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NURSING CONTRIBUTIONS TO EARLY DETECTION OF DIABETIC COMPLICATIONS IN GENERAL WARDS

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Abstract
This study explores the crucial nursing contributions to the early detection of diabetic complications within general wards, emphasizing the proactive role of nurses in optimizing patient outcomes. Diabetes poses a significant global health challenge, with increasing prevalence, leading to a higher likelihood of associated complications. Despite the pivotal role of nurses in general ward settings, there remains a need for a comprehensive understanding of their specific contributions to early detection. Commencing on February 5th, 2023, the research initiative involved a meticulous examination of existing scholarly literature. Utilizing databases such as PubMed, Web of Science, and Cochrane, a thorough literature review was conducted, incorporating diverse combinations of medical terminology. Manual searches on Google Scholar complemented the electronic search strategy, ensuring a comprehensive identification of relevant research terms. The primary focus of the literature review was on identifying the role of nurses within general wards in the early diagnosis of diabetic complications. Preliminary findings underscore the critical contributions of nurses in the early detection process. Routine monitoring and assessments conducted by nurses play a central role in identifying subtle changes indicative of complications. Patient education emerged as a pivotal aspect, empowering individuals to recognize early symptoms and actively participate in their care. Furthermore, collaboration with the healthcare team enhances the comprehensive approach, ensuring timely interventions and adjustments to treatment plans.

Keywords: Diabetes, nurses, early detection, general ward, contributions

Introduction

Diabetes is a chronic condition that on poor management can lead to a range of complications affecting various organs and systems within the body. These complications significantly impact the overall health and quality of life of individuals with diabetes (1). One of the common diabetic complications is neuropathy, a prevalent complication that arises due to nerve damage caused by prolonged high blood sugar levels (2). The impact of neuropathy extends beyond discomfort, as it can lead to impaired mobility, increased risk of falls, and even ulcerations due to decreased sensation in the affected areas (3). Another complication, retinopathy, affects the eyes and is a leading cause of

blindness in diabetic individuals. (4). Regular eye examinations are crucial for early detection and intervention to prevent or mitigate the impact of diabetic retinopathy. Kidney damage caused due to high levels of blood sugar is known as diabetic nephropathy. The impact includes the need for dialysis or kidney transplantation, affecting the individual's daily life and overall health (5). Cardiovascular disease is another major concern for individuals with diabetes, as they have a higher risk of developing heart-related complications (6). Cardiovascular complications are also a leading cause of mortality among diabetic individuals, emphasizing the importance of strict blood sugar control and lifestyle modifications. Lastly, foot complications are also observed in patients with uncontrolled diabetes due to impaired circulation and nerve damage. Left untreated, these complications can lead to severe infections, gangrene, and, in extreme cases, amputation (7).

According to the international diabetes federation, approximately 415 million individuals were diagnosed with diabetes in 2015. It was also predicted that these numbers will surpass 640 million by the year 2040 (8). It is also estimated that around half of the population living with diabetes is unaware of their condition, making them more susceptible to the development of complications associated with the disease (9). Moreover, evidence also suggests that microvascular complications are more prevalent than macrovascular diabetic complications, especially in low-middle-income countries with fragile health systems (10).

The early detection of diabetic complications holds paramount significance in the comprehensive management and improvement of outcomes for individuals with diabetes. Early detection allows for timely interventions, thereby mitigating the progression of complications and enhancing overall health (1). One of the primary reasons early detection is crucial is the potential to prevent or delay the onset of complications. Regular monitoring and assessment enable healthcare professionals to identify subtle changes in a patient's condition, facilitating prompt intervention. Early detection is also particularly vital in preventing and managing microvascular complications, such as diabetic retinopathy, neuropathy, and nephropathy (11, 12). Timely screening and intervention can prevent or slow the progression of these complications, preserving vision, preventing nerve damage, and maintaining kidney function. This not only improves the quality of life for individuals with diabetes but also reduces the economic burden on healthcare systems associated with the advanced stages of these complications (13).

Nurses play an indispensable and multifaceted role in the early detection of diabetic complications, positioning themselves as essential frontline caregivers and advocates for individuals with diabetes. Their responsibilities encompass a wide array of critical tasks, and their contributions are pivotal in shaping positive health outcomes for those living with diabetes (14). Continuous monitoring stands out as a cornerstone of nursing care in the context of diabetes. Nurses are vigilant in tracking vital signs, blood glucose levels, and other physiological parameters. Thorough assessments form another crucial aspect of nursing contributions. By conducting comprehensive assessments, nurses can identify early signs and symptoms of diabetic complications, allowing for timely interventions. Another important contribution by the nurses is their role in patient education. Nurses empower individuals with diabetes through education, providing insights into self-monitoring, medication management, and lifestyle modifications. Informed patients are more likely to actively engage in their care, recognize early warning signs, and adhere to preventive measures (15). According to the evidence, nurses serve as the pillars of a healthcare system, fortifying the core of preventive services. Patient education and early detection, championed by nurses, contribute significantly to curbing the rising incidence of non-communicable diseases, including diabetes. Their unique positioning as frontline healthcare providers equips nurses to influence positive patient outcomes through continuous monitoring, thorough assessments, patient education, and collaborative efforts, establishing them as indispensable advocates for individuals living with diabetes (16).

While numerous studies have highlighted the prevalence and impact of diabetic complications, there is a notable gap in the literature concerning the specific contributions of nurses in general ward settings. The study rationale for examining nursing contributions to the early detection of diabetic complications in general wards is rooted in the escalating global prevalence of diabetes and its associated complications. As individuals with diabetes often seek care in general wards, it becomes

imperative to explore and understand the specific role of nursing in the early detection of complications within this healthcare setting. Moreover, this study aims to address this gap by comprehensively reviewing the existing literature and synthesizing evidence regarding the nursing role in the early detection of diabetic complications within general wards. Investigating the nursing interventions, protocols, and practices that contribute to the early detection of diabetic complications will not only enhance our understanding of effective healthcare delivery but also inform tailored strategies for improving patient outcomes within the general ward setting. Furthermore, given the dynamic nature of healthcare practices and the evolving landscape of diabetes management, a review of the current literature will provide insights into emerging trends, challenges, and opportunities. This study's rationale is aligned with the broader goal of advancing evidence-based nursing practices, enhancing the quality of care provided to individuals with diabetes in general wards, and ultimately contributing to global efforts to mitigate the burden of diabetic complications. By reviewing and consolidating existing knowledge, this research aims to inform future interventions, protocols, and educational initiatives for nurses, fostering a patient-centered approach to diabetic care within general ward settings.

Methods

Starting from February 5th, 2023, the initiation of this research endeavor was prompted by a meticulous examination of existing scholarly literature. A comprehensive literature review was undertaken, utilizing various databases such as PubMed, Web of Science, and Cochrane. The search strategy encompassed diverse combinations of medical terminology, complemented by manual searches on Google Scholar to identify pertinent research terms. The primary emphasis of this literature review was placed on recognizing prevalent diabetic complications and their repercussions on individuals with diabetes, as well as the importance of their timely identification. Additionally, the review delved into the role of nurses and their specific contributions to the early detection of significant diabetic complications occurring in the general wards of hospitals. It is crucial to emphasize that the selected articles for inclusion in this study adhered to multiple criteria, ensuring a comprehensive and rigorous review process.

Discussion

The general ward nurses' role can be summarized in three key areas. Firstly, preventing diabetic complications relies heavily on the regular monitoring and assessment of escalating signs and symptoms resulting from poorly controlled blood sugar levels. Secondly, self-care initiatives and other preventive strategies are considered beneficial for the early identification of diabetic complications. Lastly, nurses play a crucial role in managing and promptly addressing these complications, minimizing damage, and aiding inpatient rehabilitation.

Routine monitoring and assessments

The efficacy of routine monitoring and assessments in the early detection of diabetic complications, coupled with the pivotal role of nursing interventions, represents a cornerstone in optimizing patient outcomes for individuals with diabetes. Routine monitoring, encompassing vital signs, blood glucose levels, and comprehensive assessments, serves as a proactive strategy for early detection, facilitating timely interventions and prevention of complications (14). Regular monitoring of vital signs, including blood pressure, heart rate, and respiratory rate, is integral to identifying early signs of complications. Changes in these parameters can signify underlying cardiovascular issues, prompting nurses to initiate further investigations or interventions (17). Additionally, routine blood glucose monitoring plays a central role in the early detection of glycemic fluctuations, enabling prompt adjustments to medications or lifestyle modifications to maintain optimal control (18). Additionally, comprehensive assessments, conducted by nurses, delve into various aspects of a patient's health. Evidence suggests that regular foot assessments are crucial in identifying signs of peripheral neuropathy or circulation issues. The early detection of these issues can prevent the development of foot ulcers and infections, which are common complications in individuals with diabetes (19). Nurses

also conduct eye assessments to screen for diabetic retinopathy, a leading cause of visual impairment. According to the literature, timely identification of any ocular changes allows for referrals to ophthalmologists and preventive measures to preserve vision (20).

Preventive strategies

The efficacy of preventive strategies employed by nurses in general wards, including patient education, patient advocacy, and collaboration between healthcare teams, plays a pivotal role in the early detection of diabetic complications. These proactive measures contribute significantly to empowering individuals with diabetes, fostering a patient-centered approach, and optimizing overall healthcare outcomes. Patient education stands out as a cornerstone in preventive strategies initiated by nurses. By imparting knowledge about diabetes, its complications, and the importance of self-monitoring, medication adherence, and lifestyle modifications, nurses empower patients to actively engage in their care (21). Research evidence endorses that informed patients are more likely to recognize early signs and symptoms of diabetic complications, facilitating timely intervention (22, 23). Patient advocacy is another crucial component of preventive strategies employed by nurses. Advocating for patients involves ensuring that their concerns are heard, needs are met, and healthcare decisions align with their best interests (24). Nurses act as a bridge between patients and the healthcare team, advocating for comprehensive assessments and timely interventions. According to the literature, through patient advocacy, nurses contribute to the early detection of diabetic complications by ensuring that patients receive the necessary screenings, assessments, and referrals to specialists as needed (25).

Healthcare team collaboration further enhances the efficacy of preventive strategies. Nurses collaborate with physicians, dietitians, pharmacists, and other healthcare professionals to provide comprehensive care to individuals with diabetes. The multidisciplinary approach ensures that all aspects of diabetes management, including early detection of complications, are addressed. For example, collaborating with ophthalmologists for regular eye screenings aids in the early identification of diabetic retinopathy, a complication that can lead to vision impairment if not addressed promptly. Additionally, collaborating with dietitians allows for the development of personalized nutrition plans, contributing to glycemic control and the prevention of complications (26). Furthermore, healthcare team collaboration extends to the coordination of care plans. Nurses serve as liaisons, ensuring that prescribed medications are administered, monitoring for adverse effects, and communicating any changes in the patient's condition to the healthcare team. This collaborative effort contributes to the timely adjustment of treatment plans, reducing the risk of complications associated with poor glycemic control (27). By empowering patients with knowledge, advocating for their needs, and collaborating with other healthcare professionals, nurses create a holistic and patient-centered approach to diabetes care. These preventive measures not only contribute to the early recognition of complications but also play a vital role in reducing the overall burden of diabetes-related morbidity and optimizing the quality of life for individuals with diabetes.

Disease management interventions

The efficacy of disease management interventions by nurses in general wards, specifically focusing on early symptom recognition and medication management, is paramount in the early detection of diabetic complications. Nurses, as frontline healthcare providers, play a crucial role in monitoring patients, identifying subtle changes in symptoms, and ensuring effective medication adherence, eventually contributing significantly to the prevention and early detection of diabetic complications. Early symptom recognition is a fundamental aspect of disease management interventions carried out by nurses. Through continuous patient assessment, nurses can identify signs and symptoms that may indicate the onset of diabetic complications (15). For instance, changes in blood pressure, heart rate, or unexplained weight loss can be early indicators of cardiovascular issues or uncontrolled diabetes. Nurses are trained to recognize these subtle signs and initiate further investigations or interventions promptly. Regular patient interactions enable nurses to establish a rapport, fostering open communication that facilitates patients in reporting any new or worsening symptoms, leading to early

detection (16). Medication management is another critical component of nursing interventions in disease management. Nurses are responsible for administering prescribed medications, educating patients on their proper use, and monitoring for any adverse effects. Optimal medication management is essential in preventing complications related to diabetes (28). For instance, ensuring insulin or oral hypoglycemic agents are administered as prescribed contributes to glycemic control, reducing the risk of complications such as diabetic neuropathy or retinopathy. According to the research studies, nurses also play a vital role in educating patients about the importance of medication adherence, helping them understand the significance of taking medications regularly to prevent complications (24).

Moreover, nurses are also known to collaborate with the healthcare team to ensure comprehensive medication management. They communicate any observed changes in the patient's response to medications, enabling timely adjustments to treatment plans (26). In addition to medication management, nurses contribute to early detection through continuous monitoring of laboratory values. Regular blood glucose monitoring is essential for adjusting medication dosages, preventing hypo- or hyperglycemia, and maintaining optimal glycemic control. Nurses interpret these results in the context of the patient's overall health, contributing to the early identification of deviations that may indicate the development of complications (14). Furthermore, nurses engage in patient education about the importance of self-monitoring at home, empowering individuals with diabetes to actively participate in their care. Evidence has shown the great impact of teaching patients to recognize early symptoms such as changes in vision, increased thirst, or persistent fatigue, enhancing their ability to seek timely medical attention, and contributing to the early detection and management of complications (29).

Conclusion

In conclusion, the nursing contributions to the early detection of diabetic complications in general wards are indispensable for optimizing patient outcomes and reducing the burden of diabetes-related morbidity. Through vigilant monitoring, regular assessments, and proactive interventions, nurses serve as the frontline advocates for individuals with diabetes. In the dynamic healthcare landscape, where the prevalence of diabetes continues to rise, the significance of nursing contributions cannot be overstated.

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