

Maximizing Wound Care Treatment Post Discharge in Patients Affected by Homelessness

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Abstract:

Patients who are homeless regularly must overcome tremendous barriers to obtain health care post discharge from hospitalizations, surgeries, emergency departments, and urgent care clinics. Lack of health insurance and financial hardship are commonly experienced by many people in the United States living below the poverty line. Often, basic needs such as food and shelter outweigh obtaining proper healthcare. An aspect of healthcare that frequently burdens individuals who are homeless is proper wound care. With many homeless individuals experiencing multiple health comorbidities leading to chronic wounds (diabetic ulcers, chronic ulcers, venous insufficiency, lack of properly fitting shoes, needle injuries, injuries from the environment, mental illness, post-surgical incisions), it appears imperative that we must do a better job at implementing effective wound care strategies when working with this specific population. This review prompts a current analysis of what the standard for wound care is in our homeless population in addition to what means this population has to obtain proper materials and education for wound healing. We propose a call to action for emergency departments, free clinics, and shelters to offer additional education and supplies for chronic wounds seen in patients experiencing homelessness.

Keywords: heart disease; homelessness; surgeries

Introduction

Homelessness is often multifactorial and involves much more than simply the lack of shelter or a place to live. Many homeless individuals suffer from poor health and premature death due to lack of accessible healthcare. Homeless individuals often experience more social exclusion and health inequities than other vulnerable groups [1]. A dearth of appropriate healthcare resources may be attributed to lack of transportation, limited free clinics, financial constraints, mental illness, and distrust in the healthcare system, amongst other reasons.

Poor health outcomes and homelessness are closely related [2,3]. Unsheltered individuals often are without warmth, protection, clean water, bathing products, clothing, and nutrition. Furthermore, homelessness is associated with hepatitis C, heart disease, epilepsy, HIV infection, and tuberculosis with death rates eight times higher than in the general population [4]. The life expectancy of homeless persons is 30 years less than those with homes [5]. Furthermore, homeless individuals have a much higher risk of adverse health outcomes, acute and chronic wounds, and low adherence or lack of resources to obtaining pharmacological therapies and treatments.

Individuals coping with homelessness are facing a multidimensional and complex problem that has a direct impact on overall health status, healthcare accessibility, and resource shortages within the

community. There are few quantitative and qualitative studies associated with lack of appropriate resources to healthcare in the homeless population, especially in regard to proper wound care.

Reducing homelessness and inequality in addition to minimizing poverty and providing basic health needs to individuals regardless of status or wealth remains the ideal goal in creating wound care initiatives and public health programs nationwide. Self-wound care initiatives are crucial for individuals living without a home, and health policy makers, legislators, and public health officials' actions and initiatives are indispensable in any attempts to improve access to accessible wound care and related resources for people experiencing homelessness.

Discussion

Homelessness continues to be a significant social problem in the United States. The leading causes of homelessness are substance abuse, domestic violence, and mental illness [6]. In the United States, homelessness has become increasingly prevalent during the past decade. From 2007 to 2019, over half a million homeless people were living on the streets every night [7]. Worldwide, an estimated 100 million people are homeless [8]. Chronic homelessness persists as an issue for many individuals. Preventing and reducing homelessness requires public health policies and community

support, such as free health clinics, wound care clinics, rehabilitation facilities, job placement assistance, and homeless camps to help individuals who are homeless maintain health and rebuild their lives. Individuals living without homes or shelter are at risk of hunger, poor health, and lack of access to clean water, sanitation, and education. The deprivation of basic human needs continues to contribute to inequalities and a deficit in social sustainability. Policy makers, congressional leaders, volunteer organizations, and the general public should be called to action in regard to aiding with homeless individuals through coordinated efforts and sustainable plans to rehabilitate this growing population.

Specifically, an area of healthcare that remains problematic with individuals experiencing homelessness is wound care. Common wound etiologies in the homeless population include trauma, injection drug use, chronic disease, and infestations [9,10,11,12]. A deficit exists in the ability to obtain sanitary bandages, clean water, wound care supplies, and education regarding proper care of wounds. Many factors predispose homeless people to acute and chronic wounds of the dermis, epidermis, and subcutaneous tissue. Additionally, the conditions that give rise to wounds in many of these patients also impede wound healing. Proper wound care supplies are often costly and not available to many free clinics and health centers [13]. For individuals who are homeless, communal bathing, lack of facilities for toileting and washing, unsanitary shelters, inadequate nutrition, lack of safe places to sleep, lack of medications, no or little income, and absence of family and community support exacerbate the proper care of acute and chronic wounds. Furthermore, substance use, lack of education, and mental illness may affect an individual's ability to understand and follow a wound care treatment plan. Lack of sanitation, resources, clinics, educational materials, and wound care supplies create an environment where proper wound care becomes significantly difficult to achieve in the homeless population. Lack of basic hygiene access renders many unable to properly clean the wound, while an inability to access bandages and medications makes it challenging to keep the wound protected from the environment.

Unsheltered individuals may present with acute wounds, chronic wounds, or both acute and chronic wounds. Acute wounds are most commonly attributed to trauma, lacerations, stab wounds, head trauma, blunt trauma, gunshot wounds, burns, frostbite, and puncture wounds [13]. The most common types of chronic wounds in the homeless population are venous stasis ulcers, diabetic foot ulcers, and intravenous drug use puncture and injection site infections. Treatment of both acute and chronic wounds depends on assessment and work-up of the patient, the wound, and the surrounding environment. Oftentimes, treatment decisions can be limited by cost to the patient. Many new wound dressings that are thought to be more effective are too expensive to allocate to individuals who are without insurance or who lack financial resources. Newer bandages with agents containing silver or iodine would most benefit the homeless population, but they are more expensive than traditional gauze and saline [13]. The silver and iodine helps reduce infection and expedites the healing process. In addition, these newer dressings need to be changed less frequently. The newer and most efficacious types of bandages that would most benefit the homeless population are ironically too expensive for this population to afford.

When assessing a wound, the type of dressing to be used in the homeless population will largely depend on the patient's needs and what resources and supplies are available. It is important to set realistic goals when analyzing how to properly care for a wound with

the supplies available to the provider. Additionally, it is important to assess the patient's capacity for caring for the wound. We must ask these patients if they have access to clean towels, clean water, cleaning agents, proper bandages, antimicrobial medications, Vaseline, and other wound care products that may help them after their wound is properly dressed. If resources are limited to the individual, supplying the person with educational materials on how to care for their wound and supplies to last them the wound's course of healing are imperative to provide after the encounter. Homeless individuals often lack the basic tools for cleanliness and self-care, including soap, clean water, cleaning supplies, antiseptics, bandages, and adequate nutrition. When focusing on wound care in the homeless population, clinicians must not be dismayed if they do not have access to the exact wound care products they would use in clinical or hospital practice. Basic care can have a tremendous impact for many people suffering from acute and chronic wounds. Simply cleaning the wound, applying topicals, and placing simple dressings can make a drastic difference in the wound care of these patients. Basic wound care is also cost effective and can be implemented across many different settings. Treatment decisions for homeless individuals must be created based on a care plan that the patient can follow and understand. If this population is asked to provide a level of care to their own wound that they cannot understand, afford, or manage, they will not heal or improve. Wound care must be made simple in order for the individual to be able to carry out the instructions with the materials they are provided to change the dressings and keep the wound clean.

Homeless patients have a hard time accessing healthcare and end up utilizing the emergency department (ED) more than housed patients [14]. Unfortunately, the ED is often the only resource a homeless patient can access when presenting with critical health issues. Additionally, homeless patients can encounter stigma from providers, and these negative prior experiences can also result in delays in seeking care resulting in a more critical presentation. Studies have shown that homeless persons visit the ED anywhere from .72 to 5.8 times per year with drug, alcohol and injury related presentations as the most prevalent complaints [15]. They often have chronic complex problems including unsafe living conditions, limited access to support, mental illness and substance abuse which can lead to significant challenges in treatment of acute and chronic wounds [16].

When a homeless patient presents with a wound, the etiology and subsequent correct treatment is determined. Homeless patients have relatively high rates of septic arthritis, osteomyelitis, necrotizing fasciitis and drug resistant bacterial infections [17]. Furthermore, peripheral vascular disease and diabetes are prevalent in the homeless community, and this predisposes patients to recurring cellulitis and ulcers, respectively, which require chronic treatment in addition to prevention. Oftentimes, longer courses of IV antibiotics are required, and some physicians may be hesitant to place PICC lines in this population due to fear of misuse. This can lead to an earlier transition to oral antibiotics which can complicate or prolong recovery. Discharging a patient with acute cellulitis or a diabetic ulcer does not adequately address the components required for full resolution or prevention of recurrence. Patients with diabetic ulcers have a high risk of serious complications including amputation and death [18]. Additionally, comorbid untreated or undertreated conditions can prolong wound healing and allow for the wounds to become chronic. Literature describing standard of care for discharge of homeless patients regarding wound care follow up is lacking and appears to depend on where they are initially treated. Patients are often discharged, either to medical respite if they qualify or simply back to their previous living arrangements with instructions to seek

care through partner homeless clinics or emergent care if their wound fails to heal or other alarming symptoms appear. Conversely, patients may simply be discharged with a few extra dressings (if applicable) and instruction on wound care at home, something they may be unable to do themselves or in their current environment. It appears that there is not a clear standard of care for wound care follow up for homeless patients. Even if patients are referred to partner homeless health clinics or respite centers, these patients may be lost to follow up at a higher rate due to mental illness, substance abuse, lack of support and ability for transportation amongst other factors [19]. It is evident the homeless population can be medically complex and challenging to manage. A clear standard of care for wound care treatment and follow up is needed to manage these patients effectively and compassionately.

Homeless individuals have a lower life expectancy and higher prevalence of numerous diseases with an average life expectancy between 42 and 52 years¹⁹. It is estimated that the USA spends \$25 billion per year treating chronic wounds [20]. Chronic wounds are typically found in chronic disease states such as diabetes and obesity but lack of access to stable housing, proper nutrition, healthcare and other factors that impact health contribute to chronicity. Patients that are discharged back to their previous living environment often face significant hurdles during recovery.

Medical respite care has emerged as a solution to safely bridge homeless people from hospitalization back to a shelter or the street. These facilities offer medical and other care to homeless persons. However, the requirements to enter these respite facilities vary and many communities do not have respite care [21]. Currently, there are around 133 medical respite programs across 38 states and territories. Regardless of the reason for hospitalization, research has shown that around 50% of homeless patients without respite care are re-hospitalized in one week and 75% within two weeks [19]. This data shows that being homeless is associated with numerous factors that increase the likelihood of rehospitalization and that respite care is an effective mitigation tool.

In response to the complex healthcare needs of homeless patients, health care for the homeless (HCH) services were developed which became part of the federal health care system and is administered by the Health Resources and Services Administration [22]. Through this system, funding is available for clinics and individual practitioners to serve homeless patients. There is limited literature on the resources that exist for wound care and education for individuals in shelters. The HCH Clinicians Network seeks to improve upon shelter-based health care programs. Their research has shown that the care available is dependent on resources the shelter has available. For example, the McKinney Homeless Program at Southwest Community Health Center in Bridgeport, Connecticut provides comprehensive care including longitudinal care to shelters in the area [19]. This is similar to how care is provided in shelters across states with shelters partnering with local clinics or hospitals. Most of these groups carry all of their supplies with them and make do with the space and resources available at each individual shelter which ultimately limits the care that can be provided. Many of these groups also serve respite centers, allowing for continuity of care throughout an individual's wound recovery [19]. Unfortunately, shelters are imperfect places and have limitations including lack of space, communicable diseases, inability to store patients' medications, unsanitary living conditions, and mandates that residents leave during the day.

With regard to what resources are helpful to provide to individuals affected by wound care and acute or chronic wounds, little research

has been conducted to supply this population with appropriate education and resources for effective wound care. One added challenge to monitoring the success of treatments, supplies, and wound care offered to the homeless population is that follow up can be very difficult to obtain if patients are only seen once or twice in an outpatient setting. Providers have begun offering street medicine programs to increase access to health care in an attempt to limit the downstream detrimental health impacts of homelessness²³. Street medicine provides healthcare to unsheltered and homeless individuals directly where they currently reside. Walking teams and ad hoc mobile clinics provide direct clinical access and care to individuals unable to access care on their own. Unfortunately, street medicine has its own set of medical, legal, and safety risks [23]. Providers and clinicians working to increase access to wound care through street medicine and mobile clinics can work with consulting agencies and organizations for added protection in their public practice.

Free clinics, mobile clinics, and non-profit drop-off organizations can all provide tremendous utility to unsheltered individuals with acute or chronic wounds. Working with individuals on the street and in shelters forces the provider to come up with creative, innovative ways to treat the patient where they are with the resources available on site. Since healthcare professionals working streetside will not have access to the same resources, tools, and interventional therapies that are available in a hospital or office-based care, providers must make the most of the supplies and tools they have on hand to provide the most support and care for their homeless patients. Similarly, when educating patients and providing plans of care, providers need to adapt and adjust their plans to account for unsheltered patients likely not having access to clean clothing, running water, dressing changes, or nutrition. It is also imperative to make sure that the instruction and education provided to the individual is written or spoken in a way that the person can understand and repeat back. It would also be of high utility to ask the individual to care for their wound in front of the provider to utilize the teach-back method for patient understanding.

Wound cleansers that providers may avoid in hospital or office-based medicine due to potential cytotoxicity, such as chlorhexidine or bleach, may be recommended in the homeless population. The benefits of using chlorhexidine soaps or bleach solutions in this population may be attributed to infection prevention. The risk of poor or no follow-up outweigh the potential for delayed wound healing from any side effects of cytotoxicity [23]. Gauze, gauze pads, baby wipes, infant diapers, and female sanitary napkins can all be used street-side for urgent wound care. Using products that people are familiar with may increase the chances they will continue to care for the wound after it has been initially cleaned and bandaged.

Directly providing homeless individuals with wound care packages with clean wound supplies can also help bridge care gaps until the patient is able to be seen by a physician or obtain more wound care supplies. Wound hygiene should be taught and encouraged with emphasis placed on regular wound cleansing and the importance of keeping a wound moist or dry depending on the type of wound. Wound care packages that are helpful to patients in the community often include antiseptic wipes, gauze, gauze wraps, bandages of varying sizes, Vaseline, Neosporin, antimicrobial ointment, Ace bandage wraps, and alcohol swabs. Each package should be provided to individuals needing wound care supplies with an inability to seek treatment of their wounds in a clinical office setting. Proper instruction should be included along with the wound care

package in order to ensure the patient knows how to successfully clean, change, and redress their wound. If severe cases are identified in street-side practice, referrals and transportation should be made to social programs or free clinics for additional care and increased level of care. Providing knowledge of available community resources, shelters, clean water supply, and how to obtain additional wound care materials is critical to providing homeless individuals with the information they need in order to access additional supplies and care when further treatment and/or care is required.

Healthcare professionals, free clinics, shelters, emergency departments, mobile clinics, clinicians, and volunteers must work together to provide adequate resources, education, instruction, and materials for homeless individuals to properly clean and care for their acute and chronic wounds. Public health policies must be implemented to ensure that unsheltered, homeless individuals receive access to basic needs that will equip them with the necessary materials for adequate wound care. State governments, policy makers, public health commissioners, public hospital systems, community agencies, and volunteers must create programs and avenues towards proper wound care in the homeless population. Allowing patients access to simple education and supplies within the community can have a significant impact on overall health, wound healing, and quality of life.

Conclusion

With a steadily rising homeless population already numbering over half a million who are without shelter, clean water, nutrition, adequate clothing, and resources for appropriate health care concerns, steps must be taken to ensure this vulnerable population has access to care for basic medical needs. Wound care remains a cause for concern in homeless individuals due to developing wounds from trauma, needle sticks, lacerations, or infestations within their community or from many comorbid diseases that also plague this specific population, such as diabetes, peripheral vascular disease, and poor nutrition. Specifically, barriers to wound care often leave individuals with acute or chronic wounds that may become life threatening. Without heavy community involvement and public health policy changes, numerous unsheltered individuals will incur increased morbidity and mortality from lack to appropriate wound care. Through creating more state- and county-wide programs that include mobile clinics, walk-up wound care sites, and outreach programs for wound care education and wound care supplies, our homeless population will gain greater health equity, access to basic health needs and supplies, education, resources for additional healthcare, and increased autonomy when it comes to their personal wound care.

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