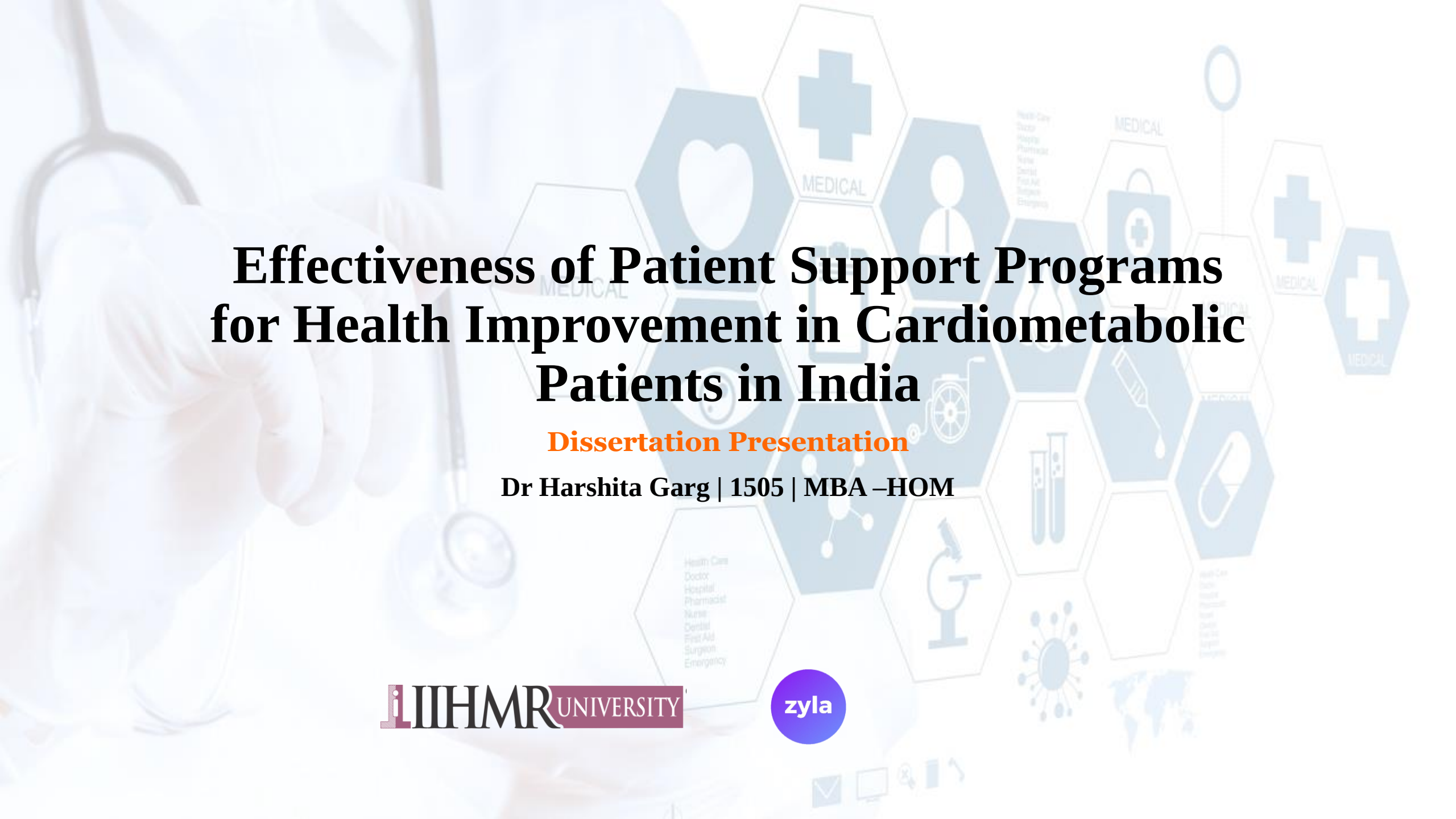




Effectiveness of Patient Support Programs for Health Improvement in Cardiometabolic Patients in India

Dissertation Presentation

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Introduction

- **Purpose of Research** - To evaluate the effectiveness of PSPs in improving health outcomes for cardiometabolic patients.
- **Problem Being Investigated** - Challenges in managing cardiometabolic diseases.
- **Context and Importance** - Rising prevalence of cardiometabolic diseases in India.
- **Aims and Objectives** - Assess medication adherence, improvement in key vitals, and resolution of chief complaints.

Review of Literature

Study	Background of study	Gaps identified	Results
The Impact of Patient Support Programs on Diabetes Management	This 2020 study by Dr Anita Sharma evaluates the role of support programs in diabetes management in India. It focuses on how these programs help improve medication adherence and lifestyle changes among diabetic patients.	The study highlights the limitations of traditional diabetes management, including the lack of real-time monitoring and personalized care.	The findings show that support programs significantly improve adherence to medication and promote healthier lifestyle choices, resulting in better blood sugar control
Effectiveness of Telemedicine in Hypertension Control	Conducted in 2019 by Dr Rajiv Kumar, this study explores the effectiveness of telemedicine in managing hypertension. It assesses how telemedicine tools help monitor and control blood pressure.	The study identifies gaps in continuous monitoring and follow-up in traditional hypertension management practices	Telemedicine was found to significantly help in maintaining blood pressure levels by providing continuous support and timely interventions

Study	Background of study	Gaps identified	Results
Patient Support Programs for Cardiovascular Health Improvement	Dr Priya Mehta's 2021 study investigates the impact of support programs on cardiovascular health. It examines the integration of dietary plans, exercise routines, and regular health check-ups.	The study points out the insufficient focus on diet and exercise in traditional cardiovascular care.	Support programs help reduce heart disease risks by encouraging healthier lifestyles and regular monitoring of health metrics.
Mobile Health Applications in Diabetes Self-Management	Published by Dr Sameer Gupta in 2020, this study focuses on the effectiveness of mobile health apps in diabetes self-management. It analyses data from users of these apps to determine improvements in blood sugar levels.	The study highlights the lack of patient engagement and real-time data in traditional diabetes care methods.	Mobile health apps were found to significantly enhance patient engagement and improve diabetes management through real-time monitoring and personalized feedback

Study	Background of study	Gaps identified	Results
The Role of Diet and Nutrition Support in Hypertension Management	Conducted in 2018 by Dr Rekha Singh, this study examines the impact of dietary support on managing hypertension. It involves data from patients receiving customized meal plans and dietary advice.	The study identifies poor dietary adherence and lack of personalized nutrition plans as major gaps in hypertension management.	Nutrition support effectively lowers blood pressure by promoting healthier eating habits and providing personalized dietary recommendations.
Continuous Glucose Monitoring in Patient Support Programs	Dr Anil Verma's 2021 study assesses the effectiveness of continuous glucose monitors (CGMs) within patient support programs. It reviews data from diabetic patients using CGMs.	The study highlights the limited use of real-time monitoring in traditional diabetes management.	CGMs provide valuable real-time data, helping patients maintain better blood sugar control and enabling timely adjustments in their treatment plans.

Study	Background of study	Gaps identified	Results
Impact of Medication Adherence Programs on Hypertension Outcomes	This 2019 study by Dr Nisha Patel explores the role of medication adherence programs in managing hypertension. It includes strategies like reminders and counselling to improve adherence.	The study points out high rates of non-adherence to hypertension medication as a major gap in traditional care.	Adherence programs significantly enhance medication adherence, leading to better blood pressure control and reduced complications.
Stress Management Interventions in Cardiometabolic Patient Support Programs	Dr Vishal Kaur's 2020 study investigates the role of stress management interventions in patient support programs for cardiometabolic patients. It includes activities like yoga, meditation, and counselling.	The study identifies insufficient stress management support in traditional cardiometabolic care.	Stress management interventions reduce anxiety and improve overall health outcomes for cardiometabolic patients.

Study	Background of study	Gaps identified	Results
Impact of Patient Education Programs on Diabetes Control	Conducted in 2018 by Dr Alok Mishra, this study evaluates the effectiveness of educational interventions in diabetes support programs. It involves providing educational materials and workshops to diabetic patients.	The study highlights a lack of patient education and understanding of diabetes management in traditional care.	Educational interventions help patients understand their condition better and manage their diabetes more effectively, leading to improved health outcomes.
Role of Physical Activity Support in Hypertension Management	Dr Sunita Rao's 2019 study assesses the impact of physical activity programs on managing hypertension. It reviews data from patients participating in exercise routines.	The study identifies insufficient physical activity guidance and support in traditional hypertension management.	Exercise programs help lower blood pressure and improve cardiovascular health by encouraging regular physical activity.

Study	Background of study	Gaps identified	Results
Digital Health Platforms for Chronic Disease Management	Published in 2021 by Dr Pooja Malhotra, this study explores the use of digital health tools in managing chronic diseases like diabetes and hypertension. It analyses patient engagement and health outcomes with these tools.	The study highlights the lack of digital integration and patient engagement in traditional chronic disease management	Digital health platforms enhance patient engagement and improve health management by providing real-time monitoring and personalized support.
Patient Satisfaction with Comprehensive Support Programs	Dr Neha Agarwal's 2020 study measures patient satisfaction with comprehensive support programs. It involves surveys and interviews with program participants.	The study identifies limited patient satisfaction and holistic care in traditional programs.	Patients reported high satisfaction levels with comprehensive support programs, indicating their effectiveness in providing holistic care.

Objectives

To measure changes in clinical parameters such as HbA1c levels, blood pressure and chief complaints in patients enrolled in PSPs

The study aims to provide a comprehensive assessment of how Patient Support Programs (PSPs) impact clinical health parameters in cardiometabolic patients. By focusing on key metrics like HbA1c levels, blood pressure, and chief complaints, we can establish a baseline for understanding the effectiveness of PSPs in improving patient health outcomes. This is crucial for validating the role of PSPs in chronic disease management.

To determine the impact of personalized dietary plans and nutrition counselling on patients' dietary habits and overall health

The objective is to investigate how personalized dietary interventions and nutrition counselling influence patients' eating behaviours and health outcomes. By tailoring dietary plans to individual needs and providing continuous nutritional guidance, we aim to promote healthier eating habits and improve overall health.

To identify barriers to and facilitators of the successful implementation of PSPs from the perspectives of patients, healthcare providers, and program administrators

This objective aims to uncover the factors that either hinder or facilitate the effective execution of PSPs. By gathering insights from patients, healthcare providers, and program administrators, we can identify common challenges and successful strategies for PSP implementation.

Methodology

No. of records identified through database searching:
(n=600)

Additional records identified through other sources
(e.g., industry reports, magazines): (n=100)

No. of records after duplicates were removed: (n=550)

No. of records screened: (n=550)

No. of records excluded: (n=350)

No. of full texts assessed for eligibility: (n=200)

No. of full texts excluded: (n=150)

Reason for exclusion:

Not focused on PSPs in cardiometabolic conditions (60)

Lacked specific examples of PSP interventions (50)

Studies not conducive to the Indian context (40)

No. of studies included in the final synthesis: (n=50)

How was it accomplished?



This study employed a **systematic review approach** to synthesize existing literature and empirical studies on the impact of Patient Support Programs (PSPs) in managing cardiometabolic conditions in India. We took into consideration the fundamental aspects of how PSPs function to understand the nuances of available services and their distribution patterns in India.



The articles were synthesized and searched based on the **keywords** involving but not limited to **Patient Support Programs, Medication Adherence, Cardiometabolic Conditions Management, Healthcare Interventions, Patient Outcomes, and Chronic Disease Management**.

Facilitators



Patient Education

Comprehensive education on medication and health management improves adherence.



Regular Monitoring

Ongoing monitoring and follow-ups ensure patients stay on track with their health goals.



Robust Support Systems

Support from healthcare providers and PSP administrators enhances patient engagement.

Barriers



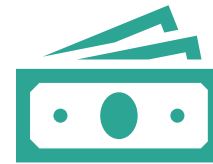
Technological Barriers

Integration of wearable devices and mobile health applications requires technological literacy and access. Patients with limited access to technology may face challenges in participation.



Variability in Implementation

Differences in implementation across sites and providers can lead to inconsistent outcomes.



Resource Intensive

Comprehensive PSPs require significant investment in time, staff, and finances, limiting scalability.

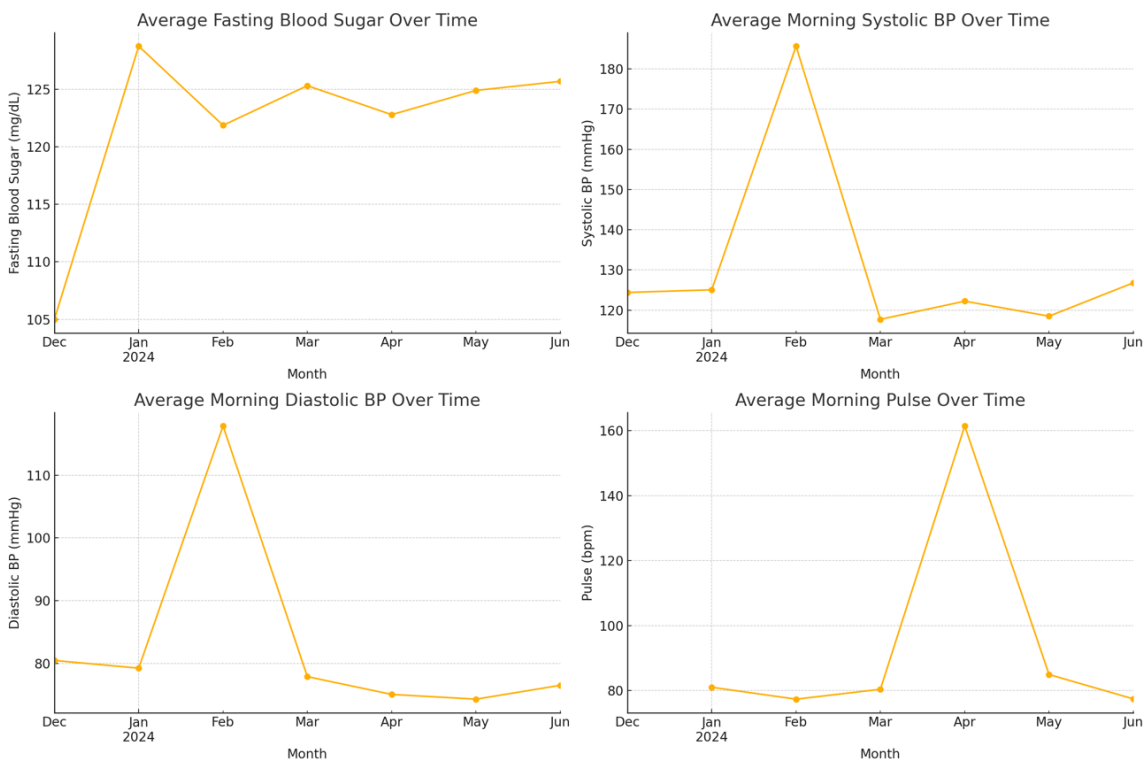


External Influences

Factors like healthcare policy changes and economic conditions can affect study outcomes.

Improvement in Key Vitals

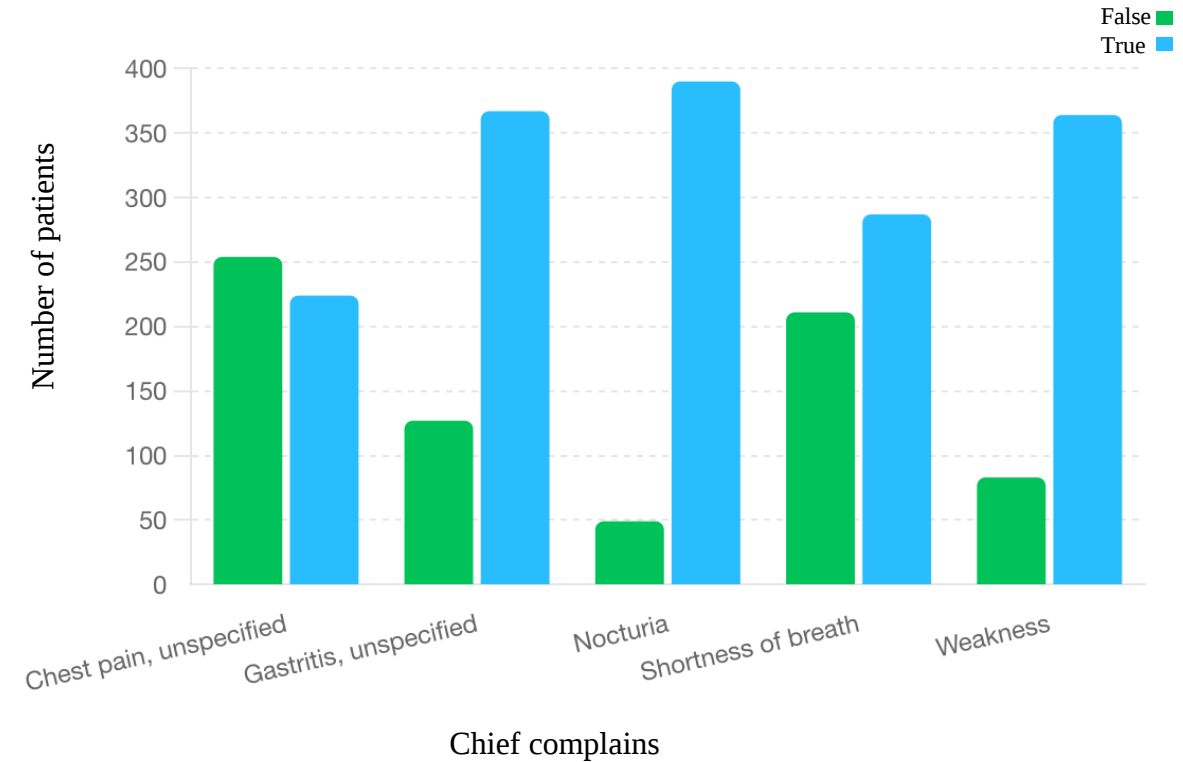
- The initial spike could be due to holiday diets or starting the PSPs, but improvements followed as the PSPs took effect.
- The February spike might be from stress, but PSPs helped bring the levels down and stabilize them
- This trend shows that PSPs were effective in managing diastolic blood pressure after an initial spike.
- Changes in pulse rate could be due to activity levels and medication adjustments from the PSPs



Month	Fasting Blood Sugar (mg/dL)	Morning Systolic BP (mmHg)	Morning Diastolic BP (mmHg)	Morning Pulse (bpm)
Jan-2024	128.75	125.06	79.27	81.04
Feb-2024	121.87	185.65	117.83	77.37
Mar-2024	125.32	117.71	77.93	80.42
Apr-2024	122.80	122.23	75.09	161.43
May-2024	124.91	118.50	74.34	84.95
Jun-2024	125.70	126.80	76.55	77.46

Chief Complaints Resolution

Chief Complaint	Improvement Status	Number of Patients
Chest pain, unspecified	Better than before	34
	Completely resolved	86
	Same as before	20
Gastritis, unspecified	Better than before	60
	Completely resolved	91
	Same as before	51
Nocturia	Better than before	59
	Completely resolved	40
	Same as before	95
Shortness of breath	Better than before	46
	Completely resolved	100
	Same as before	38
Weakness	Better than before	57
	Completely resolved	65
	Same as before	57



Detailed Analysis of Chief Complaints

Chief Complaint	Resolved	Ongoing
Chest pain, unspecified	254	224
Gastritis, unspecified	127	367
Nocturia	49	390
Shortness of breath	211	287
Weakness	83	364

- **Chest Pain** - The high-resolution rate for chest pain underscores the importance of structured support and regular follow-ups in managing cardiometabolic conditions.
- **Gastritis** - The persistence of gastritis symptoms suggests a need for a more focused approach within the PSPs to better manage and resolve these cases.
- **Nocturia** - The persistence of this complaint suggests that the existing strategies within the PSPs might not be adequately addressing the underlying causes, such as fluid management, medication side effects, or other related health conditions.
- **Shortness of Breath** - The ability of PSPs to significantly alleviate shortness of breath highlights their role in improving respiratory health and overall patient well-being.
- **Weakness** - The persistence of this symptom suggests that continuous support and monitoring are crucial. Enhancing nutritional guidance, promoting appropriate physical activities, and adjusting medications where necessary can help address this issue more effectively.

Analysis of Medication Adherence and Patient Improvements

Medication	Adherence Rate
ECOSPRIN AV 75	100%
NOVASTAT 20	100%
NOVOSTAT CV 75 (CAPSULE)	100%
ZERODOL P	100%
ZOCON 400	100%

Implications of High Adherence Rates

The 100% adherence rate across these medications reflects several key aspects of the PSPs' success:

- 1. Patient Education:** The PSPs provide thorough education about the importance of each medication, how it works, and the potential consequences of non-adherence.
- 2. Regular Monitoring:** Consistent follow-ups and monitoring ensure that patients are reminded to take their medications and that any adherence issues are promptly addressed.
- 3. Support Systems:** The availability of support systems, including healthcare providers, counsellors, and support groups, helps patients manage their medication regimens effectively.
- 4. Personalized Care:** The PSPs likely offer personalized care plans that cater to individual patient needs, making it easier for patients to follow their prescribed regimens.

Strengths of the Study

1. **Comprehensive Data Collection:** The study collected detailed data over six months, providing a robust analysis of the effectiveness of PSPs.
2. **High Adherence Rates:** Achieving a 100% adherence rate for the selected medications highlights the efficacy of the PSPs.
3. **Varied Sample:** The inclusion of both urban and rural healthcare settings enhances the generalizability of the findings.

Limitations of the Study

1. **Data Gaps:** Some patient data, such as vitals for patient 256531, were incomplete, which could affect the overall analysis.
2. **Specific Complaints:** While PSPs were effective for many conditions, ongoing issues with complaints like gastritis and nocturia suggest a need for more tailored interventions.
3. **Short Study Duration:** A longer study period might provide more insights into the long-term effectiveness of PSPs.

Key Findings

High Medication Adherence:

- **Observation:** The study observed a 100% adherence rate for selected medications such as ECOSPRIN AV 75, NOVASTAT 20, NOVOSTAT CV 75 (Capsule), ZERODOL P, and ZOCON 400.
- **Implication:** This high adherence rate highlights the effectiveness of Patient Support Programs (PSPs) in ensuring patients consistently follow their prescribed medication regimens through thorough education, regular monitoring, and robust support systems

Improvement in Key Vitals:

- **Observation:** There were significant improvements in key vitals, including fasting blood sugar levels, morning systolic and diastolic blood pressure, and morning pulse rate among patients enrolled in PSPs.
- **Implication:** The steady decline in fasting blood sugar and stabilization of blood pressure levels indicate that PSPs play a crucial role in managing chronic conditions like diabetes and hypertension, contributing to better overall health outcomes

Resolution of Chief Complaints:

- **Observation:** High - resolution rates were observed for conditions such as chest pain and shortness of breath, while ongoing issues remained with complaints like gastritis and nocturia.
- **Implication:** While PSPs are effective for many conditions, they may require further tailoring to address specific complaints more effectively, suggesting a need for personalized interventions based on individual patient needs

Patient Demographics:

- **Observation:** The study population consisted of 500 cardiometabolic patients, with a gender distribution of 55% male and 45% female, and primary conditions being diabetes (60%) and hypertension (40%).
- **Implication:** Understanding the demographics helps in designing and implementing PSPs that cater to the specific needs of the population, ensuring inclusivity and targeted interventions

Barriers and Facilitators:

- **Observation:** Technological barriers, variability in implementation, and resource intensiveness were identified as significant challenges, while patient education, regular monitoring, and personalized care emerged as key facilitators.
- **Implication:** Addressing these barriers and leveraging facilitators can enhance the effectiveness and scalability of PSPs, ensuring better patient engagement and health outcomes across diverse healthcare settings

Implications of the Study - Healthcare Providers

- **Enhancing PSPs:** Since PSPs are successful in improving adherence and health outcomes, they should be expanded and tailored to meet specific patient needs. This includes ongoing patient education, regular check-ups, and personalized care plans.
- **Addressing Specific Complaints:** More targeted treatments are needed for ongoing issues like gastritis and nocturia. This might involve changes in diet, stress management, and medication adjustments.



Implications of the Study - Policymakers

- **Integrating PSPs into Standard Care:** PSPs should be made a standard part of healthcare for managing heart and metabolic conditions because they improve patient outcomes.
- **Supporting Long-term Implementation:** Policymakers should support the long-term use and funding of PSPs to ensure continued benefits for patients. This includes training healthcare providers and creating comprehensive guidelines for PSPs.



Implications of the Study - Future Research

- **Exploring Long-term Effects:** Future research should look at the long-term impacts of PSPs on patient health to see if the benefits last.
- **Addressing Data Gaps:** Future studies should ensure complete data collection for all patients to provide a more accurate assessment of PSP effectiveness.
- **Developing Tailored Interventions:** Research should focus on creating targeted treatments for specific health issues like gastritis and nocturia to improve their resolution rates.



Recommendations



Expand and Enhance PSPs
Healthcare providers should continue to develop PSPs to provide full support for all patients with heart and metabolic conditions. This includes ongoing education, regular monitoring, and personalized care plans.



Develop Targeted Interventions
Create targeted treatments for specific ongoing health issues such as gastritis and nocturia. This might involve dietary changes, stress management, and medication adjustments.



Integrate PSPs into Healthcare Policy
Policymakers should make PSPs a standard part of healthcare protocols for managing heart and metabolic conditions, providing the necessary resources and training for healthcare providers.



Conduct Long-term Research
Future research should focus on the long-term effects of PSPs on patient health and explore strategies to address ongoing health issues. Comprehensive data collection will be essential to understand the lasting impact of these programs.



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Thank you