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THE IMPACT OF MULTIDISCIPLINARY MEDICAL PROFESSIONALS ON CHRONIC DISEASE MANAGEMENT

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Abstract

Living with a chronic disease affects an individual in various ways. Over time, chronic disease management (CDM) can become costly and time-consuming for patients, families, and health systems. To alleviate the burdens associated with managing chronic diseases, a multidisciplinary team of healthcare professionals that focuses on person-centered care could meet the needs of patients dealing with a chronic illness. Given the different roles and specializations of the healthcare providers, it is crucial that the team collaborates and communicates to ensure the individual's needs are met to manage the chronic conditions. Additionally, innovative ways of managing chronic illness such as medication adherence and interventions to foster self-management will need to become more prevalent in patient care.

Living with a chronic disease has the potential to have a profound effect, not only on one's physical health, but on their overall well-being, and extends to familial and socio-economic implications. A common chronic disease is diabetes mellitus, which affects an estimated 30 million individuals in the US alone. As these individuals age, non-adherence to the prescribed regimen and the development of co-morbidities are common. This results in not only an increased burden for the individuals themselves, and their families but on the healthcare system as a whole. (Mari & Wicklund, 2015)

Keywords

Keywords: multidisciplinary care, chronic diseases, healthcare teams, medical professionals, health systems, collective management, healthcare services

Medical and health sciences professionals need to figure out the accommodations in service strategy to utilize the professional expertise and improve healthcare services and management for patients. Chronic diseases have become the main causes that increase the burden on the health systems. The medical professionals in health systems undertake the responsibility to provide the patients with the necessary health services of continuous care. Professionals of medical and health care can apply their expert knowledge and skills on health promotion, disease prevention, and clinical management of diseases (Younas et al., 2023).

Healthcare teams with various medical professionals of expertise roles, with a design of working settings, will collaborate to provide healthcare for patients. They have the best medical professional experiences when providing healthcare and continuous long-term care services for the related diseases, they are more possibly understanding and respecting the needs and expectations of patients, and accordingly providing high-quality medical healthcare service. A multidisciplinary group can combine the nursing, medical, and pharmacy professionals together to provide patients with an integrated professional management for the collective management of the chronic diseases.

1. Introduction

Chronic diseases carry unique and changing circumstances, needs, and occupational challenges for clients. The complexity of noncommunicable diseases, such as asthma, cardiovascular disease, diabetes and cancer, heightens the responsibility of health professionals to plan patient-centered and holistic intervention to improve not only patient health but also quality of life in the long-term. However, chronic disease management is resource-consuming and challenging for both health services and patients. The goal of self-management is to empower people to take responsibility for their own well-being; to be informed about their conditions; and to adopt healthier behaviors, in order to reduce consultation with healthcare professionals and dependency on the healthcare services. In the context of chronic disease, self-management incorporates the maintenance of well-being and function, the management of symptoms, treatment adherence, coping with emotions, and finding and utilizing social and healthcare services when necessary. Accordingly, the range of knowledge and skills that patients are expected to master and use is extensive, as is the potential burden of the chronic ailment. Cost-effective, patient-centered interventions to enable the long-term improvement of health and wellness are urgently needed (Mari & Wicklund, 2015). The total cost of chronic diseases for health services was 707 billion Polish zloty in 2020 and in terms of lost wages for patients and their caregivers 187 billion zloty. The proportion of resources allocated to self-management education measures for clients in all services offered by the National Health Fund was a mere 9 percent in 2020. Additionally, the breadth of self-management strategies used in general health services is low, with solutions concentrated on a single model, manual or workshops. Currently, there is no clear and comprehensive model of self-management that takes into account the needs and abilities of clients with chronic diseases, addresses the areas of activity and participation, and engages local partners in the implementation of strategies. This approach would make more effective use of existing resources, partnerships, and services, and lead to long-term positive health and well-being outcomes for patients and their caregivers (Duda-Sikuła & Kurpas, 2023).

2. The Concept of Chronic Diseases

Chronic diseases are often defined as conditions or disorders that persist for longer than a year; this type of condition can be controlled but not fully cured. It differs from an acute condition in that acute conditions arise suddenly and are short-lasting, while chronic conditions come on gradually and are long-lasting. Chronic diseases usually cause health problems, disability, and sometimes death, and often require ongoing management, or control, to maintain stable health. Chronic diseases are further categorized into two main types: those with degenerative symptoms and those without. Degenerative chronic diseases are those for which physical symptoms steadily worsen over time. On the other hand, non-degenerative chronic diseases often have high rates of fatality when uncontrolled, though control does not depend on a decrease of existing symptoms. Chronic diseases include obesity, cancer, and diabetes, which

typically arise later in life and are not communicable. Tolerable chronic diseases, on the contrary, are those understood by society as easily managed and low risk. Most people with these chronic diseases remain healthy and productive with minimal management. Chronic diseases are the leading cause of death and disability worldwide. The aging global population has resulted in a higher global burden of disease, of which, chronic diseases are the primary contributor (Duda-Sikuła & Kurpas, 2023). Some low and middle income countries are struggling with a double burden of infectious diseases and chronic diseases. Factors that have contributed to the changing disease pattern include socio-economic status, lifestyle changes, and decreased physical activity. Socio-economic status not only affects the onset of chronic disease, but also the management and outcome of the disease. People living in poverty not only have higher rates of disease, but they are also more likely to receive a late diagnosis and/or inadequate treatment (Mari & Wicklund, 2015).

2.1. Definition and Types of Chronic Diseases

Chronic diseases are diseases that last for more than three months and do not disappear on their own. These diseases are not spread by pathogens and cannot be prevented by vaccination. In addition, these diseases are less likely to have a complete cure. Chronic diseases are more common in older adults and injured people and are often seen together. It is encountered in primary care, emergency service, internal medicine, physical therapy branches, general surgeon, nutrition and dietitian, lung health as part of other diseases, and biochemistry branches as part of blood glucose, creatinine, cholesterol, blood tests. Chronic diseases also negatively affect the quality of life of individuals and families (M. Al-hadlaq et al., 2022). The term chronic disease is complex, with a broad range of different pathologies and outcomes. There is a view that the relevant definition varies according to the professional grouping and has the potential to change over time, ensuring that the role of different researchers in a multidisciplinary research environment is not well defined, including the inability to standardize the range of relevant research. Analysis of the diversity of existing interpretations has several implications for the development of vascular research as part of biomedicine. A broad definition of chronic diseases and multimorbidity is presented involving the role of risk factors, disease progression, and the involvement of multiple organ systems. The extent of different vascular diseases and their common origin are emphasised.

Chronic diseases are diseases that have a long-term progressive course, which do not treatment completely and those limit daily activities (Currie & Delles, 2019). There are more than 400 different types of chronic diseases and conditions. A non-comprehensive definition of chronic diseases includes cardiovascular disease and stroke, cancer, chronic respiratory disease, diabetes, and obesity. Other types of chronic diseases are arthritis, asthma, hepatitis, AIDS, hypertension, macular degeneration, cataracts, glaucoma, and some dementia diseases. As dietary intake changes, there is an increase in the risk of aging chronic diseases, such as type 2 diabetes, arterial diseases, and osteoporosis. Chronic diseases are underpinned by behavioural, metabolic and endocrine dysfunctions that typically lead to overweight and obesity. An agreement should be established regarding the practice of nutritional therapy and a range should be covered in the waiting room. The waiting menu should include foods that are beneficial and harmful to chronic disease. Blood pressure, blood sugar, and quality of life of players with kidney and heart disease. Symptoms of diseases and medications should be explained to patients, and their participation in the care and treatment process should be provided. Exercises theatres with experienced and competent physiotherapists should be established to ensure that patients with various musculoskeletal and respiratory problems are

included. A training program that reduces compulsory detention times with the help of professional personnel should be prepared for caregiver, therapists, and family. Informations should be provided through the event about the symptoms of chronic diseases. Public health professionals should be informed about preventing and controling the spread of chronic disease. Screening programs for chronic diseases should be established, and this program should be open to every area of society. As a result of diagnostic tests, rapid information flow should be provided about the patients diagnosed with chronic disease.

3. Multidisciplinary Approach in Healthcare

Patients will more frequently present for healthcare with multi-system involvement, requiring coordinated care across multiple specialties. The fragmentation of health care services can increase errors and inefficiencies of care. One of the most frequent reasons for referral of patients is the concern that several body systems are involved in the patient's problems (this occurs in 2-4 out of every 10 newly referred patients). A sequence of cases have only one area of their problems considered by their health professional, leading to delays in effective treatment. There is a need for more holistic consideration of patients' problems. This scaffolding of paramedical and support services gi~dely maps out the dimensions and complexity of services required to coordinate care across the relevant epiwds of the patient journey (Thurgood, 1992).

Patients will more frequently present for healthcare with multi-system involvement. Most will require some form of diagnostic or therapeutic intervention that may involve treatment by more than one health care specialty and follow-up care by a general practitioner. This will be most efficient if managed by a single health provider. An inpatient facility might achieve this by forming a team of specialists or a day facility by coordinating various separate consultations. However, there are a number of factors which suggest that it may be most efficient to use general practitioners and specialists in private practice to work together in an organized manner in teams. The operations of such a team are defined and their relation to general practitioners and other forms of paramedical support services are explained. There is still the patient and communication of results between the various consultants is a critical issue in rendering a coordinated and efficient service to the patient.

3.1. Definition and Components of Multidisciplinary Teams

Multidisciplinary teams (teams) can consist of a psychiatrist, general practitioner, endocrinologist, social worker, naturopath and dietician. Effective teams have 7 members and the panel has identified the roles of the 6 who attend. They have identified that teams can communicate better if weekly meetings are scheduled, involving the nominated cases to be discussed before the meeting (Soukup et al., 2017).

Definition and Components

Multidisciplinary teams (teams) are a group of people from different specialist backgrounds, who work closely together in healthcare settings to achieve a shared objective (Thurgood, 1992). The success of such teams depends on careful planning of their structural components, which can include the number and specific professions of team members, meeting frequency and structure, leadership and how they communicate. Effective teams have 7 members attending to the patient, and the kinds of members (ie. professions) are constant regardless of the detail of the overarching condition being managed. The roles of the psychiatrist, general practitioner, endocrinologist, social worker, naturopath and dietician in the management of long-term type II diabetes are associated to a shared care model. This form of care aims to treat

the patient as a whole, with each member of the team responsible for an area in which they have expertise.

Team function is understood to be more effective in achieving desirable patient outcomes when practiced according to a set of criteria, defined here as the most prominent themes on which the peer reviewed literature commonly reports. Effective teams are seen to have diverse skill sets among members, comprehensive and unified communication strategies, a strong team leader and clear objectives that are shared by all members. These elements interact to inform three main understandings of effective team practice: it involves a diverse range of health professions collaborating with a focus on each of the patient's physical, emotional and social needs; it is important that members meet and discuss regularly, and practice between these meetings is pre-coordinated with the overarching aims of team-care in mind; and that the most beneficial outcomes for the patient occur when all members of the team are well-coordinated and informed.

4. Role of Multidisciplinary Teams in Chronic Disease Management

Chronic diseases including cancer, diabetes, heart disease, respiratory problems, stroke, including anxiety, asthma, bipolar condition, cardiac arrhythmias, chronic obstructive pulmonary disease, chronic pain, heart disease, Parkinson's condition, and stroke, form an important populace health challenge for Australian Principal Health Networks. Chronic diseases may be estimated with the collaboration of health systems, common health risk issues, structural causes, and special ailments. Multidisciplinary care of patients with chronic diseases commonly involves the intervention of general practitioners and multiple specialists in different medical disciplines. Health schemes have recognised chronic disease administration programs for these economies.

Management of chronic disease by a primary care provider in Australia can involve input from a diverse range of medical professionals, including podiatrists, dieticians, exercise physiotherapists, without the necessity for formal multidisciplinary consideration. Nevertheless, information on multidisciplinary care of completed stroke-instance chronic diseases, professionally driven by General Practitioners, isn't available in Australia. Coordinated care in the chronic disease consists of care planning, which in turn demands a medical analysis leading to a care plan, including instruction to the martyr and if appropriate, a team-based consideration (K Mitchell et al., 2008). In the Chronic Disease Management model, developed care planning depends on the Chronic Disease Management Medicare services which board non-medical professionals as medical services. Alarmingly, compliance with Medicare rebates injecting the Chronic Disease Management services requires getting a CDM referral from a participating General Practitioner. Care planning for Australian patients with chronic diseases would not subsume professional analysis or result in a formal care plan.

4.1. Collaboration and Communication Among Team Members

Collaboration and clear and respectful communication between all parties is recognized as a critical component of a multidisciplinary approach for managing chronic diseases. The most important lessons are the potential benefits that arise from closer working relationships and what is involved within the patient's own team that tends to make them more effective than other multidisciplinary teams. The dynamics of these teams will be highlighted, the different professional viewpoints of participants are acknowledged and explored, and how professionals collaborate and directly influence the outcomes for patients will be discussed. Teamwork and communication are presented as inextricable components of effective chronic disease management.

Regular meetings and discussions involving all or most team members are considered by patients as the most convincing indicator of close teamwork. However, other evidence of teamwork and shared goals and objectives between different parties is also strong. These include improved co-ordination and communication of care plans, such as feedback reports following assessments or regular updates on medication changes; active problem-solving and a co-ordinated team response to any issues, concerns, or crises that may arise; assistance with and promotion of referrals to other services, but done so in a way that ensures continuity of care, for example through arranging shared care arrangements or by informing the referring party of the outcomes of the referral; and specialist staff members instigating assessments or interventions based on a recommendation from another team member (Horlait et al., 2022).

Technology is crucial in helping professional team members stay in contact, informed, and aware of the actions of one another. In cases where teams are not co-located, patient information databases, shared scheduling software, intranets, team email lists, and remote logon software for accessing notes and letters have all been found to be key technologies for supporting teamwork. However, in the absence of these technologies, many teams make the effort to maintain contact through regular mobile, voicemail, or pager use; frequent joint home visits and appointments; and actually ringing one another for information on how to directly contact a member of a different profession.

5. Benefits of Multidisciplinary Approach in Chronic Disease Management

Chronic diseases account for nearly 900,000 annual deaths in Europe alone. Delivering care to chronic disease patients in particular is overly challenging because of how variable underlying conditions and required care are. Moreover, as disease progresses, comorbidities arise, vastly increasing care complexity. Using a multidisciplinary approach in managing chronic diseases helps tackling turnkey issues associated with providing care to patients with such conditions. A broad range of expertise is available for building optimum problem-solving and patient care strategies. To make it effective to handle patient care, a real-time information exchange platform specific to each patient is necessary. Even though a multidisciplinary approach broadens the scope of patient care, improved patient outcome is to be still expected. Ease of symptom management is found to directly result in avoiding unnecessary hospitalizations. Furthermore, involving patients is discovered to have a profound effect on the effectiveness of a multidisciplinary approach. Summarizing all provided information and recounting what was agreed upon during a discussion between health experts is seen to greatly boost patient care. Patients, having no access to mental health unit, typically refer to emergency rooms. Having the ability to consult with a mental health expert is remarked to be beneficial for both patients and their families. It is, therefore, proposed that a multidisciplinary team needs to have a psychiatrist on staff as well. Effectiveness of treatment is further stated to be greatly compounded by individual attention. Larger teams are found much more accessible for patients. Given a more diversified health professionals base, risk of a misdiagnosis and maltreatment in general substantially decreases. It’s far easier for patients to render the necessary lifestyle changes when several health professionals are pointing out the same problems. Increasing health literacy is also pinpointed to scholastically benefit patients. There’s a point made that a healthcare professional of one kind has a much steeper learning curve. Thus, utilizing a team-based approach actually produces a nurturing effect and, therefore, health professionals are to be more disposed to seeking further education. A unique platform is noted to be useful for chronic disease patients to manage care. Generally, a single mother of 2 (1 patient, 1 healthy) lacks any means for handling the situation. In such case, the

patient-associated platform allows appointing a diverse set of health experts and thus saving time by not having to wait in endless queues. Ease of diagnosis is found to be directly related to how soon a patient starts receiving a particular therapy treatment.

5.1. Improved Patient Outcomes and Quality of Life

First and foremost, "improvement" is directly related to better outcomes; the broad concept of "outcomes" encompasses a variety of metrics, most of which suffer when an individual has multiple chronic conditions. Before discussing outcomes, it is absolutely necessary to consider the "comprehensive and tailored management" services that are inextricably linked to improved patient quality of life. Numerous studies support the well-known fact that those with a myriad of health issues have significantly worse health outcomes than their "healthy" counterparts. Armed with this knowledge, shifting the paradigm with which those individuals are viewed to one of addressing the whole person is a critical step in this process. This focus transcends the bounds of classic medical intervention, addressing mental, psychological, and social health, among others. Moreover, strategies must be personalized to the individual in question, crafted in such a way as to uniquely address their medical burden (Sampalli et al., 2016). Thus, it is under the secret of this myriad of interdisciplinary collaboration that the CHRONIC CARE (CCM) model warrants further discussion. Its implementation in primary care settings has been shown to produce a positive response in the realms of patient self-care and economic efficiency, among others. (Md Yusof Aryani et al., 2016) found that those with access to providers versed in the CCM treatment model possess higher health-related quality of life. Integrating a multi-component education system for both patient and doctor alike also produced the highest levels of patient satisfaction.

6. Challenges and Barriers to Multidisciplinary Care in Chronic Disease Management

Effective management of chronic diseases requires input and support from a diverse range of medical professionals, each of whom brings particular expertise to bear on the problem at hand. An ideal team of multidisciplinary medical professionals may include specialists such as nutritionists, physical therapists, and pharmacists, who can provide a holistic approach to the management of care. Given the size and complexity of teams, it is unsurprising that significant challenges can hamper the effectiveness of multidisciplinary care. One form of challenge involves conflicts between members of the team. These can result from differences in professional culture or priorities, and may lead to fragmentation of both care delivery and reporting. For example, the care provided by a physical therapist may differ from that of a general practitioner (GP), even for the same patient. When these differences are not communicated or reconciled, patients are confronted with conflicting health advice. Such differences may arise from medical opinion or advice, but can extend to more systemic areas such as culture, role setting, or policy. Moreover, power dynamics may form within teams, leading to peripheralization of certain professions or restriction of discourse. This may affect the decision-making process, or compound the effects of a more general fragmentation. For example, if a patient sees a GP as the head of a healthcare team, they may feel counseling from a pharmacist is less authoritative than that from the GP, even when concerns are focused on medication only. Even in the absence of these more interpersonal challenges, there may be significant resource limitations on the team (J. Kuipers et al., 2021). This could be, most obviously, in terms of time. When members of a healthcare team are unable to discuss a case, they may provide piecemeal or even conflicting recommendations. In some cases, this could result in the neglect of a patient's more general needs, or mean certain diagnoses are

overlooked. However, a lack of funding is another common issue. In the West, this generally comes through government or private insurance, and may limit access to certain forms of treatment that fall between traditional categories. Even in more public systems, budget restrictions may constrain more general care.

6.1. Interprofessional Conflict and Power Dynamics

CONFLICT between health professionals has been identified as a significant barrier to effective multidisciplinary care. The resources for care in one sector are not completely available to those in another. For example, hospital-based service providers are able to offer emergency care and advanced medical treatments, while community-based health services are better placed to provide chronic disease management. Emerging evidence clearly indicates "health care services can be compromised, if patients do not coordinate their management according to the training background or role perceptions of health workers". The matching of care requirements for patient and provider training is often assumed, but research demonstrates missed, ambiguous or inappropriate communication between providers of differing expertise. Moreover, some health professionals, particularly general practitioners, report uncertainty and disagreement when diagnosing and managing patients with similar clinical presentations. This limits the effectiveness of the one-to-one medical consultations.

The dominant form of interprofessional conflict in the literature revolves around medical dominance. Medical dominance is commonly observed in the acute care setting where the care of patients is managed almost exclusively by doctors. The imbalance in training, professional autonomy and income is used to justify the majority of medical decisions. Nursing and allied health professionals are assigned the role of assistants who undertake tasks that do not involve making diagnoses or deciding on treatment. The widespread acceptance of medical dominance is described as 'the close-shop ethos', whereby 'a tradition of professionalism involves an excessive concern with social status'. The vivacity of the medical close shop is witnessed in the "reactions to the incursion of group-based therapies in AIDS treatment". In this example, a proposal for shared care is rebutted by doctors who are ultimately responsible for patient care. Think about the implications of this power imbalance on patient care and the functioning of a multidisciplinary team, an in-depth review around the implications of this power imbalance for both. Developing mutual respect and understanding between health professionals is seen as necessary to build collaboration and mutual respect and understanding is developed between health professionals. A complementary skills model is described, in which health professionals are valued for their expert contribution to patient management. One of the key components of the model of effective collaboration is the ability of the health professional to legally practice outside hospitals. Moreover, it is noteworthy that conflict is associated with enhanced role expansion. Unlike who propose that regulation (either through legislation or professional codes of conduct) is necessary to address this issue, a less invasive approach is advocated. Suggestions include a problem-oriented summarisation of the patient's care and the establishment of shared goals. A similar issue was experienced by a woman with fibromyalgia. She participated in a pain management program run by the local hospital. The program was staffed by a senior physiotherapist, a junior physiotherapist, and an interned exercise science student. Initially, she was very excited and hopeful the care provided would lead to pain relief because she had heard positive reviews about the service.

7. Case Studies and Real-World Examples

In order to illustrate how interdisciplinary collaboration could be implemented in the community setting, this chapter discusses the development of a multi-professional service for

patients with hair loss in a Primary Care Trust ((Meguid et al., 2015)). The aim of the service was to manage patients with hair loss following a hormonal contraceptive injection in accordance with national guidelines in order to resolve local restocking issues. Despite the increasing prevalence of chronic disease and long-term conditions, medical and nursing care traditionally likes to focus on the individual clinical specialty's sphere. This chapter illustrates an interdisciplinary, interprofessional & multi-professional approach to hair loss and its management. Diagrams are used to illustrate the referral pathways and the patients' journey through the service ((Tortajada et al., 2017)). The presentation invites the reader to follow both the patients' clinical management and consider the different professionals and their roles in the team. Clinic letters and the new hair loss guideline are described in case studies to illustrate the outcome of the interdisciplinary care of these patients. It is hoped that after reading this chapter the reader will be able to consider how an interdisciplinary approach to other clinical conditions can enhance patient care.

7.1. Successful Implementation of Multidisciplinary Teams

Research has increasingly been saying that patients with chronic diseases who are managed by multi-disciplinary teams have improved health and psychological outcomes compared with patients managed by single-discipline teams (Thurgood, 1992). This discussion offers insight into the practicalities of establishing and running Multi-Disciplinary Teams (MDTs) for clinical practitioners considering setting up or reforming such a team. This includes some necessary elements for effective team working, several examples of successful practice and advice for team leaders. Such a three-disciplinary team may include a community psychiatric nurse, social service care worker and a health visitor. This seems an excellent project. There are general comments about working in MDTs concerning the handling of multi-disciplinary teams in medical settings and outline just a few of the problems and solutions for consideration. Multidisciplinary teams (MDTs) can substantially improve the care and health outcomes of patients. They are conceived as a means to break down inter-disciplinary barriers and to standardise care practices and increase assessment and management of patients. Importantly, there is a wide consensus that MDTs should allow and encourage transmission of knowledge between the specialists composing them. Unless these specialists are organised, several disciplines may focus on one patient but do not coordinate their treatment plan; this may generate further problems. Efforts have been constantly made to develop a structure for MDTs and guidelines on their functioning, but a study of current implementation shows numerous shortcomings.

8. Future Directions and Innovations in Multidisciplinary Care

The management of chronic diseases (CD) in an aging population involves complex decision-making that needs to be assisted by adequately integrated information about the patient's health state and health care status. Multiscale modeling can provide clinically meaningful information on the evolution of individual CD, combining clinical and lifestyle contingencies, and in response to medical treatment (but also preventive and assistive interventions) effects over different time scales. Such information potentially is useful for tailoring interventions to individual patients (Ángel Gandarillas & Goswami, 2018). The latest health care approaches are stressing the need to advance new frameworks for collaboration among social and health services to address the complex nature of CD progression in the older person. Model checking is patterned on the operations of a control engineer. For a patient model, the checking system inputs parameters which determine the limits of acceptable behavior, and if abnormal data subsequently appear in the patient trajectories, the checking system initiates an early warning

condition. The latter can be used to suggest changes in therapy to the attending physicians. To exemplify the proposed method, model checking is applied to a dynamical computer model of pediatric intensive care patients with acute lung infection supported by mechanical ventilation. The patients are simulated under the conditions of conventional treatment continued until the final resolution of the infective process. The model checking system is used to forecast the most likely evolution of the health conditions under test. A comparison with an alternative treatment scenario suggests a rationale for choosing the best time to initiate selected mechanical manipulations of the patient to enable successful weaning from the ventilator. An emerging trend in healthcare is bringing proper actions with a comprehensive view of the behavior of people to foster the development of aging care technologies. For such purpose, a comprehensive view of aging care technologies is suggested, including telemonitoring systems, fitness and physical activity systems, and personalized care systems. An effective protocol action with a comprehensive view is developed by considering various topics: behavior, clinical situations, adverse events, and common issues. The MARS study is launched with reference to the description of the methodology and initial results.

8.1. Technological Advancements in Team Communication

Technological advancements in team communication play a crucial role within a multi-disciplinary team setting. Regular and timely information sharing is considered to have a positive impact on patients, particularly when communication occurs in real-time (Janssen et al., 2018). Various platforms and tools exist allowing the access and sharing of patient files, test results, medication lists, and letters between healthcare professionals. Utilizing these technologies can prevent gaps in communication, avoid misunderstandings and can contribute to a patient's wider support system. The topic is addressed through the framework of Chronic Obstructive Pulmonary Disease management and observes the use of e-technologies. The application of technology and its benefits are examined, the concerns about the integration of technology are considered, and what training could be provided to maximize benefit is recommended. The usability and effectiveness of available platforms are also explored, focusing on applications known to be used currently by multi-disciplinary professionals.

The narrative includes a mixture of vascular disease management teams. It considers how technology is currently used or may be used in the future, as well as looking outwardly at how technology could be used in collaboration with other national or worldwide healthcare professionals. E-communication is approached with an open mind and benefits or flaws are considered, without a predetermined view. Topics incorporate the compliance of current professionals with technology usage. The importance of user-friendly and intuitive interfaces is frequently stressed, suggesting that if the expected demographic of professionals is to engage with an e-platform, then it must be easy to use. Most of the tech-savvy young professionals make the vast majority of the current workforce. The systems will often have a short learning curve and should be easy and quick to set up. However, the suggestion is that even implementers and advanced users of technology don't believe they are used to good effect. This is often due to the complexity of the application with either disruptive interfaces or too many features.

9. Conclusion and Key Takeaways

Chronic diseases are the leading cause of death worldwide, prompting healthcare systems to adjust their care models in lieu of today's global aging population. In order to meet the growing demands for chronic care, the most effective care strategy involves collaborative efforts between general practitioners, patients, caregivers, social workers, and the community (Scott,

2017). However, successful implementation of this approach relies on effective communication between the different care sectors. A lack of efficient communication methods has been restricting the transfer of knowledge and patient holistic perspective between the three sectors. Furthermore, effective interaction and collaboration between healthcare professionals in the different sectors would allow for cross-disciplinary decisions that take into account patient preferences and family support for a more successful chronic disease management outfit. Consequently, healthcare organizations should consider an implementation plan that would encourage all care sectors to collaborate and communicate more efficiently on a patient's care plan. Technological features would greatly help improve communication in-between healthcare professionals, patients, and their caregivers. A healthcare system to support this kind of method would rely on a network of interconnected human and technical resources. In spite of its complexity, there is great potential for benefits. With more communication channels and a holistic view of the patient's care plan, healthcare professionals would better understand a patient's condition and be able to make more personalized decisions (Alain Ngangue et al., 2020). On the patient's side, better knowledge of their health condition and treatment plan would improve compliance and follow-up, leading to better health outcomes, patient education, relevant support groups, and follow-up interviews are examples of possible actions that could be undertaken.

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