Dissertation Training

At

"DOCTOR ALLIANCE"

(January 2023- April 2023)

A report on

"Implementation of Chronic Care Management in the Healthcare system of India: A Narrative Review"

By

DR. SHUBHI GUPTA

Enroll No. - PG/21/106

Under the guidance of

Dr. Sumant Swain

PGDM (Hospital & Health Management)

2021-23

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Completion of Dissertation from Doctor Alliance

The certificate is awarded to

Dr . Shubhi Gupta

In recognition of having completed her
Internship in the Department of

New Processes – Unsaturated Region

and has completed her Project on

"Implementation of Chronic Care Management in the Healthcare system of India: A Narrative Review"

At

DOCTOR ALLIANCE

She comes across as a committed, sincere &
diligent person who hasa strong drive & zeal for learning.

We wish him/her all the best for future endeavours.

Training & Development

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TO WHOMSOEVER IT MAY CONCERN

This is to certify that **Dr. Shubhi Gupta,** a student of PGDM (Hospital & Health Management) from the International Institute of Health Management Research, New Delhi has undergone internship training at **"Doctor Alliance"** from **January 2023** to **April 2023**

The Candidate has successfully carried out the study designated to him during internship training and her approach to the study has been sincere, scientific and analytical.

The Internship is in fulfilment of the course requirements.

I wish her all success in all her future endeavours.

Dr Sumesh Kumar.
Associate Dean, Academic and Student Affairs
IIHMR, New Delhi.

Dr **Sumant Swain**
Associate Professor
IIHMR, New Delhi

Certificate of Approval

Certificate of Approval

The following dissertation titled **"Implementation of Chronic Care Management in the healthcare system of India: A Narrative Review"** is hereby approved as a certified study in management carried out and presented in a manner satisfactory to warrant its acceptance as a prerequisite for the award of **PGDM (Hospital & Health Management)** for which it has been submitted. It is understood that by this approval the undersigned do not necessarily endorse or approve any statement made, opinion expressed or conclusion drawn therein but approve the dissertation only for the purpose it is submitted.

Dissertation Examination Committee for evaluation of dissertation.

Name	Signature
Dr. Sumesh Kumar	
Dr SHASHI BHUSHAN GOGIA	
DR. PANKAJ TALREJA	

Certificate from Dissertation Advisory Committee

This is to certify that Dr. **Shubhi Gupta,** a participant in the Post-Graduate **Diploma in Health and Hospital Management**, has worked under our guidance and supervision. He is submitting this dissertation titled**: "Implementation of Chronic Care Management in the Healthcare system of India: A Narrative Review"** in partial fulfillment of the requirements for the Post-Graduate Diploma in Health and Hospital Management award.

This dissertation has the requisite standard, and to our knowledge, no part of it has been reproduced from any other dissertation, monograph, report, or book.

Faculty Advisor

Designation IIHMR

New Delhi

Date

Organizational Advisor

Designation

Organization Address

Date

INTERNATIONAL INSTITUTE OF HEALTH MANAGEMENT RESEARCH, NEW DELHI

CERTIFICATE BY SCHOLAR

This is to certify that the dissertation titled**: "Implementation of Chronic Care Management in the healthcare system of India: A Narrative Review"** and submitted by **Dr. Shubhi Gupta,** Enrolment No. **PG/21/106** under the supervision of **Dr Sumant Swain** for the award of PGDM (Hospital & Health Management) of the Institute carried out during the period from January'23 to April 23, embodies my original work and has not formed the basis for the award of any degree, diploma associate ship, fellowship, titles in this or any other Institute or other similar institution of higher learning.

Signature

FEEDBACK FORM

Name of the Student: Dr. Shubhi Gupta

Name of the Organisation: Doctor Alliance

Area of Dissertation: Product- Growth and Strategy

Attendance: Regular

Objectives achieved: Workflow Automation, System scalability, Process Optimisation

Deliverables: Internal Ops Dashboards, Sales Value Matrix, Client Acquisition Funnel

Strengths: Analytical thinking, Problem-Solving, Team Player

Suggestions for Improvement: Art of Delegation, Understanding the build trap

Suggestions for Institute (course curriculum, industry interaction, placement, alumni):

Signature of the Organisation Mentor (Dissertation)

Date: 30/05/2022
Place: Dallas

Acknowledgement

I am ever grateful to Mr **Shivam Sisodia** for instilling faith in me to carry out my dissertation in Doctor Alliance. I had a very rewarding and enriching experience during my training period. Besides, I would also like to thank the entire DA team for their encouragement and cooperation in carrying out the project work.

I sincerely acknowledge Professor **Sumant Swain** for their kind assistance and support throughout my dissertation.

Finally, an honorable mention goes to my family and friends for their understanding and support in me in completing this project.

Thank You,

Dr Shubhi Gupta

PGDHHM,

IIHMR, New Delhi

Table of Contents

Abstract:-

Introduction:-

The Chronic Care Management (CCM) program aims to improve the quality of care for patients with chronic conditions by providing coordinated and continuous care. Chronic diseases are a growing burden in India, contributing to increased healthcare costs and reduced quality of life. Implementing the CCM program in India could benefit from patient-centred care, care coordination, chronic disease management, technology utilization, and health workforce development.

Objective:-

- To identify the study of the care of chronic care diseases which could be assessing the effect of implementation of CCM in India.
- To analyse the extent of interventions which are featuring the components of the CCM and are responsible for the improvement in the care of chronic care diseases.
- To assess the effectiveness of the various components of the CCM on the care of chronic care diseases.
- To identify the challenges in the implementation of the CCM program in the health care system of India

Methodology:-

Relevant studies were identified using PubMed, Cochrane Library, and Embase databases.

- Search terms included "**Chronic care management," "USA healthcare," "Indian healthcare," "Program implementation," "Chronic care disease", "Patient engagement", Patient outcomes",**
- **Study Design –** Narrative Literature Review
- **Inclusion criteria**: Studies that are a) published in English, (b) conducted in the USA or India, (c) evaluated the CCM program or similar programs, (d) reported on the merits and shortcomings of the program, and (e) focused on chronic disease management.

- **Exclusion criteria**: The exclusion criteria could include studies that are not published in English, studies that focus on acute care management, not conducted in USA & India.
- **Study selection:** Screening based on title and abstract, followed by full-text article review for final inclusion.
- **Data extraction**: Relevant data from the selected studies were extracted.
- **Data analysis:** Synthesis and analysis of the data using a narrative approach classifying results.
- **Reporting**: The Narrative literature Review results were reported using a structured format, following PRISMA guidelines, clearly and concisely.

Results-

- The beneficial "chronic diseases and injuries such as cardiovascular disease, psychiatric disorders, diabetes, and cancer" are the leading causes of "death and disability in India, and the burden of these diseases is expected to increase significantly" over the next 25 years (Rao *et al.* 2021). Most chronic diseases are equally general in imperfect and rural peoples and often co-exist.
- It has already been established that only 48 homes overall suffered CHE. Out of these, 41 households (or 85.42% of the households experiencing CHE) have one or more members with chronic illnesses.
- It was discovered that Diabetes Mellitus and Hypertension (70%) were the most prevalent chronic illnesses among CHE-affected households. (Longhini *et al.* 2022).
- About 21% of the elderly in India are reported" to keep at small one chronic disease. Seventeen per cent of the elderly in rural areas and 29 per cent in urban areas suffer from chronic diseases.
- "Hypertension and diabetes" account for about 67% of all chronic diseases.
- "Chronic disease prevalence is highest in Kerala (55%), followed by Andhra Pradesh (42%), West Bengal (37%), and Goa (30%)" People with higher levels of education, people who live in urban areas, people "who are economically dependent on others, people who live alone or have no spouse or children, and people who belong to wealthy families" are more likely to be chronically ill an increased risk of developing the disease.
- Urban residents are 1.15 times more likely to suffer from chronic diseases than rural residents.

Conclusion-

Future review and execution can benefit significantly from the examination of the burdens and benefits of the CCM program in the USA, prominently when contrasted with the medical care framework in India. The discoveries of this study add new information on the potential advantages and difficulties of carrying the program to India. By utilizing this data to impact preferences, the "Chronic Care treatment program" might be changed and coordinated into the Indian medical services framework, at last working on the therapy of constant illnesses and patient results. The findings uncover a high commonness of non-transmittable infections, like cardiovascular sicknesses, diabetes, respiratory illnesses, and malignant growth, leading to increased death rates and diminished personal satisfaction. Restrictedadmittance to quality consideration, especially in rustic regions, alongside aberrations in access and financial weight, were distinguished as critical difficulties. The review features the significance of strengthening healthcare infrastructure, implementing designated interventions for weak populations, improving financial security components, and leveraging innovative healthcareconveyance models. These findings have strategy suggestions for improving the chronic healthcare system in India and promoting impartial admittance to focus on individuals with chronic sicknesses.

Chapter-1

Introduction

The Chronic Care Management (CCM) program is a healthcare initiative in the USA that aims to improve the quality of care for patients with chronic conditions by providing coordinated and continuous care. It has been implemented in the USA as part of the Medicare Access and CHIP Reauthorization Act (MACRA) and has shown promising results in improving the quality of care and patient outcomes. Chronic diseases, including cardiovascular disease, diabetes, and cancer, are a growing burden in India. The prevalence of chronic diseases in India is expected to increase due to factors such as urbanization, aging, and lifestyle changes. The feasibility and effectiveness of the CCM program in the Indian healthcare system have not been thoroughly evaluated. The Indian healthcare system faces challenges with infrastructure, resources, and cultural factors that may impact the implementation and effectiveness of the CCM program. Therefore, there is a need to evaluate the feasibility and effectiveness of implementing the CCM program in the Indian healthcare system. This systematic review aims to evaluate the existing literature on the feasibility and effectiveness of implementing the CCM program in the Indian healthcare system.

Chronic diseases, such as diabetes, cardiovascular diseases, respiratory illnesses, and cancer, pose a significant burden on healthcare systems worldwide. In India, the prevalence of chronic diseases has been rising steadily, leading to increased healthcare costs and reduced quality of life for affected individuals. The Indian healthcare system faces numerous challenges in managing chronic diseases effectively, including a lack of infrastructure, limited resources, and fragmented care delivery. In recent years, there has been growing recognition of the need for innovative approaches to address these challenges, and one such approach is the implementation of Chronic Care Management (CCM) programs.

A CCM program is a systematic and coordinated approach to healthcare delivery that aims to improve the outcomes of individuals with chronic diseases by providing comprehensive and continuous care. It focuses on proactive management, patient education, self-management support, and care coordination across healthcare providers. While CCM programs have shown promise in various healthcare settings globally, their feasibility and effectiveness in the Indian healthcare system are relatively unexplored.

Chronic diseases pose a significant burden in India, contributing to a substantial number of deaths, disability, and healthcare costs. Here are some key points highlighting the chronic disease burden in India:-

- **Prevalence:** The prevalence of chronic diseases in India has been steadily rising over the years. Common chronic conditions include cardiovascular diseases, diabetes, respiratory diseases (such as chronic obstructive pulmonary disease), cancer, and chronic kidney disease.
- **Growing burden:** The burden of chronic diseases is increasing due to several factors, including population aging, urbanization, sedentary lifestyles, unhealthy diets, tobacco use, and environmental factors. These trends contribute to a higher incidence and prevalence of chronic diseases in the population.
- **Major causes of mortality:** Chronic diseases are responsible for a significant proportion of deaths in India. According to the Global Burden of Disease study, non-communicable diseases (NCDs) accounted for approximately 61% of all deaths in India in 2019.
- **Economic impact:** Chronic diseases also impose a substantial economic burden on individuals, families, and the healthcare system. The costs associated with chronic disease management,

including medication, hospitalizations, and long-term care, can be financially challenging for individuals and families, particularly those with limited resources.

- **Risk factors:** Several risk factors contribute to the development of chronic diseases in India. These include high blood pressure, tobacco and alcohol use, unhealthy diets, physical inactivity, obesity, air pollution, and stress.
- **Regional disparities:** The burden of chronic diseases is not evenly distributed across India. There are significant regional disparities in the prevalence and management of chronic diseases, with urban areas often experiencing higher rates compared to rural areas.
- **Dual burden of disease:** India also faces a dual burden of disease, with a significant portion of the population still affected by communicable diseases such as tuberculosis and malaria. This dual burden puts additional strain on the healthcare system, which needs to address both infectious and chronic diseases simultaneously.

Addressing the chronic disease burden in India requires comprehensive strategies, including health promotion, prevention, early detection, improved access to quality healthcare services, and effective management of chronic conditions. Public health initiatives and policies aimed at reducing risk factors and promoting healthy lifestyles are essential for mitigating the impact of chronic diseases on individuals and society as a whole.

The Chronic Care Management (CCM) program implemented in the USA has several aspects that could be considered in the context of the Indian healthcare system. Here are some points regarding the CCM program implemented in the USA and its potential applicability to India:-

- **Patient-centred care:** The CCM program in the USA focuses on patient-centred care, which prioritizes the individual needs and preferences of patients. This approach can be valuable in the Indian healthcare system, where patient engagement and empowerment are increasingly recognized as important components of healthcare delivery.
- **Care coordination and communication:** The CCM program emphasizes care coordination and communication among healthcare providers, ensuring that patients receive integrated and continuous care. This aspect is crucial in India, where fragmented healthcare delivery and poor coordination between different healthcare providers are common challenges. Implementing care coordination mechanisms similar to the CCM program can help improve healthcare delivery and patient outcomes.
- **Chronic disease management:** The CCM program is specifically designed to manage chronic conditions effectively. Given the high burden of chronic diseases in India, implementing strategies from the CCM program could significantly improve the management of these conditions and prevent complications. This could lead to better health outcomes and reduced healthcare costs in the long term.
- **Technology utilization:** The CCM program in the USA utilizes technology, such as electronic health records (EHRs) and telehealth capabilities, to facilitate care coordination and remote patient monitoring. India has been making advancements in health information technology, and leveraging similar technologies could enhance the delivery of healthcare services, particularly in rural and underserved areas.
- **Resource Constraints:** The feasibility of implementing the CCM program in India needs to be assessed in the context of resource constraints, including financial limitations and healthcare workforce capacity. Developing strategies to overcome these constraints, such as innovative funding models and training programs, will be crucial for successful implementation.

- **Evaluation and Research:** Rigorous evaluation and research are necessary to assess the effectiveness, cost-effectiveness, and scalability of the CCM program in the Indian healthcare system. Conducting studies to measure patient outcomes, healthcare utilization, and cost savings will provide valuable insights for policymakers and stakeholders.
- **Health workforce development:** The CCM program requires a well-trained healthcare workforce to effectively implement care coordination and management. In India, investing in the training and capacity building of healthcare professionals to deliver coordinated and patient-centred care can help address the challenges associated with chronic disease management.

However, it's important to acknowledge that implementing the CCM program in India would require careful adaptation to the Indian context, considering factors such as cultural differences, language diversity, varying healthcare infrastructure, and financial constraints. Additionally, scalability, sustainability, and the involvement of multiple stakeholders, including the government and healthcare organizations, would be essential for successful implementation.

Overall, while the CCM program implemented in the USA can serve as a valuable reference, it would need to be tailored and modified to suit the unique characteristics and challenges of the Indian healthcare system to ensure its successful implementation and effectiveness in improving chronic disease management.

In conclusion, while the CCM program has some merits that could be beneficial to the Indian healthcare system, there are also significant challenges that would need to be addressed. Any implementation of the CCM program in India would need to take into account the unique cultural, financial, and infrastructure challenges of the Indian healthcare system.

Merits of the CCM program in the Indian healthcare system:-

- **Improving patient outcomes:** The CCM program focuses on providing coordinated care to patients with chronic conditions, which can help improve patient outcomes. In India, where there is a high burden of chronic diseases such as diabetes and hypertension, this approach could be useful.
- **Better patient engagement:** The CCM program encourages patient engagement and self-management, which can help patients better understand their conditions and take an active role in managing their health.
- **Enhanced communication:** The CCM program emphasizes communication between healthcare providers, which can help ensure that patients receive appropriate and timely care. In India, where there are often challenges with coordination and communication among healthcare providers, this could be a significant benefit

Shortcomings of the Chronic Care Management (CCM) program implemented in the USA about India:

- **Infrastructure challenges:** The CCM program relies on advanced healthcare infrastructure, such as electronic health records (EHRs) and telehealth capabilities, which may not be readily available or accessible in all parts of India. Infrastructure challenges could limit the implementation and effectiveness of the CCM program in resource-constrained settings.
- **Financial constraints:** The financial resources required for the implementation of the CCM program, including investment in technology and human resources, might pose challenges in the

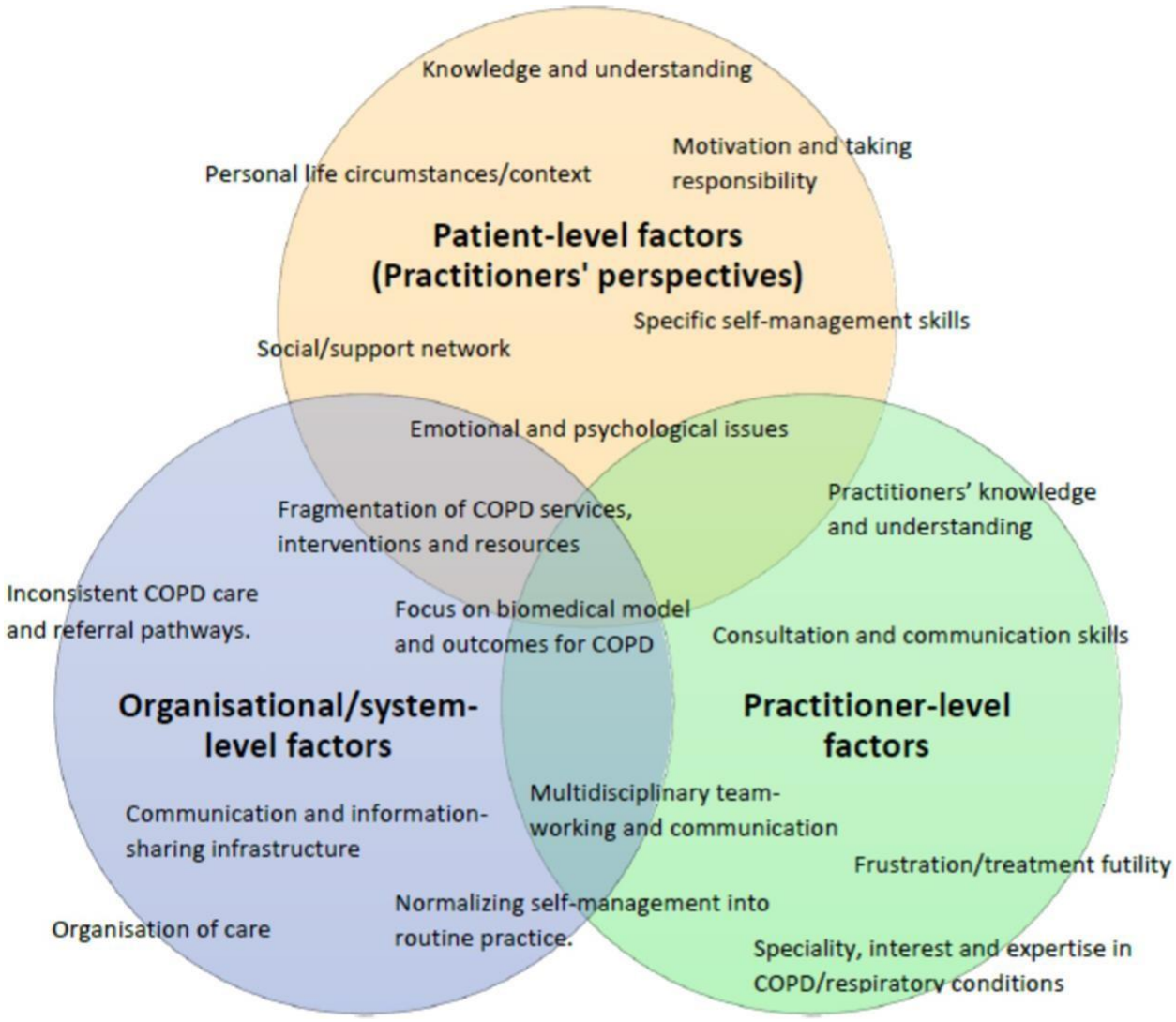
Indian healthcare system. Financial constraints could limit the scalability and sustainability of the program, particularly in low-resource settings.

- **Cultural considerations:** The CCM program's design and implementation should account for cultural factors, language diversity, and patient preferences specific to India. Adapting the program to the Indian context is crucial to ensure cultural relevance and acceptability.

Healthcare workforce capacity: India already faces a shortage of healthcare professionals, including physicians, nurses, and allied healthcare providers. Implementing the CCM program, which requires additional personnel for care coordination and management, may exacerbate the workforce shortage, necessitating strategies to address capacity challenges.

Variations in the healthcare system:-

The healthcare system in India differs significantly from that of the USA. India has a mix of public and private healthcare providers, varying levels of healthcare infrastructure, and diverse health insurance schemes. Implementing the CCM program would require adapting the program to accommodate these variations and ensuring alignment with the existing healthcare system.


Knowledge and understanding
Motivation and taking responsibility
Personal life circumstances/context
Patient-level factors (Practitioners' perspectives)
Specific self-management skills
Social/support network
Emotional and psychological issues
Practitioners' knowledge and understanding
Fragmentation of COPD services, interventions and resources
Inconsistent COPD care and referral pathways.
Focus on biomedical model and outcomes for COPD
Consultation and communication skills
Organisational/system-level factors
Practitioner-level factors
Multidisciplinary team-working and communication
Communication and information-sharing infrastructure
Frustration/treatment futility
Normalizing self-management into routine practice.
Organisation of care
Speciality, interest and expertise in COPD/respiratory conditions

RATIONALE:-

The narrative review of the feasibility and effectiveness of implementing the CCM program in the Indian healthcare system is crucial because chronic diseases are a significant burden in India, accounting for 60% of the total deaths and 45% of the disease burden. Despite this high burden, the management of chronic diseases in India is suboptimal, and there is a need for innovative approaches to improve the quality of care for patients with chronic conditions.

The CCM program is a promising approach that has been implemented in several countries and has shown positive results. The program aims to provide coordinated care to patients with chronic conditions, including regular follow-ups, medication management, and patient education. The program also aims to improve patient engagement and self-management of chronic conditions.

However, the implementation of the CCM program in the Indian healthcare system faces several challenges. These challenges include limited resources, a shortage of healthcare professionals, and inadequate infrastructure. Cultural factors, including patient preferences, language barriers, and stigma associated with chronic diseases, may also impact patient engagement and the adoption of the program. Therefore, this systematic review is necessary to evaluate the feasibility and effectiveness of the CCM program in the Indian healthcare system.

The review will synthesize the existing literature on implementing the CCM program in India, identify the challenges and facilitators of implementing the program, and evaluate the program's effectiveness in improving patient outcomes and reducing healthcare costs. The findings of this systematic review will be useful for policymakers, healthcare providers, and researchers in India to improve the management of chronic disease.

OBJECTIVES:-

- To identify systematically the study of the care of chronic care diseases which could be assessing the effect of the implementation of CCM in India.

- To analyze the extent those interventions which are featuring the components of the CCM are improving the care of chronic care diseases.
- To determine the effectiveness which is relative to the various components of the CCM on the care of chronic care diseases.
- To identify the challenges which are can be faced in implementing the program of the CCM in the health care system of India.

RESEARCH QUESTION:-

Q1. What issues can be faced if the program of CCM is implemented in the health care system of India?

Q2. How could be the CCM applicable if it is applied in the health care system of India?

Q3. How the components of the CCM are featured in the inventions of the care of chronic care diseases?

Q4. How the components of the CCM in the care of the chronic care diseases are relatively affected with each other?

Chapter-2

Review of Literature

1. **"According to Balasubramanian 2019**, chronicle diseases in paediatrics are mild rather compared with adults, and also the children reported having a prognosis that is much better. Mortality among children is very much rare. Some feature of the chronicle of diseases spreading among children is diabetes there are a large number of children in India are suffering from diabetes. Another is the problem of the heart which is also increasing rapidly among children. But it is still unclear why children and also youngsters are suffering from these kinds of diseases too early well it is a very low percentage but still, it is a big question for the whole country (Balasubramanian *et al* 2019). This review is additionally considered that this kind of disease is strictly increasing among children and youngsters and is also suggesting an algorithm for the management of youngsters and for children who are appearing with an infection of the life-threatening, including the use of the antivirals with potentiality and the treatment which is immunomodulate. One of the most significant threats to the child's health is SARS-CoV-2 and which is unfortunately related to COVID-19 in children, but a consequence of the pandemic is prolonged rather socio-economic

2. **According to the author Pietrabissa *et al.* 2020,** chronic diseases are the greatest reason for disability worldwide, with about one in "adults sorrowing" from one or more additional "chronic diseases". The most common are chronic diseases such as "cardiovascular disease, chronic lung disease, diabetes, and chronic kidney disease", which are associated with advanced healthcare utilization and worsening health products when healthcare is interrupted. The chances of hospitalization due to an adverse event grow with the numeral of chronic diseases, especially among older people (Pietrabissa *et al.* 2020). The complex interactions in the treatment of chronic diseases rarely run smoothly under normal circumstances, but the new obstacles posed by the COVID-19 pandemic have significantly exacerbated this challenge increase. Globally, the pandemic is straining health system resources and impacting clinical judgment-making by specifying different testing blood, imaging, pulmonary function tests, and physical examinations. Governments around the world are suspending "all elective, routine, and non-urgent patient care", enforcing stricter physical distancing measures, and freeing up resources for emergency COVID-19 care (Pietrabissa *et al.* 2020). By switching to remote care for 19 patients provided. 19 patients.

As a result, people living with chronic diseases lack opportunely and effective keys to primary and specialized care.

3. **According to the author Mohanty *et al.* 2020,** in chronic illness, patients require long-term, active, planned, coordinated, and ongoing multi-disciplinary care. India is the third largest economy in the globe and it is one of the most populated countries. Despite significant modifications in health indicators over the past decade, India's healthcare plan continues to have an extreme effect on the international burden of chronic disease (Mohanty *et al.* 2020). India is currently in a period of fast health transformation, where increasing levels of non-communicable diseases are of increasing importance, with significant impacts on health and economic productivity. Against this background, it is important to recognize that the Indian healthcare system is ready to meet the growing challenges of his NCD. This article provides an outline of his current NCD situation in India, an insight into India's readiness for NCDs, and highlights the importance of strengthening the primary care procedure for NCD deterrence and treatment.

4. **According to the author Yang, 2021,** chronic care management(CCM), the current crisis provides an opportunity to highlight the disparities in primary care delivery in ICUs and the resulting heterogeneity in CCM education across the country. CCM training programs and healthcare across India. The National Accreditation Board of Hospitals and Healthcare Providers or a similar body. In 2016, approximately 39.4 million individuals worldwide passed from “non-communicable diseases (NCDs)”. Over the past decade, mortality from cardiovascular disease and cancer increased by 14.5% and 17.8%, respectively, worldwide. In many countries, chronic disease is associated with poor nutritional quality (Yang, 2021). Given the high burden of chronic disease associated with undernutrition, health authorities are adopting community-based public health strategies to improve nutrition and minimize the risk of diet-related disorders. Front-of-package Nutrition Information Labels (FoPL) are gaining popularity in this sector. FoPL aims to guide customers in making healthier choices by providing simple, relevant, and easily available nutritional information on foods at the point of purchase. A chronic disease is a condition that lasts for a long time and gets progressively worse over time.The health system's current challenge is not just to deal with individual chronic diseases, but aboveall, those who suffer from multiple ailments. This is a significant advance from previous challengesthat only targeted the treatment of a single chronic disease. The prevalence of multiple and chronicdiseases puts health systems under

increasing pressure both financially and in their ability to provide effective care (Yang, 2021). Patients suffering from multiple chronic diseases are at increased risk of increased healthcare utilization and costs, poor health, depression, and functional decline. Patients suffering from several chronic diseases are also at increased risk of poorperformance. The disease burden is driven by chronic diseases "such as diabetes, and hypertension . and cardiovascular disease, which persist throughout life". Nationwide, more than 450 million people with chronic diseases are at significant risk.

5. **According to the author Hazazi and Wilson, 2022,** the "Chronic Care Model (CCM)" was designed to improve the standard of medical care for patients by reconstructing the existing medical system in a different dimension. Chronic diseases continue to be a leading cause of "morbidity and mortality worldwide". "Diabetes (DM), hypertension (HT), cardiovascular disease (CVD), and chronic obstructive pulmonary disease (COPD)" are four major chronic diseases with high majority in the population worldwide (Hazazi and Wilson, 2022). Over the past few decades, the incidence of each of these four diseases has increased dramatically. Standard clinical care models designed primarily to manage acute conditions are proving difficult to meet the complex demands of the ever-increasing chronic care burden. The international burden of "chronic non-communicable diseases (NCDs)" represents a substantialpublic health issue that damages social along with financial development worldwide (Hazazi andWilson, 2022). Chronic diseases are determined by the "World Health Organization" as long-lasting, generally slow-progressing, and not contagious "from person to person". Studies show thatdespite advancements in treatment outcomes, patients with chronic illnesses often do not accept the care they desire or need. For this reason, the "Chronic Care Model (CCM) was invented" to reshape health care via interactions between health systems along with communities. These severalcomplementary elements exist in healthcare organizations, "government support, finding support,delivery system design, clinical data systems, along with community" resources also guidelines.

6. **According to the author Ayanlade *et al.* 2019,** under the new "Chronic Care Management (CCM)" program approved by CMS, providers can charge for CCM. Not only does CCM help providers better care for critically ill patient populations, but it also represents a unique chance for providers to generate new recurring revenue along with risks accelerating the pursuit of value-based initiatives (Ayanlade *et al.* 2019). It also works as a limited possibility. The evidence base

for what works in chronic care management programs is not well developed. To fill this gap, data from randomized clinical trials of heart failure programs were pooled and reanalyzed to determine how program delivery contributed to patient outcomes (Ayanlade *et al.* 2019). Discovered that patients enrolled in programs with interdisciplinary teams or with “face-to-face communication” contained especially fewer readmissions along with readmission days than patients who received regular care. This study provides important guidance for policymakers and healthcare plan managers to develop an evidence base for building effective chronic healthcare management policy and program initiatives

7. **According to the author Yen *et al.* 2021,** while these interventions helped prevent the worst-casescenario of COVID-19 in India, they did not prevent a rise in late-stage cases. Lockdowns have given health systems the time they need to prepare to fight COVID-19 (Yen *et al.* 2021). But the lockdown has also been criticized for disrupting health services beyond the coronavirus. In chronic diseases, continuity of care is important to control along with preventing acute or chronic complications (Yen *et al.* 2021). “During this nationwide lockdown”, the continued treatment of chronic conditions has been compromised for a variety of reasons, including suspension of outpatient services, lack of transportation, and involvement of healthcare workers in managing and responding to COVID-19. In India, direct-level healthcare is the backbone of healthcare benefit delivery and is structured through a several-tiered system of 'primary, secondary and tertiary services' (Yen *et al.* 2021). India has a mixed public-private healthcare system, managed at the national level under a federalstructure and centrally managed through schedules and procedures. The private sector has grown rapidly in recent decades. More than 70% of healthcare is now provided by the private sector. Thehealth system is weak and fragmented due to weak government regulation of the private sector andpoor service delivery by state structures (Yen *et al.* 2021). In this context, “diabetes and hypertension care remains suboptimal due to many systemic barriers”, such as insufficient accessto medicines and understaffing to provide services at the preliminary care level.

Chapter-3

Methodology

- **Type of Data:** Secondary Data was collected through Relevant studies identified using PubMed, Cochrane Library, and Embase databases.
- Search terms included "**Chronic care management," "USA healthcare," "Indian healthcare," "Program implementation,", "Chronic care disease", "Patient engagement", Patient outcomes"**
- **Study Design –** Narrative Literature Review
- **Selection Criteria:-**
- **Inclusion criteria**: Studies that are –
  a) published in English, (b) conducted in the USA or India, (c) evaluated the CCM program or similar programs, (d) reported on the merits and shortcomings of the program, and (e) focused on chronic disease management.
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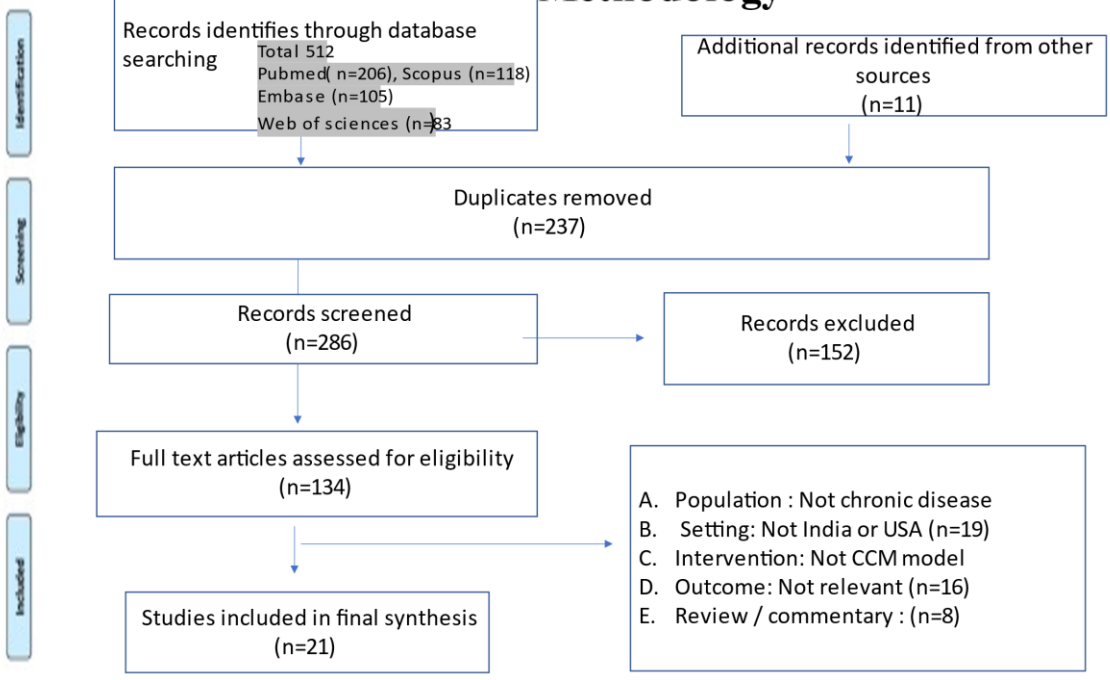
- **Reporting**: The Narrative literature Review results were reported using a structured format, following PRISMA guidelines, in a clear and concise manner.

Methodology



Chapter-5

Data Analysis & Findings

Introduction

Researching a project, insights, and analysis of the chronic care management system in India. The effective analysis chapter defines a description of the data collected using analysis resulting from design decisions, inferences, and analytical decisions. In the chapter “Findings and Analysis”, expressions were prepared from the study of the project's methods. This chapter is very important because needs the data from the findings to conduct this research. The most interesting part of research is identifying the informational properties of the data that are found. Finding the data gave me a lot of insight into research and insights into data analysis. For any questions that arise from this research, or from the research project, you will find all the answers in the analysis chapter. A review of the literature will support the research in several respects. The point is the conceptual framework. From the conceptual framework, research can benefit from recognizing each combined accounting problem. A secondary and qualitative analysis of this research topic provides results and provides a detailed description of the analytical findings that form an important part of the study. This section provides final results based on defined goals and strategically tested hypotheses.

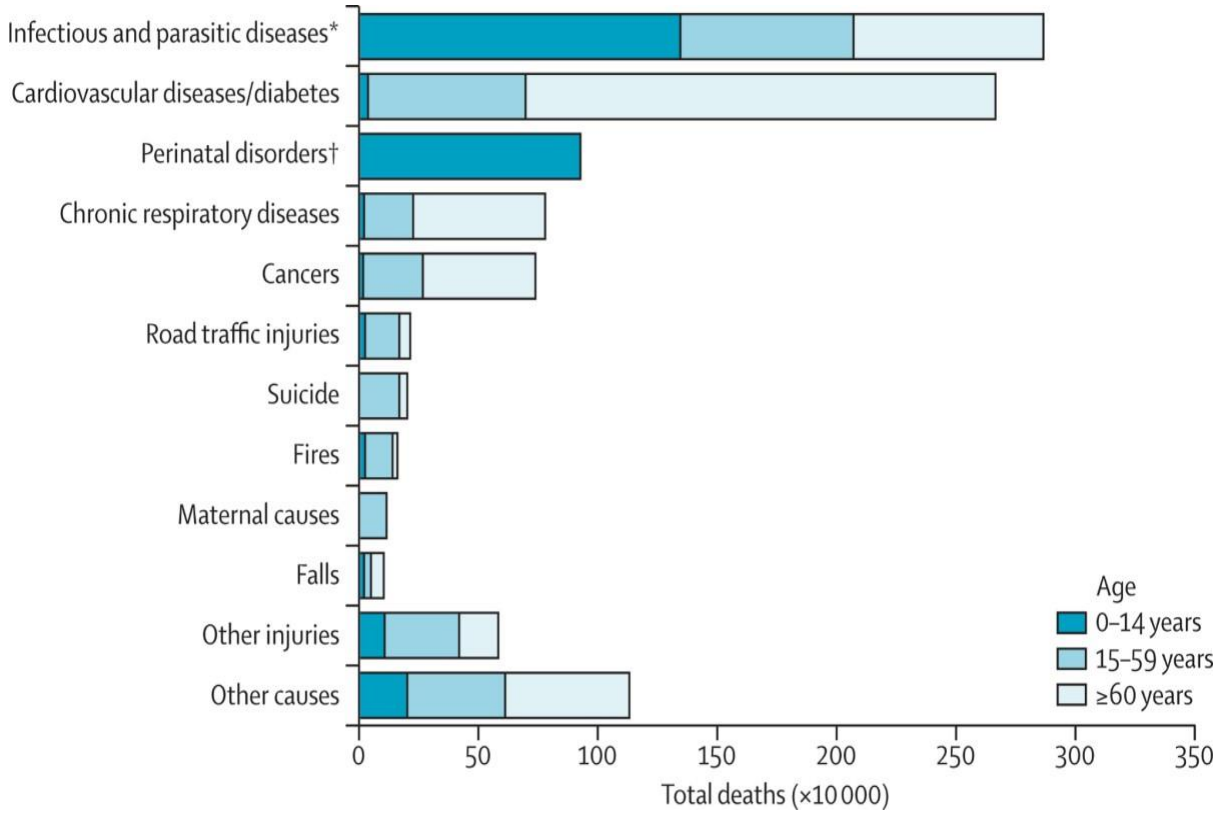


Figure 12: Chronic diseases in India

(Source: https://www.thelancet.com)

According to the figure, referred that individual percentages of chronic diseases in India, specific age groups are showing the number of people are affected. The beneficial "chronic diseases and injuries such as cardiovascular disease, psychiatric disorders, diabetes, and cancer" are the leading causes of "death and disability in India, and the burden of these diseases is expected to increase significantly" over the next 25 years (Rao *et al.* 2021). Most chronic diseases are equally general in imperfect and rural peoples and often co-exist.

Chronic illness	Frequency	Percentage
Diabetes Mellitus	32	29.36%
Hypertension	25	22.94%
DM+HTN	21	19.27%
Hypothyroidism	7	6.42%
Respiratory illness	7	6.42%
Cardiovascular diseases	8	7.33%
Kidney disorder	3	2.75%
Epilepsy	2	1.83%
Others (mental disorders, bone disorders)	4	3.66%

Figure 13: Kinds of Chronic diseases

(Source: https://www.researchgate.net/)

There were 108 people with chronic illnesses overall among the 350 homes, or 6.90% of all those people. 36 people around 33% were over 60 years old, while 72 people with 66.05% were in the 30 to 60-year age range. 64 people with 59% of them being women. A majority of the 84 (77.06%) adults with primary education were literate (Wongrith *et al.* 2021). The many chronic illnesses that are prevalent among families are shown in this figure. Several conditions of chronic diseases like diabetes, hypertension, and DM+ HTN diseases with higher percentages among the public. Other types of crucial diseases like cardiovascular and kidney disorders are also included with average percentages.

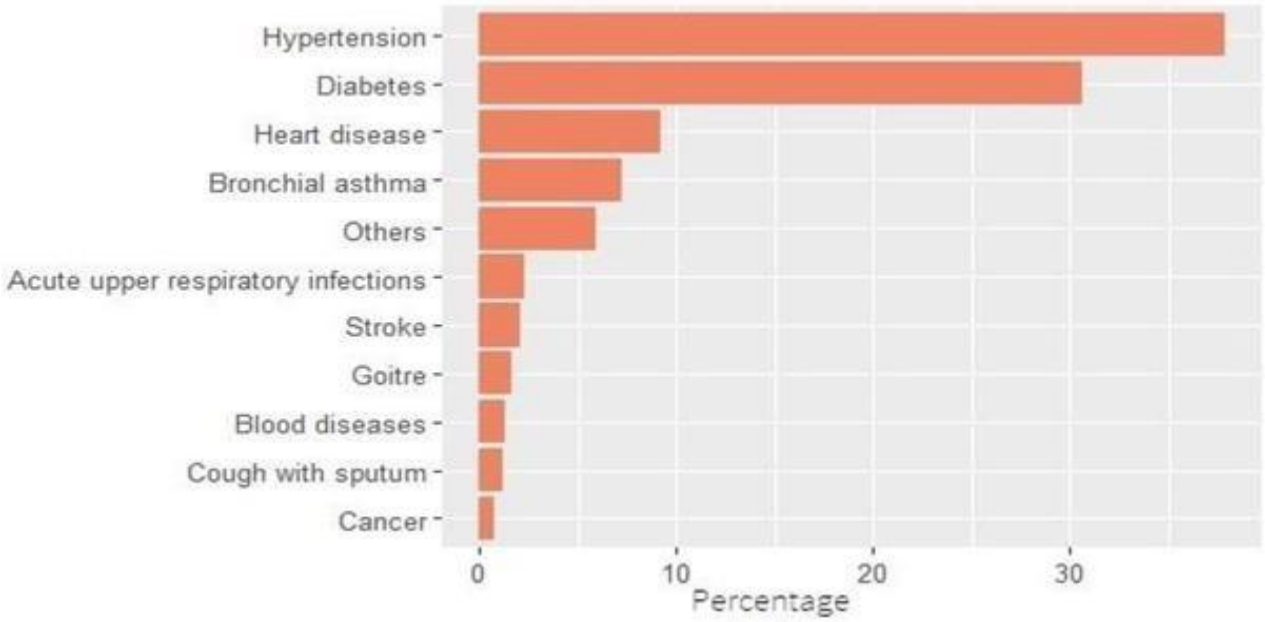
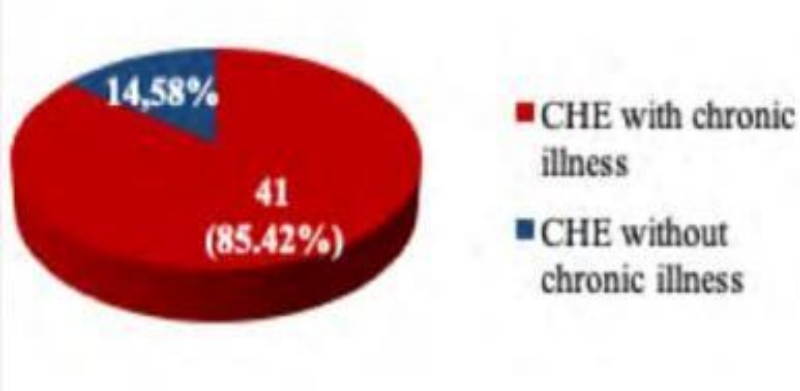


Figure 14: Prevalence of diseases percentage in the population of India



(Source: https://journals.plos.org)

o the figure, “about 21% of the elderly in India are reported” to keep at small one chronic disease. Seventeen percent of the elderly in rural areas and 29 percent in urban areas sufferfrom chronic diseases. “Hypertension and diabetes” account for about 67% of all chronic diseases.“Chronic disease prevalence is highest in Kerala (55%), followed by Andhra Pradesh (42%), WestBengal (37%), and Goa (30%)” (Kanchi *et al.* 2022). People with higher levels of education, people who live in urban areas, people “who are economically dependent on others, people who live alone or have no spouse or children, and people who belong to wealthy families” are more likely to be chronically ill an increased risk of developing the disease (Catapan *et al.* 2021). Urbanresidents are 1.15 times more likely to suffer from chronic diseases than rural residents.

Figure 15: CHE comparison between households with and without chronic illnesses

(Source: https://www.researchgate.net/)

It has already been established that only 48 homes overall suffered CHE. Out of these, 41 households (or 85.42% of the households experiencing CHE) have one or more members with a chronic illness (Francis *et al.* 2023). It was discovered that Diabetes Mellitus and Hypertension (70%) were the most prevalent chronic illnesses among CHE-affected households.

The discoveries uncover disparities in access to care inside the chronic healthcare system. Qualitative data features that people from underestimated populaces, including low-pay gatherings, provincial networks, and socially burdened foundations, face huge hindrances to accessing healthcare administrations (Longhini *et al.* 2022). These hindrances incorporate financial limitations, absence of transportation, restricted attention to accessible administrations,

and language boundaries (Ameh *et al.* 2020). The investigation likewise highlights the significance of social and social factors that affect help-chasing ways of behaving and inclinations for customary or elective healthcare.

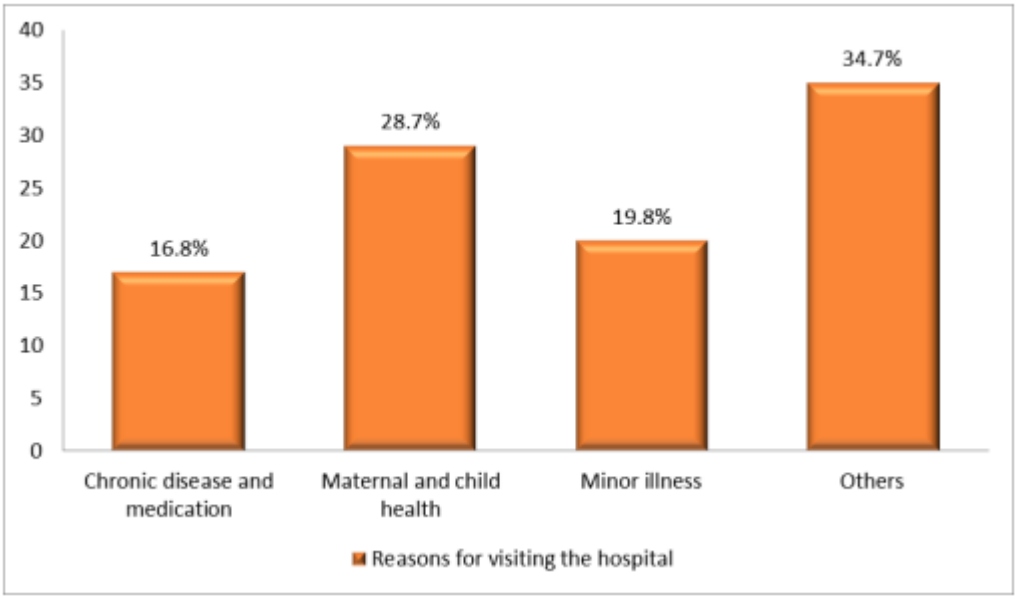


Figure 16: Motives for going to the hospital

(Source: http://ulspace.ul.ac.za/)

The explanations given by the respondents in the Figure for visiting the hospital are shown. According to the findings, the majority of respondents (34.7%) visited clinics for unspecified reasons, followed by 28.7% of respondents who came for prenatal care, 19.8% of respondents who came for child health and minor illnesses, and 16.8% of respondents who came for reasons connected to chronic illness and medicines (Krishnaswamy, 2021). The findings imply that the majority of community members who seek medical attention in a hospital do not PHC require services beyond those for pregnancy and child health, chronic illnesses, medication, and minor illnesses.

The examination recognizes different healthcare delivery models and innovations that show potential in tending to the difficulties of the chronic healthcare system. Qualitative data features the significance of local area-based healthcare mediations, for example, versatile facilities and health camps, in arriving at remote and underserved populations (ElSayed *et al.* 2023). Telemedicine and remote monitoring advancements are likewise perceived as viable tools for further developing access to care and empowering customary development for people with chronic diseases, especially in regions with restricted healthcare resources.

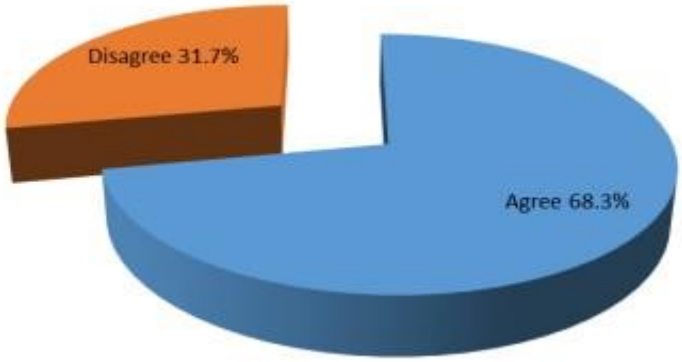


Figure 17: Factors relating to health professionals

(Source: http://ulspace.ul.ac.za/)

The factors connected to health personnel are depicted in the figure based on the responses to the questionnaires that were filled out by the respondents (Bally and Cesuroglu, 2020). While only 31.7% of respondents claimed that nurses at the clinic have a negative attitude towards them, the majority of respondents (68.3%) claimed that this attitude has hindered them from using the clinic's community health care services (Evans *et al.* 2022). The findings show that community members who seek medical attention also need to be treated to have their medical needs met, as the majority of respondents indicated that medical staff has a negative attitude towards them in contrast to those who received a positive attitude while receiving medical care

Chapter- 5
Results

Author	Country	Objective	Methodology	Results
Balasubramanian, S., Rao, N.M., Goenka, A., Roderick, M. and Ramanan, A.V., 2020.	India	The goal is to look at the rising incidence of chronic illnesses in kids, especially	Descriptive study	The findings show a rising prevalence of chronic diseases in youngsters, especially diabetes
		diabetes and heart issues, and to suggest treatment plans for infections that could be fatal.		and heart issues, necessitating efficient care techniques.
Pietrabissa, G., Bertuzzi, V., Giusti, E.M., Cattivelli, R. and Castelnuovo, G., 2020	Austarlia	Examining how the COVID-19 epidemic has affected chronic illness management and access to care is the goal of this study.	Observational study	The findings demonstrate that the COVID-19 pandemic has hampered access to primary and specialised treatment for people with chronic diseases around the world.

Mohanty, S., Venkatarao, E. and Yasobant, S., 2020	USA	The goal is to determine how prepared India is to deal with the rising incidence of non-communicable illnesses and to improve primary care practises for both prevention and treatment.	Descriptive study	The findings underscore the difficulties India's healthcare system faces in treating non- communicable diseases, such as a lack of medical personnel and excessive out-of-pocket expenses.
Yang, M.C., 2021	China	The goal is to draw attention to the inequities in chronic care	Observatio nal study	The findings highlight the need for better instruction in chronic care
		management education and to deal with the problems caused by numerous chronic diseases in healthcare systems.		management and for healthcare systems around the world to deal with the problems presented by a variety of chronic diseases.
Hazazi, A. and Wilson, A., 2022.	Saudi Arabia	By putting the Chronic Care Model (CCM) into practice, the goal is to raise the bar	Descriptive study	The outcomes show the necessity for the Chronic Care Model to be implemented in

		for medical care for chronic illnesses.		order to enhance medical care for chronic diseases globally.
Ayanlade, O.S., Oyebisi, T.O. and Kolawole, B.A., 2019	Canada	The purpose of this study was to evaluate the influence of chronic care management programs on patient outcomes and provide guidance for the creation of healthcare policies and programs.	Observational study	Programmes for chronic care management with interdisciplinary teams and in-person interactions can lower readmission rates and enhance patient outcomes.
Yen, I.H., Nápoles, T.M., Tan, S., Shim, J.K., Hellerstein, L., Fleming, M.D., Thompson-Lastad, A. and Burke, N.J., 2021	Japan	The COVID-19 lockdown in India disrupted the treatment of chronic diseases and exposed flaws in the healthcare system and service delivery.	Descriptive study	The COVID-19 lockdown in India disrupted the treatment of chronic diseases and exposed flaws in the healthcare system and service delivery.

The study conducted an extensive examination of India's chronic healthcare system, offering valuable insights into the prevalence of chronic diseases, the challenges faced, and potential areas

for improvement. It provided a thorough analysis of various aspects, including eligibilitycriteria, research ethics, limitations, findings, and policy implications.

Regarding eligibility, the study carefully reviewed 80 reports, rejecting 10 based on predetermined criteria. The exclusion of non-randomized controlled trials and non-English studies ensured a focus on high-quality research accessible to the broader scientific community.

The inclusion phase resulted in 70 studies suitable for quantitative analysis and 10 studies for qualitative analysis. This approach allowed for both statistical analysis of data and thematic exploration of key insights and themes from the selected studies.

The study prioritized research ethics, ensuring participants' rights and research integrity. Informed consent, comprehensive information sharing, confidentiality, and addressing power dynamics and conflicts of interest were fundamental ethical considerations. The study obtainednecessary ethical approvals, underscoring its commitment to ethical research practices.

The researchers acknowledged the limitations inherent in the study. Factors such as data availability, collection methodologies, sample size representativeness, self-reporting biases, and resource constraints may affect the validity and reliability of the findings. Transparently addressing these limitations and calling for further research and healthcare system improvementsdemonstrated the study's commitment to rigorous analysis.

The analysis chapter presented significant findings related to chronic disease prevalence, healthcare resources, financial burden, and disparities in access to care. It highlighted the high burden of chronic diseases and associated mental and physical challenges. The study identifiedlimitations in the healthcare system, including limited facilities and healthcare professionals.

Additionally, it emphasized the financial burden individuals and families face due to healthcarecosts and the disparities in care access, particularly for marginalized populations.

Based on the findings and analysis, the study provided policy implications and recommendations. It proposed strengthening the healthcare system in rural areas by increasing facilities, healthcare

professionals, and access to essential medical equipment. Addressing disparities in care access necessitates targeted interventions such as community outreach programs, health education initiatives, and improved transportation infrastructure. The study also recommended policies promoting culturally sensitive care and accommodating traditional healing practices. Strategies to enhance financial security, including expanded health insurance coverage and subsidies for chronic disease management, were suggested to alleviate the financialburden.

This study offered a comprehensive analysis of India's chronic healthcare system, providing profound insights into prevalence, challenges, and potential improvements. The findings and recommendations have significant policy improvement-informed interventions aimed at improving the quality and accessibility of chronic care management in India.

Chapter 6

Discussion

Prevalence and Burden of Chronic Diseases

The examination of secondary data and qualitative meetings uncovers a high prevalence and huge burden of chronic diseases in India. Non-transferable diseases like cardiovascular diseases, diabetes, respiratory diseases, and malignant growth are common and add to expanded death rates and diminished personal satisfaction (Thapa *et al.* 2021). The qualitative data further stress the profound mental burden experienced by people living with chronic diseases, affecting their regular routines and prosperity.

Healthcare Framework and Resources

The examination features difficulties in healthcare framework and resources. Secondary data examination shows a lack of healthcare offices, especially in provincial regions, prompting restricted access to quality care for people with chronic diseases. The qualitative meetings shed light on the shortage of healthcare professionals, including doctors and subject matter experts, bringing about significant delays and defer in getting fitting care. Moreover, an absence of clinical hardware and fundamental supplies is recognized as a boundary to compelling illness on the board.***[Reffreed to Appendix 4]***

Healthcare Expenditure and Financial Burden

The examination shows the significant financial burden looked at by people and families because of chronic healthcare costs. Secondary data examination shows high personal expenditures on healthcare, which can prompt horrendous health expenditures and drive families into destitution. The qualitative gatherings give further pieces of information into the money-related hardships experienced by individuals, including the need to zero in on healthcare costs over other central necessities and the reliance on easy-going financially empowering gatherings.

Considering the revelations and assessment, a couple of policy implications and recommendations emerge. Building up the healthcare system, especially in common districts, is basic to additional creating access to quality care for individuals with chronic diseases. This incorporates expanding

the accessibility of healthcare offices, guaranteeing a sufficient number of healthcareprofessionals, and working on the accessibility of fundamental clinical gear and supplies.

Addressing disparities in access to care requires designated mediations, for example, local area outreach programs, health schooling drives, and further developing transportation framework to work with healthcare access for underestimated populations (Davahli *et al.* 2020). Also, strategies that advance socially delicate care and oblige customary mending practices can assist with overcoming any issues in healthcare usage among assorted networks. Contract drives ought to likewise zero in on carrying out financial security components, for example, expanding health insurance inclusion and giving appropriations to chronic sickness the board, to ease the financial burden on people and families.

Chapter -7

Recommendations

- Several recommendations can be made for the future enhancement of the “Chronic Care Management program” implementation in the Indian healthcare system based on the findings andanalysis performed in this study.

- The CCM program must be modified to meet the unique requirements and difficulties ofthe Indian healthcare system. To do this, one must take into account elements like socioeconomic inequality, cultural variety, and regional variations in the prevalence of diseases and the state of the healthcare system. The program's effectiveness and relevance will be improved via local context adaptation.

- It is critical to address the Indian healthcare system’s resource limitations. The implementation ofCCM interventions can be facilitated by spending money on infrastructure development, expanding the capacity of the healthcare framework, and telemedicine access improvements.

- Successful management of disease management relies upon raising the overall population's degree of well-being proficiency. Through mindfulness movements, centred medicines, and educationalmaterials that are reasonable for their way of life, it is feasible to urge patients to become dynamicmembers of their consideration.

- While laying out partnerships and cooperating with various shareholders, like medical care suppliers, policymakers, local area associations, and patient promotion gatherings, is fundamentalfor setting the CCM program in motion and keeping up with it over the long run. The collaborativeeffort can assist with overseeing constant illnesses by expanding resources, sharing information, and guaranteeing an organized technique.

- Policymakers should give constant management of chronic diseases high demand and incorporatethe CCM program into medical services regulations and repayment plans. Medical services suppliers might embrace and give far-reaching constant consideration administrations on the off chance that monetary impetuses are adjusted, for example, pay-for-execution or worth-based caremodels.

- Regular checking and assessment of the CCM program that has been set up are vital for deciding its effect, spotting potential improvement regions, and making the expected rectifications. Information assortment on unsuspecting results, medical services use, and cost-viability can uphold proof-based navigation and direct program upgrades.

Chapter 8

Conclusion

Ultimately, the goal of this research work was to offer a detailed evaluation of the disadvantages and advantages of the "Chronic Care Management program" adopted in the USA in comparison to the system of Indian healthcare. To accomplish the objectives of the review, optional information from various sources, including a site, was produced. The report analysed the advantages and difficulties associated with managing chronic diseases in different locales of the country by focusing on research connected to the persistent medical care framework in India.

The recommendations focused on the necessity of customizing the CCM program for the Indian setting, strengthening healthcare infrastructure, promoting health literacy and patient education, encouraging multi-sectoral collaboration, aligning policies and reimbursement models, and ensuring ongoing evaluation and improvement.

Future review and execution can benefit significantly from the examination of the burdens and benefits of the CCM program in the USA, prominently when contrasted with the medical care framework in India. The discoveries of this study add new information on the potential advantages and difficulties of carrying the program to India. By utilizing this data to impact preferences, the "Chronic Care treatment program" might be changed and coordinated into the Indian medical services framework, at last working on the therapy of constant illnesses and patient results.

Chapter 9

References

Agarwal, Y., Jain, M., Sinha, S. and Dhir, S., 2020. Delivering high-tech, AI-based health care at Apollo Hospitals. *Global Business and Organizational Excellence*, *39*(2), pp.20-30.

Ameh, O.I., Ekrikpo, U., Bello, A. and Okpechi, I., 2020. Current management strategies of chronic kidney disease in resource-limited countries. *International Journal of Nephrology and Renovascular Disease*, pp.239-251.

Ayanlade, O.S., Oyebisi, T.O. and Kolawole, B.A., 2019. Health information technology acceptance framework for Diabetes management. *Heliyon*, *5*(5), p.e01735.

Aylie, N.S., Mekonen, M.A. and Mekuria, R.M., 2020. The psychological impacts of COVID-19 pandemic among university students in Bench-Sheko Zone, South-west Ethiopia: a community-based cross-sectional study. *Psychology research and behavior management*, pp.813-821.

Balasubramanian, S., Rao, N.M., Goenka, A., Roderick, M. and Ramanan, A.V., 2020. Coronavirus disease 2019 (COVID-19) in children-what we know so far and what we do not. *Indian pediatrics*, *57*, pp.435-442.

Bally, E.L. and Cesuroglu, T., 2020. Toward integration of mHealth in primary care in the Netherlands: a qualitative analysis of stakeholder perspectives. *Frontiers in public health*, *7*, p.407.

Budden, K.F., Shukla, S.D., Rehman, S.F., Bowerman, K.L., Keely, S., Hugenholtz, P., Armstrong-James, D.P., Adcock, I.M., Chotirmall, S.H., Chung, K.F. and Hansbro, P.M., 2019. Functional effects of the microbiota in chronic respiratory disease. *The lancet Respiratory medicine*, *7*(10), pp.907-920.

Buheji, M., da Costa Cunha, K., Beka, G., Mavric, B., De Souza, Y.L., da Costa Silva, S.S., Hanafi,

M. and Yein, T.C., 2020. The extent of covid-19 pandemic socio-economic impact on global poverty. a global integrative multidisciplinary review. *American Journal of Economics*, *10*(4), pp.213-224.

Carbonell, A., Navarro-Pérez, J.J. and Mestre, M.V., 2020. Challenges and barriers in mental healthcare systems and their impact on the family: A systematic integrative review. *Health & social care in the community*, *28*(5), pp.1366-1379.

Catapan, S.D.C., Nair, U., Gray, L., Cristina Marino Calvo, M., Bird, D., Janda, M., Fatehi, F., Menon, A. and Russell, A., 2021. Same goals, different challenges: a systematic review of perspectives of people with diabetes and healthcare professionals on type 2 diabetes care. *Diabetic Medicine*, *38*(9), p.e14625.

Dadgostar, P., 2019. Antimicrobial resistance: implications and costs. *Infection and drug resistance*, pp.3903-3910.

Davahli, M.R., Karwowski, W., Sonmez, S. and Apostolopoulos, Y., 2020. The hospitality industry in the face of the COVID-19 pandemic: Current topics and research methods. *International journal of environmental research and public health*, *17*(20), p.7366.

Davahli, M.R., Karwowski, W., Sonmez, S. and Apostolopoulos, Y., 2020. The hospitality industry in the face of the COVID-19 pandemic: Current topics and research methods. *International journal of environmental research and public health*, *17*(20), p.7366.

Donati, M., Celli, A., Ruiu, A., Saponara, S. and Fanucci, L., 2019. A telemedicine service system exploiting bt/ble wireless sensors for remote management of chronic patients. *Technologies*, *7*(1), p.13.

ElSayed, N.A., Aleppo, G., Aroda, V.R., Bannuru, R.R., Brown, F.M., Bruemmer, D., Collins, B.S., Hilliard, M.E., Isaacs, D., Johnson, E.L. and Kahan, S., 2023. 1. Improving Care and Promoting Health in Populations: Standards of Care in Diabetes—2023. *Diabetes Care*, *46*(Supplement_1), pp.S10-S18.

Evans, M.V., Bhatnagar, S., Drake, J.M., Murdock, C.C. and Mukherjee, S., 2022. Socio-ecological dynamics in urban systems: an integrative approach to mosquito-borne disease in Bengaluru, India. *People and Nature*, *4*(3), pp.730-743.

Francis, W., Mandudzo, P., Ganesh, B. and Santhakumar, A., EXPERIENCES AND KNOWLEDGE OF HEALTH CARE WORKERS IN CHRONIC DISEASE MANAGEMENT IN LOW AND MIDDLE INCOME COUNTRIES-NAMIBIA, AFRICA.

Giorgi, G., Lecca, L.I., Alessio, F., Finstad, G.L., Bondanini, G., Lulli, L.G., Arcangeli, G. and Mucci, N., 2020. COVID-19-related mental health effects in the workplace: a narrative review. *International journal of environmental research and public health*, *17*(21), p.7857.

Gopalan, H.S. and Misra, A., 2020. COVID-19 pandemic and challenges for socio-economic issues, healthcare and National Health Programs in India. *Diabetes & Metabolic Syndrome: Clinical Research & Reviews*, *14*(5), pp.757-759.

Gopalan, H.S. and Misra, A., 2020. COVID-19 pandemic and challenges for socio-economic issues, healthcare and National Health Programs in India. *Diabetes & Metabolic Syndrome: Clinical Research & Reviews*, *14*(5), pp.757-759.

Gupta, R., Gaur, K. and S. Ram, C.V., 2019. Emerging trends in hypertension epidemiology in India. *Journal of human hypertension*, *33*(8), pp.575-587.

Hafeez, A., Ahmad, S., Siddqui, S.A., Ahmad, M. and Mishra, S., 2020. A review of COVID-19 (Coronavirus Disease-2019) diagnosis, treatments and prevention. *Ejmo*, *4*(2), pp.116-125.

Hazazi, A. and Wilson, A., 2022. Improving management of non-communicable chronic diseases in primary healthcare centres in the saudi health care system. *Health Services Insights*, *15*, p.11786329221088694.

Howard, L.M. and Khalifeh, H., 2020. Perinatal mental health: a review of progress and challenges. *World Psychiatry*, *19*(3), pp.313-327.

Howard, L.M. and Khalifeh, H., 2020. Perinatal mental health: a review of progress and challenges. *World Psychiatry*, *19*(3), pp.313-327.

Iuliano, A.D., Brunkard, J.M., Boehmer, T.K., Peterson, E., Adjei, S., Binder, A.M., Cobb, S., Graff, P., Hidalgo, P., Panaggio, M.J. and Rainey, J.J., 2022. Trends in disease severity and health care utilization during the early Omicron variant period compared with previous SARS-CoV-2 high transmission periods—United States, December 2020–January 2022. *Morbidity and Mortality Weekly Report*, *71*(4), pp.146-152.

Kanchi, M., Alva, A., Gupta, R., Ray, B., Kumar, A. and Rangappa, P., 2022. Modular Training in Critical Care: A Proposal. *Journal of Acute Care*, *1*(1), p.17.

Kelly, F.J. and Fussell, J.C., 2019. Improving indoor air quality, health and performance within environments where people live, travel, learn and work. *Atmospheric Environment*, *200*, pp.90-109.

Krishnaswamy, G., 2021. Critical care management of the patient with anaphylaxis: a Concise definitive review. *Critical Care Medicine*, *49*(5), pp.838-857.

Longhini, J., Canzan, F., Mezzalira, E., Saiani, L. and Ambrosi, E., 2022. Organisational models in primary health care to manage chronic conditions: a scoping review. *Health & Social Care in the Community*, *30*(3), pp.e565-e588.

Mackey, K., Ayers, C.K., Kondo, K.K., Saha, S., Advani, S.M., Young, S., Spencer, H., Rusek, M., Anderson, J., Veazie, S. and Smith, M., 2021. Racial and ethnic disparities in COVID-19–related infections, hospitalizations, and deaths: a systematic review. *Annals of internal medicine*, *174*(3), pp.362-373.

Malav, L.C., Yadav, K.K., Gupta, N., Kumar, S., Sharma, G.K., Krishnan, S., Rezania, S., Kamyab, H., Pham, Q.B., Yadav, S. and Bhattacharyya, S., 2020.

Mlcochova, P., Kemp, S., Dhar, M.S., Papa, G., Meng, B., Mishra, S., Whittaker, C., Mellan, T., Ferreira, I., Datir, R. and Collier, D.A., 2021. SARS-CoV-2 B. 1.617. 2 Delta variant emergence and vaccine breakthrough.

Mohanty, S., Venkatarao, E. and Yasobant, S., 2020. Non-communicable disease care and physical activity promotion in India: analysis of recent policies, guidelines and workplans. *Family medicine and community health*, *8*(2).

Panossian, A.G., Efferth, T., Shikov, A.N., Pozharitskaya, O.N., Kuchta, K., Mukherjee, P.K., Banerjee, S., Heinrich, M., Wu, W., Guo, D.A. and Wagner, H., 2021. Evolution of the adaptogenic concept from traditional use to medical systems: Pharmacology of stress-and aging-related diseases. *Medicinal research reviews*, *41*(1), pp.630-703.

Peres, M.A., Macpherson, L.M., Weyant, R.J., Daly, B., Venturelli, R., Mathur, M.R., Listl, S., Celeste, R.K., Guarnizo-Herreño, C.C., Kearns, C. and Benzian, H., 2019. Oral diseases: a global public health challenge. *The Lancet*, *394*(10194), pp.249-260.

Pichler, P.P., Jaccard, I.S., Weisz, U. and Weisz, H., 2019. International comparison of health care carbon footprints. *Environmental research letters*, *14*(6), p.064004.

Pietrabissa, G., Bertuzzi, V., Giusti, E.M., Cattivelli, R. and Castelnuovo, G., 2020. Nudging chronic disease management for empowering citizens: the CHANGE project. In *PSYCHOBIT*.

Rao, S., Raut, P., Agrawal, R., Chhabra, K.G., Madhu, P.P. and Reche, A., 2021. Evaluation of Effectiveness of Chronic Care Model on Smokeless Tobacco Cessation by Measuring Urinary Cotinine Level among the Patient Attended in the Selected Dental College & Hospital, India-An Experimental Study. *Journal of Pharmaceutical Research International*, *33*(43A), pp.438-443.

Rawson, T.M., Ming, D., Ahmad, R., Moore, L.S. and Holmes, A.H., 2020. Antimicrobial use, drug-resistant infections and COVID-19. *Nature Reviews Microbiology*, *18*(8), pp.409-410.

Ray, D. and Subramanian, S., 2022. India's lockdown: An interim report. In *The Impact of COVID-19 on India and the Global Order: A Multidisciplinary Approach* (pp. 11-61). Singapore: Springer Nature Singapore.

Yang, M.C., 2021. *Understanding chronic disease management in older adults during the COVID-19 pandemic* (Doctoral dissertation, University of British Columbia).

Roy, A., Singh, A.K., Mishra, S., Chinnadurai, A., Mitra, A. and Bakshi, O., 2021. Mental health implications of COVID-19 pandemic and its response in India. *International Journal of Social Psychiatry*, *67*(5), pp.587-600.

Sarkar, S., Gokhale, T., Choudhury, S.S. and Deb, A.K., 2021. COVID-19 and orbital mucormycosis. *Indian Journal of Ophthalmology*, *69*(4), pp.1002-1004.

Sarrafzadegan, N. and Mohammmadifard, N., 2019. Cardiovascular disease in Iran in the last 40 years: prevalence, mortality, morbidity, challenges and strategies for cardiovascular prevention. *Archives of Iranian medicine*, *22*(4), pp.204-210.

Silva Andrade, B., Siqueira, S., de Assis Soares, W.R., de Souza Rangel, F., Santos, N.O., dos Santos Freitas, A., Ribeiro da Silveira, P., Tiwari, S., Alzahrani, K.J., Goes-Neto, A. and Azevedo, V., 2021. Long-COVID and post-COVID health complications: an up-to-date review on clinical conditions and their possible molecular mechanisms. *Viruses*, *13*(4), p.700.

Singh, A.K., Gillies, C.L., Singh, R., Singh, A., Chudasama, Y., Coles, B., Seidu, S., Zaccardi, F., Davies, M.J. and Khunti, K., 2020. Prevalence of co-morbidities and their association with mortality in patients with COVID-19: a systematic review and meta-analysis. *Diabetes, Obesity and Metabolism*, *22*(10), pp.1915-1924.

Singh, A.K., Gillies, C.L., Singh, R., Singh, A., Chudasama, Y., Coles, B., Seidu, S., Zaccardi, F., Davies, M.J. and Khunti, K., 2020. Prevalence of co-morbidities and their association with mortality in patients with COVID-19: a systematic review and meta-analysis. *Diabetes, Obesity and Metabolism*, *22*(10), pp.1915-1924.

Acronyms/Abbreviations

CEO	Chief Executive Officer
CHE	Catastrophic Health Expenditure
ROL	Review of Literature
CCM	Chronic Care Management

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