household and community levels. However, factors that were recognized at both the levels consisted both community and household factors in the emergence of self-reliance. Therefore, household and community factors cannot be seen in silos since they influence each other. For instance, households with traditional knowledge contributed to community health through shared learning as witnessed in HD Kote where people with traditional knowledge became source of treatment for other people in the community. The presence of community health workers helped in building the capacities of families in taking care of their health in Aluva where village resource person motivated individuals to adopt TM practice and acted as a facilitator in enabling self-reliance of communities.

Going beyond household and community factors, the more subtle components of self-reliance exist with the individuals in their perception of illness, cultural practices, traditions, and beliefs. The response to illness stems from how the individuals perceive, experience, and understand illness. This understanding of illness or disease is largely driven by the culture, traditions, and social norms (44,65). In HD Kote, the cause of disease was identified by using cowry shells (the cause of the disease is identified with the priest throwing cowry shells after worshipping them. An even number of cowry shells falling indicates some bad things are happening in life that are responsible for the illness. An odd number of cowry shells falling imply that good health prevails and no treatment is essential for the disease). In another instance in HD Kote, Guddappa, a tribal priest decides on the choice of healthcare approach. In Aluva, a participant explained about the importance of holy water (a water given in the temple) for the health of cows. Thus, beliefs, culture and traditions influenced behavior, decisions, and actions related to health. The present study findings align with the study by Anwer et al that identified theism and *mantra* recitation (65) as part of self-care, another study by Rankaona mentioned restrictions to certain foods, avoiding sexual intercourse during menstruation, and taking bath after attending a funeral (44) as part of self-care. In this respect, people are not autonomous actors, nor is their behavior influenced completely by environmental factors, rather it is an interplay between environmental and individual factors (66). Despite its manifestation at the individual level, the complexity of

self-reliance is such that there are macro and micro-level dynamic interactions that influenced the individual-level manifestation.

The individual and environmental factors identified in both case studies correlate with the components of the self-determination theory that focuses on achieving sustainable behaviour change (67). The participants in this study felt autonomous when they were able to use their resources and knowledge to take decisions related to health. It is the same feeling they experienced when their worldview was respected and treated with dignity in the health system otherwise resentment and disappointments were expressed by the participants. Thus, basic psychological need satisfaction is essential to develop an autonomous state among individuals. This correlates with the autonomy component of SDT which states the importance of basic psychological satisfaction among individuals to develop an autonomous state (68–70). However, the autonomy of individuals is inseparable from their social norms, culture, traditions, religious, and spiritual practices. That means, while individuals strive to be autonomous, they usually do not discard their inherent practices. There is a strong connection to the society and the context in which they live with a vibrant feeling of belonging and self-respect. The feeling of belongingness developed when their culture was respected, and their worldviews were heard without being judgmental about their beliefs around health and illness which enhanced their self-respect and feeling of autonomy. These observations were evident in HD Kote and Aluva, where TM practitioners connected well with people because of their nature of being able to spend time, understand, and allowing patients to share illness experiences. The ability of healthcare providers to connect with patients is important in healthcare since that builds trust between healthcare providers and recipients. SDT emphasizes this feeling of belongingness in its relatedness component where theory states that the autonomous nature of individuals is strengthened by connecting to their context and immediate environment (69,71,72). The present study also witnessed various abilities and skills in managing health and illness among study participants. These competencies were the result of practices originating from different forms of knowledge - intellectual, embodied, or experiential knowledge. Legitimizing or de-legitimizing healthcare practices adopted at the individual and community level is challenging since both benefits and harms of these practices were observed. In addition, these practices were driven by various factors as witnessed in both the case studies. This finding synchronized with the argument by Evelynne and Jan that experiential knowledge is not wrong knowledge rather it is ‘knowing

otherwise' and this 'knowing otherwise' entails wrong knowledge to be neither fictional nor embracing experiential knowledge as a source for action (73–75). Thus, the existence of different practices derived from different worldviews reflects the existence of a pluralistic healthcare approach among individuals and communities. This also reflects the complex combination of religion, identity, and beliefs apart from economic constraints and restrictive notions of human values (8,27,76–78). The complex nature of existing pluralism raises the question of evidence among healthcare providers. However, the question of evidence did not bother participants. For them, the importance lay in the 'cure' of the disease. Thus, in the event of assessing and developing the competencies of people, it is necessary to have a broader approach that entails the understanding of different forms of knowledge, practice, and worldviews of people and communities.

To apply the theoretical understanding and philosophical nature of different factors in the emergence of self-reliance, there is a need to create local champions (community health workers, health facilitators, healers, any health worker who could work at the grass root level) or to support naturally emerged healers in the community (for instance, Mr. X in HD Kote, refer a case in Box 1) who could align with beliefs, customs, traditions, and other community specific factors while understanding, adopting, practicing, and promoting healthcare practices in a particular community. This approach could be a positive direction to enable the self-reliance of individuals and communities in primary healthcare.

6.4. Self-reliance as a strategy to strengthen the health system

Medico-socio-political paradigm where medical knowledge and socio-political factors interact in the process of achieving self-reliance, the need for respecting different world views is imperative. People believe strongly in their worldviews concerning health and illness. The same is true with the healthcare providers who closely guard their beliefs, irrespective of practicing biomedical or traditional approaches to treatment (27). However, the conflict is persisting in their practice. Allopathic practitioners are vocal about scientific evidence as a strength of their practice and TM practitioners continue to demonstrate the role of TM in health and well-being and questioned by scientific forums on the evidence (27). Unfortunately, these two different worldviews are being understood by using a single lens, and hence is conflict. Due to these different views and misinterpretations, the need for building capacities at both care receivers and

care providers levels is crucial to align the practice and belief that could aid in creating evidence and contribute to achieving self-reliant communities.

The understanding of the health system has widened beyond the WHO building block model that measures health systems performance based on six components (service delivery, health workforce, information, medical products including vaccines and technology, finance, and leadership and governance). The block model omits people from its framework at the first instance and also a linear approach to strengthening the health system based on six components is highly criticized (79). Therefore, other frameworks have evolved over a period to cover multiple factors. As witnessed in this study, the multidimensional understanding of health connects with the concept of well-being and calls for a newer perspective to bring solutions to strengthen the health system. People's explanation of environmental factors, ecosystems, and connecting health with animal health relates to the emerging concepts of 'One Health', 'Planetary Health', 'Eco Health', and so on. These emerging concepts provide a broader perspective and interlinkage of different determinants in determining the health of an individual and communities (80,81). A similar understanding can be traced from the TM system. For instance, Ayurveda systems in India have well described these components while understanding health (81,82). Ayurveda describes the importance of animal health and plant health through its *mrigayurveda* and *vrikshayurveda* concepts respectively (81). Therefore, there should not be any surprise if there are multiple approaches to healthcare practice including self-care by the people since it is driven by multi-perspective of health.

Self-care is a part of health behavior and comprises home-based solutions to health problems. Self-care is also about having knowledge about the disease or illness and knowing bodily responses to a disease condition. The present study revealed the practice and understanding of self-care as contextual and influenced by various factors (E.g., knowledge, values, traditions, culture, individual skills, environmental, and health system factors, etc.) (18). Since health problems and sufferings are obvious in communities, therefore, adoption of coping strategies and support from the neighbors and community members were also considered part of self-care. To enhance the informed self-care practice, there is a need to empower people and also healthcare providers to accept each other. This collaborative approach could help in accepting different belief systems (79,83). The present study provided an insight on health decisions that were

driven by their cultural beliefs, traditions, religious, and spiritual beliefs. Thus, practice and beliefs are inseparable since they contribute to each other. Kabir Sheikh and Lucy Gilson argue that it is imperative to balance software elements (culture, relationships, values, and norms) and hardware elements (human resources, medicine and technology, finance, and information systems) while operating in complex socio-political contexts to strengthen the health system (84).

As per the definition of self-reliance in this study, self-reliance emphasizes the use of local resources, informed decisions, and aligning cultural and belief systems to attain sustainable behavior. Therefore, if self-reliance is enhanced, it could contribute to the people-centered health system, and a robust pluralistic health system by promoting peoples' participation, ownership, mutual responsibility, and accountability towards their health.

6.5. Policy implications of self-reliance

Ayushman Bharat health and wellness program in India emphasizes self-care, informed decisions, respectful care, people-centred care, and confidentiality in its policy guidelines (85). The present study re-emphasizes those principles to enable the self-reliance of individuals and communities. The limitation of the Ayushman Bharat program is that the program does not mention people as part of the healthcare delivery network but rather emphasizes channelizing delivery of services through community health workers (ASHA, community health officer, and Anganwadi workers) which makes people again passive receivers of healthcare (85). Self-reliance emphasizes people being actively involved and accountable for their health. Thus, the principles of self-reliance eventually bring sustainable health behaviour that minimizes dependency and maximizes the independency of people in managing their health. The Ayushman Bharat program upgraded health and wellness centres to AYUSH health and wellness centres to achieve holistic health and well-being (86). AYUSH health and wellness centres emphasize using medicinal plants for primary healthcare in addition to self-care, informed choice, and people-centred care (86). However, the approach of AYUSH health and wellness again centred around institutional based approach. Although with well-designed strategies and objectives, the program continues to face practical challenges of monitoring, and conducting community-level activities due to manpower shortage (87). This necessitates building capacities of the people to address the crisis of manpower that is resulting in the underutilization of services of the program.

Keeping the principles of self-reliance, now is the time to reflect on how people need to get involved to make the Ayushman Bharat program successful in achieving its objectives of universal health coverage and empowering people to make informed choices. The AYUSH health and wellness program also emphasizes moral behaviour (*sadvrita*) for the well-being of people which aligns with the findings of this study where *dharma* (Religion), *Nyaya* (Justice), and *neeti* (Moral conduct) were part of self-care.

The definition of self-care by WHO does not mention the influence of contextual factors while acquiring abilities (88). Also, the definition is more affirmative in its position that omits the flexible nature of an individual's abilities in managing health consequences. The self-reliance definition developed in this study has mentioned the influence of contextual factors and the flexible nature of an individual's abilities. Therefore, this study suggests adopting a self-reliance definition to design comprehensive policy guidelines for enabling the self-reliance of individuals and communities to address the current ambiguous and interchangeable use of different terms.

The individual components of the self-reliance framework mentioned in this study contribute to the accountability component of the WHO self-care framework (89) by endorsing informed decisions, autonomy, and relatedness in the framework. The WHO self-care framework lacks cultural and contextual adaptation in its applicability, unlike the self-reliance framework developed in this study endorses contextual factors including culture, religion, and traditions for enabling self-reliance which could contribute to better application and design of self-care interventions.

With the increasing burden of non-communicable diseases, the need for empowering people to be responsible for their health is more crucial than ever before. In this direction, creating self-reliant individuals and communities is essential for achieving a people-centred health system (90,91). People-centred health system targets to achieve patient satisfaction and increased responsiveness to care by meeting non-medical expectations like respect for people by protecting their dignity, confidentiality, and autonomy (91). The principles of self-reliance well align with the goals of a people-centred health system. The informed choice component of self-reliance aligns with the strategy of a people-centred health system of strengthening the integration of education, family involvement, self-management, and counselling into healthcare (90,91).

Rastriya Bal Swasthya Karyakram (RBSK) in India initiated to enhance quality of life children through a systemic approach of early identification of health problems and link to care, support, and treatment (92). An AYUSH medical officer is expected to visit schools and Anganwadi for the screening, and to conduct health awareness activities. This program provides an opportunity to integrate TM component in their awareness activities so that children and school staff can be made aware of these practices. Integration of TM related awareness activities could facilitate self-care and thereby enable self-reliance of families and community.

Health systems continue to struggle with the challenges of accessibility, affordability, equity, and meeting the expectations of people for whom health services are targeted. To overcome these issues, it is essential to balance medical and non-medical expectations of people while delivering health services. Comprehending principles of self-reliance could help to design health interventions and policies that are people-centric and empower people to become self-reliant in primary healthcare.

6.6. Strengths and limitations of the research

Self-reliance framework is the strength of this study. There was no such framework that explained the phenomenon of self-reliance in previous studies. This study contributed to such a gap by providing a comprehensive framework that located different factors contributing to the manifestation of self-reliance. This study included different approaches to developing a self-reliance framework. Initially, a scoping review to develop a conceptual framework, secondly, case study research allowed to go in-depth into participants' context-specific healthcare choices, beliefs, and spiritual, cultural, and religious factors. Thirdly, participatory research provided contextual diversity to enhance the application of the self-reliance framework. Also, the ambiguity and interchangeable usage of terms were not discussed adequately in the health literature, and this study dissected the nature of usage and factors considered in each of the terms through constant comparison between the existing understanding and the emerged explanation of self-reliance. A Qualitative study using a case study approach allowed study participants to reflect on their practices and beliefs which allowed to provide an in-depth explanation of their lived experience of using TM and other modalities of treatment. The idea of innate capacity of the body to self-heal by self-care practice, and understanding the self in relation to the environment is essential knowledge to contribute to a people-centered health system, and this

study contributed to the same. The current study focused on both the 'self' component and the 'environment' component by selecting two different levels of case studies while conceptualizing self-reliance. The study covered rural, semi-urban, and tribal contexts to conceptualize self-reliance that provided diversity in understanding the factors. The concept of self-reliance is widely used in different disciplines including chronic health conditions, the current study is limited to TM and primary healthcare.

The study has combined human and animal health interventions which raises methodological concerns. Many communities or families do not necessarily differentiate the use of TM between animals and humans which is another reason for combining human and animal interventions in the study. While there is an explanation around one health and integrative practice as a rationale for choosing two case studies from two different sectors, this combination could be conceptually and methodologically challenged. Careful consideration of combining such interventions and highlighting the positionality a priori could be beneficial while synthesizing an explanation of complex phenomena of self-reliance. The study has engaged minimally with SDT while describing self-reliance. The study invokes the elements of SDT in the findings and discussion sections of the study. The engagement with theories at various stages right from inception, could have provided a greater clarity on the use of SDT. The choice of healthcare in the community is also influenced by the medical markets, social media, and state agencies. The study does not address these influences as they were outside the scope of the study. The study uses individual level factors as an entry point to describe self-reliance and relatively less focus on social structure like caste, religion, occupation, and gender. It is quite likely that these social structures have important influence on the manifestation of self-reliance. Although our research explains the interaction between individual level factors and social structures, there is a greater emphasis on the individual level. Therefore, study suggests to provide a balanced view around the interaction of different level of factors in the manifestation of self-reliance. The majority of study participants were more than 50-year-old although this selection was not intentional. When younger participants were asked to participate in the study, they mentioned that TM practices could be better captured by interviewing their parents, and hence denied participating in the study. This study, therefore, suggests that a follow-up study capturing the changes in perspectives of younger generations about TM healthcare practices, and the loss of this knowledge over time, would be useful to further enhance the understanding of changes in self-

reliance. This study covered different contexts and groups of participants both in HD Kote and also in Aluva. However, the contextual differences, and critical comparison of wider social context and group dynamics in these two case studies have not been discussed in detail in the process of emergence of self-reliance in primary healthcare. It is also noteworthy to consider that the access to resources like medicinal plants is influenced by the policy level factors. For instance, the implementation of forest rights act (2006) has put restrictions on entering forest that prevents access to medicinal plants and other resources to meet healthcare needs. Introduction of policies like forest right acts leads to depletion of TM knowledge over a period of time resulting in push towards relying on modern medicine. In this situation, whether promoting the use of TM could really enhance self-reliance is debatable. Policy factors have not been engaged deeply since it was outside the scope of the study. Neoliberal policies also emphasize autonomy and reducing the interference of state agencies. The current study does not discuss those deliberations while explaining self-reliance. Future studies need to position an explanation of self-reliance considering neoliberal policies so that clarity of understanding self-reliance is provided in the context of neoliberal policies.

Sudden appearance of the COVID-19 pandemic in India affected the data collection, results, and outcomes. In HD Kote, restrictions were relaxed soon after the first wave of COVID-19 that allowed to have multiple visits to collect rich data. However, responses from study participants might have got influenced due to COVID-19 since many people started using TM and other home remedies as part of COVID-19 management. The data collection in Aluva was affected due to stringent restrictions imposed by the Kerala state government during the second wave of COVID-19. The first round of data was collected in Aluva. However, subsequent follow-up was done via phone calls and video calls which limited the richness of data. If the repeated visits had happened, and the situation was normal, more unbiased and neutral perspectives could have been captured. Focus group discussion was not conducted in Aluva due to restrictions, unlike in HD Kote where three focus group discussions were held. This data discrepancy affected the study outcomes. SS¹ being a public health expert and not a core TM expert, his positionality as an external might have been advantageous in terms of producing unbiased results, and this could

¹ SS – Shivanand Savatagi

also be a limitation in terms in-adequate deepening of some of the TM concepts. However, this was addressed by consulting UPM² who is a TM expert.

² UPM – Unnikrishnan Payyappallimana

6.6. References

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Chapter 7: Conclusion

7.1. The Contribution of Case Study and Participatory Research to Understand Self-reliance

The present study provided an understanding of self-reliance within the health system from people's perspectives and their lived experiences. There are limited studies that engage in a dialogical and iterative process of developing a self-reliance framework using TM interventions. The present study contributed to such an important gap. The interaction of factors identified in the framework provides a necessary direction to design health interventions focusing at different levels of the health system to enable self-reliance of individuals and communities. The self-reliance framework would strengthen the conversations on how to empower individuals and communities within primary healthcare approach. The use and integration of self-care, self-efficacy, self-management, and self-reliance should never be understood in silos since each of the term are interconnected. While using any of these terms, this study proposes to discuss the positionality and relationship with other terms to avoid ambiguities of using terms interchangeably and uncritically. The meaning of self-reliance was embedded in the people's lived experiences of health and illness and this study attempted to understand the process of enabling self-reliance by reflecting on the influence of different factors. Self-reliance can't be understood as self alone; one must meaningfully understand it in relation to the environment and socio-political context. The development of a self-reliance framework using the SDT as a guiding tool has provided a balanced understanding of the interaction between environmental and individual factors in the emergence of self-reliance. The framework could guide policy makers and health intervention designers to consider various elements while formulating policies and interventions to support and enable self-reliance of individuals and communities.

While many self-treatment practices including TM exist in the community, the current health awareness activities are limited to the prevention and promotion aspects of primary healthcare. Identifying the best practices of TM based on the evidence is a way to promote curative practices to address minor health conditions and reduce the burden on the health system. Providing adequate and consistent information to people is crucial to enhancing the health literacy of people and communities. This literacy further builds peoples' competency and confidence in their practice. Protecting autonomy while empowering individuals and communities comes from

understanding their culture, traditions, and beliefs. Capturing local views and peoples' perspectives help policymakers to understand the gaps concerning scientific perspectives and local knowledge by carefully locating them within the context of the health system. This understanding helps to develop strategies that are context-specific and people-centric.

The practice of integrative approaches to health is diverse and fragmented due to variations in the evidence perception by the people. The illness experience of individuals, the social, and cultural factors, and health literacy sourced from elders, community health workers, family members, healers, and other health service providers influenced healthcare decisions. Providing an opportunity and autonomy for individuals to reflect on their thoughts and actions is essential to navigating a solution to the struggle of choosing a healthcare approach or even understanding one's health and well-being. Building competencies of both healthcare providers and healthcare recipients is the need of the hour to address the trial-and-error of healthcare practice to endorse informed decisions. Although integrative approaches come with a choice component, the choice should happen strategically and logically rather than arbitrarily. Since study participants viewed health under the umbrella of well-being, emphasizing localization, and preserving natural resources, hence, understanding the dynamic interaction and interrelation between human, animal, and local ecosystems help to design comprehensive yet context-specific health interventions with the active involvement of people and communities. Eventually it helps to create self-reliant individuals and communities to deal with their health problems using local resources to attain sustainable health behavior.

The efforts towards achieving primary healthcare and Universal Health Coverage (UHC) in India are continuously persisting. However, the gap between policy and implementation, and lack of contextual consideration continue to hinder the progress of primary healthcare and UHC. Instead of promoting UHC as a global approach, what is required is to empower participatory, plural, integrated health systems from home to institutional care level (including primary, secondary and tertiary care) appropriate to different socio-economic contexts. There cannot be a generalization between the states or even countries (high-income or low-income) to follow a similar approach.

The emergence of a healer in the community out of trying multiple healthcare approaches, elders as a source of traditional knowledge, experiential management of disease conditions in the

community indicate an existence of unrecognized healthcare delivery system in a community. There should be an effort to create evidence of such practices to endorse the creation of local champions for sustained engagement with health behavior. This should be backed by providing enabling environment through necessary policies and support at various levels for their implementation and acceptance in the socio-political context.

To investigate a phenomenon like self-reliance, the case study research method provided an opportunity to deep dive into contextual analysis to understand the complex interactions of different factors within the HD Kote and Aluva settings by using different methods of data collection. However, considering ethnography, or the grounded theory or anthropological research methods would be of further help in dissecting specific contextual factors and unravelling the complex nature of the phenomenon. The TM interventions that aim to enable the self-reliance of individuals and communities should incorporate methods to identify indicators in their interventions that would help in the assessment process and create evidence. Identifying measurable indicators further helps in designing specific policy guidelines to provide an enabling environment for the emergence of self-reliance in primary healthcare.

The development of self-reliance engages in iterative process of literature review, case study research, and participatory workshop (consultative and engagement workshop) in three different settings. While study has attempted to contribute to health policy and systems research by providing a framework, however, selective approach to choose a particular intervention might have influenced the outcomes of study. A careful testing of framework in other contexts to refine it further by delineating complex factors (individual and environmental), would help in the better application of framework to design the health interventions for enabling self-reliance in primary healthcare. In addition to the purposive selection of a TM intervention, the study has combined human and animal health interventions which raises methodological concerns. While there is explanation around one health and integrative practice as a rationale to choose two case studies from two different sectors, it did not sufficiently justify the selection. A careful consideration of combining such interventions and highlighting the positionality a priori would be beneficial while investigating the complex phenomenon like self-reliance.

Self-reliance emphasizes empowering individuals and communities to take ownership of their health by promoting active participation and fostering a sense of responsibility for personal well-being. With its emphasis on preventive care, health education, and utilization of community resources, self-reliance can enhance healthcare outcomes, especially in resource-limited settings. Self-reliance also promotes healthy behaviors to achieve control over one's health. A shift from being a passive recipient of healthcare to active participant in healthcare is the main motto of self-reliance. Building the capacity of people and communities reduces the burden on overstretched healthcare professionals. While self-reliance could contribute in various ways to strengthening the health system, achieving self-reliance requires consistent perseverance to address existing challenges of healthcare accessibility, affordability, inadequate health literacy, medico-industrial complexity, and socio-economic disparities. Enabling self-reliance should happen alongside supportive infrastructure, accessible healthcare services, and continuous health awareness programs. Self-reliance can be a valuable approach if individual responsibility and a supportive healthcare environment are balanced to promote the health and well-being of individuals and communities.

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ANNEXURE 5

Topic Guides

CASE STUDY 1: PRACTICE OF TRADITIONAL MEDICINE AT HOUSEHOLD LEVEL

1. Please tell me about yourself (Name, age, occupation, family background etc.)
2. According to you, what does health mean?
3. What according to you is cause for the disease?
4. What you do when you are sick or ill?
5. What you do to be healthy?
6. How far is hospital from your village? How do you reach to it?
7. What are the challenges in reaching the health facility?
8. What are the benefits of hospital from where you have received health services? Please share your experience
9. Could you tell me what are the home remedies that you use and for which disease conditions?
10. Could you explain me the journey of using these home remedies? How and when did you start?
11. What are the reasons to use home remedies?
12. From where do you get materials required for the preparation of home remedies?
13. Are these materials available easily? And how easy or challenging it is to get materials?
14. Could you tell me how you will prepare and use home remedies?
15. How does use of home remedies has benefitted you? Please share an experience
16. Do you use same medication for all types of patients with the same health problem or does it change according to patient profile?
17. In addition to herbal products or home remedies that you use, is there anything that you follow? (Probe: Values, attitudes and spiritual elements)
18. What is the relationship between disease and practice of values and other spiritual elements? How does it function in the treatment aspect?
19. Is there any situation wherein treatment with traditional medicine has not worked and you had to go to hospital? If yes, could you explain what made you to go to hospital and how did you decide?
20. What are your opinions regarding use of traditional medicine? (probe: is it good? How it is helpful? What are your beliefs around it?)
21. What are your opinions regarding using home remedies and as well as availing existing health facilities? (Probe: What are the situations in which home remedies need to be used and what are the situations where one has to go for hospital or health services?, how to decide between two?)
22. Anything that you would like to share?

CASE STUDY 2: COMMUNITY LEVEL PRACTICE OF TRADITIONAL MEDICINE

Farmers

1. Could you please tell me about yourself?
2. Could you tell me about your community? (Livelihood, occupation, cultural practices, farming practices)
3. What is your understanding about health and illness?
4. What are the disease conditions that your cattle experiences?
5. From where do you seek treatment when your animal is unhealthy?
6. Could you explain a disease condition of your animal that was treated by veterinarian and what was the outcome?
7. How easy or challenge it is to access veterinarian in your community?
8. I understand that, you have been trained in using home remedies for certain disease conditions in animals. Could you tell me what are the home remedies that you use?
9. Could you tell me what are the disease conditions for which you use home remedies?
10. What are the reasons to use home remedies?
11. From where did you learn about home remedies?
12. From where do you get materials required for the preparation of home remedies?
13. Are these materials available easily? And how easy or challenging it is to get materials?
14. Could you tell me how you will prepare and use home remedies?
15. How does use of home remedies has benefitted you? Please share your experience
16. Is there a difference in the treatment by veterinarian and home remedies? How it is different?
17. Is there anything that you do while practicing home remedies? (Probe: Rituals, Cultural practices)
18. Do you also use home remedies for your own health? If yes, could you tell me what are those?
19. What has been your experience in using home remedies? Could you please explain? (visiting any healer, use of home remedy, outcome of the disease,
20. What is the relationship between animal and human health? How they influence each other?
21. Anything that you would like to share? Or ask? Please do so

Veterinarians

1. Could you share your experience of working as veterinarian? (About yourself, work experience etc.)
2. I heard that, locally available formulation does help in the treatment of certain disease conditions in animals. Could you tell me some of the formulations which you have come across if any?
3. Have you seen the practice of these formulations in any rural area during your visit? Could you explain it in detail in terms of what they were practicing and what did you advise?

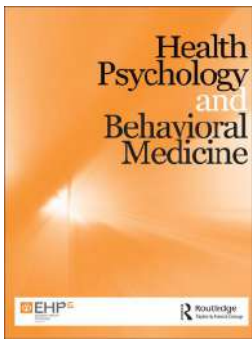
4. What is your perception towards farmers using traditional medicine-based interventions to treat animal disease conditions?
5. Have you come across farmers who opt for traditional medicine-based interventions against modern treatment? If so, why do they choose? If not, why?
6. How much do you charge for treatment? Could you tell me with few examples with disease conditions?
7. Have you met any healer in the community who treats using local health formulations? what do they do?
8. I also understand that, health issue of an animal is associated with livelihood concern for farmers, so what is your opinion whether use of locally available formulations would help in addressing this concern?
9. Whether farmers were able to manage disease using traditional medicine-based interventions? Please share your views
10. What complications you have seen in animals who have undergone treatment with traditional medicine?
11. Being veterinarian, do you promote practice of these local formulations? If yes, why? If not why not?
12. Does use of traditional medicine-based interventions reduces the dependency of farmers on veterinarians? Please explain

Further exploration

- Which are the situations the communities define as suitable for self-care?
- Is there any consensus or shared basis for this understanding (usually you can pick up this in a FGD or simple group chat)
- What are the divergences in the understanding?
- What all do people do when self-care can be practiced? What is their perception of success?
- What do they do when it cannot be managed at home? What is their perception when they seek external help (this you have already captured in various ways?)
- What are the facilitating factors for self-care? Including anything specific to this community?
- What are the limiting factors for self-care (this too you have captured in some interviews already) including anything specific to this community?

IDI guide for village resource person (VRP)

1. Could you please tell me yourself? (Your family, job role and experience with working traditional medicine)
2. Which are the prevailing animal health conditions in your community?
3. How does animal diseases impact livelihood of farmers?
4. How is the accessibility of treatment for animals in your community?
5. What are the treatment practices that people have adopted to treat animal diseases in your community?
6. Could you list down traditional medicine-based interventions practiced in your community?
7. Which are the animal health conditions treated using traditional medicine?
8. What are the reasons to practice traditional medicine interventions?
9. Could you please explain in detail about recent experience that you come across using traditional medicine for treating animal health conditions?
10. What according to you are the reasons for practicing traditional medicine-based interventions?
11. Approximately how many households practice traditional medicine in your area? How it has impacted their livelihood? Give me an example
12. In your opinion, what are the limitations using traditional medicine?
13. Do the farmers practice traditional medicine by themselves or do they depend on somebody?
14. How is the acceptance of traditional medicine practices in your community?
15. Are there any other practices that they do while practicing traditional medicine? (Probe: rituals, religious practices, cultural practices etc.)
16. What are your opinions in regards to integrating these two practices in main stream health services?
17. Would you like to share anything else about use of traditional medicine?



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RESEARCH ARTICLE



Do integrative approaches to health contribute to self-reliance in primary healthcare? reflections from a community case study in Kerala, India

BS Shivanand ^{a,b,c}, M Tushara ^b, PM Unnikrishnan ^a and Jayanna Krishnamurthy ^c

^aThe University of Transdisciplinary Health Sciences and Technology (TDU), Bengaluru; ^bInstitute of Public Health (IPH), Bengaluru; ^cM S Ramaiah University of Applied Sciences, Bengaluru

ABSTRACT

A pluralistic Health system provides options for people to choose appropriate healthcare approach. However, the ability to make informed decision is influenced by many factors. An informed decision is one of the attributes of self-reliance. In this study, through the interactions with smallholder farmers, we tried to travel through the realm of communities' integrative practices and perceptions with a specific focus on traditional medicine concerning animal and human health. We aimed to understand what influences healthcare choices, mainly traditional medicine among people and how it contributes to self-reliance in primary healthcare. We conducted this case study in Aluva taluk of Ernakulam district in Kerala, India. Study participants were selected using the purposive sampling method and the data collected through 22 in-depth interviews and participant observation.

Integrative healthcare practice is fragmented due to variations in the evidence perception by the people. Personal experiences, social and cultural factors, and health literacy influence health decisions in practicing integrative healthcare. Therefore, while investigating a concept like self-reliance, there is a need for analytical methods to embrace experiential, textual, inherited, and incorporated forms of learning. This further helps researchers and policymakers to recommend context-specific and sustainable solutions to create self-reliant communities in primary healthcare.

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Integrative healthcare approaches; primary healthcare; self-reliance; health system; health policy; social determinants of health

1. Introduction

There exist practices of different healthcare approaches including traditional medicine (TM) in Kerala (Sujatha, 2007). TM is based on worldviews that consider physical, mental, social, spiritual, cultural, and ecological dimensions of health (Porter et al., 2021). The striking feature of traditional medicine is that there are different tiers of

CONTACT BS Shivanand  bsshivabs@gmail.com  The University of Transdisciplinary Health Sciences and Technology (TDU), Bengaluru Institute of Public Health (IPH), Bengaluru M S Ramaiah University of Applied Sciences, Bengaluru

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the prototype layer of medical knowledge classified as: experiential, textual, inherited, and incorporated (Oyebode et al., 2016). TM in India includes codified and non-codified systems (Oyebode et al., 2016). The codified system has acquired legitimacy and formal recognition of the practice (AYUSH). Non-codified or folk medicine is an intergenerational knowledge existing in all communities in India. This includes bone setters, birth attendants, local healers, and the use of home remedies by mothers or elders in the family for addressing common illnesses contributing to inherited and incorporated knowledge of TM (Adhikari & Paul, 2018, [jan 1](#); Reviving local health knowledge for self-reliance in primary healthcare, 2020). Here, the iterative process of practice itself is a great source of knowledge that contributes to the use of TM (Porter et al., 2021).

Practicing TM as the first line of treatment or a combination with modern medicine is deeply ingrained in the communities of countries like India, especially in the State of Kerala (Payyappallimana, 2010), demonstrating the already existing pluralistic healthcare practices in the region. The practice of TM sometimes is because of push factors (inaccessibility, non-availability, and unaffordability of conventional health services) of the health system. In such a scenario, a healthcare choice becomes a conditioned approach for individuals rather than an approach that is chosen by them. TM is also practiced because of its close association with culture, values, beliefs, traditions, and customs. These factors strongly influence more than the medicinal value alone (Payyappallimana, 2010). Thus, the existing pluralism that provides autonomy in choosing healthcare approaches is the positive side of the people-centric approach, but there is also a danger with such choices if there is a lack of information on what to choose, how to choose, and why to choose a healthcare approach (Porter et al., 2021). Therefore, the question of informed decision is complex to address since it involves various factors (Lewis & Pignone, 2009).

Self-treatment practices consisting of TM that is adopted in families and communities sometimes lead to detrimental effects on health or delay in seeking institutional healthcare (Basappa, 2021). However, one can't undermine the experiential knowledge embedded in the community that is preventing and curing minor health conditions. '*Yashmin deshe to yo jaatah, Tasya tajaushadham hitam*' (Sushruta Samhita), which means for a person born in a biogeographical region, local herbs of that location are beneficial (Gangadharan et al., 2009). The spirit of this three millennia old proverbial statement of an Ayurveda treatise translates as a lived experience of health and nutrition of several communities in India even today, as evident in our fieldwork. The idea of nature as a remedy is embedded in people's minds within their promotive, preventive, and curative approaches to healthcare (Jayanna, 2021; Victorson et al., 2020). Most farmers in our study narrated an interwoven relationship between the local herbs, environment, animals, food, and lifestyle to prevent and treat minor health conditions and achieve control over their health and wellbeing, declaring themselves as self-reliant in primary healthcare.

The attributes of self-reliance are informed decisions, use of local resources, self-worth, and discipline (Lowe, 2003). Self-reliance is the ability of a person to manage their health conditions using locally available resources, and it is an essential strategy in the context of primary healthcare (Fonchingong & Fonjong, 2002; Weltgesundheitsorganisation, 2008). The informed decision being a necessary element of self-reliance, it plays an important role in healthcare choices. The ability to make informed decisions

varies and is influenced by various factors (Lewis & Pignone, 2009). For instance, availability and accessibility of health services, perceived effectiveness, doctor-patient relationship, and social and cultural factors (Khalikova, 2020). Understanding factors that influence informed decisions may help design interventions that enable the self-reliance of people and communities.

In this study, through the interactions with smallholder farmers, we traveled through the embedded realm of farmers' integrative healthcare approaches (those approaches that take account of body, mind, spirits, and all aspects of lifestyle) (Hu et al., 2015) with a specific focus on TM practices concerning animal and human health. With its emphasis on localization, indigenization, culture, religious practices, and context-specific solutions, TM potentially contributes to self-reliance in primary healthcare (Bodeker & Kronenberg, 2002; Savatagi et al., 2022). We aimed to understand what influences people to adopt a healthcare approach, especially TM and how they navigate their healthcare choices, and how they perceive themselves as self-reliant in primary healthcare using TM. We believe that understanding people's adaptive and pluralistic lifestyles could enhance our logical and practical approach to developing strategies that enable people to make informed decisions. This further helps to apply the concept of 'self-reliance' in primary healthcare using TM.

2. Methodology

Study site

We conducted this case study in Aluva taluk of Ernakulam district in Kerala from November 2021 to March 2022. As per the census of 2011, the total population of Aluva is 22,428 (11,031 males and 11,397 females). The majority of the population (41.83%) self-identify as Hindus, followed by Christians (38.86%) and Muslims (18.93%). The average sex ratio of Aluva taluka is 1033 females per 1000 males. Malayalam is the native language of Aluva. Agriculture is the main occupation of the people residing in Aluva. Aluva taluka has semi-urban and rural contexts.

Study design and selection of study participants

It is a community case study conducted using a qualitative approach. The University of Transdisciplinary Health Sciences and Technology (TDU), Bengaluru, a private university in Karnataka state in India (The University of Trans-disciplinary Health Sciences and Technology [Internet], 2022), implemented a study in Aluva. Mastitis among cattle is highly prevalent in Kerala, and also this is an economic and social concern for the farmers. The cost incurred for treating this disease using modern medicine is enormous and seems to burden the farmers. Therefore, TDU used TM using a combination of Aloe vera, calcium hydroxide, and turmeric to treat this disease, and the results were encouraging. TM use also showed many advantages in reducing the economic burden and antibiotic residue in milk and meat products. This intervention was considered an integrative approach to health since the interventions benefitted human health as well. Hence, we purposefully selected Aluva to explore if the use of traditional medicine enables the self-reliance of individuals and communities in primary healthcare. With

the pre-existing list of participants provided by TDU, we traced our study participants in Aluva.

A case was defined as a community where TM interventions are practiced for treating minor health conditions in humans and animals. Individuals within the community were cases (study participants). Study participants were selected using the purposive sampling method since that provides an opportunity to select information-rich cases to investigate the phenomena of interest.

Sampling and data collection

The sample size was determined based on the data saturation principle. Through the purposive sampling technique, we collected data from 22 cases. After 18 cases, data became repetitive, and additional three interviews were conducted to re-confirm the saturation. Hence, the total sample size became 22 cases. Two data collectors, an interviewer, and a note-taker collected the data. Both data collectors were familiar with the native Malayalam language and were not part of the community. Each interview lasted for half an hour to one hour. The observation technique was used as a supplementary to interview during the data collection process. All interviews were recorded in a recorder, and field observations were noted down in a paper. The data collectors expanded all the field notes on the day of data collection itself to use them in the analysis.

Data collection tool

The questionnaires were developed and pilot tested prior to actual data collection. The training was provided to data collectors to understand the questionnaires and clarify their doubts before the data collection process. Questionnaires were also refined when required, mainly by adding more probes or in case the question deviated from the objective. The data captured was especially about people's perception of health and illness, different healthcare approaches adopted by study participants and reasons to do so, and reasons for using traditional medicine.

Data analysis

All the interviews were translated into English before exporting to software for analysis. The data sets were cross-checked for their validity. We used the QDA miner lite 2.01 version to analyze the qualitative data (QDA Miner Lite 1.2 Download (Free) – QDALite.exe [Internet], 2022). The thematic analysis approach was used. The themes and codes were discussed periodically with other authors and refined as and when required.

Ethical consideration

We obtained ethical review clearance from the ethics committee for human research Trans-disciplinary Health Sciences and Technology (TDU), Bengaluru (study protocol number: TDU/IEC/11/2020/PR38). The review committee consisted of two committees scientific review committee and the ethics review committee, the former validated the

scientific merit of the study, and the latter reviewed the ethical aspects of the study. The protocol was systematically reviewed and approved by both committees.

We followed the necessary ethical guidelines during the study. We provided sufficient information about the study to the participants before obtaining written consent for their participation. Potential risks and benefits were explained to the participants. We sought permission from study participants to take pictures, document their knowledge of traditional medicine, and publish the study's findings. The collected data was coded, and confidentiality was maintained throughout the study. A voluntary approach was encouraged for their participation in the study.

3. Results

Characteristics of study participants

The age range of study participants was 20–80 years. The majority of the participants were Hindus 9 (~ 40%) and Christians 9 (~ 40%), and others belonged to Islam. The educational level ranged from 6th std to post-graduation. Of the 22 participants, 11 (50%) were male, and 11 (50%) were female. Farming was the main occupation for both male and female participants, i.e. of the total 22 participants, 21 (99%) engaged in farming, and only 1 (1%) were engaged in teaching. For details of each participant, please refer to [Table 1](#).

Integrative approaches toward health and wellbeing

Participants defined health as a condition free from diseases. They opined that, be it animals or humans, diseases occur due to changes in food habits, exposure to chemicals in daily life, and maintaining unhygienic living conditions. Fever, Theileria, Foot and

Table 1 . Characteristics of study participants.

Sl. No	Place	Age (yrs.)	Sex	Education	Religion	Occupation
1	Choornikarna	48	F	Nursing	Christian	Teaching
2	Kudugallor	19	F	SSLC	Muslim	Farming
3	Udaymperoor	44	F	Post-graduation	Hindu	Farming
4	Angamaly	52	M	SSLC	Christian	Farming
5	Thuravoor	58	M	9th std	Hindu	Farming
6	Angamaly	47	M	Degree	Hindu	Farming
7	Aluva	31	M	SSLC	Hindu	Farming
8	Aluva	53	M	5th	Muslim	Farming
9	Choornikarna	36	M	8th	Hindu	Farming
10	Champanad	51	F	SSLC	Muslim	Farming
11	Aluva	56	M	3rd	Hindu	Farming
12	Aluva	61	M	5th std	Hindu	Farming
13	Aluva	66	F	6th std	Christian	Farming
14	Manikyamangalam	53	F	PUC	Christian	Farming
15	Manikyamangalam	62	F	3rd std	Christian	Farming
16	Manikyamangalam	68	M	PUC	Christian	Farming
17	Manikyamangalam	55	F	10th std	Hindu	Farming
18	Perumbavoor	55	F	SSLC	Muslim	Farming
19	Arakkapaddy	65	M	SSLC	Hindu	Farming
20	Manikyamangalam	80	M	6th std	Christian	Farming
21	Mattoor	61	F	10th std	Christian	Farming
22	Aluva	61	F	6th std	Christian	Farming

Mouth Disease (FMD), Mastitis, Indigestion, Diarrhea, Skin infections, and Repeat bleeding were a few conditions that their cattle suffer from. Among these conditions, Mastitis was mentioned by the majority of participants. The disease Mastitis affected farmers since it led to less milk yield, high cost of treatment, and sometimes death of cattle leading to an increased burden on farmers' health and livelihood.

As narrated by farmers, the approach to treating these conditions starts with using medicinal plants or sometimes allowing them to live in a natural environment. The decision to manage these conditions was based on their cattle's bodily reactions and the experience of living with the cattle. Some also argued that lifestyle concerns make people and animals prone to diseases. Throughout the fieldwork, farmers continue to stress that their experience in relation to geographical region, climate, and natural habitat is the major source of knowledge to manage their health and the health of domesticated cattle.

'A 47-year-old male participant from Angamaly village said, "Our cows have a lot of immunity power because of the exposure to mud and dirt. I don't tie these cows until 6. Mostly, I bring in only those cows that have milk to tie them. We try our best to establish their relationship with nature organically. Because of all this, they don't have big diseases.'

The presence of internal and external drivers of change within the community to sustain animal health by using natural resources is apparent here. Thus, communities have believed and experienced a lifestyle that they think is sustainable, and they negotiate this relationship every day, bridging the gap between generations through such practices.

The below diagram (Figure 1) depicts healthcare approaches used by the participants in treating minor diseases. The participants were highly dependent on three medical practices: Allopathy, Ayurveda, and Homeopathy. It was also understood that self-medication and home remedies often overlapped with the ayurvedic treatment modality. The ability to choose different treatment modalities was quite evident among the study participants, either through a trial-and-error approach or through informed decisions. As the following goes:

'For Mastitis, injection is not necessary, I have felt that aloe vera gave good results. Like all the rest, we haven't tried these Ayurveda medicines; rather, we rely on English medicine. We started understanding Ayurveda remedies slowly for other disease conditions. We give betel leaves and pepper for indigestion, which is quite effective.' 51-year-old participant, Champnad village, Aluva.

Healthcare approaches and their implications

Our field data indicated important perceived pros and cons of all healthcare approaches adopted by the study participants. Even though Allopathy as a medical approach was widely practiced, most participants found the influence of antibiotics harmful to the overall well-being of the cattle. Around 12 (~45%) of the study participants believed that modern medicines ensured a faster cure but sustained further damage to milk production and the cattle's health status. The availability of doctors and medical practitioners in the wee hours was raised as a major issue that bothered the farmers. Only 4 (~18%) trusted homeopathic treatment for specific diseases like Foot and Mouth Disease (FMD). All the farmers widely respected and appreciated

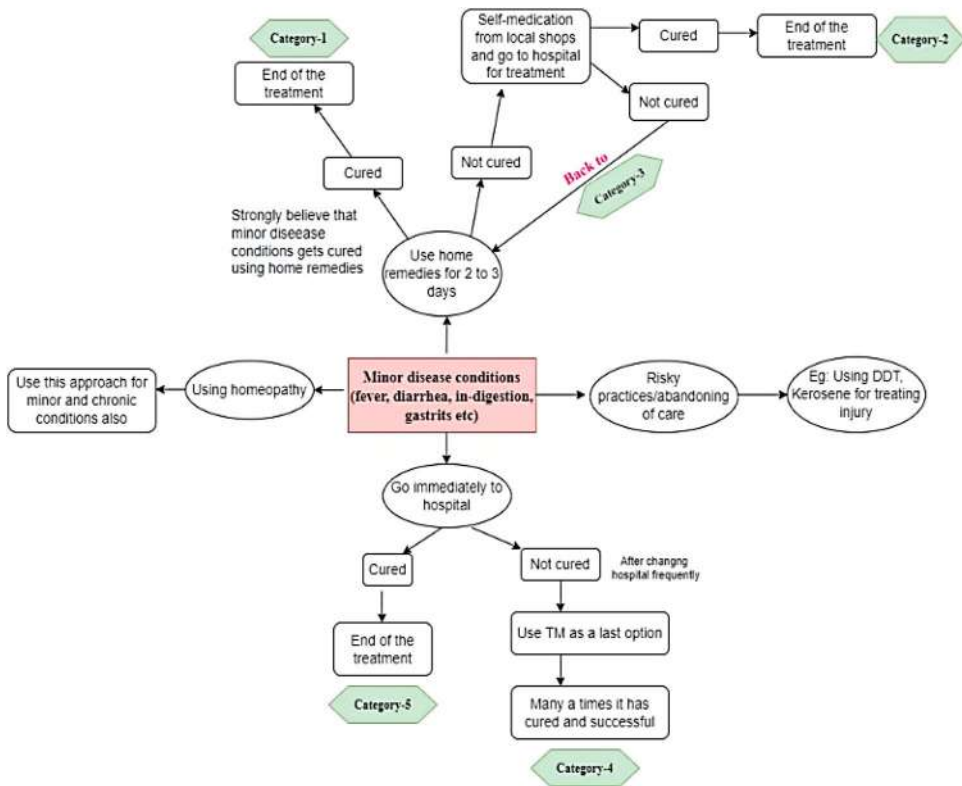


Figure 1. Healthcare approaches adopted by study participants.

traditional home remedies due to the ease of access, cost-effectiveness, and no side effects. However, most of them found the application of traditional medicines to be time-consuming and comparatively slower in procuring results. Within each of these approaches, different factors influenced pluralistic healthcare engagements. For instance, a statement by a participant who brought up the issues of institutional-based healthcare and stressed the need for developing skills by ourselves in handling minor issues goes as below:

‘There are injections to dry out the wound, but not many doctors know it. If we keep calling doctors for minute issues, this deal cannot move further, and we should know certain basics. What I mean to say is, the last day a doctor came here, he gave glucose drip and gave an injection for fever, and he charged 1200 rupee as fees. Similarly, for FMD, I did not call a doctor this time; we treated on our own using the medicinal plants available in our field. (53-year-old male participant, Aluva town).’

This statement shows that farmers’ experiences have come in handy through peer interactions and intergenerational information for their self-care approach. This knowledge also stems from local community health workers, ethnoveterinary practitioners, and also from veterinarians who have been serving the community. We can notice how they have used both allopathy and home remedies to cure the wound and discomfort of diseases like fever and FMD. For treating common ailments, they resort to remedies

from their garden like *Pacha manjal* (*Curcuma longa*), *mala inchi* (*Zingiber wightianum*), *vettilla* (*Piper beetle*), *chengalamperanda* (*Cissus quadrangularis*), *kurumulaku* (*Piper nigrum*), etc.,. It was quite evident in this study that they resorted to immediate treatment via the ecosystem and readily available plant products. In the light of yielding positive results, farmers reinstate those traditional medicines that enhance sustainability, prevention, and a cost-efficiency mode of treatment.

4. Discussion

A struggle to find the meaning of informed decision

Attributes of self-reliance were embedded within the integrative healthcare approaches of study participants. The integrative approaches that are taken by the participants highlight the existence of a medically pluralistic system. However, these approaches were most often through a ‘trial and error’ technique. When choosing between evidence-based and practice-based medicine, respondents tend to choose efficiency over authenticity since they are more inclined towards results than science. From our study, we interpret that there was an internal struggle among study participants between understanding their bodies and the lifestyle they were living (Gabre et al., 2019) to preserve their health. This internal struggle was due to the mismatch between the values they believed in and the practice they were doing. Their trial-and-error approach seems out of tension to address a particular health problem. Within this struggle, they were also able to bring a new pathway to managing disease conditions. This observation was similar to a review by Lakshmi et al. (2015) that described how disagreements within a family and community exist that trigger the friction of the decision process in seeking healthcare due to the accessibility of pluralistic healthcare approaches (Lakshmi et al., 2015). Therefore, the act of creating meaning to resources and decisions came from the struggle participants underwent by negotiating with their beliefs, values, cultural relevance, and their health literacy (Martinez et al., 2021).

Historical developments in medicine show that medicine was borne out of human necessity, but in the current situation, we have multiple options of healthcare approaches (Park, 2013; Payyappallimana, 2010; Rudra et al., 2017). Thus, the health system has moved from a mere being disease or target-specific approach to a comprehensive approach to health and wellbeing by providing multiple healthcare options. Therefore, now it is not about necessity; rather, it is about the right choice through the crucial informed decision. However, the decision ability remains complex and ambiguous (Sundararajan et al., 2020). To take advantage of the strengths of different healthcare approaches, there is a need to increase the health literacy of the people to make them understand the importance of integrative healthcare approaches, and that could enhance their ability to make informed choices.

What does self-reliance mean for the study participants?

The meaning of self-reliance given by participants exists in the negotiation process than in a straightforward response to a health problem. This negotiation originated out of their experiential knowledge that allowed participants to understand their bodies in relation to their surrounding environment. Thus, the ability of self-awareness of the

body and its reactions to a disease condition is a great source for making choices related to healthcare (Bullington, 2006). If self-awareness emerged from aligning the belief system and the practices of study participants, it contributed significantly to an informed decision, thereby enabling their self-reliance. Thus, the efficacy and legitimacy of a healthcare approach are evaluated by people depending upon how a modality of treatment is able to consider their personal views while addressing a health problem. This finding aligns with the study conducted by Khalikova (2019) that mentions personal and family experiences as a great source for determining the efficacy and legitimacy of a healthcare approach (Khalikova, 2020). Thus, we interpret that self-reliance is a social and complex construct that involves many factors at different levels in its manifestation. This observation is similar to a review by Savatagi et al. in 2022 (Savatagi et al., 2022).

Need for emphasizing self-reliance as a strategy in the context of primary healthcare

Apart from existing confusion in the choice of healthcare, most of the time, farmers found it difficult to get a qualified medical professional/veterinarian in case of emergency (Muraleedharan & Chandak, 2022). That is also one of the prime reasons to resort to TM. In addition, increased antibiotic use, increased health expenditure, and repeated infections pushed farmers to rely on their resources as a primary response to their health problems (Rudra et al., 2017). The existing understanding of farmers about their place, context, and the local ecosystem was a pull factor that enabled them to use their natural resources.

With the renewed interest in primary healthcare among policymakers, there is a need to bring innovative and integrative strategies that are people-centric, context-specific, and can be applied at the grassroots level to achieve universal health coverage (World Health Organization, 2007). While we try addressing push factors, we also need to strengthen pull factors to apply and practice self-reliance logically. Although integrative healthcare approaches provide more autonomy in choosing treatment modalities; however, this choice should be made strategically rather than arbitrarily. The increased voice towards a people-centered health system calls for those strategies where people's abilities are built and given more autonomy to choose healthcare approaches based on their social, cultural, ecosystem, and other contextual factors as they influence their healthcare decisions (Sheikh et al., 2014).

Strengths and limitations

Our study discussed the importance and complexity of informed decisions while adopting integrative healthcare approaches and in the manifestation of self-reliance in primary healthcare. We have taken people's perspectives in understanding reasons to utilize integrative healthcare approaches, including TM. However, perspectives from healthcare practitioners/providers (veterinarians, medical officers, community health workers) could have brought perspectives of healthcare providers, which we acknowledge as a limitation of our study.

Conclusion

The practice of pluralistic and integrative approaches is fragmented due to variations in the evidence perception by the people. An amalgamation of personal experience, social and cultural factors and health literacy sourced from community health workers, family members, healers, and other health service providers help people to make informed decisions. To address the existing trial and error approach of a healthcare choice, there is a need to build the competency of both healthcare providers and consumers. This, in turn, helps families and communities to use integrative healthcare approaches through informed decisions. While investigating a concept like self-reliance, the analytical methods must focus on local worldviews and lived experience and their inner meaning. This approach should also embrace experiential, textual, inherited, and incorporated forms of learning and thereby help researchers to unpack the complexity of the decision process in using integrative healthcare approaches. This further helps policymakers to recommend solutions that are context-specific and sustainable to create self-reliant communities in primary healthcare. In addition, emphasizing localization, preserving natural resources, and protecting the interrelation between human, animal, and local ecosystems continued to remain as core elements of self-reliance while achieving health and wellbeing.

Authors' contributions

All authors contributed significantly to the development of the manuscript. SBS (first author) and TM (second author) were involved in data collection, transcription, and analysis. TM supported SBS right from the drafting till the completion of the article. UPM (third author) and JK (fourth author) critically reviewed the article in every step and guided throughout the process.

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This article has earned the [Center for Open Science](#) badges for Open Data and Open Materials through Open Practices Disclosure. The data and materials are openly accessible at <https://doi.pangaea.de/10.1594/PANGAEA.915881>.

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ORCID

BS Shivanand  <http://orcid.org/0000-0002-9248-3681>

M Tushara  <http://orcid.org/0000-0002-2885-8135>

PM Unnikrishnan  <http://orcid.org/0000-0003-0296-1975>

Jayanna Krishnamurthy  <http://orcid.org/0000-0002-0224-2543>

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Factors Influencing the Emergence of Self-Reliance in Primary Health Care Using Traditional Medicine: A Scoping Review

Shivanand Basappa Savatagi^{1,2}, Prashanth Nuggehalli Srinivas², Unnikrishnan Payyappallimana³

¹PhD. Scholar, ³Visiting Professor, The University of Trans-Disciplinary Health Sciences and Technology, ²Faculty and Assistant Director Research, Institute of Public Health, Bengaluru, Karnataka, India

Summary

Self-reliance is the responsible behavior and the ability of an individual to take care of one's own health using local resources. A substantial proportion of the population use traditional medicine (TM) for primary health care (PHC) in low- and middle-income countries (LMIC). The underlying philosophy of the TM approach is self-reliance due to its emphasis on culture, traditions, customs, and local resources. Given the complexity and ambiguity of how self-reliance emerges, there is a need to have clarity in its understanding and the practice in relation to TM. Hence, we conducted this review to synthesize the factors determining the emergence of self-reliance in PHC using TM in resource-poor settings with a specific focus on LMICs. We searched PubMed, Google scholar, and the Social Science Research Network databases, and conducted reference tracking of selected articles. We included articles published between 2000 and 2020 May. Thematic analysis was done using QDA-miner Lite software version 2.1. We retained 29 papers for review and analysis. A conceptual framework was developed that located factors influencing the emergence of self-reliance. Self-reliance manifests through a socially constructed interaction between factors from the macro (policy and environment) to the micro context (community and household). Due to the lack of explanatory models, there is a substantial gap between understanding self-reliance and its application in health policy and practice. Achieving comprehensive PHC and universal health coverage requires policy provisions to create an enabling environment in health-care facilities, communities, and households that allows the emergence of self-reliance.

Key words: Primary health care, scoping review, self-care, self-reliance, traditional medicine

INTRODUCTION

It is estimated that 65%–85% of all health care is provided by the individual or the family without professional assistance using either nonallopathic or allopathic health interventions.^[1] The illness process begins with personal awareness of a change in body feeling and that gets labeled as a disease by self or by family.^[2] The philosophy of “self” can be traced to ancient systems of medicine in India. Ayurveda's focus of health within the self is reflected in the Sanskrit word for health, “*Svasthya*” (“*Sva*,” the “self”); it means being established in oneself, a deep state of self-awareness.^[3] Thus, the philosophy of self in health is not a new approach rather a continuous approach that has been in practice by individuals, families, and communities irrespective of its recognition in the health system. However, within the concept of self, often, terms such as self-care, self-efficacy, self-reliance, and self-management [Supplementary File 3] are used

interchangeably in literature reflecting ambiguity, diversity, and its wide application in different fields.^[1,4]

In many low- and middle-income countries (LMICs), the practice of traditional medicine (TM) is an important source of primary health care for several individuals and households.^[5] For instance, in India, more than 70% and around 80% in African countries use TM for primary health care (PHC).^[6,7] With its

Address for correspondence: Dr. Shivanand Basappa Savatagi, The University of Trans-Disciplinary Health Sciences and Technology, 74/2, Post Attur via Yelahanka, Jarakabande Kaval, Bengaluru - 560 064, Karnataka, India.
Institute of Public Health, 3009, II-A Main, 17th Cross, Krishna Rajendra Rd, Banashankari Stage II, Bengaluru - 560 070, Karnataka, India.
E-mail: bssshivabs@gmail.com

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emphasis on local resources, culture, traditions, and beliefs, the TM interventions designed for PHC often link self-reliance in its approach.^[7] Hence, we considered TM interventions as an opportunity to conceptualize self-reliance in relation to TM.

The scope of self-reliance is viewed in a wider context of sustainable development, localization, indigenous participation, and PHC.^[8] Hence, various community development programs and global health initiatives emphasized community participation with the main aim of enabling self-reliance.^[9] For instance, the 1978 Alma Ata Declaration^[10] and the first National Health Policy (NHP) of India in 1983 stated that the success of PHC depends on community participation and individual self-reliance.^[11] The period of 1990s witnessed an avalanche of self-reliance projects in response to the impact created by structural adjustment program policies.^[12] Self-reliance as a concept continues to attract the attention of policymakers and implementers even during the postneoliberal period as an effort toward achieving health as a larger social goal to reduce inequalities and inequities.^[13]

In the context of the health system, self-reliance is about the decisions made at the individual level. These decisions are influenced by various social, economic, political, and human agency factors.^[14] However, historical perspectives of self-reliance revealed that it is predominantly viewed from a resource availability perspective which reflects a narrow understanding and application of a complex social construct. Hence, there is a need to expand our analytical understanding of the systemic underpinning of self-reliance in health policy and systems practice.

The early 21st century witnessed developments in community health, TM, people-centred approaches, and sustainable initiatives in a more systematic way with the focus of enabling self-reliance. For instance, TM strategy 2002–2005 and 2014–2023 mentions the integration of TM and self-health care.^[6,15] In India, NHP 2002 and 2017 also resonate well with this.^[16,17] Hence, we included literature from the year 2000 to 2020 May to look at the recent developments about self-reliance.

This review is part of a research agenda for developing a self-reliance framework for PHC consisting of TM interventions. Scoping review is a type of knowledge synthesis used for topics that are interdisciplinary and underexplored.^[18,19] Hence, we considered scoping review as the best fit to synthesize the understanding of self-reliance.

OBJECTIVE AND REVIEW QUESTION

Objective

This study was to synthesize the understanding of self-reliance in PHC using TM in resource-poor settings.

Review question

What are the factors that enabled the emergence of self-reliance in PHC using TM in resource-poor settings?

METHODS

PRISMA guidelines

We adopted the 2018 PRISMA scoping review guidelines and followed the steps as described under these guidelines.^[18]

Protocol and registration

The scoping review protocol was registered at Open Science Framework (OSF) <https://osf.io/ycn2p> for its scientific transparency and audit.

Ethics approval

The ethical review of this study was not required because it solely used the data published in the literature.

IDENTIFICATION OF RELEVANT STUDIES

Data sources

Articles were searched systematically using keywords along with Boolean operators [Table 1]. Different databases were used based on their scope of coverage of articles. Only articles available through open access were included. Relevant articles from gray literature were also added using (1) Google and (2) websites of the institutions (nongovernmental organizations, private, and public) that worked on TM, PHC, local health traditions, and community development. The reference list of selected articles was scanned to identify relevant studies. The entire search process led to the selection of 401 articles [Table 1].

STUDY SELECTION

Inclusion and exclusion criteria

The inclusion criteria followed were that the articles should (1) describe the practice of self-care and self-reliance, community participation, PHC, and local health traditions, (2) be published between the year 2000 and 2020 May, (3) be peer-reviewed

Table 1: Databases and number of articles obtained

Type of database	Keywords used	Number of articles found
PubMed	(("Primary health care"(Mesh)) and "medicine, traditional"(Mesh)) and "self-care"(Mesh)	10
Google Scholar	"Self-care" and "traditional medicine" and "primary healthcare" and "policy" and low- and middle-income countries	355
Google (gray literature)	Self-care, primary healthcare, simple ailments, traditional medicine	22
SSRN	"Self-reliance," "Self-care," "Community development," "Community participation"	10
Reference tracking of selected articles	Selected articles were scanned for references to identify any relevant article to include in the study	4
Total		401

SSRN: Social Science Research Network, Mesh: Medical subject headings, PHC: Primary health care

papers or book chapters, conference proceedings, and reports, (4) policy documents, and (5) be from LMICs. Articles published before the year 2000 and explained self-care and self-reliance as a concept alone but not including a practice element were excluded.

The screening process

The first author organized the articles and shared them with other authors for finalizing the selection. If disagreement, the consensus was sought on inclusion/exclusion. Steps are illustrated in Figure 1.^[18]

QUALITY APPRAISAL OF SELECTED ARTICLES

Qualitative studies were assessed using Pope and Mays criteria.^[20] The main parameters assessed were clear explanation of sampling and study design, use of triangulation, respondents' validation, generalization, and relevance of the study. For quantitative studies, tools from Effective Public Health Practice^[21] were used, and parameters such as study design, clear explanation of methodology (sampling, study setting, control of possible biases, analysis, and the relevance of the study) were assessed. For systematic reviews, Joanna Briggs Institute checklist^[22] was adopted and parameters assessed were clarity of the review question, clear explanation of search strategy, inclusion criteria, future directives for researchers, and relevance of the study. In respective tools, each of the parameters was

assigned a score of "1" and the total score was 5. Articles with a score range 1–2 indicated poor, 3 – indicated average, and score with more than 3 indicated high quality [Supplementary file 2].

In the papers that used mixed method study design, major components (quantitative or qualitative) were assessed for quality as used previously by James *et al.*^[23] Policy documents were obtained from government official websites to ensure their authenticity.

Charting the data

Data captured were (a) year of publication, (b) author, (c) number of citations, (d) study design, (f) study setting, (g) levels of enabling self-reliance, and (h) factors influencing the emergence of self-reliance. The data were organized systematically in a spreadsheet and was discussed among all authors periodically.

Data analysis

The stored data were transferred to QDA-miner lite software (Provalis Research, Montreal, Canada) to code and create themes. Obtained themes were used to develop a conceptual framework [Figure 2].

RESULTS

Descriptive characteristics of selected articles

The main characteristics of the 29 articles are presented in Table 2. Six (20%) were qualitative studies, five (16.67%)

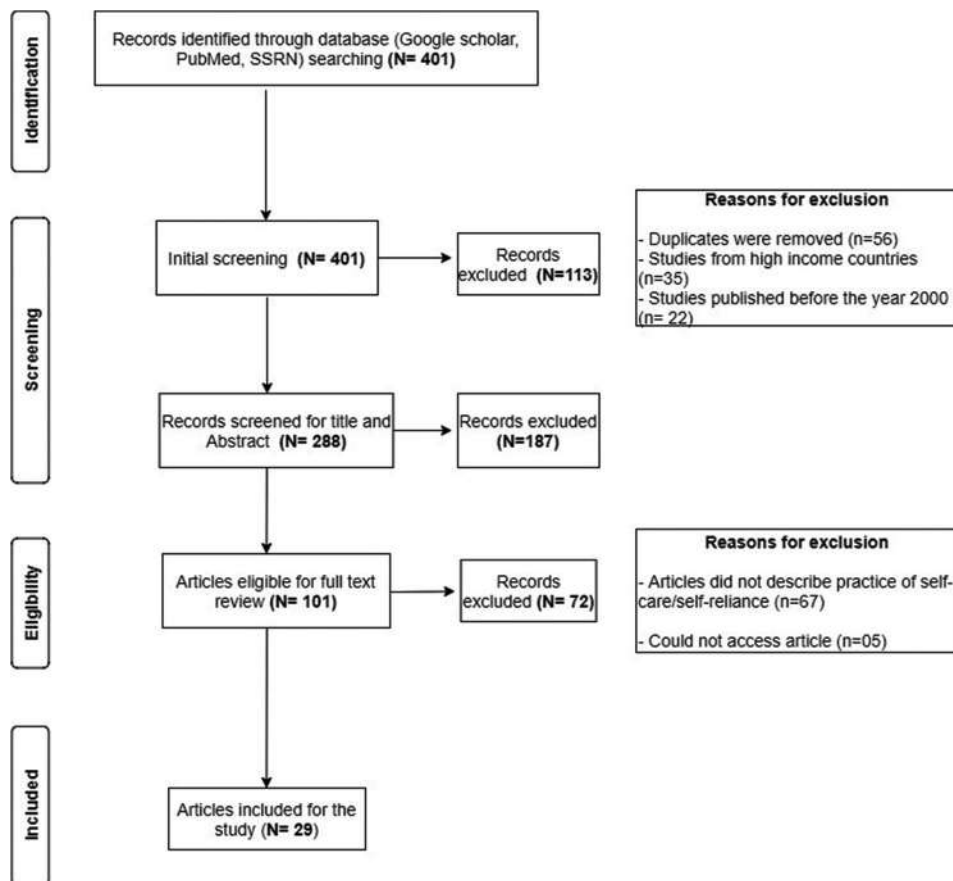


Figure 1: PRISMA flow diagram.

Table 2: Descriptive characteristics of selected articles [Supplementary file 1]

Authors	Year of publication	Type of literature	Number of citations (Google Scholar)	Study design
Journal articles				
Julie Barlow <i>et al.</i>	2002	Journal article	2580	Review
Charles C <i>et al.</i>	2003	Journal article	125	Mixed method
KK Bhuyan	2004	Journal article	115	Review
KR Nayar <i>et al.</i>	2004	Journal article	49	Review
L T Ajibade <i>et al.</i>	2005	Journal article	33	Cross-sectional
M Asadi Lari <i>et al.</i>	2005	Journal article	31	Not given
H. Cross and Ramesh C	2005	Journal article	21	Mixed method
Aurel Constant <i>et al.</i>	2010	Journal article	54	Cross-sectional
Li Yufeng <i>et al.</i>	2012	Journal article	61	Cross-sectional
Akaninyene Out <i>et al.</i>	2014	Journal article	2	Qualitative
Maria Costanza Torri	2015	Journal article	3	Qualitative
G. Michael K Habtom	2015	Journal article	4	Cross-sectional
Mudassir A <i>et al.</i>	2015	Journal article	15	Qualitative
Peter B J <i>et al.</i>	2018	Journal article	42	Review
Yie Jae Yoon	2018	Journal article	23	Review
Grey literature				
PM Unnikrishnan and G. Hariramamurthy	2007	Magazine article	Not found	Report
Sara Javanparast	2011	Report	6	Qualitative
SA Rankoana	2012	Thesis	13	Mixed method
Nippon Foundation	2012	Report	Not found	NA
Brianna Buehler <i>et al.</i>	2013	Report	21	NA
Richard Gaunt	2015	Thesis	Not found	Qualitative
Globinmed organization	2019	Report	Not found	Qualitative
Policy documents				
Title of document	Year of publication	Source		
Self-care in the context of primary healthcare	2009	WHO website		
The use of herbal medicine in primary healthcare: A report of the regional meeting 10-12 March 2009, Myanmar	2009	WHO website		
Up-gradation of training of community-based health workers within the context of revitalization of primary healthcare	2010	WHO website		
WHO - Traditional medicine strategy 2014-23	2014	WHO website		
Traditional and complementary medicine in primary healthcare	2018	WHO website		
Enabling people to manage health and well-being: Policy approaches to self-care	2019	euiperspectives.economist.com		
NCDs[tools for implementing WHO PEN (disease interventions)	2020	WHO website		

NA: Not applicable, WHO: World Health Organization, PHC: Primary healthcare, WHO PEN: World Health Organization: Package of essential noncommunicable disease interventions

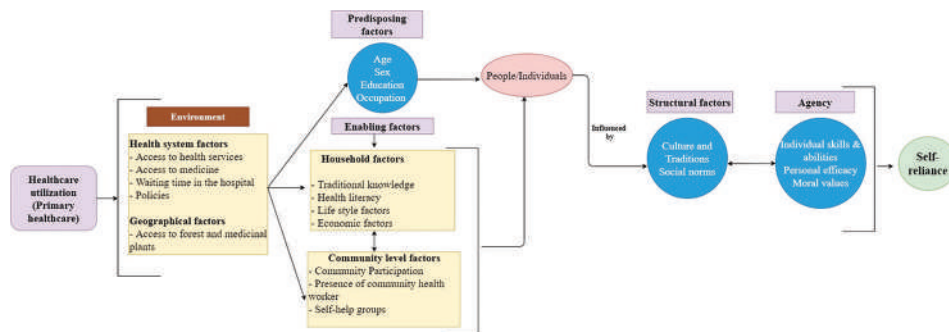


Figure 2: A self-reliance conceptual framework.

were review articles, four (13.3%) used a cross-sectional design, and three (10.01%) used a mixed method of study

design. The majority of articles (11, 37.93%) were from the Asian region and 8 (27.59%) were from the African region, one

review article captured perspectives on self-care practice from LMIC context, and two review articles captured perspectives on self-care practice from both high-income and LMICs.

Different levels of enabling self-reliance

This review revealed that the interventions that targeted enabling self-reliance were implemented at the individual (personal and family), community, and at institutional levels. The interventions that targeted enabling self-reliance at the individual level were most represented (six papers) and the most underrepresentation was at the institutional level (one paper). This may be due to the complexity of institutional arrangements in implementing programs or interventions to enable the self-reliance of individuals or communities. The papers we reviewed described these levels in a combination of one or two levels, i.e., 10 papers described both individual and community levels and four papers described all three levels.

Factors influencing the emergence of self-reliance in primary health care

We adopted the Anderson model for health-care utilization to navigate the emergence of self-reliance.^[24] The model describes different factors (environment, predisposing, and enabling factors) that are involved in the health behavior while utilizing health-care services. Since self-reliance is also related to health behavior, we used this model as a guide to categorize different factors involved in the emergence of self-reliance. Structural and agency factors are the additional components included in our framework [Figure 2].

Environment

We further categorized environmental factors into health system factors and geographical factors.

Health system factors

The challenges of the conventional health system that focused on an institutional-based approach acted as push factors for adopting practices to enable self-reliance. Long distances to health facilities and long waiting times influenced opting for self-care.^[23] Having accessibility to medicine acted as a pull factor and led to self-medication using herbal medicine for acute and minor conditions.^[25,26]

Health policies facilitate the practice of self-care and self-reliance by giving due consideration in their design. For instance, Indian NHP 2002 emphasized local self-government institutions for health interventions; Indian NHP 2017 mentions documentation of local knowledge, farming herbal gardens, and building the credibility of the alternative systems of medicine through evidence-based research.^[16,17] The Behvarz program in Iran is another policy approach for enhancing self-care through community participation and utilizing local resources.^[27]

At the global level, a conceptual framework for self-care interventions was developed by the World Health

Organization (WHO).^[28] Global policy roadmap for self-care by Bayer and White ribbon alliance in the year 2018 recommended integrating self-care with health policy, encouraged evidence-based self-care practice, and strong public–private collaboration.^[25] WHO Package for Essential Noncommunicable Disease Interventions for primary care in low-resource countries recommends early detection, community engagement, and self-care practice by the people.^[29] WHO TM strategy 2014–2023 emphasized developing tools for educating and disseminating information about self-care.^[15] Thus, policies play a vital role in pushing states and institutions toward creating an enabling environment for the practice of self-care that further enables self-reliance, but studies that examined how these policies impacted practice were unavailable.

Geographical factors

Geographical factors referred to the availability of TM in specific contexts or settings. Being near forests facilitated the practice of TM, particularly medicines based on medicinal herbs.^[30,31] To make easy accessibility of medicinal plants, many countries have implemented household and community-based interventions. For instance, successful integration models in countries such as Vietnam, the Lao people's Democratic Republic, and Thailand have established community herbal gardens to aid the practice of TM.^[32]

Predisposing factors

The majority of health practices including self-care vary depending on the age, gender, and stage of life of the individual.^[33] Elders appeared to be using TM more than other age groups.^[26,34] Age and gender factors were reported in two studies.^[1,30] There appears to be a lack of consensus on the influence of education on the practice of self-care.^[26,34,35] Occupational factors such as long or busy work hours and daily wage work hindered access to institutional health services which possibly were driving a choice for home-based interventions for acute and minor conditions.^[23,26]

Enabling factors

Household factors

Traditional knowledge influenced the use of local resources.^[31,32,36-40] Such knowledge is sourced from within families (especially mothers and elders), community members, and also trained community health workers in settings where TM has been integrated into health service delivery. Apart from traditional knowledge, health literacy, i.e., information about the availability of health services,^[31,35,39,41-43] lifestyle factors, and economic circumstances influenced the practice of self-care. The use of TM was observed mainly among families belonging to low socioeconomic status.^[23,37,40,41] The interventions targeted at the household mainly incorporated lifestyle messages including the use of home remedies^[26,36,37,40,44-46] to enable self-reliance,^[47] for instance, family medicine box project by Nippon Foundation in Mongolia^[48] and home herbal garden approach by the Foundation for Revitalization of Local Health Traditions in India.^[44]

Community factors

Community-directed interventions are considered the gold standard method for enhancing local participation through the involvement of people.^[9] Seven (24.1%) papers mentioned community participation as an enabler for the practice of self-care. Having a community health worker and self-help groups in the community were also identified as enablers.^[9] Seven (24.10%) articles identified the presence of local health workers as an important enabler for the self-reliance of the community.^[8,37,40,43,44,49,50] Community health programs such as ASHA program under NRHM in India,^[51] village midwife program in Indonesia, community midwives program in Sri Lanka and female community health volunteer in Nepal,^[50] Behvarz community health program in Iran,^[41] and traditional knowledge and conservation of local biodiversity project by Globimed organization in Malaysia^[39] are few examples that facilitated the participation of people and promoted the use of local resources.

Household and community factors cannot be seen in silos since they influence each other. For instance, households with traditional knowledge contributed to community health through shared learning, and also, the presence of community health workers helped in building the capacities of families in taking care of their health.

STRUCTURAL FACTORS AND AGENTS

The response to an illness stems from how an individual perceives and experiences it. This understanding of illness or disease is driven by culture, traditions, and social norms.^[31,40] They influence behavior, decisions, and actions related to health. For example, theism and *mantra* recitation,^[31] restrictions to certain foods, avoiding sexual intercourse during menstruation, and taking bath after attending a funeral^[40] were considered as part of self-care. Six articles (20.07%) mentioned culture and traditions as an influencing factor for self-care. Beyond structural factors, several attributes at the individual level (personal skills and abilities, self-efficacy, and moral values) which are in constant interaction with structural factors influenced decisions and actions. For instance, better health was always associated with good moral values^[38,40,52,53] and these moral values were attributed by the societal consensus and adopted at the individual level. In this respect, people are not autonomous actors, nor is their behavior influenced completely by structural factors, rather it is an interplay between structural and agency factors.^[54] Thus, there are macro- and micro-level dynamic interactions including contextual factors that influenced the emergence of self-reliance. Our conceptual framework describes the interaction of different factors that are involved in the emergence of self-reliance in PHC using TM.

DISCUSSION

Conceptualizing self-reliance

Terms used interchangeably with self-reliance were self-care, self-management, and self-efficacy. We included all these possible terms in our search to tease out the differences between

them. According to Fonchingong and Fonjong, self-reliance is defined as “A state of mind that regards to one’s own mental and material resources as the primary stock to draw on in the pursuit of one’s objectives, and finds emotional fulfilment not only in achieving the objectives but of having achieved them primarily by using one’s own resources.”^[8] WHO defines self-care as “the ability of individuals, families, and communities to promote health, prevent disease, maintain health and cope with illness and disability with or without the support of healthcare provider.”^[28] Critical analysis of these two definitions shows that the use of local resources and seeking a balance between dependency and independency are commonalities between them. Self-care is an attitudinal component wherein major focus lies with an individual believing in his/her ability. Self-efficacy is confidence through which skills are manifested. The ability to manage physical and psychological consequences in the event of achieving self-care ability is called self-management.^[47] When an individual has achieved a stage of self-management, there is a state of mind of an individual who trusts his/her own skills, which is termed self-reliance. Hence, self-reliance is a broader concept and all other terms are precursors to it.^[8,47] Self-reliance incorporates three attributes, i.e., being responsible, disciplined, and confident.^[55] Factors described concerning the practice of self-reliance in our review resonate with other studies conducted in China and sub-Saharan Africa.^[26,23]

Significance of different factors in the emergence of self-reliance

We identified that the distribution of traditional knowledge varied across age groups.^[26,34,56] The ability to use TM comes from both intellectual and experiential knowledge. Since knowledge of TM passes through intergeneration and word of mouth in the community, the level of education of an individual seems to be having less influence in the acquisition of this knowledge. Occupational factors identified in this review influenced the adoption of self-care practice, but these factors also highlight the failure of the health system to meet the needs of the working people.

Health system factors described in this review could act both as push and pull factors of self-reliance. While push factors such as unaffordability, nonavailability, and nonaccessibility^[23] could facilitate the practice of self-care, they also reflect systemic gaps which may not necessarily have chosen if there was a more equitable health system. On the other hand, if the practice of self-care is influenced by pull factors (easy accessibility, aligning with culture, values, traditions),^[23] they need to be strengthened for addressing issues of equity and equality.^[48] Hence, there is a need to take a close assessment of these factors while facilitating self-reliance. The articles included in the review described self-reliance as a resource-intensive strategy. However, mere making accessibility and availability of resources (health services, information, financial resource, medicines, etc.) may not result in self-reliance since there are structural and agency factors influencing its emergence. These factors are underrepresented in literature or explained in silos without proper linkage of macro- and micro-level contexts.

Need for differentiating different levels in the emergence of self-reliance

In this review, studies that described the specific pathways through which interventions enabled self-reliance at various levels (individuals [personal and family], community, or institutional) neither identified reasonable endpoints for determining the emergence of self-reliance nor identified how these could be sustained. Hence, we contend that there is a need for having a critical lens to categorize these levels considering overlapping and interaction of different factors within these levels.

Need for social science research methods

To understand practice-based evidence and the application of self-reliance, there is a need to relook at the conventional epidemiological methods that are used to investigate a complex phenomenon like self-reliance.^[57,58] The articles that we chose in this review mainly adopted a qualitative, cross-sectional, and mixed-method approach to explain self-reliance which we feel is insufficient. Experimental approaches and different scales were also used to generate evidence regarding self-care and self-reliance.^[33] However, due to its psychosocial construction and complexity as well as the context specificity, a social science research approach capturing lived experiences of people, their history, and social embeddedness could help to explain the interaction of various factors of self-reliance.

STRENGTHS AND LIMITATIONS OF THE STUDY

The main strength of this review is the conceptual framework which provided an understanding of self-reliance in PHC using TM. Limiting our scope to LMICs, PHC, and TM settings and the inclusion of select gray literature are our limitations. Self-reliance is socially constructed and the academic term self-reliance is a catch-all term for a variety of individual and community perceptions and practices, especially concerning TM. Hence, a more comprehensive effort at collating keywords that integrate the breadth of community practices concerning TM might have yielded a greater number of articles that better reflect the practice. The scope of self-reliance could also cover chronic conditions and mental health which has not been covered in our study.

CONCLUSION

If TM practice has to be promoted as an enabler of self-reliance, there is a need to recognize the best practice of TM based on both evidence-based practice and practice-based evidence to integrate into health policy. Due to the influence of various factors, the emergence of self-reliance differs widely across different contexts and goes beyond the individual level since it is socially constructed. In the era of growing interest in pluralistic health-care approaches, health decisions made at the individual level impacts one's health status. To better inform these decisions, understanding self-reliance is crucial. Self-reliance ought to manifest within capacitated households as their own choice rather than as a forced choice for addressing

the health systems' gaps by filling the substantial gap between the policy and the practice of self-reliance. The lack of psychosocial and contextual exploration of self-reliance opens an opportunity to investigate it through social science research approaches, and our proposed conceptual framework could guide such empirical studies to strengthen its practice.

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Conflicts of interest

There are no conflicts of interest.

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Supplementary File 1: Details of selected articles

Journal articles						
Title of literature	Year of publication	Name of the journal	Indexed	Number of citations	Authors	Study design
Self-management approaches for people with chronic conditions: A review	2002	Patient Education and Counseling - Elsevier	SCOPUS, Web of Science	2580	Julie Barlow <i>et al.</i>	Review
The concept self-reliance in community development initiatives in the Cameroon grassfields	2003	Nordic Journal of African studies		125	Charles C, Fonchingong, Lotsmart N. Fonjong	Mixed method
Health promotion through self-care and community participation: Elements of a proposed program in developing countries	2004	BMC Public Health	MEDLINE	115	Khaninder Kumar Bhuyan	Review
Self-help: What future role in health care for LMIC?	2004	International Journal for Equity in Health	MEDLINE	49	KR Nayar <i>et al.</i>	Review
Ethnomedicine and primary healthcare in Ilorin, Nigeria	2005	Indian Journal of Traditional Knowledge	Web of Science	33	L T Ajibade <i>et al.</i>	Mixed method
Applying a basic development needs approach for sustainable and integrated community development in less developed areas: A report of ongoing Iran experience	2005	Journal of the Royal Institute of Public Health	MEDLINE	31	M Asadi Lari <i>et al.</i>	Not given
Self-care: A catalyst for community development	2005	Asia Pacific Disability Rehabilitation Journal	SCOPUS, Web of Science	21	Hugh cross and Ramesh Choudary	Mixed method
The use of medicinal plants in self-care in the Agonlin region of Benin	2010	Journal of Ethnopharmacology	MEDLINE	54	Aurel constant Allabi <i>et al.</i>	Cross-sectional study
Use and factors associated with self-treatment in china	2012	BMC Public Health	MEDLINE, Web of Science, SCOPUS	61	Li Yufeng <i>et al.</i>	Cross-sectional study
Strengthening primary healthcare through community involvement in cross river state, Nigeria: A descriptive study	2014	Pan African Medical Journal	MEDLINE	2	Akaninyene Out <i>et al.</i>	Qualitative study
Increasing knowledge and traditional use of medicinal plants by local communities in Tamil Nadu: Promoting self-reliance at the grassroot level through community-based entrepreneurship initiative	2015	SAGE Journal (complementary health practice review)	Not found	3	Maria Costanza Torri	Qualitative study
Integrating traditional medical practice with primary healthcare system in Eritria	2015	Journal of Complementary and Integrative Medicine	MEDLINE	4	Geber Michael Kibrab Habtom	Cross sectional study
Self-medication, home remedies, and spiritual healing: Common responses to everyday symptom in Pakistan	2015	Health Psychology and Behavioral Science	Web of Science	15	Mudassir A <i>et al</i>	Qualitative study
Traditional, complementary, and alternative medicine use in Sub Saharan Africa: A systemic review	2018	BMJ Global Health	MEDLINE, Web of Science, SCOPUS	42	Peter B J <i>et al</i>	Review
Self-management of chronic conditions Using mHealth Interventions in Korea: A systematic review	2018	Healthcare Informatics Research	Web of Science, SCOPUS	23	Yie Jae Yoon	Review

Contd...

Supplementary File 1: Contd...

Journal articles						
Title of literature	Year of publication	Name of the journal	Indexed	Number of citations	Authors	Study design
Gray literature						
Authors	Year of publication	Type of literature	Source of article	Number of citations (Google scholar)	Study design	
P M Unnikrishnan and G. Hariramamurthy	2007	Gray literature	Liesa magazine	Not found	Project report (number particular design)	
Sara Javanparast	2011	Gray literature	wp global health equity. ca	6	Review + qualittatve study	
SA Rankoana	2012	Gray literature	Thesis (Limpopo University website)	13	Mixed method	
Brianna Buehler <i>et al.</i>	2013	Gray literature	IEE Technology and Society Magazine	21	It has discussed different case studies from developing countries	
Richard Gaunt	2015	Gray literature	Thesis (SIT digital collections)	Not found	Qualitative study	
Globinmed organization	2019	Gray literature	Organization website	Not found	Qualitative study (Ethnographic)	
Nippon foundation	2010	Gray literature	Organization website	Not found	Project report (number particular design)	
Policy documents						
Title of document	Year of publication	Source	Authors	Content		
Self-care in the context of primary healthcare	2009	WHO website	WHO	Report has discussed importance of self-care in the context of primary health care and some of the best practices that are yielded positive results in achieving primary healthcare		
The use of herbal medicine in primary healthcare: A report of the regional meeting 10-12 March 2009, Myanmar	2009	WHO website	WHO	A report by WHO (different country experiences have been described)		
Upgradation of training of community-based health workers within the context of revitalization of PHC	2010	WHO website	WHO	The report has discussed the importance of community health workers in differnet countries and their contribution in achieving primary healthcare		
WHO - traditional medicine strategy 2014-23	2014	WHO website		This strategy is an effective and proactive response to the World Health Assembly resolution on traditional medicine (1), which encourages member states to consider T and CM as an important part of the health system and builds on the work introduced in the Beijing Declaration, adopted by the WHO congress on traditional medicine in 2008		

Contd...

Supplementary File 1: Contd...

Policy documents				
Title of document	Year of publication	Source	Authors	Content
Traditional and complementary medicine in primary healthcare	2018	apps.WHO.int	Shangyoung <i>et al.</i> (WHO technical team)	This is technical series by WHO given in the year 2018 has re-emphasised on the integration of traditional medicine. I has discussed some of the evidence-based practices related to traditional medicine
Enabling people to manage health and well-being: Policy approaches self-care	2019	Eiuperspectives.economist.com	Becca Lipman	This has discussed self-care approaches in developed and developing countries
NCDs tools for implementing WHO PEN (disease interventions)	2020	WHO website	WHO	Tools for implementing WHO PEN (disease interventions) The main goal is to close the gap between what is needed and what is currently available to reduce the burden, health-care costs, and human suffering due to major NCDs by achieving higher coverage of essential interventions in LMIC

WHO: World Health Organization, WHO PEN: WHO Package for essential noncommunicable, BMC: BioMed central, LMIC: Low- and middle-income countries, PHC: Primary health care, SAGE: Sarah and George, Scopus, IEEE: Institute of electrical and electronics engineers, SIT: School for international training, NCDs: Non-communicable diseases

Supplementary File 2: Quality appraisal tools applied

Quality appraisal for quantitative studies							
Title	Author	Parameters assessed_ quantitative study (EPPHP)					Obtained score
		Criteria for selection is defined	Study design clearly explained	Taken care of blinding and confounding	Methods are clearly explained	Relevance	
The use of medicinal plants in self-care in the Agonlin region of Benin	Aurel constant Allabi <i>et al.</i>	1	1	0	1	1	4
Use and factors associated with self-treatment in ehin	Li yufeng <i>et al.</i>	1	1	0	0	1	3
Integrating traditional medical practice with primary healthcare system in Eritria	Geber Michael Kibrab Habtom	1	1	0	1	1	4

Quality appraisal criteria for qualitative studies

Title	Author	Parameters assessed_ qualitative study					Obtained score
		Study and sampling design	Triangulation method used	Respondents' validation	Generalization	Relevance	
Contribution of community health workers to the implementation of comprehensive primary healthcare in rural settings, Iran	Sara Javanparast	1	0	1	1	1	4
Strengthening primary healthcare through community involvement in cross river state, Nigeria: A descriptive study	Akaninyene Out <i>et al.</i>	1	0	0	1	1	3
Increasing knowledge and traditional use of medicinal plants by local communities in Tamil Nadu: Promoting self-reliance at the grassroots level through community-based entrepreneurship initiative	Maria Costanza Torri	1	1	1	0	1	4
Herbs, home medicine, and self-reliance: A study on the current status of TM in Idukki district in Kerala	Richard Gaunt	1	0	0	1	1	3
The conservation of traditional medicine knowledge, and practices in the north western region of Sabah	Globinmed organization	1	0	1	0	1	3
Self-medication, home remedies, and spiritual healing: Common responses to everyday symptoms in Pakistan	A Mudassir <i>et al.</i>	1	0	1	1	1	4

Quality appraisal criteria for review studies

Title	Author	Parameters assessed_ reviews (JBI checklist)				Score
		Clarity of review question to be addressed	Were the inclusion criteria set forth for including papers?	Was the search strategy defined and appropriate?	Quality appraisal of selected articles	
Self-management approaches for people with chronic conditions: A review	Julie Barlow <i>et al.</i>	1	1	1	1	5

Contd...

Supplementary File 2: Contid...

Quality appraisal criteria for review studies

Title	Author	Parameters assessed_ reviews (JBI checklist)					Score
		Clarity of review question to be addressed	Were the inclusion criteria set forth for including papers?	Was the search strategy defined and appropriate?	Quality appraisal of selected articles	Has review provided specific directives for new research?	
Health promotion through self-care and community participation: Elements of a proposed programme in developing countries	Khaninder Kumar Bhuyan	1	1	1	0	1	4
Self - help: what future role in health care for LMIC?	KR Nayar <i>et al.</i>	1	0	1	0	1	3
Traditional, complementary and alternative medicine use in Sub Saharan Africa: A systemic review	Peter B J <i>et al.</i>	1	1	1	1	1	5
Self-management of chronic conditions using mHealth interventions in Korea: A systematic review	Yie Jae Yoon PPP	1	1	1	0	1	4

JBI: Joanna Briggs Institute, LMIC: Low- and middle-income countries, TM: Traditional medicine, EPHPP: Effective public health practice project, PHC: Primary healthcare

Supplementary File 3: Glossary of terms

Local: It denotes a particular geographical context or setting. It might be a community, village, or ethnic group.

Resources: Denotes financial resources, social networks, local health services, health institutions, and natural resources (medicinal plants) within a community or geographical context.

Resource-poor settings: Are those settings where there are limited health-care delivery services and limited financial resources.

Primary health care: It is a whole-of-society approach to health that aims at ensuring the highest possible level of health and well-being and their equitable distribution by focusing on people's needs and as early as possible along the continuum from health promotion and disease prevention to treatment, rehabilitation, and palliative care, and as close as feasible to people's everyday environment.^[1]

Self-care: According to WHO, self-care is “the ability of individuals, families, and communities to promote health, prevent disease, maintain health, and cope with illness and disability with or without the support of healthcare provider.”^[2]

Self-efficacy: Self-efficacy is confidence through which actions are carried out.^[3]

Self-management: The ability to manage physical and psychological consequences in the event of achieving self-care ability is called self-management.^[3]

Self-reliance: Self-reliance is defined as “A state of mind that regards to one's own mental and material resources as the primary stock to draw on in the pursuit of one's objectives, and finds emotional fulfilment not only in achieving the objectives but of having achieved them primarily by using one's own resources.”^[4]

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NOTES FROM THE FIELD

Self-care or Delay in Seeking Healthcare: Reflections from the Field

Shivanand Savatagi Basappa¹

1. INTRODUCTION

“These days, I do not go to the hospital. If I have a fever or any other common disease, I take tulsi and drink hot water. I practise these remedies for two to three days. If the symptoms do not subside, then I go to the hospital,”² said a participant from HD Kote taluka in Karnataka, when I asked him about his immediate response to health problems.

I carried out the fieldwork described in this paper on 15–27 February 2021 to understand self-care practices among families who use traditional medicine in HD Kote taluka, Karnataka. This fieldwork was carried out as part of a larger research study on self-reliance in primary healthcare among families using traditional medicine in HD Kote. Here, I reflect on the self-care practices of these families and examine the potential impact on health outcomes.

I collected data through field observation and 15 in-depth interviews with families from rural, tribal/Adivasi, and urban communities, using the purposive sampling method. The age range of participants was 30–60 years.

¹ PhD scholar, The University of Trans-disciplinary Health Sciences and Technology (TDU), 74/2, Jarakabande Kaval, Post Attur via Yelahanka, Bengaluru, Karnataka – 560064, and the Institute of Public Health (IPH), 3009, II-A Main, 17th Cross, Krishna Rajendra Rd, Banashankari Stage II, Bengaluru, Karnataka – 560070; bsshivabs@gmail.com.

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² Exact quote in vernacular language (Kannada): “*Ittibina dinagalalli nanu aaspatrege hoguttill. Nanage jvara athava samanya kayile enadru bandare, tulsi matt bisi neerannu tegedukolluttene. Idannu eradarind mooru dina tagotini, nanage kadime agalilla andre aaspatrege hoguttene?*”. Interview with a 48-year-old farmer, Hirehalli-A village, HD Kote taluka, Karnataka, 17 February 2021.

Of the 15 participants, seven were female and eight male. Most of the male participants—seven of them—were engaged in agriculture, and the female participants were engaged in either *coolie* (daily wage) or household work. The Kabini tributary of the Cauvery, which flows through HD Kote taluka, is their main source of irrigation water.

2. SELF-CARE IN THE CONTEXT OF HEALTH

Self-care is an integral part of promotive, preventive, curative, and rehabilitative care and offers unique opportunities to keep ourselves healthy; it is also considered as a renewed approach to primary healthcare (WHO 2009). However, the tension between self-care and state-delivered primary healthcare has not been sufficiently addressed (Levin and Idler 1983), which raises scepticism about promoting self-care as a practice. Hence, there is a need to reflect on what is self-care, whom it is for, to what extent it should be followed, and its position within the health system (Webber, Guo, and Mann 2013). In low- and middle-income (LMIC) countries like India, traditional medicine is considered an important resource for population health, especially primary healthcare (Oyebode *et al.* 2016). Homemakers play a significant role in the prevention of many diseases and the promotion of health through their nutrition-based interventions. Intergenerational knowledge regarding the use of traditional medicine potentially adds value to self-care as it can help in making better-informed decisions.

2.1 What Is Health, Disease, and Illness According to the Participants?

Self-care for health is rooted in an understanding of proper dietary practices, consuming fresh air, physical activity, and other domestic activities that can prevent disease (Levin and Idler 1983). My field observations show that people had various definitions of health, including the absence of disease, being happy and satisfied, and meeting life needs. For instance, one interviewee, a resident of Hirehalli B village, said, “Health means doing good things and eating well, maintaining cleanliness, living in a good environment, getting good sleep, and having the ability to work efficiently.”³ This statement covers the physical, psychological, environmental, and value dimensions of health. According to WHO, self-care is “the ability of individuals, families, and communities to promote health, prevent disease, maintain health, and cope with illness and disability

³ Exact quote in vernacular language (Kannada): “*Arogya andre chennagiruvudu, chennagi uta, nidde maduvudu bagu kelasvannu maduva samrthyavannu honduvudu.*” interview with a 40-year-old woman homemaker, at Hirehalli B village, HD Kote taluka, Karnataka, on 17 Feb 2021.

with or without the support of a health-care provider” (WHO 2013). Critical reflection on this definition shows that self-care is a comprehensive approach that includes the promotion, prevention, and maintenance of health. Thus, self-care seems to be embedded within people’s understanding and practices concerning health.

I also collected responses on reasons for disease or illness. One participant, a farmer in a village named MC Tholalu, indicated that the use of chemical fertilizers was a major cause of disease and illness. He said, “Sir, now everyone is using chemical fertilizers, but, earlier, they used organic fertilizers. The food used to be very tasty and there was no disease. Now there are many different types of fertilizers, so now there are many diseases.”⁴ This understanding of disease was common across all participants whose occupation was agriculture. Participants’ beliefs about the reasons for disease varied across rural, urban, and tribal/Adivasi communities. In urban communities, participants believed that diseases were caused mainly by food habits and reduced physical activity, while Adivasis and tribals cited addiction to bad habits (e.g., smoking and drinking) as the predominant reason for disease.

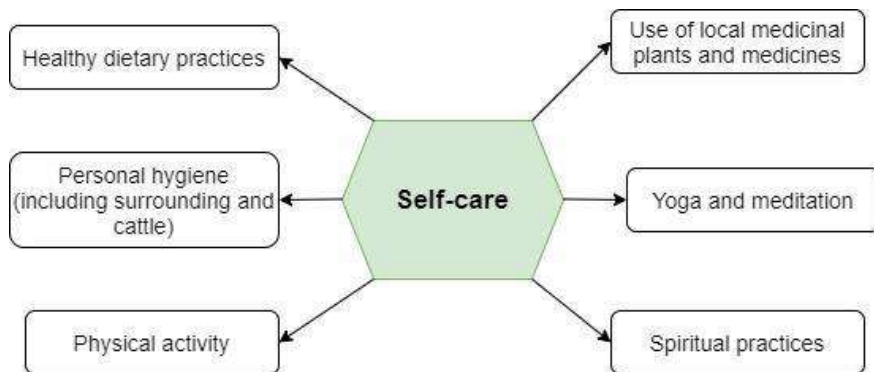


Figure 1: Self-care Practices among Study Participants

Source: Original work, diagram is formed based on the themes obtained from the preliminary analysis of the data

The activities that participants undertook to take care of their health ranged from physical activity to spiritual practices, as Figure 1 shows. Urban, rural,

⁴ Exact quote in vernacular language (Kannada): “Sir, *evag ellaru rasayanik gobbar balastare, modalu novella kottige gobbar upayogistiddu, uta tumba ruhe aagirtittu bagu yavunde kayile irtiralilla. Evag bere bere chemicals use madtare, adakke bahala rogalu bandidave*”. Interview with a 60-year-old male farmer, at MC Tholalu village, HD Kote taluka, Karnataka, on 21 Feb 2021.

and Adivasi communities were aware of the importance of physical activity. However, their practices varied. For rural and Adivasi communities, physical activity was a part of daily work, since they were engaged in agriculture and domestic activities. Things were different in the urban context, as the lifestyle there involved less activity, and participants had to allocate a specific time to go for a walk, exercise, or practise yoga. Personal hygiene included individual care and cleanliness of domestic animals and the surroundings, which was also considered part of self-care across all contexts.

Highlighting the importance of food, participants mentioned that they maintain their health by consuming “natural” foods that they grow in their own fields. Among the villagers, the notion of healthy food was strongly associated with food being free from chemicals. Apart from physical activity and consumption of natural food, most participants used home remedies to treat common health ailments; these included medicinal plants such as *nagadali* (*Ruta graveolens*), *dodda patre* (*Coleus amboinicus*), *chitramoolika* (*Plumbago zeylanica*), *ondelaga* (*Centella Asiatica*), *tulsi* (*Ocimum tenuiflorum*), hibiscus (*Rosa-Sinensis*), *simiribu* (*Simarouba*), ginger (*Zingiber Officinale*), and pepper (*Piper nigrum*). Their first response to common illnesses was using these home remedies for two to three days, and if the symptoms did not subside, then they visited a hospital for further treatment. When I asked them to show me these home remedies, one participant took me around his village and showed me 10 plants that grew on the streets and in his field. Thus, the health-related practices of these households were based on the local ecosystem. The participants’ approach to health was not about getting medicine, but how they live with their local resources and ecosystem and regulate their lifestyle accordingly. Additionally, respondents also spoke about culture and tradition, spiritual practices, and values like honesty, trustworthiness, and responsibility as part of their self-care. Thus, self-care originates from the interaction between various factors; it is a comprehensive approach that includes promotion, prevention, and curative aspects.

3. REFLECTIONS

According to the participants, health is not only a physical or biological state—it has to do with the ecosystem and integration of body and mind. While a small section of the participants had a narrow understanding of health as the absence of disease, the majority linked health with multiple factors. The individual definitions of health also varied depending upon the context, age, and life stage of the participant. Therefore, for the participants, health is a multidimensional phenomenon embedded within the larger concept of well-being. The health behaviour of an individual is

shaped by their everyday needs, which comprise bodily needs, economic needs, social relations, emotional needs, and therapeutic needs. Self-care is a part of health behaviour and includes home-based solutions to health problems. It also entails having knowledge of the disease or illness and understanding our bodily responses—in other words, intellectual and embodied knowledge. Thus, the ability of an individual to make use of local knowledge and resources seemed to be an important part of their definition of self-care. It was evident that the practice and understanding of self-care were contextual and influenced by various factors, such as knowledge, values, traditions and culture, individual skills, and environmental and health system factors. Since health problems and suffering are obvious in communities, adopting coping strategies suggested by neighbours and other community members and accepting support from them are also considered as part of self-care.

Individuals with illnesses are likely to try multiple solutions that could be medical or non-medical. Thus, it is difficult to categorize household practices as self-care or delays in seeking healthcare, as they may have varying degrees of effectiveness. The challenges of availability, accessibility, and affordability of institutional health interventions continue; there is still an ongoing debate about evidence-based practice versus practice-based evidence, and self-care falls in the latter category. Of course, there is greater value attached to medical knowledge, but one modality of treatment or intervention is not always the best. There is a need to emphasize pluralistic healthcare approaches for better health outcomes. In the case of pluralistic healthcare approaches, individuals need to be able to make informed decisions regarding their selection of healthcare services. This ability holds good even for self-care practices. Therefore, if communities make better-informed decisions in their practice of self-care, they have the potential to produce better health outcomes and strengthen the health system. Otherwise, there might be continued delays in seeking healthcare, which can lead to detrimental effects on health.

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