



SOCIAL DETERMINANTS OF HEALTH

*The Social Impacts on
Wound Healing*

 Healogics®
Wound Science
Initiative



The social and environmental conditions in which people are born, grow, live, work and age account for 80 percent of health outcomes while only 20 percent are the result of care delivery. The ways that social conditions influence mortality and morbidity have long been studied by epidemiologists and public health researchers. As early as 1845, researchers were writing about the effects of social conditions on health outcomes¹, but it's only in recent years that others in the healthcare community have started taking notice. Some such organizations include the World Health Organization (WHO), The MacArthur Foundation, and The Robert Wood Johnson foundation, as well as payors and hospitals.

Chronic wound patients face a number of challenges to their health and well-being. The presence of the ulcers is an indication of broader physical systems failures. However, with education and prevention, many wounds could be prevented or treated when they are less severe resulting in improved outcomes. The association between chronic conditions such as diabetes, cardiovascular disease, and social conditions is well established. Yet, none of the previous studies have addressed chronic ulcers. Healogics Wound Science Initiative is partnering with hospitals and researchers to better understand how the social determinants of health impact the lives of wounded patients. Over the next year, we will release a series of findings based on surveys of clinicians, interviews with patients and secondary data analysis. Our goal is to ensure that all patients are able to access high quality care and heal chronic ulcers. We begin our series with an outline of what social determinants are and how they impact health.

What are social determinants?

The WHO defines the social determinants of health as the conditions in which people are born, grow, live, work and age, that shape health. These factors include characteristics such as socioeconomic status, education, neighborhood and physical environment, employment and social support networks. Researchers examine how social and physical environments interact with biology and how individuals embody the contexts in which they live and work, and why social variables are highly correlated with health outcomes such as cardiovascular disease, diabetes, and life expectancy.²

Social determinants affect health through multiple pathways. Socioeconomic status (SES), a measure of income, education and occupation may be the most well-known social indicator of health outcomes.

Income

- Increased income levels are associated with having access to health insurance, gym memberships, healthier food, adequate housing and decreased psychological stress.
- Behavioral health studies have found individuals in lower-SES groups are three to four times more likely to report negative health habits compared with their higher SES peers.³
- Prevalence of diabetes decreases as income increases, even after controlling for demographic status, housing, BMI and physical activity.⁴



Education

- Higher rates of education are related to better physical functioning, and lower levels of morbidity, impairment, and disability. High levels of education lead to full-time employment, high earnings, high household income, and low economic hardship.⁵
- A study of adults with diabetes found diabetic patients with the lowest education levels were more likely to have diabetic retinopathy, heart disease, and higher HbA1c levels. They were also more likely to be recorded as non-compliant by health professionals and had lower rates of hospital attendance.⁶
- Having a college degree rather than only a high school degree is equivalent to being eight years younger. Mortality risk doubles with every seven to eight years of age, implying that Americans with college degrees have about half the mortality risk of those with only high school degrees.⁷

Occupation

- Occupations with physically dangerous requirements and environmentally toxic environments bestow negative mental health outcomes due to stress or lack of autonomy.
- Work-related benefits including medical insurance, paid leave, workplace wellness programs, or child care services work to protect health.⁸
- Shift work and irregular working hours are associated with behavioral and psychological stress, and linked to increased cortisol and inflammation, diabetes, increased blood pressure and hypertension.⁹

Neighborhoods/Communities

The places we live and communities we belong to have a powerful impact on our health and well-being. Studies find that there is geographic variation in health behaviors, health outcomes, healthcare access and healthcare spending that is not explained by individual characteristics alone.

- The influence of neighborhood can be direct, through walkability or violent crime, or indirect, through social position or discrimination.
- Residents of disadvantaged neighborhoods report high levels of psychological distress¹⁰, poor cognitive functioning and faster rates of cognitive decline.¹¹
- Individuals in low income environments (annual household income <25,000) experience increased risk factors for cardiovascular disease, including elevated BMI, hypertension and sedentarism.¹²
- Low neighborhood economic status has been associated with an increased risk of mortality from cancer and cardiovascular disease, and overall mortality. Residing in neighborhoods with the lowest economic status (lowest 20 or 25th percentile) corresponded with a 17–26 percent increased risk of overall mortality after controlling for individual SES and disease risk factors.¹³

Psychosocial Factors

“Psychosocial” factors such as stress, hostility, depression, and hopelessness are important causes of health inequalities. Psychosocial factors can refer to any exposure that effects physical health through a psychological mechanism.

- Stress increases depression and anxiety, and impacts physical health through neuroendocrine, inflammatory, immune and vascular mechanisms.¹⁴
- Increased stress is associated with negative health behaviors including engaging in alcohol and tobacco use, decreased physical activity and trouble sleeping.¹⁵
- Psychosocial factors impact diabetes and cardiovascular risk by influencing lifestyle risk factors for diabetes such as adiposity and physical activity, affecting the development of diabetes directly through mechanisms such as glucose dysregulation and inflammation, and shaping the processes through which diabetes stimulates cardiovascular complications.
- Stress, anger and depressed mood can act as acute triggers of major cardiac events. Stress is also implicated in the prognosis of cardiovascular disease and in the development of stress cardiomyopathy.¹⁶
- Studies find chronic stressors and psychosocial factors predict future coronary heart disease in initially healthy populations independently of standard risk factors.¹⁷

Social Relationships/Family/Caregiving

Social relationships affect mental health, physical health and health behaviors. Having adequate social support can work as a buffer against stress, depression and anxiety to protect mental health; but it can also trigger physiological responses (e.g., reduced blood pressure, heart rate and stress hormones) that are beneficial to health.

- Socially connected adults are healthier and live longer than their more socially isolated peers.¹⁸
- Socially isolated seniors are 3.4 times more likely to suffer from depression and are two times more likely to develop Alzheimer's disease than their more socially integrated peers.

- Adults experiencing social isolation have a 1.5 times increased risk of coronary heart disease.¹⁶
- Social network size is a significant predictor of mortality, with individuals with a small social network having a relative risk ratio for mortality of 2.0 compared to individuals with larger social support networks.¹⁹

Physician Assessment of Social and Behavioral Factors

Physicians commonly assess some health behaviors while other social factors are viewed as outside the scope of medical practice. Epidemiological studies suggest the commonly assessed health behaviors such as smoking, exercise, and eating behaviors have only a marginal impact on health. Studies show that the effects of social and behavioral risk factors such as smoking and social isolation sometimes exceed those of genetic factors and clinical indicators.^{20,21} Social factors have a substantial impact on health outcomes, and healthcare providers can more effectively influence patient health by partnering with patients to make informed and realistic medical decisions if they have details on determinants effecting their patients.²² Additionally, information on social and behavioral factors can expand health system's ability to tailor services to the needs of their population.

How Do Social Determinants Effect Wounded Patients?

In the United States, chronic wounds effect 6.5 million patients. Chronic wounds are rarely seen in healthy patients; diabetes, increased age, obesity and other factors contribute to the rising number of wounded patients. Access to professional wound care for management and prevention of wounds is imperative. Wound care experts should take an integrated approach to addressing patients' clinical and behavioral needs.

Wounded patients are an especially important population to consider when thinking about social determinants of health. The majority of Healogics patients are over 65 years old and living with a chronic wound and multiple comorbidities. Their needs extend past clinical care to social and behavioral care. Rates of emergency department visits and hospital admissions for diabetic foot ulcers, alone, exceed the rates for congestive heart failure, renal disease, depression, and most forms of cancer. Although 77 percent of diabetic ulcers heal within a year, due to biological and behavioral influences, 40 percent of patients have a recurrence within one year of healing.²³

Additionally, risk of amputation increases with:

- Smoking
- Low education status
- Low income
- Lack of commercial insurance²⁴

As the population ages, the prevalence of chronic disease has increased; the proportion of Americans, 65 and older, reporting one or more chronic diseases rose to 92.2 percent in 2008 from a previously recorded 86.9 percent in 1998.²⁵ Studies predict an increase in diabetes prevalence between 86 percent and 164 percent by 2030.²⁶

Wound care literature has primarily focused on clinical interventions for wound healing and prevention.

However, there is a need to explore the literature on chronic wounds and where it intersects with social determinants literature. This white paper focuses on social determinants that may be especially important to the wounded population given their advanced age and comorbidities, including caregiving and family relationships, psychosocial factors influencing health, and the geographic distribution of health disparities.

Healthcare Companies Take on Social Determinants

In order to succeed in a value driven market payors and providers must find ways to improve the health of their populations through creative interventions. Below are examples of companies who are taking on the challenge of social determinants.

- LexisNexis has joined the growing number of organizations focusing efforts on social determinants, releasing several white papers addressing improving patient care by studying social, economic and environmental factors influencing health.
- Humana's "Bold Goal" initiative is aimed at making the communities they serve 20 percent healthier by 2020 by addressing social determinants of health such as food insecurity, social isolation and loneliness.



RESEARCHER SPOTLIGHT



Hanna Gordon, PhD

Executive Director of Research and Informatics at Healogics Inc., Dr.

Gordon is committed to improving

patient outcomes and healthcare delivery through data-driven discovery and quantitative analysis. Her research is driven by a belief in the transformative power of data to meet the needs of an evolving health system. She has over seven years of experience in health informatics

including work in population health, health policy and private industry. She received her PhD from Florida State University.

Jennifer Brailsford, PhD

Sr. Research Analyst at Healogics Inc., Dr.

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Sociology at Florida State University in 2016, where her research focused on social inequalities in human health. Dr. Brailsford's research has

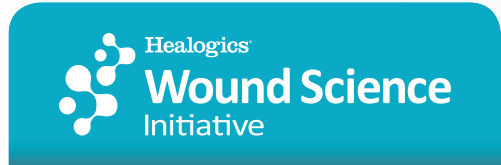
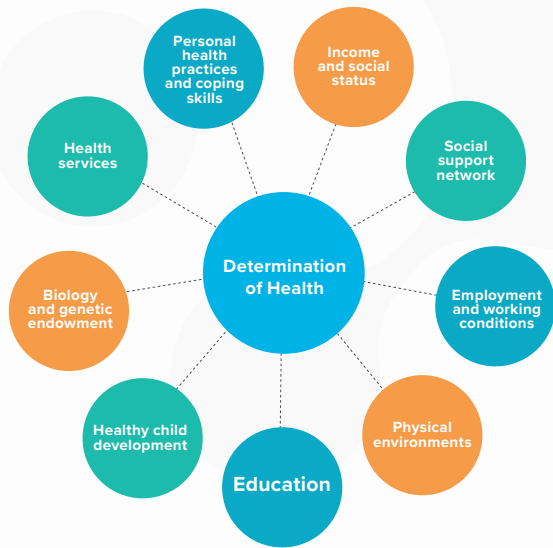
appeared in various peer-reviewed journals and book chapters including Community, Work, & Family; City & Community; and Research in the Sociology of Health Care: Underserved and Socially Disadvantaged Groups and Linkages with Health and Health Care Differentials. In her current role at Healogics, she is focused on advocating for wounded patients by leveraging real-world data to create awareness and improvements in wound care.

- CareSource, a nonprofit managed care company, developed grants to be awarded to nonprofits developing innovative approaches to addressing critical health issues affecting children, adults and families in the field of social determinants (healthy communities, domestic violence, sustainable housing, etc.).
- Samepage developed an evidence-based method to integrate behavioral health methodologies into chronic condition care management systems focused on efficiently moving patients into lower cost categories.

Additional payors and providers are following suit in an effort to address the underlying causes of health outcomes; discovering upstream solutions before they become downstream problems.

Healogics Wound Science Initiative Social Determinants Series

The findings of social determinants research highlight the importance of thinking outside of the four walls of the Wound Care Center and expanding our concept of how we heal into our communities and relationships. The purpose of this series is to identify which social factors are most impactful to the lives of the wounded patient in order to reduce barriers to care and improve outcomes. The series will focus on topics identified by patients and providers, share findings of original research and include expert commentary from leaders in the field of social determinants research.



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