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“The Effectiveness of Nurse-Led Interventions on Disease Management in Patients Suffering from Diabetes”

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Abstract

Diabetes management poses significant challenges to patients due to its chronic nature and potential complications. Nurse-led interventions have emerged as a crucial component in improving disease management outcomes for patients with diabetes. This research aims to explore the effectiveness of nurse-led interventions in diabetes management through a comprehensive review of existing literature. Various nurse-led interventions are examined for their impact on glycemic control, adherence to treatment regimens, and overall health outcomes among diabetic patients. The review highlights the importance of a multidisciplinary approach to diabetes care, with nurses playing a pivotal role in providing personalized, patient-centered interventions. Additionally, barriers to implementing nurse-led interventions are discussed, along with recommendations and strategies to optimize diabetes management.

Keywords: Nurse-led interventions, Diabetes, Disease management, Glycemic Control, Self-management, Lifestyle, Patient Outcomes.

الملخص

تشكل إدارة مرض السكري تحديات كبيرة للمرضى بسبب طبيعته المزمنة والمضاعفات المحتملة. برزت التدخلات التي تقودها الممرضة كعنصر حاسم في تحسين نتائج إدارة المرض للمرضى الذين يعانون من مرض السكري. يهدف هذا البحث إلى استكشاف مدى فعالية التدخلات التي تقودها الممرضة في إدارة مرض السكري من خلال مراجعة شاملة للأدبيات الموجودة. يتم فحص التدخلات المختلفة التي تقودها الممرضات لمعرفة تأثيرها على التحكم في نسبة السكر في الدم، والالتزام بأنظمة العلاج، والنتائج الصحية العامة بين مرضى السكري. تسلط المراجعة الضوء على أهمية اتباع نهج متعدد التخصصات لرعاية مرض السكري، حيث تلعب الممرضات دورًا محوريًا في تقديم تدخلات شخصية تركز على المريض. بالإضافة إلى ذلك، تتم مناقشة العوائق التي تحول دون تنفيذ التدخلات التي تقودها الممرضة، إلى جانب التوصيات والاستراتيجيات لتحسين إدارة مرض السكري.

الكلمات المفتاحية: التدخلات التي تقودها الممرضة، مرض السكري، إدارة الأمراض، التحكم في نسبة السكر في الدم، الإدارة الذاتية، نمط الحياة، نتائج المرضى.

Introduction

Eventually, elevated blood glucose levels are the hallmark symptom of diabetes mellitus (DM), a metabolic disorder that can develop due to insulin resistance, insulin secretion problems, or both (Galicía-García et al., 2020). Diabetes is the most prevalent metabolic problem on a global scale and is among the top four non-communicable diseases. Type 2 diabetes mellitus (T2DM) is the more common form of the disease, accounting for 90–95% of all instances of diabetes mellitus (Carstensen et al., 2020), while type 1 diabetes mellitus (T1DM) is less common. There has been a consistent increase in the number of individuals living with diabetes, making it a major public health concern worldwide (Cho et al., 2018). Worldwide, the number of people with disabilities has risen sharply from 108 million in 1980 to 422 million in 2014, according to the World Health Organization (WHO). In addition, by 2025, this figure will have risen to 592 million.

Effective management of diabetes necessitates the use of novel care and practice approaches. Healthcare systems are increasingly adopting nurse-led models, which are considered to be patient-centered, as opposed to the traditional physician-led model that prioritizes medical treatment and cure. An initiative to enhance the outcomes of patients with diabetes has been proposed, which involves granting nurses more autonomy in their duties in diabetes care (Juil et al., 2012). In a study conducted by Li et al. (2017), it was shown that a nurse-led model was more effective than standard treatment in improving glycemic control and reducing diabetic discomfort.

Nurses, as primary healthcare practitioners, have a vital role in diabetes care by providing complete, holistic, and patient-centered services. Nurse-led interventions often consist of a blend of educational, behavioral, and clinical elements that are customized to meet the specific need of patients. The purpose of these treatments is to give patients the ability to take control of their disease and manage it on their own, improve their compliance with treatment plans, encourage healthy behaviors, and avoid or delay the development of problems connected to diabetes.

Nurses are in a unique position to educate patients about diabetes and provide them with greater care than other healthcare providers because of the amount of time they spend with patients. Furthermore, when it comes to advising patients on the best care practices and different ways to manage their sickness, nurses are typically in a better position than other healthcare professionals like doctors and physicians. According to Lou et al. (2014), nurses possess superior listening skills and a deeper understanding of diabetes patients compared to other medical professionals. As a result, they ought to have a more positive outlook and devote more time to caring for diabetic patients than other medical staff.

Given the growing global occurrence, it is crucial to implement efficient strategies for managing diseases in order to reduce their negative health consequences. Nurse-led interventions have become essential elements in the holistic care of patients with diabetes, among other strategies. Nurses play a crucial role in the management of diabetes due to their distinct position as primary healthcare professionals, combining clinical proficiency with patient-focused care abilities (Jutterström et al., 2016).

Nurse-led interventions involve a diverse range of activities that aim to empower patients to effectively manage their disease, encourage self-care practices, and improve overall quality of life (van Hooft et al., 2017). These therapies frequently encompass education, counseling, and continuous support customized to meet the specific requirements of each patient. Nurses can utilize their strong patient-provider relationships to successfully educate patients on the significance of medication adherence, appropriate nutrition, consistent physical exercise, and glucose monitoring.

In addition, nurse-led interventions go beyond simple education by incorporating comprehensive assessments, lifestyle adjustments, and psychosocial assistance to tackle the complex dimensions of diabetes management. Nurses fulfill an essential function by empowering patients to embrace healthier lifestyles and facilitating behavior modification, thus mitigating the likelihood of complications linked to diabetes.

Problem Statement

Although there have been notable improvements in the management of diabetes, healthcare systems around the world still face a difficult task in getting the best possible results. Poor management of blood sugar levels, failure to take prescribed medications, and insufficient self-care practices all contribute to the negative impact of diabetes-related issues. This not only reduces patients' quality of life but also places a significant financial burden on healthcare systems. Nurse-led interventions have become promising solutions in addressing the complex requirements of diabetes care. These programs utilize the skills of nurses in patient education, counseling, and support. Nevertheless, even if there is an increasing acknowledgment of their significance, there is still a lack of a thorough comprehension regarding the efficacy and consequences of nurse-led interventions in diabetes care.

Study Objectives

- To evaluate the effectiveness of nurse-led interventions in improving the disease management outcomes.
- To identify barriers and challenges associated with the implementation of nurse-led interventions in diabetes care delivery.
- To identify the different strategies in addressing the existing and emerging challenges faced by nurses in nursing intervention diabetes care.
- To provide recommendations for optimizing the integration of nurse-led interventions into diabetes care delivery.

Significance of Study

This study has the potential to completely transform the way healthcare is provided to those who have diabetes. This study sheds light on the ways in which nurse-led interventions impact the outcomes of diabetes management and identifies the obstacles and factors that help or hinder their implementation. It offers guidance on how to best incorporate nurse-led interventions into models of diabetes care delivery. This can result in improved and streamlined healthcare delivery, promoting increased collaboration among diverse care teams, optimizing the use of resources, and ultimately boosting the patient experience within healthcare systems.

Furthermore, this study has the capacity to enhance the authority of healthcare practitioners, specifically nurses, by emphasizing their essential role in the management of diabetes. This research validates the knowledge and contributions of nurses within healthcare teams by demonstrating the effectiveness of nurse-led interventions and their ability to enhance patient outcomes. Recognition of the importance of nursing can lead to more investment in nursing education, training, and professional development. This will ultimately enhance the ability of healthcare systems to fulfill the changing needs of diabetic care.

Terminologies of Study

- **Nurse-led interventions:** Nursing interventions are healthcare measures developed and executed by nurses to target specific healthcare needs or enhance health outcomes. Nurse-led interventions involve a diverse array of actions, such as providing patient education, counseling, monitoring, and coordinating treatment (Clark et al., 2011).
- **Diabetes management:** Integrated care is the continuous effort to synchronize healthcare, education, support, and lifestyle adjustments in order to efficiently manage blood glucose levels and avoid or postpone the development of problems associated with diabetes (Chamberlain et al., 2016).

Literature Review

1. Overview of Diabetes Mellitus

According to (Deepthi et al., 2017), Diabetes mellitus is a persistent metabolic condition marked by high levels of glucose in the blood, caused by deficiencies in the secretion or function of insulin, or both. It is a major global health issue, with its occurrence consistently rising on a global scale. Diabetes has an impact on people from various age groups, nationalities, and socioeconomic backgrounds. However, specific groups including older adults, ethnic minorities, and individuals with a family history of the disease are more susceptible to it. The rising incidence of diabetes can be ascribed to several reasons, such as inactive lifestyles, bad eating patterns, obesity, aging populations, and hereditary susceptibility (Fareed et al., 2017).

Diabetes mellitus has a multifactorial etiology, which means it is caused by a combination of genetic, environmental, and behavioral variables that interact in a complicated way. Type 1 diabetes mellitus (T1DM) is mostly a result of the immune system attacking and destroying the beta cells in the pancreas, which leads to a complete lack of insulin. Usually appearing during childhood or adolescence, this condition necessitates the use of insulin therapy for the entirety of one's life in order to survive. T1DM is believed to be influenced by genetic predisposition, viral infections, and environmental factors (Principi et al., 2017). According to (DeFronzo et al., 2015), Type 2 diabetes mellitus (T2DM) is distinguished by insulin resistance and a relative lack of insulin, typically linked to obesity, lack of physical activity, bad eating habits, and genetic factors. Gestational diabetes mellitus (GDM) arises during pregnancy due to hormonal changes and insulin resistance associated with pregnancy. However, it can also elevate the likelihood of acquiring type 2 diabetes mellitus (T2DM) in the future (Baz et al., 2016).

Diabetes mellitus is characterized by disturbances in the way the body processes glucose, secretes insulin, and responds to insulin. These disruptions result in high blood sugar levels and metabolic abnormalities. T1DM is characterized by the autoimmune death of pancreatic beta cells, which causes a complete lack of insulin production. This leads to a decrease in the uptake of glucose by peripheral tissues and an increase in the synthesis of glucose by the liver (Katsarou et al., 2017). Individuals with type 1 diabetes mellitus (T1DM) commonly have autoantibodies that specifically target pancreatic islet cells, including insulin, glutamic acid decarboxylase (GAD), and tyrosine phosphatase-like protein (IA-2) (Kawasaki, 2023). On the other hand, Type 2 diabetes mellitus (T2DM) is distinguished by the presence of insulin resistance in certain tissues, including muscle, liver, and adipose tissue. This resistance hinders the uptake and utilization of glucose, resulting in reduced functioning. Insufficient compensation by pancreatic beta cells leads to elevated blood sugar levels due to inadequate insulin release, resulting in hyperglycemia (Galicia-Garcia et al., 2020). Persistent high blood sugar levels, known as chronic hyperglycemia, have a significant role in the development of both small blood vessel and large blood vessel complications. These consequences include damage to the retina (retinopathy), kidneys (nephropathy), nerves (neuropathy), as well as increased risk of cardiovascular disease and stroke. These complications are substantial contributors to illness and death in people with diabetes.

2. The Performed Role of a Nurse in Management of Diabetes

The nurse's role in diabetes care is complex and vital, since they provide important support to patients with diabetes in properly managing their illness and achieving optimal health outcomes. Nurses frequently play a leading role in the provision of diabetes care, offering a wide array of services that include education, monitoring, support, and care coordination.

Primarily, nurses have a crucial role in providing education to persons with diabetes regarding their illness, available treatment options, and strategies for self-management. They offer extensive information about diabetes, encompassing its causes, physiological processes, consequences, and important lifestyle adjustments for managing the disease (Awang Ahmad et al., 2020). Nurses enable patients to make well-informed choices regarding their health by instructing them on how to monitor their blood glucose levels, administer medications, regulate insulin dosages, and interpret indicators and symptoms of low and high blood sugar levels.

Nurses assist individuals with diabetes in the development and implementation of individualized self-management plans that are customized to their specific requirements, preferences, and objectives, in addition to providing education. In collaboration with patients, they establish attainable objectives pertaining to weight management, glycemic control, dietary adjustments, and physical activity. Nurses offer continuous encouragement, support, and direction to assist patients in adhering to their treatment plans, surmounting obstacles to self-care, and navigating the complexities of diabetes-related life circumstances (McCue, 2021).

Nurses also have a crucial responsibility in overseeing and evaluating the health condition of individuals with diabetes, doing routine evaluations of blood glucose levels, blood pressure, weight, and other pertinent clinical indicators (Hanley et al., 2015). They utilize their clinical discernment and proficiency to detect indications of problems, adverse effects of medications, and alterations in health condition that may necessitate action or referral to other healthcare practitioners. Nurses also promote preventive care interventions, such as vaccinations, screenings, and health promotion activities, to mitigate the likelihood of problems associated with diabetes and enhance overall health outcomes.

In addition, nurses act as advocates and intermediaries for patients with diabetes in the healthcare system, facilitating the coordination of care across various locations and specialties. They engage in collaboration with physicians, dietitians, pharmacists, social workers, and other healthcare team members to formulate comprehensive care plans, track progress, and assure the uninterrupted provision of care. Nurses champion the needs and preferences of individuals with diabetes, enhance availability of resources and support services, and foster communication and collaboration among healthcare providers to maximize patient outcomes.

3. The Barriers to the Implementation of Nurse-led Interventions in Diabetes Management

Various obstacles impede the proper execution of nurse-led interventions in diabetes treatment, hence restricting their efficacy and acceptance among patients and healthcare systems. A major obstacle is the limited availability of nursing personnel and resources, which might limit the ability of healthcare institutions to provide comprehensive diabetes care. Nurses may be unable to allocate adequate time and attention to delivering education, counselling, and support to patients with diabetes due to staffing constraints, elevated nurse-to-patient ratios, and conflicting priorities (Nikitara et al., 2019). Insufficient financing and budget limitations may restrict the availability of resources needed for training, equipment, and infrastructure to support nurse-led interventions in diabetes management.

Moreover, the presence of organisational obstacles within healthcare systems can hinder the incorporation of nurse-led interventions into the regular provision of diabetes care. The presence of hierarchical structures, bureaucratic processes, and rigid workflow systems might impede interdisciplinary collaboration and communication among healthcare practitioners, hence diminishing the efficacy of nurse-led interventions (Hamdan, 2017). Isolated care delivery models and fragmented healthcare systems can lead to disconnected care experiences for patients with diabetes, with minimal coordination and consistency of care across various venues and specializations (YAÑEZ, 2016). In addition, the reluctance to embrace change and the tendency to maintain the status quo within healthcare organisations may impede the implementation of innovative strategies for diabetes management, such as nurse-led interventions, despite the presence of compelling evidence supporting their efficacy.

Obstacles relating to patients can provide difficulties in carrying out nurse-led interventions in diabetes management. Patients' limited health literacy, cultural views, and socioeconomic circumstances can impact their willingness to accept nurse-led interventions and their capacity to participate in self-management activities (Cengiz & Korkmaz, 2023). Individuals with limited health literacy may encounter difficulties comprehending intricate medical information, adhering to treatment plans, and navigating healthcare institutions, hence impeding the efficacy of nurse-led educational and supportive interventions. Patients' attitudes towards diabetes care and their readiness to embrace lifestyle changes indicated by nurses may be influenced by cultural beliefs and traditions connected to health and sickness. Patients may face challenges in participating in nurse-led interventions and adhering to treatment regimens due to socioeconomic considerations, including restricted access to healthcare resources, transportation hurdles, and budgetary restraints.

Furthermore, systemic barriers such as payment policies, regulatory frameworks, and limitations on the scope of practice may hinder the long-term viability and expandability of nurse-led interventions in the management of diabetes. Insufficient compensation for nursing services, especially under payment models based on fees for each service, may discourage healthcare organisations from investing in initiatives led by nurses and restrict their financial sustainability. Regulatory obstacles, such as limitations on the scope of practice and licensing requirements, might restrict the independence and authority of nurses in providing specific components of diabetes care, hence impeding their effectiveness in implementing nurse-led treatments.

4. The Strategies to Overcome the Challenges for Nurses in Diabetes Care

In order to address the difficulties encountered by nurses in providing diabetes care, many tactics can be employed to improve their efficiency and maximize patient results. An essential approach is to allocate resources towards continuous education and training programs for nurses, guaranteeing that they possess the requisite knowledge, skills, and competences to provide exceptional diabetes care (Abduzhapparova, 2019). Nurses can enhance their knowledge and skills in diabetes management, evidence-based practice guidelines, and emerging technology through continuous professional development programs, workshops, and certifications. Healthcare organisations can enhance nurses' confidence and competence in handling the complexity of diabetes by investing in nurse education, enabling them to deliver comprehensive, evidence-based care to patients with the disease.

According to (Myers, 2017), one further approach is to incorporate interdisciplinary collaboration and team-based methods into the administration of diabetes treatment. This involves promoting efficient communication, coordination, and shared decision-making among healthcare practitioners. Interdisciplinary care teams, comprising nurses, physicians, dietitians, chemists, and other professionals, can utilize complementary knowledge and resources to deliver comprehensive and holistic diabetic care. Regular team meetings, case conferences, and care coordination sessions promote collaboration and information sharing, guaranteeing that patients receive coordinated and integrated treatment across various settings and specialties. Healthcare organisations can enhance the use of nursing resources and enhance patient outcomes in diabetes management by encouraging interdisciplinary teamwork.

In addition, utilizing technology and telemedicine solutions can effectively address obstacles to accessibility and enhance the provision of diabetes treatment by nurses. Nurses can utilize telehealth platforms, mobile applications, and remote monitoring equipment to offer virtual consultations, do telephonic assessments, and remotely track patients' blood glucose levels. This enables timely interventions and proactive management of diabetes (Rutledge & Gustin, 2021). Telehealth provides avenues for patient education, self-management assistance, and lifestyle guidance, enabling patients to actively participate in the control of their diabetes from the convenience of their residences. Healthcare organisations can increase access to diabetes care, enhance patient involvement, and improve the efficiency of nurse interventions by adopting technology and telehealth solutions.

In addition, advocating for patient-centered care and shared decision-making helps address obstacles in diabetes care by encouraging patients to actively engage in their treatment choices and self-management practices. Nurses can actively involve patients by utilizing motivational interviewing techniques, establishing goals, and engaging in collaborative goal planning. They can customize interventions based on the unique requirements, preferences, and circumstances of each individual. Nurses can improve patient satisfaction, adherence to treatment regimens, and health outcomes by including patients in the decision-making process and valuing their autonomy and preferences. Adopting a patient-centered approach in healthcare promotes the development of trust and a strong relationship between patients and nurses. This, in turn, enhances communication, encourages active involvement of patients, and ultimately results in improved health outcomes in the management of diabetes

Previous Studies

According to (Alghamdi et al., 2023) comprehensive and patient-centered approaches are necessary to obtain best outcomes when dealing with chronic diseases, which are a major worldwide health concern. Individuals, neighborhoods, and healthcare systems are all hit hard by the effects of long-term health conditions. One major obstacle is the high incidence of chronic disorders. As educators, nurses are critical in educating patients about chronic diseases, treatment options, and self-management techniques. Collaboration with patients to develop unique and long-term lifestyle plans is an integral part of their holistic approach, which goes beyond clinical treatment. Research in this area is driven by the realization that nurses play a crucial role in providing comprehensive treatment, education, and emotional support to people dealing with chronic health issues. To better understand the outcomes linked to nurse-led interventions in chronic disease management, they performed a comprehensive literature analysis using databases like PubMed, Web of Science, and Cochrane. They also looked for any gaps in our knowledge. Improving clinical metrics, quality of life, patient happiness, and cost-effectiveness are the primary goals of the project. Nurse-led initiatives are also expected to be examined. Nurses play a crucial role in improving patients' health behaviors and overall wellness through individualized education, medication management, lifestyle adjustments, and care coordination. The importance of nurses as champions for health equity, reducing healthcare inequalities through community outreach and culturally sensitive interventions, is highlighted in the study. Additionally, by reducing healthcare consumption and minimizing problems, nurse-led programs show cost-effectiveness. Notably, there is evidence that nurses also play an advocacy role for health equity by reducing gaps through community participation and culturally competent interventions.

To the study of (Al Lenjawi et al., 2017) compared the efficacy of routine outpatient care with a structured nurse-led diabetes education program based on the theories of patient empowerment, change in locus of control, and health belief model in improving metabolic and glycemic parameters among South Asians with type II diabetes. Adults from South Asian countries residing in Qatar who were diagnosed with type II diabetes were the subjects of this randomized, parallel-group study. Group-based diabetes education guided by nurses ($n = 230$ subjects) or usual care ($n = 230$ subjects) was the random assignment of 460 subjects. Metabolic markers such as HbA1c, lipid profile, albumin/creatinine ratio, blood pressure, and body mass index improved, which was the principal outcome. Participants in the intervention group were encouraged to attend four weekly 2-hour sessions of education on self-efficacy improvement. They measured outcomes both at the beginning and again after a year. All of the clinical outcome variables were subjected to an intention-to-treat analysis using repeated measures ANOVA (analysis of variance). Following a year of participation in a nurse-led, theory-based diabetes education program, glycemic and metabolic parameters improve in South Asian patients with type II diabetes.

Methodology

A comprehensive search was performed on electronic databases, such as PubMed, Google Scholar, and Scopus, to locate pertinent papers published from January 2010 to December 2023. The search technique employed a blend of keywords and concepts pertaining to nurse-led interventions, diabetes, and disease management. In addition to the search, reference lists from relevant publications were manually screened.

Studies were eligible for inclusion if they met the following criteria: (1) original research articles reporting on nurse-led interventions in patients diagnosed with diabetes, (2) study designs including randomized controlled trials (RCTs), quasi-experimental studies, or cohort studies, (3) interventions led primarily by nurses or nurse practitioners, (4) outcomes related to disease management, including but not limited to glycemic control, medication adherence, lifestyle modifications, healthcare utilization, quality of life, and patient satisfaction, (5) publication in English language.

Discussion

Funnel (2011) found that diabetic nurse educators (DNEs) play an important role in empowering patients to take charge of their own diabetes treatment by providing them with the knowledge and confidence to set and achieve self-care objectives. Reducing risks, problem-solving, checking glucose levels, adhering to medication, exercising, and eating healthily are seven key components of effective self-care management integrating healthy coping mechanisms (Powers et al., 2015). Acceptance of diabetes by the patient is crucial for health education programs to be successful. Adherence to self-care in the management of diabetes mellitus can also be influenced by sociodemographic characteristics, such as a person's degree of education. Methods of providing care must also be thoroughly examined. People who have difficulty reading and writing may benefit from visual aids and teach-back methods (Selvaraj et al., 2016). Conversely, Awang Ahmad et al. (2020) shown that group-based consultation was less effective than one-on-one consultation. Nursing education has a significant role in helping patients manage their disease, according to multiple studies that have examined the effects of nursing care (Boström et al., 2012; Wexler et al., 2012). New research supports the idea that patient outcomes, such as better glycaemic control, can be enhanced by nurse-led education (Raballo et al., 2012).

The nursing staff plays a crucial role in the treatment, control, and prevention of diabetes by promoting dietary and lifestyle changes (Halfyard et al, 2010). The risk factors linked to diabetes are extensively studied and include sedentary lifestyle, unhealthy eating habits, hypertension, elevated cholesterol levels, smoking, and excessive alcohol intake. Murphy et al (2017) suggest that healthcare providers can facilitate the adoption of lifestyle and nutritional modifications, which frequently result in decreased rates of type 2 diabetes occurrence.

Nurses play an important role in improving diabetes management, according to (Tshiananga et al., 2012). The focus of these research is on the beneficial contributions of nurses to the management of chronic diseases, rather than on nurse prescribers. Nurse case management strategies were found to have a clinically meaningful effect on glycaemic control in 2010, according to a meta-analysis that looked at the effects on HbA1c levels of blood glucose. Another study found that CVD risk variables, such as high blood pressure in diabetics, were reduced when nurse-led interventions were implemented using standardized algorithms for care. When it came to lowering HbA1c levels, Martinez-Gonzalez et al. (2014) found no significant difference between nurse-led and physician-led care.

As a result of their physiological effects, blood pressure, weight, BMI, lipids, fasting blood glucose, and haemoglobin A1c are frequently measured in nurse intervention studies. After a nurse created and implemented educational and support programs, patients' body mass index (BMI), lipid profiles, fasting blood glucose levels, and haemoglobin A1c levels significantly improved. Significant reductions in low-density lipoprotein and haemoglobin A1c levels were noted in the experimental group after a telemedicine intervention involving educational sessions led by nurses. Nonetheless, when it came to body mass index and blood pressure, no disparities were noted (Davis et al., 2010).

Patients are much more likely to be satisfied when they work with Diabetes Specialist Nurses (DSNs). By increasing consultation time and establishing contacts between patients and nurses, Courtenay et al. (2015) found that individuals with diabetes mellitus (PWD) reported higher levels of satisfaction when consulted by prescribing nurses. This finding was based on a study including 214 patients in the UK. Approximately 92% of patients also felt that the care management plan run by DSNs was somewhat helpful in controlling their disease, according to the survey. Another study found that newly diagnosed patients with type 2 diabetes benefited clinically from a care program managed by DSNs, and that patients were more motivated and satisfied as a result.

Recognising the obstacles that prevent nurses from taking on more responsibilities is crucial in any healthcare system. In Kyrgyzstan, a low- and middle-income nation (LMIC), for instance, the only systemic or legal obstacle is that nurses cannot dispense medications. Another constraint of nurses' roles is how the general public and even doctors view their work in caring for non-communicable diseases like diabetes.

A Swiss referendum in 2021 highlighted the value of nurses and the country's responsibility to recruit enough of them, highlighting the significance of nursing in the country. Many governance structures fail to adequately acknowledge nurses' efforts, despite those contributions being substantial. To fill the void in nursing leadership in Switzerland, a cantonal nurse is appointed to represent the profession's distinct viewpoints to legislators and other stakeholders. One effective strategy to acknowledge the significance of nurses' roles is to change the services they offer and increase payment for services supplied by nurses.

Conclusion

The results indicate that interventions led by nurses, which typically involve education, support, and individualized care, have a beneficial effect on many aspects of disease management in individuals with diabetes. These approaches demonstrate potential in improved glycemic control, improving medication adherence, encouraging healthy lifestyle behaviors, and decreasing healthcare utilization.

Nurse-led interventions are crucial in the management of diabetes as they offer education, support, and individualized care to patients. These therapies have demonstrated efficacy in enhancing glycemic control, improving self-management abilities, and mitigating the risk of diabetes-related complications. Nevertheless, the effective execution of nurse-led diabetes care models necessitates the resolution of numerous obstacles and the establishment of collaboration across healthcare teams. Healthcare systems can enhance diabetes management techniques and enhance outcomes for persons with this chronic condition by utilizing the knowledge of nurses and implementing a patient-centered approach.

Nurse-led interventions demonstrate potential as an efficacious strategy for enhancing disease management in people afflicted with diabetes. These treatments consist of several educational, behavioural, and therapeutic elements that are customized to meet the specific needs of patients, with the goal of enabling them to effectively self-manage their disease. Although initial results are promising, additional investigation is necessary to clarify the most efficient elements of nurse-led interventions, establish their lasting influence on patient outcomes, and examine their potential for expansion and long-term viability in real-world healthcare environments. Nurse-led interventions, by utilizing the knowledge and distinct position of nurses in diabetes care, have the capacity to augment the standard of care, diminish healthcare expenses, and eventually boost health outcomes for individuals with diabetes.

Recommendations

- Promote cooperation among healthcare professionals, such as nurses, physicians, dietitians, pharmacists, and social workers, to utilize their complementary knowledge and resources in the delivery of diabetes care.
- Enable patients with diabetes to actively participate in the management of their condition by offering education, training in essential skills, and support to improve their self-management capabilities.
- Utilize technology, such as mobile health apps, wearable devices, and telehealth platforms, to improve the provision and availability of nurse-led interventions in diabetes management.
- Offer continuous education, training, and professional growth prospects for nurses and other healthcare professionals engaged in the delivery of diabetes care.
- Incorporate performance evaluation metrics and quality improvement initiatives to oversee the efficacy, efficiency, and results of nurse-led interventions in the delivery of diabetes care.

By adopting these recommendations, healthcare organizations and stakeholders can maximize the incorporation of nurse-led interventions into diabetes care delivery models, enhance patient outcomes, and improve the quality of care for individuals with diabetes.

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