WoundCareCareEssentialsPractice PrinciplesSth Edition

Sharon Baranoski Elizabeth A. Ayello



Wound Care Essentials Practice Principles

Fifth Edition

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Fifth Edition

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Dedicaton

To my colleagues—Over the course of my nursing career, I've had the privilege of working with and interacting with the best and the brightest colleagues in wound care. It has been my honor to be involved in educating, influencing, and shaping the world of wound care. It is exciting that our book will debut in 2020 the "The Year of the Nurse."

To my family—Years have been very good to us. Our families have grown, dealt with sadness, and great change BUT we've had the strength to continue and always remember "family first."

To my much loved, children and grandchildren—You've been the best part of my life. The laughter, smiles, tears, and "out of the mouth of babes" will stay with me forever. Love you, Madison, Lexi, Brek, Lanie, Brooklyn, Morgan, Alia, Tyler, and Taryn. To Jim, Deborah, Jeffrey, JR, and Carissa, thank you for giving me my most beautiful gifts, my grandchildren. May your lives all be filled with new adventures and exciting new chapters.

To my granddaughter and future nurse, Madison—May your career bring you as much joy and happiness as mine did. May you always remember, there is a person attached to every wound.

To my husband, Jim—Thank you for accepting me and supporting my drive, ambition, and career: you are and always will be my perfect partner, husband, father, and grandfather.

With Love, Sharon/Mom and Gramma

"Family is everything, a la famiglia"

This is the motto of my parents, Phyllis and Tony; my brothers, Bob and Ron and their families; and of course me and my family. Now more than ever is this true especially as more and more of my loved ones become a blessed memory. So, thank you to my families both biological, professional, friends, and patients who have shared their experiences, supported, and nurtured me through this incredible life and skin/wound care journey.

As 2020 is the international year of the nurse and the 200th anniversary of the birth of Florence Nightingale, I want to especially acknowledge all my colleagues from the professional organizations that have enriched my nursing career especially while serving in volunteer positions—National Pressure Injury Advisory Panel (NPIAP), American Professional Wound Care Association (APWCA), Wound Ostomy and Continence Society (WOCN), and the World Council of Enterostomal Therapists (WCET[®]). In the almost five decades of my nursing career, there are too many of you to mention individually; hopefully I have done a good job of expressing my gratitude and appreciation to you often.

To:

Mom, Dad, Bob, Ron, and their families for the food, laughs, and the smiles

Roberta, who mentored and taught this clinical nurse specialist the skill of writing and editing over 30 years ago

My "**Dream Team**" for having me as part of an extraordinary group of educators, authors, and researchers

Katie, the sister I never had, who taught me the real meaning of unconditional friendship

Sarah, whose joy of music taught me that when words fail, listen to the true meaning of healing

Wendy and Andrei, who give me hope for the future of health care and the promise of tomorrow. I am so proud of you

A. Scott, who brings the art through his paintings, guitar playing, and singing to balance my science. Thank you for your patience while I was busy with "the book." Now let's dance.

Love E.A.A.

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Preface

Tomorrow is the most important thing. ... It's perfect when it arrives and it puts itself in our hands. It hopes we've learned something from yesterday." John Wayne, actor

We cannot believe that it is almost 20 years ago that we began writing our book "Wound Care Essentials: Practice Principles." It was a labor of love that we undertook in response to the many requests that our professional colleagues made to us to create a succinct book that combined the essential knowledge, synthesis of the current evidence with the expertise gained from clinical experience. We continue to be grateful to the many people who have let us know the role that our book has played in their initial and continuing professional education. It is always exciting when at a professional conference someone comes up to us showing us the well-used and dog-eared copy of their book. Using educational resources rather than having them sit on a shelf is so important. Many people have a 5-year plan, and while we were not sure back then that there would be future editions, here we are introducing you to this fifth edition.

As our book is publishing in the 200th anniversary of the birth of Florence Nightingale, a global visionary in the management of wounds, we thought it would be a good idea to use one of her important strategies which is reflection. Therefore, we have revisited a chapter we wrote in the first edition entitled "Wound care: Where we were, where we are, where we're going." Ms. Nightingale also strongly believed in evidence base practice and therefore you will find that all chapters have been thoroughly updated with the most current research available to our authors at the time of their chapter writing.

"Wound care: Where we were, where we are, where we're going."

Where we were: One obvious change is terminology. Pressure ulcers are now referred to as pressure injuries and the National Pressure Ulcer Advisory Panel (NPUAP) is now the National Pressure Injury Advisory Panel (NPIAP) along with the European Pressure Ulcer Advisory Panel (EPUAP) and Pan Pacific Pressure Injury Alliance (PPPIA) have released the third edition in November 2019 of the International Pressure Injury Clinical Practice Guideline. Documentation in the chart is now computer-based. Electric medical records are required in all healthcare settings in the United States. Gone are the days (thankfully) of attempting to read orders in cursive.

Where we are: Clinically, the exact turning interval for repositioning people to offload pressure is being researched to see if the old adage of "turn every 2 hours." Is really evidence base. National guidelines now support 4-hour intervals if on an appropriate mattress. The research team of Dr. Nancy Bergstrom continues to provide us new research and insights upon which to base prevention strategies. Some support surfaces/beds and even a wearable device can alert the staff that a patient is not moving and needs to be turned and repositioned. In this edition of our book, you will note that we have included extended information about device-related pressure injuries (MRPI) and mucosal injuries, etiologies of pressure injuries that were not emphasized back then. The newly updated and validated Braden QD risk assessment scale for pediatrics now includes medical devices as one of the factors to be assessed.

Wound care education has changed with shorter more frequent presentations and more and more online and distant education offerings available. Education has become more interactive, case based, global and interprofessional focused. Since many of our devoted readers have told us how much you like the "Show what you know questions," we have increased the number of questions in some chapters as well as the number of photos in our popular Wound Gallery.

Suggested in our original book that minimally invasive surgery would reduce the number of acute incision wounds—which is now true. Robots are part of the surgical team process as new techniques are implemented; some of which have resulted in getting patients out of patients sooner (within hours of surgery). It will be interesting to see the impact (if any) on post-op patient care needs and/or complications. Truly new ways of thinking have to replace old practices.

Newer dressings continue to emerge and those with less aggressive adhesion have greatly reduced the pain of dressing removal and increased patient comfort. Who ever thought we could "peak" under a dressing to see the wound and then the dressing could be put back in place? Dressings are an important aspect of wound management, but we must also remember that other supportive measures like nutrition, antiseptics, and systemic antibiotics need to be given equal attention.

Technology has come a long way in the past 20 years. We predicted handheld scanning devices to detect stage 1 pressure injuries, and portable ultrasound equipment is now available for such assessments. A new device provides clinicians with visual pictures of the blood flow in the wound after HBOT treatments providing a reliable guide to assess the effectiveness of the treatment. Low cost infrared thermography is now used for early detection of Charcot foot and wound infection in persons with diabetic foot ulcers.

Where we're going:

Research may support tissue engineering techniques like stem cells and gene therapy for achieving wound closure. Stem cell-based skin engineering and gene recombination represents an alternative tool we hope to see in our future. Of course, our hope is that with newer prevention options, there will be less wounds that occur and thus less need for newer and advanced treatment options.

Technology will continue to evolve with ever-changing new noninvasive devices to better our assessment skills. So that clinicians can have more time to care for patients rather than spending so much of their time writing care notes, we are still hoping that technology can streamline this process and be more time efficient. We are still wishing that what we asked for in the first edition will come true—that clinicians will speak into their work badge and that then this automatically sends their documentation notes to the patient's electronic medical record. Public policy and reimbursement have and will continue to impact practice. Health economics may govern how we practice, where we practice, and with whom we practice.

What has not changed is the caring for the whole person who has a skin or wound problem. We hope that never will. As Nightingale said, "To our beginners, good courage, to our dear old workers, peace, fresh courage too, perseverance: for to persevere at the end is as difficult & needs yet better energy than to begin new work."

To our new colleagues in skin and wound care, welcome, to our old colleagues, thank you for sharing your wisdom, research, and knowledge with us. We deeply appreciate your being part of our skin and wound care journey.

Sharon Baranoski and Elizabeth A. Ayello

Contents

1 Quality of Life and Ethical Issues

Kevin Y. Woo, PhD, RN, NSWOC, WOCC(C), FAPWCA, IIWCC-Can Nicola Waters, PhD, MSc, (WHTR) RN Vera Lúcia Conceição de Gouveia Santos, PhD, BSN, MNSc, CETN (TiSOBEST Emerit)

2 Reimbursement Regulations Impacting Wound Care

Dan R. Berlowitz, MD, MPH Marcia Nusgart, RPh Karen Ravitz, JD

3 Legal Aspects of Wound Care

Steven P. Knowlton, JD, RN Diane K. Langemo, PhD, RN, FAAN

4 Skin: An Essential Organ

Sharon Baranoski, MSN, RN, CCNS-APN, CWCN, MAPWCA, FAAN Elizabeth A. Ayello, PhD, MS, BSN, RN, CWON, ETN, MAPWCA, FAAN Jeffrey M. Levine, MD, AGSF, CMD, CWSP R. Gary Sibbald, MD, <u>DSc</u> (Hons), MEd, BSc, FRCPC (Med)(Derm), FAAD, MAPWCA, JM

5 Acute and Chronic Wound Healing

Samantha Holloway, MSc, PGCE, FHEA, RNSophia Tate, MB, ChB Joyce K. Stechmiller, PhD, ACNP-BC, FAANGregory Schultz, PhD

6 Wound Assessment

Sharon Baranoski, MSN, RN, CCNS-APN, CWCN, MAPWCA, FAAN Elizabeth A. Ayello, PhD, MS, BSN, RN, CWON, ETN, MAPWCA, FAAN Jeffrey A. Niezgoda, MD, FACHM, MAPWCA, CHWS Diane K. Langemo, PhD, RN, FAAN

7 Wound Bioburden and Infection

Nancy A. Stotts, RN, EdD, FAAN Gregory Schultz, PhD

8 Wound Debridement

R. Gary Sibbald, MD, <u>DSc</u> (Hons), MEd, BSc, FRCPC (Med)(Derm), FAAD, MAPWCA, JM Jeffrey A. Niezgoda, MD, FACHM, MAPWCA, CHWS Elizabeth A. Ayello, PhD, MS, BSN, RN, CWON, ETN, MAPWCA, FAAN

9 Wound Treatment Options

Jeffrey A. Niezgoda, MD, FACHM, MAPWCA, CHWS Sharon Baranoski, MSN, RN, CCNS-APN, CWCN, MAPWCA, FAAN Elizabeth A. Ayello, PhD, MS, BSN, RN, CWON, ETN, MAPWCA, FAAN Andrea McIntosh, BSN, RN, CWON, APN Linda Montoya, BSN, RN, CWOCN, APN Marta Ostler, PT, CWS

10 Nutrition and Wound Care

Mary Ellen Posthauer, RDN, LD, FAND Becky Dorner, RDN, LD, FAND Andy S. Chu, MS, RD, CDN, CNSC, FAND

11 Pressure Redistribution: Seating, Positioning, and Support Surfaces

David M. Brienza, PhD Ann N. Tescher, APRN, CNS, PhD, CCRN, CWCN, CCNS, FCCM Evan Call, MS, CSM-NRM

12 Pain Management and Wounds

Kevin Y. Woo, PhD, RN, NSWOC, WOCC(C), FAPWCA, IIWCC-Can R. Gary Sibbald, MD, DSc (Hons), MEd, BSc, FRCPC (Med)(Derm), FAAD, MAPWCA, JM

13 Skin—Challenging Conditions

Sharon Baranoski, MSN, RN, CCNS-APN, CWCN, MAPWCA, FAAN Elizabeth A. Ayello, PhD, MS, BSN, RN, CWON, ETN, MAPWCA, FAAN Kimberly LeBlanc, PhD, MN, RN, NSWOC, WOCC(C), IIWCC Dimitri Beeckman, PhD, RN, FEANS R. Gary Sibbald, MD, <u>DSc</u> (Hons), MEd, BSc, FRCPC (Med)(Derm), FAAD, MAPWCA, JM

14 Pressure Injuries

Elizabeth A. Ayello, PhD, MS, BSN, RN, CWON, ETN, MAPWCA, FAAN Sharon Baranoski, MSN, RN, CCNS-APN, CWCN, MAPWCA, FAAN Janet E. Cuddigan, PhD, RN, CWCN, FAAN Amit Gefen, PhD, MSc, BSc

Dan R. Berlowitz, MD Hiske Smart, RN, RM, MA (Nur), PGDip (WHTR), IIWCC-Can Wendy S. Harris Jicman, BSN, BSHS, RN

15 Venous Disease and Ulcers

Mary Y. Sieggreen, MSN, RN, CNS, NP, CVN Jeffrey A. Niezgoda, MD, FACHM, MAPWCA, CHWS Hiske Smart, RN, RM, MA (Nur), PGDip (WHTR), IIWCC-Can Awais Siddique, MD

16 Lymphedema: Complete Decongestive Therapy

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18 Diabetic Foot Ulcers

Peter Andrew Crisologo, DPM Lawrence A. Lavery, DPM, MPH Paul J. Kim, DPM, MS Javier La Fontaine, DPM, MS

19 Sickle Cell Ulcers

Terry Treadwell, MD, FACS

20 Surgical Wounds and Surgical Reconstruction

Jonathan S. Black, MD, FACS, FAAP Joyce M. Black, PhD, RN, FAAN Barbara Delmore, PhD, RN, CWCN, MAPWCA, IIWCC-NYU

21 Tube, Drain, and Fistula Management

Linda J. Stricker, MSN, RN, CWOCN Laurent O. Chabal, BSc, (CBP), RN, OncPall(Cert), Dip (WH), ETN, EAWT, HES-SO

22 Atypical Wounds

Robert S. Kirsner, MD, PhD, FAAD Brian A. Cahn, MS

23 Spinal Cord Injury Population

Susan L. Garber, MA, OTR, FAOTA, FACRM

24 Adiposity and the Bariatric Patient

Susan Gallagher, PhD, MSN, MA, RN, CBN Sharon Baranoski, MSN, RN, CCNS-APN, CWCN, MAPWCA, FAAN

25 Pressure Injuries in Neonatal and Pediatric Populations

Catherine Noonan Caillouette, MS, RN, CPNP-AC/PC, CWON Sandy Quigley, MSN, RN, CPNP-PC, CWOCN

26 Palliative Skin and Wound Care

Diane K. Langemo, PhD, RN, FAAN

27 Wound Gallery

Sharon Baranoski, MSN, RN, CCNS-APN, CWCN, MAPWCA, FAAN Elizabeth A. Ayello, PhD, MS, BSN, RN, CWON, ETN, MAPWCA, FAAN

APPENDICES

Definitions of the EPUAP/NPIAP/PPPIA 2019 Clinical Guideline Strengths of Evidence and Strengths of Recommendations

Answers

Index

Quality of Life and Ethical Issues

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Objectives

After completing this chapter, you'll be able to:

- describe how wounds and those afflicted by wounds are viewed
- identify the impact of quality of life on patients with wounds and their caregivers
- describe the ethical dilemmas confronted in wound care
- identify issues and challenges faced by caregivers of patients with wounds
- describe the strategies aimed at meeting the needs of patients with wounds and their caregivers.

Introduction

Wound healing involves complex biochemical and cellular events. Chronic wounds do not follow a predictable or expected healing pathway, and they may persist for months or years.^{1,2} The exact mechanisms that contribute to poor wound healing remain elusive; an intricate interplay of systemic and local factors is likely involved.³ With an aging population and increased prevalence of chronic diseases, the majority of wounds are becoming recalcitrant to healing, placing a significant burden on the health system and individuals living with wounds and their caregivers. Although complete healing may seem to be the desirable objective for most patients and clinicians, some wounds do not have the potential to heal due to factors such as inadequate vasculature, coexisting medical conditions (terminal disease, end-stage organ failure, and other life-threatening health conditions), and medications that interfere with the healing process.⁴ Whether healing is achievable or not, holistic wound care should always include measures that promote comfort and dignity, relieve suffering, and improve quality of life (QoL).

Case Study

Margaret is an 86-year-old woman who resides in a long-term care facility. With progressive dementia over the last 5 years, she has become incontinent and experienced significant weight loss due to poor oral intake. Margaret developed a stage 4 pressure injury (PI) in the sacral area after a recent hospitalization for exacerbation of heart failure. She continues to exhibit symptoms of dyspnea and prefers to sit in a high Fowler position (head of bed above 45 degrees) in bed to help breathing. She gets agitated when she is repositioned, especially in a side-lying position. Her only daughter is distraught over her mother's agitation, and she wonders if the constant repositioning is necessary. During a family meeting, the daughter asked the following questions regarding her mother's care, "If this is not something she likes, are we doing the right thing for her? Is this quality of life?"

Quality of Life and Person-Centered Concerns

What is quality of life (QoL)? Generally, QoL is defined as a general perception of well-being by an individual. It is a subjective but dynamic construct that is influenced by emotions, beliefs and values, social contexts, and interpersonal relationships, which together account for its variability.^{5–7} Health-related quality of life (HRQoL) is a measure intended to capture to the sense of well-being that is specifically affected by health and illness focusing on symptoms and functions, levels of impairment, disabilities, and handicaps,⁸ along with other related efforts to promote health, manage disease, and prevent recurrence.⁷ HRQoL refers to a subjective appraisal of life that is predicated on the meanings, purposes, expectations, demands, and priorities a person assigned to situations, taking into account of cultural norm, sociopolitical context, and value system. The concept is shaped by person-environment transactions; it is complex, fluid, dynamic involving multiple overlapping dimensions (e.g., biological and physiological factors, symptoms, functioning, general health perceptions, and overall QoL). Each component may carry more importance at a given time based on the context of health and illness. Among people with chronic wounds, there is very little dispute that their QoL is severely diminished.^{8–12}

Quality of Life Instruments

There are a number of validated instruments to measure QoL. The generic instruments most commonly used are the Medical Outcomes Study Short Form-36 (SF-36) and adaptations,¹³ Research and Development 36-Item Form, Sickness Impact Profile,¹⁴ Quality of Life Ladder,¹⁵ Barthel Index,¹⁶ Nottingham Health Profile,¹⁷ and EuroQol EQ-5D.¹⁸ Specific instruments that are used to evaluate HRQoL for patients with diabetic foot ulcers (DFUs) include the Cardiff Wound Impact Schedule Diabetes,^{19,20} Norfolk Quality of Life in Diabetes Peripheral Neuropathy Questionnaire,²¹ Neuro-QoL,²² Manchester-Oxford Foot Questionnaire,²³ Ferrans and Powers Quality of Life Index-Wound Version (FPQLI-WV),²⁴ and DFU Scale.²⁵ For the leg ulcer patient population, the Hyland Leg and Foot Ulcer Questionnaire,²⁶ Charing Cross Venous Leg Ulcer Questionnaire,²⁷ and Sheffield Preference-Based Venous Leg Ulcer 5D²⁸ could be considered.^{29–31} Despite adequate psychometric properties, most of these instruments are designed for research purposes, and clinical utility for daily use may be questionable. HRQoL is a relative concept; personal perception of life may not reconcile with the measurement of demonstrable ability to complete certain tasks. Arguably, the preponderance of life choices may not be relevant to impoverished environments and certain cultures. In additional, lacking in most tools are items to capture and credit the impact of political economy, social justice, and equity on HRQoL. Lastly, the assumption that all subscales contribute equally to the quality of life can be misleading. It is possible that improvement in one subscale representing one aspect of HRQoL may compromise other domains of HRQoL. For instance, spending money on a new outfit may improve psychological wellbeing but put undue stress on marital relationship.

Quality of Life and Chronic Wounds

The three major chronic wound types are pressure injuries (PIs), DFUs, and venous leg ulcers. A PI is an area of skin breakdown due to prolonged exposure to pressure and shear leading to tissue ischemia and cell death. Despite intensive efforts to prevent their occurrence, PIs remain a significant problem across the continuum of healthcare services; prevalence and incidence estimates range from 0.32% to over 47.4% depending on the setting of care, geographical locations, and methods to collect data.^{32–40} PIs are linked to a number of adverse patient outcomes including prolonged hospital stay, decline in physical functioning, and death. In fact, patients with a PI have been reported to have a 3.6-fold increased risk of dying within 21 months, as compared with those without a PI.⁴¹

Gorecki and colleagues⁴¹ reviewed and summarized 31 studies (10 qualitative and 21 quantitative) that examined issues related to QoL in people with PIs. Common concerns and salient issues were synthesized and categorized into the following themes:

- 1. Physical restrictions resulting in lifestyle changes and the need for environmental adaptations
- 2. Social isolation and restricted social life
- 3. Negative emotions and psychological responses to changes in body image, self-concept, and loss of independence
- 4. PI symptoms: management of pain, odor, and wound exudate
- 5. Health deterioration caused by PI
- 6. Burden on others
- 7. Financial hardship
- 8. Wound dressings, treatment, and other interventions
- 9. Interaction with healthcare providers
- 10. Perception of the cause of PI
- 11. Need for education about PI development, treatment, and prevention

Diabetes is one of the leading chronic diseases worldwide.⁴² Persons with diabetes have a 25% lifetime risk of developing foot ulcers that precede over 80% of lower extremity amputations in this patient population.^{43–48} The 5-year mortality rates have been reported to be as high as 55% and 74% for new-onset DFUs and after amputation, respectively; the number of deaths surpasses that associated with prostate cancer, breast cancer, or Hodgkin's disease.^{48–50} Individuals with unhealed DFUs share some unique challenges. Due to problems using the foot and ankle, patients with foot ulcers suffer from poor mobility limiting their ability to participate in physical activities.^{51–53} Mobility issues may also interfere with their performance at work resulting in loss of employment and financial hardship. Increased dependence can lead to caregiver stress and unresolved family tension. High levels of anxiety, depression, and psychological maladjustment may affect patients' abilities to participate in selfmanagement and foot care.53,54

Increasing attention is placed on stigma that is experienced and internalized by individuals through interactions with other people in the workplace, healthcare facilities, and educational institutions, even in close interpersonal relationships. Stigma is a complex social construct, and it refers to negative characteristics and stereotypes that are often experienced by individuals with diabetes.³¹ Especially for people with foot ulcers, they are labeled as "noncompliant" and blamed for allowing ulcers to develop due to their lack of self-control, willpower, and competence to make healthy choices. Internalization of may lead feelings of failure. embarrassment. to stigma disempowerment, low self-efficacy, and fear of being judged and prevent people from seeking help, discussing their difficulties openly, and following treatment recommendations (such as using prescription footwear and orthotics). Yet, the impact of self-stigma on people with diabetes and their abilities to participate in self-management remains underrecognized and underexplored. It is crucial that self-stigma be addressed in this population to avoid the vicious cycle of self-stigma, demoralization, and disengagement from disease management.

It is estimated that approximately 1.5 to 3.0 per 1,000 adults in North America have active leg ulcers, and the prevalence continues to increase due to an aging population, sedentary lifestyle, and the growing prevalence of obesity.^{55–58} Chronic leg ulcers involve an array of pathologies: 60% to 70% of all cases are related to venous disease, 10% due to arterial insufficiency, and 20% to 30% due to a combination of both.^{59,60} Although venous leg ulcers are more common in the elderly, 22% of individuals develop their first ulcer by age 40 and 13% before age 30, hindering their ability to work and participate in social activities.⁶¹ To understand the experience of living with leg ulceration, Briggs et al.⁶² reviewed findings from 12 qualitative studies. Results were synthesized into five categories, similar to those identified above in individuals with PIs:

- 1. Physical effects including pain, odor, itch, leakage, and infection
- 2. Understanding and learning to provide care for leg ulcers
- 3. The benefits and disappointment in a patient–professional relationship
- 4. Social, physical, and financial cost of a leg ulcer
- 5. Psychological impact and difficult emotions (fear, anger, anxiety)

In two other reviews examining the impact of wounds on QoL, a total of 22²⁹ and 24 studies⁶³ were identified. Both qualitative and quantitative studies were included in the reviews. Pain was identified as the most common and disabling symptom leading to problems with mobility, sleep disorders, and loss of employment. Other symptoms associated with leg ulcers, including pruritus, swelling, discharge, and odor, are equally distressing but often overlooked by caregivers. In the studies, patients discussed the impact of leg ulcerations on their ability to work, carry out housework, perform personal hygiene, and participate in social/recreational activities. Patients report feeling depressed, powerless, being controlled by the ulcer, and ashamed of their body. Efforts were taken to conceal the bandages/dressings with clothing or shoes; however, the latter were often considered less attractive than what would normally be worn. Both reviews identified the need to address patient engagement and patient knowledge deficits to promote treatment adherence.^{29,63–69} However, others are critical of this approach as the challenges of living with a chronic condition are increasingly recognized as constraining patients' ability to make informed decisions about their care. This is further compounded by the challenge patients face when expected to follow conflicting "best practice" advice from professionals dealing with different aspects of the patient's health. Approaches wherein solutions depend on educating patient to make behavior changes have been shown to increase the potential for patients to be labeled as disruptive/noncompliant and to receive suboptimal care.

Chronic Wound–Related Quality of Life (CW-QOL) Framework

Based on analysis of the interviews from a descriptive qualitative study that was designed to explore patients' and clinicians' perceptions and experiences of wound care, common themes were identified to create a conceptual framework for the concept of QoL as it relates to patients with chronic wounds (Fig. 1-1). Included in the framework are two concentric circles and a center representing the individual coping with a chronic wound. The outer circle represents the social, political, and healthcare systems within which QoL is realized and lived. The inner circle outlines six key stressors encountered by people living with chronic wounds:



Figure 1-1 Chronic wound–related quality of life (CW-QoL) framework. (Copyright © 2014 KY Woo.)

- 1. Wound status and treatment
- 2. Pain and other wound-related symptoms
- 3. Function status and mobility
- 4. Emotions and psychological state
- 5. Financial resources and cost

6. Social relationships

Encumbered by increased disability and exacerbation of symptoms, patients identify a need to curtail regular recreational, social, and physical activities, and they struggle with becoming increasingly dependent on others for help. To improve patients' QoL, this paradigm places greater emphasis on the need to foster a climate that supports patient engagement as appropriate, accompanied by mindful scanning of the environment and health resource mapping. Collaborative care is the cornerstone of chronic disease self-management to help patients master problem-solving skills; the objective is for patients to experience the best possible quality of life. Individualized wound care plans that address specific patient-centered concerns are most likely to succeed and promote the best outcomes for the patient with a wound.

Person Coping with a Chronic Wound

People who are living with chronic wounds describe the experience as isolating, debilitating, depressing, and worrisome, all of which contribute to high levels of stress. Stress has a direct impact on QoL. Lazarus and Folkman⁷⁰ postulated that stress is derived from cognitive appraisals of whether a situation is perceived as a threat to one's well-being and whether coping resources that can be marshaled are sufficient to mitigate the stressor. Stress appraisal is constructed when the demands of a situation outstrip perceived coping resources.⁷⁰ While no one is immune to stress, the impact of a chronic wound on individual's perception of well-being and QoL depends on personal meanings and values that are assigned to the demands that arise from living with a chronic wound. Coping is less adaptive or effective if people lack self-esteem, motivation, and the conviction that they have the aptitude to solve a problem.⁷¹ Woo⁷¹ evaluated the relationship between self-perception and emotional reaction to stress in a sample of chronic wound patients. Findings suggest that people who are insecure about themselves tend to anticipate more wound-related pain and anxiety.

Chronic Stress Is Not Innocuous

Stress triggers a cascade of physiological responses featured by the activation of the hypothalamic-pituitary-adrenal axis that produces vasopressin and glucocorticoid (cortisol).⁷² Vasopressin is known for its property to induce vasoconstriction that could potentially be harmful to normal wound healing by compromising the delivery of oxygen and nutrients. Cortisol attenuates the immunoinflammatory response to stress. Excessive cortisol has been demonstrated to suppress cellular differentiation and proliferation, inhibit the regeneration of endothelial cells, and delay collagen synthesis. The body of scientific evidence that substantiates the deleterious impact of protracted stress on wound healing is convincing.^{73–75} In one study, Ebrecht et al.⁷⁶ evaluated healing of acute wounds created by dermal biopsy among 24 healthy volunteers. Stress levels reported by the participants via the Perceived Stress Scale were negatively correlated to wound healing rates 7 days after the biopsy (P < 0.05). Subjects exhibiting slow healing (below median healing rate) rated higher levels of stress during the study (P < 0.05) and presented higher cortisol levels 1 day after biopsy than did the fast-healing group (P <0.01). Kiecolt-Glaser and colleagues⁷⁷ compared wound healing in 13 older women (mean age = 62.3 years) who were stressed from providing care for their relatives with Alzheimer disease, and 13 controls matched for age (mean age = 60.4 years). Time to achieve complete wound closure was increased by 24% or 9 days longer in the stressed caregiver versus control groups (P < 0.05).

Cognitive–behavioral strategies and similar psychosocial interventions are designed to help people reformulate their stress appraisal and regain a sense of control over their life's problem within an empathic and trusting milieu. Ismail et al.⁷⁸ identified 25 trials that utilized various psychological interventions (e.g., problem-solving, contract setting, goal setting, self-monitoring of behaviors) to improve diabetic self-management. Patients allocated to psychological therapies demonstrated improvement in hemoglobin A1c (12 trials, standardized effect size = -0.32; -0.57 to -0.07) and reduction of

psychological distress including depression and anxiety (5 trials, standardized effect size = -0.5; -0.95 to -0.20).

Simple problem-solving technique is easy to execute and provides a step-by-step and logical approach to help patients identify their primary problem, generate solutions, and develop feasible solutions. The key sequential steps are⁷⁹:

- 1. explanation of the treatment and its rationale
- 2. clarification and definition of the problems
- 3. choice of achievable goals
- 4. generation of alternative solutions
- 5. selection of a preferred solution
- 6. clarification of the necessary steps to implement the solution
- 7. evaluation of progress.

Wound Status and Management

The trajectory for wound healing is often tortuous and unpredictable, deterioration, punctuated by wound recurrence. and other Despite complications. appropriate management and exact adherence to instructions, there is no guarantee that healing will occur. The following quotes are some of the narratives that patients worry, voiced to convey their frustration. feelina and of powerlessness.

"The wound doctor asked me to use this dressing, but the wound is not getting better. I don't know what else to do?"⁸⁰

"The wound is getting bigger, and now I am getting an infection; I don't know why this is happening to me?"⁸⁰

Even when best practice is implemented, some treatment options are not feasible and they are not conducive to enhance patients' QoL, for example, a patient with foot ulcers who cannot use a total contact cast because he needs to wear protective footwear at work and he cannot maintain his balance walking on a cast, a patient with venous leg ulcer who likes to take a shower every day to maintain personal hygiene but cannot do so because she needs to wear compression bandages, or a patient with a PI who refused an air mattress because it generates too much noise that interferes with sleep. While turning patients every 2 to 4 hours has been recommended, repositioning can who patients have be painful. especially among significant contractures, increased muscle spasticity, and spasms. Among critically ill individuals, repositioning may precipitate vascular collapse or exacerbate shortness of breath (as with, e.g., advanced heart failure).⁸¹ According to the study of hospitalized patients with PIs.⁸² it was surprising for investigators to learn that even assuming a sidelying position could be uncomfortable. Briggs and Closs⁸³ indicated that only 56% of patients in their study were able to tolerate full compression bandaging, with pain being the most common reason for nonadherence. Similarly, patients' adherence to wearing compression stocking as a prophylactic measure to preempt ulceration is poor.⁸⁴ Patients should be informed of various treatment options and be empowered to be active participants in care decisions. Being an active participant involves taking part in the decision-making for the most appropriate treatment, monitoring response to treatment, and communicating concerns to healthcare providers.

circulation is diverted from the skin to maintain When hemodynamic stability and normal functioning of vital organs, skin damage is inevitable. For this reason, it is important that all involved recognize that, despite the best efforts to mitigate skin damage, in certain situations wounds are not always avoidable. Much discussion in the qualitative literature has focused on patients' lack of knowledge about how chronic wounds develop as an issue to be resolved.^{29,62} As a reminder, patients, especially those dealing with the challenges of chronic disease, may lack the cognitive ability to recognize factors contributing to their chronic wounds. As self-care practices become the new norm in health care, many in this population continue to rely heavily on healthcare practitioners (HCPs) for information, advice, and support related to treatment strategies to improve their conditions.⁸⁵ By providing information about how chronic wounds are largely preventable but not always avoidable, HCP can assist patients and their families to make informed choices and reduce feelings of guilt or blame that are often associated with wound development.

Complications such as wound infection are common but upsetting. According to an analysis of an extensive database comprising approximately 185,000 patients attending family medical practitioners in Wales, 60% of patients with chronic wounds had received at least one antibiotic in a 6-month period for the treatment of wound infection.⁸⁶ Bacteria compete for nutrients and oxygen that are essential for wound healing activities, and they stimulate the overproduction of proteases leading to degradation of extracellular matrix and growth factors.^{87–89} Among patients with DFUs, wound infection is one of the major risk factors that precede amputations. Surgical site infection has been linked to prolonged hospitalization and high mortality.^{90,91} In fact, the mortality rate has been reported to be over 50% in patients with bacteremia secondary to uncontrolled infection in PIs.^{86,92} Receiving a diagnosis of an infection is anxiety provoking; patients often fear that infection is the beginning of a downward vicious cycle leading to hospitalization, limb amputation, and death. The need to align expectations and dispel misconceptions cannot be underestimated.

Pain and Other Symptoms

Wound-associated pain continues to be a common yet devastating symptom, often described as one of the worst aspects of living with chronic wounds.^{93,94} Sleep disturbance, immobility, poor appetite, and depression are some of the consequences of unremitting pain. In an international survey of 2018 people with chronic wounds, over 60% of the respondents reported the experience of pain "quite often" and "all the time."⁹⁵ In a survey of 287 patients with PIs, McGinnis et al.⁹⁶ reported that 75.6% of patients with stage 1 PI experienced pain with the sacrum, buttocks, and heels being the most vulnerable and painful; the mean pain intensity was 6.4 (SD 2.53) and the median 7.0 on a 10-point pain scale. Of people with venous leg ulcers, the majority experienced moderate to severe levels of pain described as aching, stabbing, sharp, tender, and tiring.^{94,97,98} Pain has been documented to persist up to at least 3 months after wound closure. Contrary to the commonly held belief that most patients with DFUs do not experience pain due to neuropathy, up to 50% of patients experience painful symptoms at rest, and approximately 40% experience moderate to extreme pain climbing stairs or walking on uneven surfaces.^{99,100} Patients with diabetes who report pain most or all of the time had statistically and clinically significant poorer HRQoL than those who did not report pain.^{52,101,102} However, pain in diabetes is often underestimated and undertreated. The need to improve pain assessment and management is incontestable. Pharmacotherapy continues to be the mainstay for pain management. Appropriate agents are selected based on severity and specific types of pain (see Chapter 12, Pain Management and Wounds).