

Understanding Barriers to Wound Care Access and Chronic Wound Management for Veterans

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Citation: Frasier K, Baptiste C, Javaid S, Neman S, Vinagolu-Baur J (2024) Understanding Barriers to Wound Care Access and Chronic Wound Management for Veterans. Annal Cas Rep Rev: ACRR-379.

Received Date: 14 February, 2024; **Accepted Date:** 23 February, 2024; **Published Date:** 01 March, 2024

Abstract

Veterans encounter formidable barriers in accessing essential wound care and managing chronic wounds, stemming from a multifaceted interaction of systemic, geographic, and psychological factors. Geographical disparities pose a significant challenge, as specialized wound care facilities are often concentrated in urban areas, leaving veterans in remote or rural locations with limited access. Veterans are also at increased risk of experiencing hurdles such as limited access to specialized wound care facilities, fragmented healthcare coordination, and insufficient awareness of healthcare providers regarding the distinctive needs of veterans. Mental health issues prevalent in veterans, including post-traumatic stress disorder (PTSD) and depression, contribute to the complexity by impeding proactive engagement in self-care and exacerbating chronic wounds. Additionally, healthcare providers' lack of comprehensive training in veteran-specific wound care further hinders effective treatment. These multifaceted barriers underscore the need for targeted interventions that address geographic disparities, streamline healthcare transitions, enhance mental health support, and provide specialized training for healthcare professionals. This review underscores the importance of furthering interventions to enhance accessibility, improve healthcare coordination, and increase awareness amongst healthcare professionals. Addressing these barriers is essential to ensure that veterans receive timely and effective wound care, promoting overall well-being, health, and quality of life.

Introduction

Chronic skin wounds, or wounds that do not progress through the normal stages of healing in a timely manner, contribute to disability, increase healthcare costs, and reduce one's quality of life. These include pressure injuries, diabetic foot ulcers, venous leg ulcers, and forms of vasculitis. Veterans are one population that substantially deals with chronic skin wounds, either from combat injuries or comorbid chronic health conditions. One study of veterans found that the initial severity of wounds, in this case, diabetic foot ulcers, was a more significant predictor of mortality than stroke, coronary artery disease, or peripheral artery disease.

The provision of essential wound care for veterans presents a complex and challenging problem shaped by a confluence of systemic, geographic, and psychological factors. This multifaceted interaction creates challenging barriers that impede veterans' access to crucial wound care services and the effective management of chronic wounds. One of the

primary challenges arises from geographical disparities, where specialized wound care facilities tend to be concentrated in urban areas, leaving veterans in remote or rural locations with limited accessibility [1]. This spatial divide exacerbates the struggle for veterans to obtain timely and specialized care, thereby compounding the difficulties they face in addressing chronic wounds.

For example, one in four veterans lives with Type 2 diabetes, which is more than double the general population rate in the United States [2]. A cross-sectional study on diabetic foot ulcers (DFUs), a condition requiring proper and timely wound care, found that rural patients are 50% more likely to require a major amputation (above the ankle), and have 40% higher odds of inpatient death compared to their urban counterparts [3]. This highlights a critical gap in wound care between rural and urban health systems.

Moreover, veterans encounter additional hurdles such as fragmented healthcare coordination and a lack of awareness amongst healthcare providers regarding their distinctive needs [4]. The risk is further heightened by mental health issues prevalent within the veteran community, particularly post-traumatic stress disorder (PTSD) and depression. These psychological challenges contribute significantly to the complexity of the issue by hindering proactive engagement in self-care and exacerbating chronic wounds [5]. In this context, it becomes imperative to recognize the interconnected nature of these barriers and their collective impact on the overall well-being of veterans.

The complexity of addressing these challenges is further compounded by a deficiency in comprehensive training amongst healthcare providers in veteran-specific wound care. The lack of specialized knowledge in this domain inhibits the effective treatment of veterans' wounds, highlighting the pressing need for targeted interventions [6]. This review aims to underscore the importance of implementing interventions that specifically target geographic disparities, streamline healthcare transitions, enhance mental health support, and provide specialized training for healthcare professionals. By comprehensively addressing these barriers, we can pave the way for a more accessible, coordinated, and effective wound care system for veterans, ultimately promoting their overall well-being, health, and quality of life.

Discussion

Overview of Barriers to Wound Care for Veterans

The impediments to effective wound care for veterans are intricate and span systemic, geographic, and psychological realms, manifesting in various challenges that hinder access to crucial wound care services. Geographical barriers pose a significant challenge, with specialized wound care facilities predominantly concentrated in urban centers, leaving veterans in remote or rural areas underserved. For instance, a veteran residing in a remote region may face not only the logistical challenge of traveling long distances to reach a specialized facility but also encounter difficulties accessing transportation options [7]. Furthermore, geographical isolation exacerbates the scarcity of healthcare professionals with expertise in veteran-specific wound care, limiting the availability of skilled providers in these underserved areas. This geographic imbalance compounds the struggles for veterans who may already contend with mobility issues, financial constraints, or the challenges associated with living in areas lacking comprehensive healthcare infrastructure [8].

Systemic obstacles add another layer of complexity, as veterans navigate fragmented healthcare coordination and a lack of awareness amongst healthcare providers about the unique aspects of military service. An illustrative example is the lack of a standardized electronic health records system that seamlessly integrates veterans' military health history with civilian medical records. This absence of cohesion in healthcare information hampers the continuity and effectiveness of wound care, leading to delays and potential oversights in treatment [9]. Moreover, the disjointed nature of healthcare coordination may result in veterans having to repetitively recount their medical history, contributing to

frustration and impeding the establishment of a holistic and patient-centered care approach.

Psychological factors, notably prevalent mental health issues amongst veterans, introduce additional challenges to effective wound care management. Veterans grappling with post-traumatic stress disorder (PTSD) or depression may find it difficult to adhere to treatment regimens or engage proactively in self-care practices. For example, a veteran experiencing PTSD-related anxiety may be averse to seeking medical attention, further delaying wound care interventions. The intertwined dynamics of mental health and physical well-being underscore the necessity for a holistic approach that addresses both aspects to achieve comprehensive and effective wound care outcomes for veterans [10].

Furthermore, a notable challenge lies in the lack of comprehensive training for healthcare providers in veteran-specific wound care. This gap extends beyond traditional medical education and encompasses understanding the unique challenges associated with military service. For instance, a healthcare professional may not be adequately trained to recognize and address the distinctive nature of blast injuries or wounds resulting from combat experiences [11]. Bridging this knowledge gap is pivotal for optimizing the quality of care provided to veterans, necessitating targeted training programs that enhance the expertise of healthcare professionals in the intricacies of veteran-specific wound care. In essence, a nuanced understanding of the multifaceted challenges, encompassing geographical, systemic, and psychological dimensions, is crucial for devising interventions that improve accessibility, coordination, and the overall efficacy of wound care services for veterans.

Limited Access to Wound Care: Geographical Barriers in Rural vs. Urban Settings

Access to wound care is a critical aspect of healthcare, presenting distinct challenges for veterans due to geographical barriers. Veterans in both rural and urban settings grapple with differing experiences in wound care accessibility. However, common issues such as transportation hurdles and prolonged wait times for appointments impact veterans universally, hindering the timely and adequate receipt of wound care. Particularly in rural communities, these challenges are exacerbated, and rural veterans face additional barriers.

Rural Challenges

Approximately 4.7 million veterans reside in rural areas, constituting a significant portion of the veteran population [12]. This higher concentration of veterans in rural communities compared to their urban counterparts results in disproportionate challenges in receiving support and care for complex healthcare needs [13]. Consequently, rural veterans generally have lower healthcare utilization than their urban counterparts. A retrospective cohort study in the Pacific Northwest found fewer outpatient wound care visits for rural veterans (6.8 vs. 9.9) and a similar number of inpatient wound care stays (0.9 and 0.8, respectively) [14].

This low level of healthcare utilization can be a result of myriad factors, ranging from geographic barriers, transportation challenges, or workforce shortages due to a lack of wound care specialists. Rural communities often grapple with limited access to specialized wound care due to sparse population density, extended travel distances to facilities providing wound care, and limited broadband internet [15,16]. Additionally, a shortage of wound care specialists and resources in these regions exacerbates the problem, leading to prolonged wait times for appointments [17]. These barriers may contribute to rural veterans struggling to follow through with their wound care appointments.

Urban Challenges

Contrary to the assumption that urban areas universally offer better access to healthcare, disparities persist within these settings. Pockets of underserved populations face challenges related to socioeconomic differences, transportation issues, and language barriers. Sen's research highlights disparities within urban communities, particularly affecting individuals from lower-income neighborhoods, indicating that urban areas are not immune to geographical barriers in wound care access. Hence, understanding the unique challenges faced by veterans in rural and urban settings is crucial for developing targeted interventions that ensure equitable access to wound care services across diverse geographic landscapes.

Fragmentation of Healthcare

The management of chronic skin wounds is complex; patients often require routine dressing changes, debridement, pain management, specialty follow-up, and potentially home visits. Ideally, there is a centralized point of care that is familiar with each patient's unique needs to help optimize chronic wound management. Fragmented care, on the other hand, can be inefficient and harmful to patient outcomes. Fragmented care introduces risks of higher mortality, a greater number of preventable hospitalizations, increased prescription drug use, risk of adverse medical interactions, unnecessarily repeated medical testing, increased costs of healthcare, and fewer primary care encounters [18,19].

The Veteran Health Administration (VHA) is the largest integrated health system in the United States, with over 1000 healthcare facilities nationwide, including both inpatient and outpatient facilities. One electronic health record (EHR) system is used across VA facilities so that all providers have a full picture of their patients' medical history. Staff undergo specific VA training, and approximately 30% of VA employees are veterans themselves, which further invokes a sense of familiarity (VA employee). The VHA offers a wide variety of services; those that are relevant to wound care include podiatry, prosthetics, plastic surgery, vascular surgery, dermatology, and primary care. Telehealth services are also available for wound care [17].

While the scope of care provided through the VHA is significant, there are reasons why veterans may seek care outside of this integrated system. For example, patients on

average travel farther when admitted to a VA hospital compared to when they are admitted to a non-VA hospital [20]. Almost 25% of all U.S. Veterans (4.4 million) reside in rural communities, and in urgent situations, traveling to a VHA may not be an option [16]. In addition, not all VA facilities offer the same services; veterans with multiple comorbidities may require complex care across specialties and health systems. In this context, working with renowned specialists outside of the VA may be worth the risk of fragmentation [19].

Outside of the VHA, veterans may be able to seek outside care through Medicare or VA Community Care, which provides access to community providers for patients who meet specific eligibility criteria. Multiple policies, such as the Choice Act in 2014 and MISSION Act in 2018 have increased access to non-VA care. In fact, in 2021, the VA allocated nearly one-quarter of its health budget to purchasing non-VA care [21]. Seeing that the availability of non-VA care has increased, providers must be increasingly mindful to minimize the potential effects of the fragmentation of care.

Mental Health Barriers to Chronic Wound Care

In the healthcare field, the nuanced connection between mental health and wound care outcomes has gained increasing recognition. Depression emerges as a significant barrier to effective wound healing. Research indicates that individuals experiencing depression may exhibit delayed wound healing processes due to the intricate neurobiological connections between depression and immune system dysregulation [22,23]. Additionally, depressive symptoms often lead to poor self-care practices hindering adherence to wound care regimens and exacerbating the challenges faced by individuals dealing with chronic wounds. Examples include a nutritionally deficient diet, lack of regular physical activity, and the overuse of controlled and/or illegal substances [22,24].

In veterans who served in the conflicts in Iraq and Afghanistan, the prevalence of depression was 17.4%, surpassing the general population rate of 10.2% [25]. Furthermore, female veterans faced a substantially higher rate of depression, reaching 87.9% more than their male counterparts [26]. Military service itself is associated with a 33% elevated risk of suicide compared to the general population, and this risk further escalates to 77% if the veteran has been diagnosed with a mental health disorder [25].

Given these mental health challenges, the national no-show rate for mental health appointments at the VA was 17.7% between October 2018 and September 2019 [27]. Failing to address mental health concerns can impact wound care healing time. Collaborative findings from both experimental and clinical models of wound healing suggest that psychological stress, encompassing conditions such as depression or anxiety, leads to significant delays in the wound healing process [22]. Moreover, negative emotions arising from having a wound can further impede the healing time of the wound [28]. It is crucial to note that individuals with heightened anxiety levels may also encounter difficulties adhering to prescribed wound care regimens,

significantly affecting their ability to cope with the demands of managing chronic wounds [22]. Therefore, addressing mental health can encourage proper wound care management and possibly lead to better wound health outcomes.

Deficient Provider Awareness for Veteran Needs

Insufficient awareness amongst healthcare providers regarding the unique needs of veterans poses a significant challenge, predominantly stemming from the absence of specialized training in veteran-specific healthcare. Studies have systematically delineated knowledge gaps in healthcare providers, extending beyond wound care to various healthcare domains. These gaps, notably prominent during the COVID-19 pandemic, impede providers' ability to deliver precise and effective interventions for veterans [29,30].

It is crucial to acknowledge that veterans, particularly those who have endured spinal cord injuries, constitute one of the groups at the highest risk for chronic wounds. When attending to veterans, healthcare professionals need to consider not just the physical injuries incurred during their time in service but also the existing emotional traumas, such as PTSD, acute stress disorder, and depression [24]. However, primary care providers may not be recognizing this association, as an electronic survey involving 102 Primary Care Providers (PCPs) revealed infrequent inquiries about patients' military history, despite providers recognizing its significance for patient care [30]. This failure to inquire can significantly hinder a provider's understanding of a veteran patient's needs, impacting wound healing and adherence to treatment. Thus, interventions are needed in this space to better address veteran needs and improve wound care outcomes.

Areas for Future Interventions, Education, and Research

Future directions in chronic wound management for veterans must focus on centralized healthcare, increased accessibility, and a holistic approach to patient care. Based on trends in VA budgetary spending, non-VA physicians may be increasingly providing care for veterans. Non-VA physicians may benefit from a veteran education curriculum to provide a better understanding of this population and sensitively guide patient interactions; an idea for a military medicine subspecialty has also been proposed [31]. While there is a deficit in providers' knowledge of military medicine, creating a subspecialty can suggest that developing a strong foundation in veteran healthcare is the exception rather than the rule.

One potential method to improve patient outcomes is to integrate mental health services with chronic wound management. For example, follow-up appointments can include a brief mental health check-in or a list of potential veteran resources, such as psychiatric services or support groups. Taking a holistic approach to wound care may help improve appointment adherence. Future research can focus on characterizing veterans' subjective experience with chronic wound management to further identify barriers to care.

For those experiencing geographic barriers to care, expanding telehealth and home health services are promising options. The COVID-19 pandemic highlighted the potential that telehealth has in alleviating the geographic barriers that rural patients face in accessing healthcare. An up-and-coming opportunity to improve wound care in rural patient populations includes the adoption of telehealth in streamlining the process of receiving wound care. The Veterans Health Administration recently rolled out TeleWound Practice (TWP), a coordinated telehealth effort that has shown promise in increasing access to wound care by allowing for asynchronous interaction with wound care specialists who review photos of wounds before in-person appointments are made. TWP also promotes synchronous tele-visits with wound care specialists who may be able to assess the wound severity and healing progress between appointments. This decreases travel burden and transportation costs while enabling timely care [17].

Lastly, it is important to discuss the role of the primary care provider as the nexus for integrated patient care. In one study examining veterans using VA services, improving continuity with a VA PCP was associated with a reduction in hospitalizations and ED visits [32]. In instances when patients are subject to fragmented care, VA primary care providers can help ensure they are not slipping through the cracks by serving as a consistent point of contact.

Upon an examination of literature, research shows that within veteran patient cohorts, wounds can be even more predictive of mortality than coronary artery disease, peripheral arterial disease, or stroke. As a result, interventions are imperative in improving health outcomes [33]. Forging a path towards enhanced chronic wound management for veterans necessitates a concerted effort to centralize healthcare, improve accessibility through telehealth solutions, and embrace a holistic approach to patient care, all underscored by the crucial integration of mental health services—an imperative step toward ensuring the well-being and longevity of those who have served.

Conclusion

The multifaceted barriers to wound care access and chronic wound management for veterans demand urgent and assertive interventions that address systemic, geographic, and psychological concerns within this population. The challenges posed by geographical disparities, whether in rural or urban settings, are not merely inconveniences but critical impediments to veterans' access to specialized care. The systemic obstacles of fragmented healthcare coordination and a lack of provider awareness cannot be ignored as they are active contributors to treatment delays and hinder a comprehensive approach to veteran healthcare. The detrimental impact of mental health issues, particularly depression, on wound care outcomes emphasizes the imperative need to integrate mental health support seamlessly into wound care protocols. New strategies addressing wound care in veterans must go beyond merely addressing disparities in access; they must actively strive to eliminate these disparities. This involves the development of comprehensive programs that bridge

the urban-rural gap, ensure timely access to specialized care, and bolster healthcare coordination. Future research should delve into the intricacies of geographical barriers, exploring innovative solutions that leverage technology, community engagement, and policy advocacy to ensure equitable access for all veterans. Systemic challenges demand empirical investigations into healthcare coordination models that can be tailored to the unique needs of veterans, fostering seamless transitions and continuity of care. Addressing the distinctive challenges of veteran-specific wound care requires transforming rhetoric into tangible improvements in the accessibility, coordination, and awareness of wound care for our veterans.

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