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DEVELOPING A NOVEL HEALTHCARE MODEL FOR MANAGING CHRONIC DISEASES

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Abstract
Through the use of mobile devices such wearables, web-based technologies, telecommunications services, social media, and smartphone applications, mobile health technology, or mHealth, is becoming more and more popular. The use of mHealth as a tool to improve the management of chronic illnesses using medication adherence, risk assessment, clinical decision support, lifestyle and educational interventions, monitoring and feedback, and rehabilitation support has been evaluated in a number of studies. This article's goal is to provide an overview of systematic studies that discuss how mHealth affects the outcomes of people with long-term illnesses. We outline the existing uses of several mHealth strategies, assess their advantages and disadvantages, and talk about possible obstacles to their continued advancement. According to available data, none of the mHealth technologies now in use are less effective than conventional medical care. The most commonly reported therapies are telehealth and web-based technologies, which have shown encouraging outcomes such as reducing mortality and rehospitalization.
Keywords: summarize systematic reviews, monitoring, effectiveness

1. INTRODUCTION

Due to its great efficacy, cost, and accessibility, since patients have had difficulty getting medical treatments through in-person consultations with healthcare providers during the COVID-19 epidemic[1]. Examples of information and communication technologies utilized in mHealth interventions include cell phones, computers, tablets, wearable biometric monitors and sensors, and personal digital assistants [2]. They not only offer a substitute for conventional clinical practice, but they can also raise the bar for patient care, encourage patient-provider relationships their illness. According to certain research, mHealth devices can help manage chronic illnesses, which are costly and detrimental to individuals' health as well as society at large. Through mHealth technologies allow for the management of numerous chronic illnesses without regard to time or location[11].

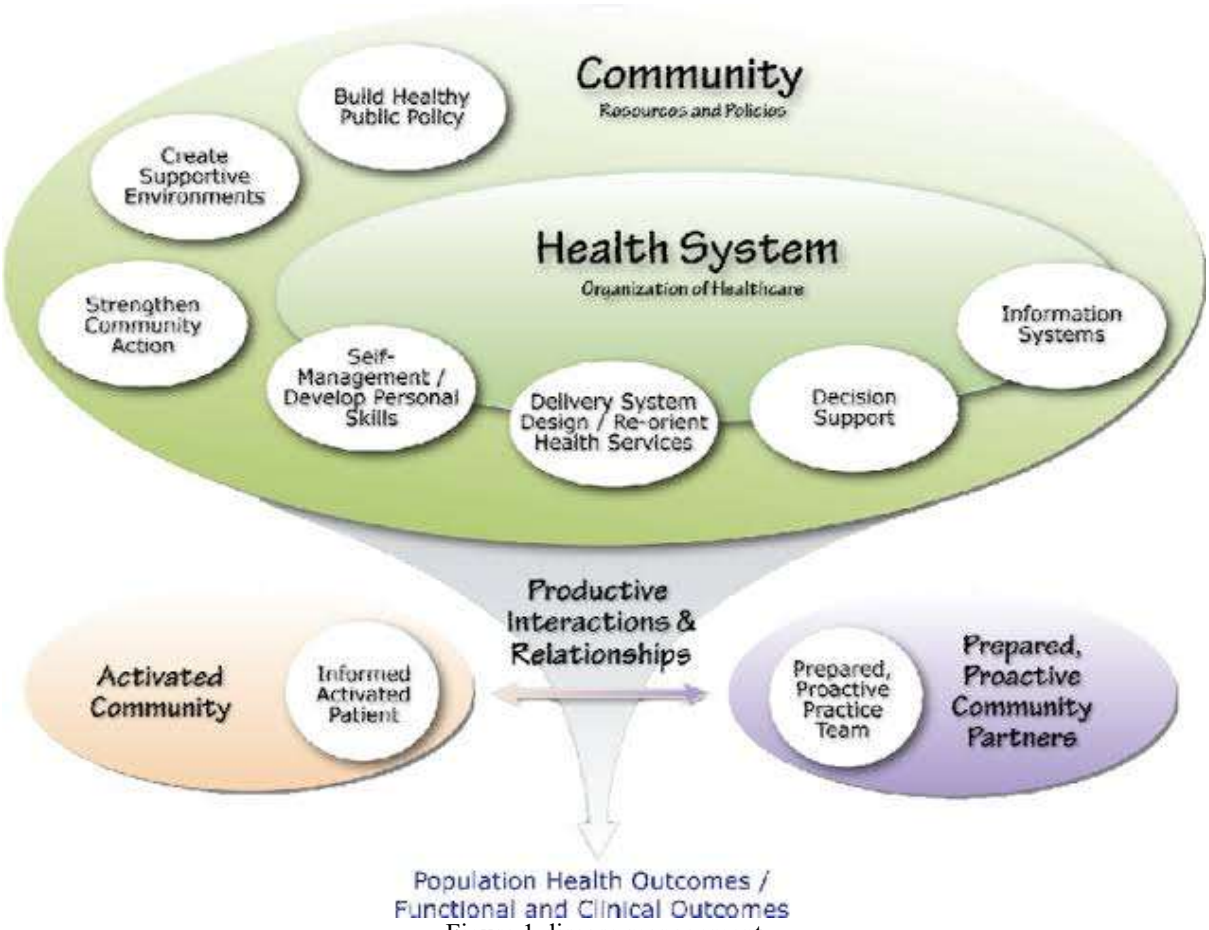

Figure 1 disease management

Numerous technical advancements and applications are used in mHealth therapies for chronic illnesses. In this review, we concentrate on the tools that patients use to interact with medical staff outside of hospitals. Based on how the intervention is delivered, mHealth apps: social media, Web-based technologies, wearable mHealth devices, telecommunications (telecom) services, and mHealth applications [3]. One of the most extensively researched mHealth therapies for the control of chronic diseases in both developed and developing nations is mobile phone texting, which offers the benefits of being inexpensive, widely available, and easy to use. Multidisciplinary teams create smartphone applications with distinct functional modules to treat a range of medical ailments [4]. While some programs are diverse, others simply do one primary function. One example of a single-purpose smartphone application that has grown in popularity in the dermatology sector is the "skin app" for online skin cancer screening [16].

2. REVIEW OF LITERATURE

It is common practice to integrate different mHealth technologies for certain medical circumstances[5]. For example, web-based data gathering platforms receive clinical images or health data obtained using wearable sensors, smartphone applications, or electronic monitors. Computerized systems or medical experts will further examine and evaluate these data. Patients can receive feedback and recommendations in person or virtually through phone consultations, email, or mobile messaging [12].

One study found that a WeChat account with multiple helpful modules for pulmonary rehabilitation in patients with COPD was just as successful as in-person interventions in terms of self-efficacy, dyspnoea status, and health-related quality of life; however, these outcomes changed with time [10]. the impact of mHealth interventions on COPD patients' outcomes [13]. The most commonly reported outcome was health-related quality of life, which was followed by adherence, behavioural modification, adverse events, symptom control, and functional exercise capacity [8]. For the management of COPD, the majority of research showed that mHealth interventions were not inferior to traditional therapy, with a small number showing superiority [6].

The prognosis and overall survival of occult cancer can be enhanced by early detection and treatment. Using telehealth technologies to assess skin cancer is a major difficulty because dermatology relies heavily on visual

inspection[7]. Dermatologists can use real-time interactive video conferencing or digital photos that patients send them to investigate unidentified skin lesions. It is believed that, with the correct threshold in place, tele dermatology's diagnostic accuracy could be high enough to identify the majority.

3. MATERIALS AND METHODS

But recommendations remain difficult to put into practice, which can result in subpar care and worse health outcomes, especially in places with low resources. Based on demographic information and geographic location, this study aims to discover significant differences between patients in rural and urban locations that call for customized ways to manage chronic diseases, while accounting for the impact of emergencies like the COVID-19 pandemic. Over the course of four years, from 2018 to the first quarter of 2021, information on the prevalence of diabetes and hypertension, risk factors, comorbidities, resource utilization, and disease burden was collected from general practitioner (GP) practices in both rural and urban areas of Poland. The results showed that patients in rural and urban areas differed significantly in terms of age, number of visits, gender distribution, diagnoses, and attendance patterns. Compared to urban patients, rural patients had a higher median number of visits, were more likely to be older, and displayed different diagnoses and visit types [14]. The study also looked at how the COVID-19 pandemic affected the treatment of chronic illnesses. It discovered that while the average age of visits rose during the pandemic, the distribution of genders remained relatively unchanged. Nonetheless, there was a noticeable shift in the visiting and diagnostic patterns, with more distant visits and changes in the frequency of certain diagnoses. The health of individuals and communities will eventually improve if lawmakers and medical experts work together to develop targeted policies that improve the management and prevention of chronic illnesses.

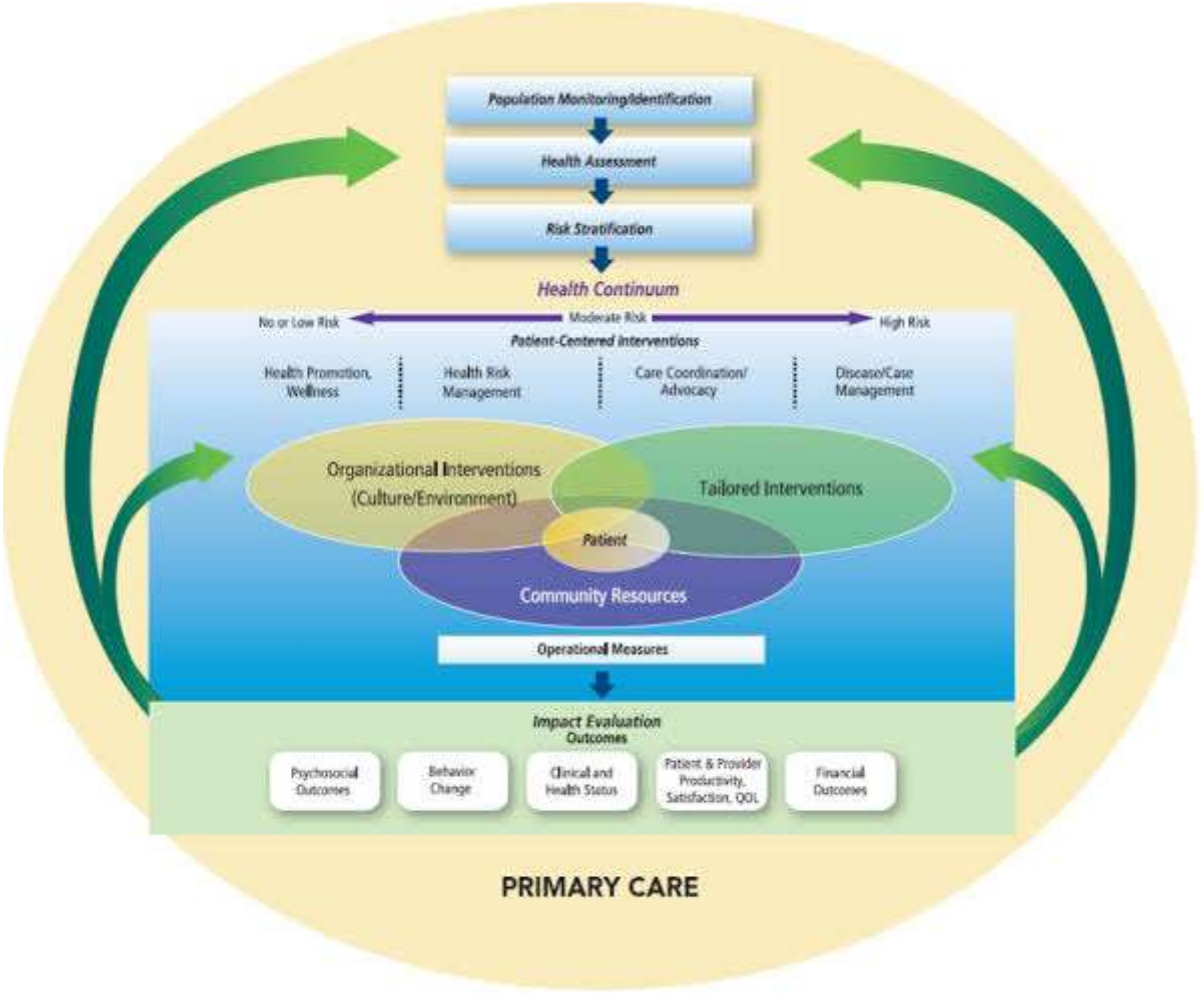

Figure 2 health care model

Today's health policies place a high importance on managing chronic illnesses with medicine and lifestyle changes. By ensuring equitable access to healthcare and involving patients, primary healthcare (PHC) aims to

prevent chronic illnesses. Patients require well-executed instructions for effective self-management; simply offering them advice is insufficient. However, putting current standards into practice is frequently required, which impedes the provision of optimal care and leads to less-than-ideal health outcomes. Therefore, it is necessary to provide evidence-based, practical advice that are tailored to a variety of patient needs. Two important concerns include addressing health disparities, particularly in rural areas, and integrating self-management into professional practice. There are still many obstacles to overcome in order to support lifestyle changes and implement tailored interventions while following guidelines [9]. Non-communicable diseases (NCDs), which impact people globally and include diabetes, cancer, heart disease, and chronic respiratory problems, are caused by a variety of risk factors, including poor eating habits, sedentary lifestyles, tobacco use, and excessive alcohol consumption. These illnesses account for a sizable part of deaths worldwide; NCDs kill people of all ages and geographical locations, with low- and middle-income nations carrying a disproportionate amount of the burden. Understanding the changing factors influencing the burden of NCDs in various regions should be the main goal of efforts.

4. RESULT AND DISCUSSION

Diabetes and hypertension are serious public health issues that affect millions of individuals globally, particularly in low- and middle-income countries. The incidence of hypertension varies by area, with the greatest rates found in Africa. This condition is a major cause of cardiovascular disease and early death. Promoting healthy lifestyles, expanding access to treatment, and putting into practice efficient management techniques are all part of the effort to combat diabetes and hypertension [15]. Effective chronic illness prevention and control techniques include interdisciplinary cooperation, patient-centered approaches, evidence-based practices, self-management support, and capacity-building initiatives.

Table 1: Resultofchi-squaredistribution

Factors	SymmetricMeasures	
	Phi	Crammer'sV
How can healthcare systems reduce healthcare disparities in chronic disease management?	0.317	0.317
What are the most effective ways to promote healthy behaviors in patients with chronic diseases?	0.001	0.001
How can healthcare providers address the mental health needs of patients with chronic diseases?	-0.122	0.122
Can a data-driven approach to chronic disease management improve patient outcomes?	0.134	0.134
What are the key factors influencing the success of chronic disease management programs?	-0.174	0.174
How can technology-enabled care coordination improve chronic disease management?	0.033	0.033
Can a data-driven approach to chronic disease management improve patient outcomes?	-0.154	0.154
What are the key factors influencing the success of chronic disease management programs?	0.059	0.059
How can technology-enabled care coordination improve chronic disease management?	0.001	0.001
What are the benefits and challenges of implementing a collaborative care model for chronic disease management?	-0.122	0.122

How can healthcare systems integrate social determinants of health into chronic disease management?	0.134	0.134
Can a patient-centered care model improve health outcomes for patients with multiple chronic conditions	0.001	0.001
What role can telemedicine play in enhancing access to care for patients with chronic diseases	-0.154	0.154
How can healthcare providers improve patient adherence to treatment plans for chronic diseases	0.059	0.059
What are the most effective strategies for patient engagement in chronic disease management	-0.154	0.154
What are the most effective components of a multidisciplinary approach to chronic disease management?	0.001	0.001
How can healthcare systems promote continuity of care for patients with chronic diseases	-0.122	0.122

Significant disparities still exist in Poland in a number of health-related areas. Infrastructure expenditures, especially in the eastern regions, are part of the efforts to lessen these disparities. Nearly two out of five Polish persons report having at least one chronic ailment, making chronic diseases a significant contributor to the burden of illness.

Table2:RotatedFactorMatrix

Description	**Factor**		
	1	**2**	**3**
How can healthcare systems reduce healthcare disparities in chronic disease management?	-.011	.889	.154
What are the most effective ways to promote healthy behaviors in patients with chronic diseases?	.085	.473	-.069
How can healthcare providers address the mental health needs of patients with chronic diseases?	.913	.205	-.069
Can a data-driven approach to chronic disease management improve patient outcomes?	.802	-.150	-.158
What are the key factors influencing the success of chronic disease management programs?	.733	.282	.251
How can technology-enabled care coordination improve chronic disease management?	.221	-.598	.150
Can a data-driven approach to chronic disease management improve patient outcomes?	.662	.453	-.593
What are the key factors influencing the success of chronic disease management programs?	.762	-.269	-.048
How can technology-enabled care coordination improve chronic disease management?	.014	-.051	.893
What are the benefits and challenges of implementing a collaborative care model for chronic disease management?	.085	.473	-.069
How can healthcare systems integrate social determinants of health into chronic disease management?	.913	.205	-.069
Can a patient-centered care model improve health outcomes for patients with multiple chronic conditions	.802	-.150	-.158

What role can telemedicine play in enhancing access to care for patients with chronic diseases	.733	.282	.251
How can healthcare providers improve patient adherence to treatment plans for chronic diseases	.221	-.598	.150
What are the most effective strategies for patient engagement in chronic disease management	.662	.453	-.593
What are the most effective components of a multidisciplinary approach to chronic disease management?	.762	-.269	-.048
How can healthcare systems promote continuity of care for patients with chronic diseases	.014	-.051	.893

Non-pharmacological methods, which include dietary adjustments, physical exercise, quitting smoking, reducing alcohol intake, managing stress, and controlling weight, are essential for controlling hypertension. These therapies successfully lower blood pressure and lower the risk of cardiovascular disease, which makes them crucial additions to medication, particularly for high-risk patients.

5. CONCLUSION

Healthcare delivery is expected to change as a result of emerging technologies, particularly for marginalized and rural populations. Even though there have been a lot more research on mHealth interventions and their uses over the past ten years, the most of them have been carried out in affluent nations; very few have been done in low- or middle-income nations. Furthermore, little is known about how particular mHealth modalities affect various patient populations with chronic illnesses because to the data's unpredictability. Patients who used more complex and intensive therapy, however, frequently displayed greater improvements. Standardized techniques must be used in future research to broaden the data supporting the successful integration of mHealth approaches into clinical practice and to combine the findings from various studies.

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