CLINICAL MANAGEMENT

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An Introduction to Skin as an Interface: Implications for Interprofessional Collaboration and Whole-Person Care

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GENERAL PURPOSE:

To increase health care professionals' awareness and perceptions of the skin as one of the largest body organs with multidimensional aspects and significant implications for interprofessional collaboration in whole-person care.

TARGET AUDIENCE:

This continuing education activity is intended for physicians, physician assistants, nurse practitioners, and nurses with an interest in skin and wound care.

LEARNING OBJECTIVES/OUTCOMES:

After participating in this educational activity, the participant should be better able to:

1. Apply physiologic and integumentary knowledge to assessing common skin variations and problems.

2. Summarize the results of the authors' literature review of the evidence regarding the emotional, psychosocial, cultural, and spiritual aspects of skin health and disorders.

ABSTRACT

The skin reflects not only a person's physical state of health, but also the dynamic interplay of emotional and cultural influences. This article will increase health practitioner understanding of the skin and skin assessment by highlighting its multidimensional aspects and significant implications for interprofessional collaboration in whole-person care. Through a multidimensional assessment of the skin, practitioners can better understand the health story of each patient and intervene holistically to improve overall well-being and quality of life.

KEYWORDS: interface, interprofessional collaboration, multidimensional aspects, skin, skin assessment, whole-person care

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INTRODUCTION

The human skin offers a protective covering and a form of personal identification, and through its natural and normal changes it reveals evidence of the aging process across the life span.[1] It is easy to take for granted the "wear and tear" the skin endures without stopping to appreciate its vital role in life and living, as well as during death and dying. With close observation of the skin, healthcare practitioners can gain new information about the internal and external world of a person.

The skin offers the first visual impression of a person, and can reflect not only of a person's physical state of health, but also the dynamic interplay of emotional and cultural factors; it can even herald the approach of death. Consider common idioms associated with the skin such as "soft as a baby's skin," "beauty is skin-deep," "thick-skinned," "comfortable in your skin," "under one's skin," "no skin off my back," "show me some skin," or "skin and bones." Even informally, the skin is multidimensional in the information it provides.

This article will increase healthcare professionals' understanding of the skin by challenging them to view the skin in a more holistic way, broadening their ability to perform a multidimensional assessment and increasing their recognition of the need for not only discipline-specific interventions, but also interprofessional collaboration related to whole-person care.

CASE STUDY

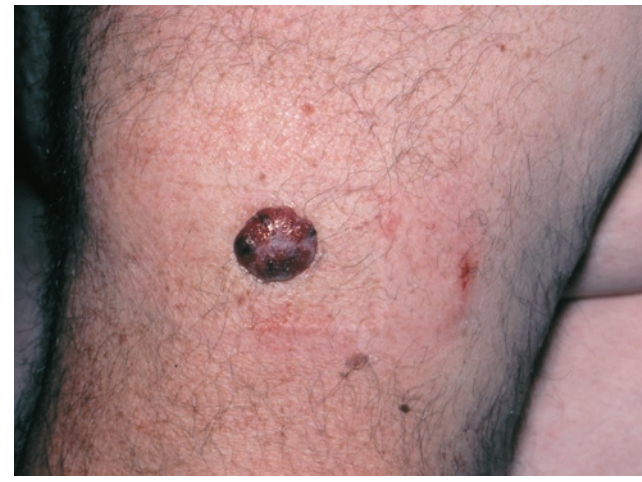
C.J., 42, was an active, energetic man with several engagements scheduled on any given day. He was an amateur whittler, with a passion for making wooden chess pieces; the scars on his hands were indicative of his occasional mistakes. Although he had been diagnosed with type 2 diabetes mellitus, he was thriving and lived for the thrill of riding the waves as a professional surfer. Both blond and fair, his unprotected skin burned quickly and often in the unrelenting sun. Even the heart and cross tattooed on his shoulder in memory of his mother were fading. C.J. never gave his skin a second thought until one day he noticed a raised brown area of skin on his left forearm. He dismissed it as an ordinary freckle. Over the course of several months, his "freckle" started changing. It grew to the size of a pea, elevated, with irregular borders and varying colorations.

C.J. went to a dermatologist and was informed that he had malignant melanoma (Figure 1), a serious form of skin cancer. His view of life was instantly changed. Now afraid of the sun, he no longer went surfing and became vigilant about protecting his skin during all outdoor activities, including wearing long-sleeve shirts, a hat, and a strong sunscreen. He was continuously monitored for disease progression and now worried about skin infections on his feet because of his diabetes. C.J. had realized that his skin was not a mere covering but integral to all aspects of his life and health and that damage to his skin had life-threatening implications.

PHYSICAL DIMENSIONS

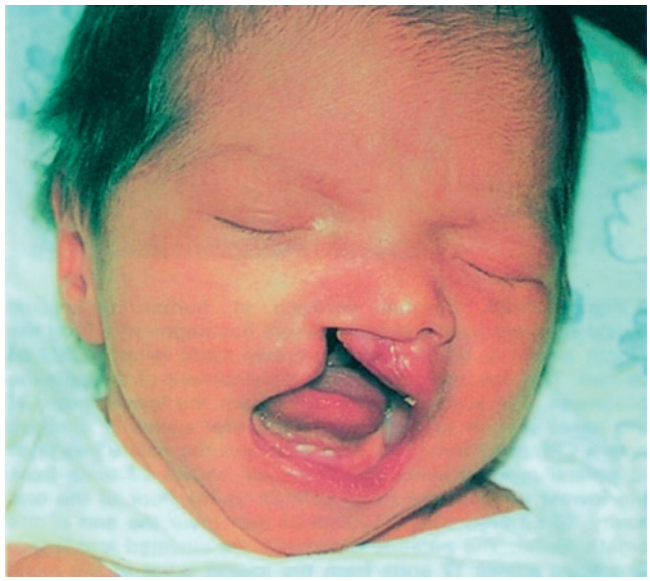
From a developmental perspective, observations of the skin are relevant from birth through death. Each newborn's skin is examined for birthmarks, which may fade over time or become a personal identifying mark, as well as for congenital abnormalities, such as a cleft lip (Figure 2). In addition to assessing the integrity of neonatal skin, practitioners also examine hair distribution, quality, texture, and skin moisture. Lanugo, the fine hair that covers the body of a fetus, reflects gestational age. As development continues, the influence of hormones in adolescence leads to

Figure 1.
NODULAR AMELANOTIC MELANOMA



From Goodheart HP, MD. Goodheart's Photoguide of Common Skin Disorders. 2nd ed. Philadelphia: Lippincott Williams & Wilkins; 2003.

Figure 2.
CLEFT LIP AND CLEFT PALATE IN AN INFANT



From Nath J. Stedman's Medical Terminology. Philadelphia, PA: Wolters Kluwer, 2012.

growth of hair in the areas of the axilla and pubis. Sweat and sebaceous glands of the skin also become active, resulting in perspiration and often resulting in varying degrees of acne.

As people age, skin loses the elasticity of youth, becoming rough and dry, with fine lines and deep winkles resulting from a loss of subcutaneous fat and/or dehydration. "Age spots" or skin discolorations appear, most notably on the face and hands, along with the graying, thinning, or loss of hair, revealing age.

No matter what the age of the person, the skin reveals a person's nutrition state, with a well-balanced diet and adequate hydration resulting in exceptional skin quality, whereas poor nutrition and hydration result in dry, cracked skin that is susceptible to tears and infection. The skin also indicates sensitivities or allergies to foods, environmental allergens, or medications based on the sudden presence of skin redness, hives, or rash.

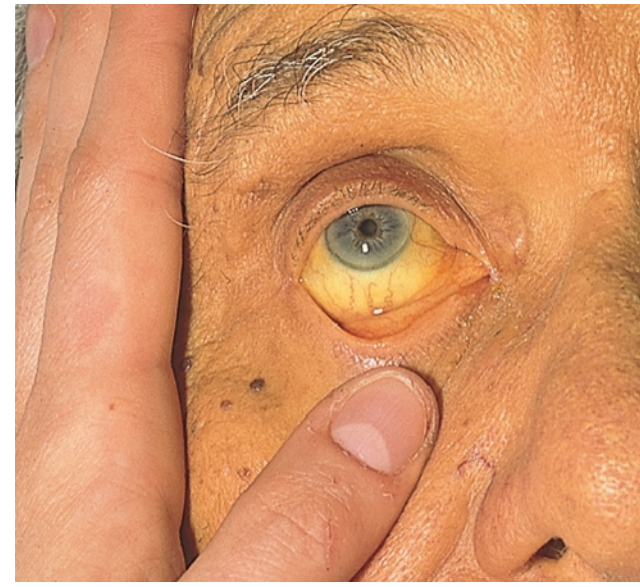
Over the course of a lifetime, the skin is also subject to mechanical injuries, such as abrasions, tears, lacerations, surgical incisions, or the scars of war and physical assault. The skin may also sustain thermal injuries, such as first-, second-, or third-degree burns resulting from extreme heat or cold or radiation treatments, and chemical injuries from skin contact with caustic chemicals. The skin may also be injured by chemotherapy, which affects the skin, hair, and other rapidly dividing cells. These injuries can leave their mark and reflect life's history, perhaps with an associated degree of emotional trauma.

Through skin assessment, practitioners diagnose diseases or health conditions reflective of metabolic, hematologic, hormonal, endocrine, autoimmune, or infectious disorders. For example, the skin may indicate signs of kidney failure, with uremic crystals evident on the skin; bruising caused by blood disorders; sweating caused by hormone-induced hot flashes during menopause; skin dryness associated with thyroid dysfunction; a butterfly rash seen with lupus erythematosus; or skin perspiration indicative of fever and infection.[2]

Skin assessment is also critically important in identifying and differentiating benign skin lesions (such as freckles) from malignant lesions (such as basal cell or squamous carcinomas) to more life-threatening skin cancers (such as melanoma or Kaposi sarcoma). In addition, changes in skin color may be associated with organ diseases, such as the yellowing of the skin (jaundice) associated with liver disease or bile duct obstruction (Figure 3), bluing of the skin (cyanosis) indicative of hypoxia associated with respiratory or cardiac problems, skin paleness reflective of poor blood perfusion from peripheral vascular disease or anemia, or skin redness associated with inflammation or infection. It is important for health practitioners to take notice and document skin changes, conditions, or abnormalities, such as nevi, macules, papules, nodules, wheals, plaques, pustules, vesicles, bullae, crusting, ulceration, excoriation, maceration, cherry angiomas, or senile purpura, which have a range of health implications.[3]

As visual observations of the skin are made and objectively documented, practitioners need to ask about associated subjective symptoms of nociceptive, somatic pain, described as

Figure 3.
JAUNDICE



From Bickley LS, Szilagyi P. Bates' Guide to Physical Examination and History Taking. 8th ed. Philadelphia: Lippincott Williams & Wilkins; 2003.

throbbing, aching, stinging, tightness, burning, tingling, or "pins and needles" sensations. The discomfort of skin drying (xerosis) may also be accompanied by the subjective symptom of itching (pruritus). If untreated, xerosis or pruritus may increase the incidence of skin tears, infection, and pressure injuries.[4] Upon further questioning, the practitioner may learn that this range of subjective descriptors may also be associated with changes in a person's functional status or their quality of life.

As with any other organ, damage accumulates over time, leading to skin breakdown. Extrinsic change, known as "photoaging," is damage brought on by exposure to environmental agents such as UV light or smoke.[1] Other external factors, such as excessive skin washing, can result in skin trauma, whereas lack of hygiene can lead to the accumulation of microbes and pathogens, creating a higher risk of skin infection.[4]

EMOTIONAL DIMENSIONS

The dermis and the psyche are closely intertwined functionally, because humans cannot live without their skin either physiologically or emotionally.[5] Skin can reflect emotion; for instance, blushing or turning red can reflect embarrassment. This complex mind-skin connection has been termed *psychodermatology* or *psychocutaneous medicine*.[6] Skin conditions or illnesses may affect a person's body image because our bodies influence how others view us.[5] The societal ideal of perfect, smooth, and flawless skin may subject people with skin conditions or diseases to feeling less attractive, stigmatized, ostracized, embarrassed, and depressed.[7]

By looking at the skin, providers may be able to observe whether an individual has emotional disturbances or distress. For example, stress may cause the exacerbation of certain skin conditions, such as psoriasis, herpes, and acne.[2] According to McCance and Huether,[2] a herpes skin outbreak may be triggered by stress, resulting in the appearance of the highly contagious vesicles on the skin. Individuals with vitiligo, acute wounds, scarring, or stomas may feel that their skin is under the scrutiny and judgment of others. Therefore, they may feel the need to hide or cover their skin with clothing and have a higher incidence of psychological morbidity, impaired quality of life, and suicidal ideation.[7]

A dramatic example of visible emotional distress is skin cutting. Klonksy[8] examined skin self-mutilation in the form of skin cutting or burning, concluding that adults who engaged in these activities sought ways to relieve daily stressors. Other behaviors, such as hair twirling or nail picking, are also manifestations of stress or distress.

In contrast, taking good care of one's skin is related to positive body image, fewer depressive symptoms, and healthy self-care behaviors.[9] For example, a person may actively protect his/her skin from sunlight and UV exposure, engage in healthy eating practices, and exercise if he/she values their body and has positive feelings of acceptance, protection, love, and respect.[9] Often, skin hygiene or lack thereof may play a part in the way the person is viewed by others, as cleanliness is often associated with a sense of personal dignity.[4]

PSYCHOSOCIAL DIMENSIONS

The psychosocial dimension of the skin relates to touch and skin-to-skin contact and is a critical component of health across the lifespan. The skin serves as one of the main mechanisms through which we communicate and begins or continues the bonding process when we are born (Figure 4). Many studies have reported the importance of skin-to-skin contact and how "kangaroo care" helps newborns to regulate their breathing, heart rate, temperature, and many other bodily functions by just being held.[10]

As we age, our skin is a main contributor to a sense of belonging and acceptance. Adolescents place great importance on appearance and feel pressured to have clear, smooth skin to be accepted by their peers. According to Kottner,[11] a person's confidence level and interaction with others is closely related to how they think they look. Physical disfigurement is daunting, from the appearance of a miniscule pimple to the horrifying reality of third-degree burns. Sensitivity and coping mechanisms, as well as social support, are part of the survival process for those who must endure significant skin damage or disfigurement.

In addition, the way the skin feels and smells can also affect a person's sexual or intimate life. The softness of the skin is part of sexual attraction, whereas the smell of a person's skin may be as identifying as his/her signature. As humans age, decreased skin moisture and lubrication may lead to painful intercourse with vaginal and penile irritation.[12] As the skin of a woman's breasts

Figure 4.
BONDING THROUGH SKIN TO SKIN CONTACT

Photo by Wayne Evans.

begins to sag, or with other skin conditions, she may feel less attractive and less inclined to engage in sexual intimacy.[7]

Social isolation occurs when conditions of the skin are infectious. Skin conditions, such as scabies, may be spread by physical contact and can cause individuals to be placed in medical isolation. Young children with chickenpox, another highly contagious skin disease, are often separated from healthy peers to prevent transmission. In addition, the care or hygiene of the skin and nails may reflect an individual's socioeconomic status related to their access to bathing facilities or personal care products.

From a psychosocial perspective, rituals related to the skin, such as tattooing, skin art, or skin piercing, may express a person's desire for individualism. The skin and hair are aspects of a person's perceived beauty, with implications for how an individual is valued, treated, or desired sexually. Further, skin conditions may indicate environmental influences related to a person's job or work. For example, those who work outdoors may have skin damage from the sun, cold, or wind; harsh environmental chemicals can make someone look prematurely aged. On the positive side, moderate skin exposure to the sun is necessary to produce adequate vitamin D, which is important to bone health.

Importantly, the skin can inform us about the possibility of physical abuse or neglect. Unexplained bruises, cuts, or burns may indicate that an individual is the victim of physical abuse. An article discussing pediatric visits to the emergency room described how certain patterns of "chest and arm burns with undulating borders" are indicative of hot liquid being poured on a child.[13] Physical neglect of children, older adults, or persons with disabilities may be revealed by poor hygiene and body odor, which place individuals at risk for serious infections.

However, practitioners should not rush to judgment; the various causes of skin defects must be considered. Bruising on a child's skin may be a birthmark, attributable to a fall on the playground, or a sign of illness; practitioners should not assume it was caused by a rough grab or slap by an abusive parent. In this example, the focus may be on the physical dimensions of the child's health based on the medical history, physical examination, and laboratory data; however, circumstances do lend themselves to a review of the child's medical records for evidence of prior abuses.

CULTURAL-SPIRITUAL DIMENSIONS

As a form of cultural, racial, or ethnic identification, information is deduced from a person's physical appearance, including the texture and color of their skin and hair. For example, an individual with fair skin, blond hair, and blue eyes may be assumed to be of European descent, whereas dark brown skin, black hair, and brown eyes may indicate African or Indian descent. A study conducted by Chan et al[14] in Singapore found that most patients with vitiligo, a type of skin discoloration, became socially isolated. Individuals with vitiligo reported a loss of sense of identity because of their unique and distinctive skin, which led to self-imposed social isolation.[14]

Culture plays a key role in how a person's external appearance is perceived, such as the relative importance of maintaining a youthful appearance, or in terms of how much skin is appropriate to be revealed in public. In many cultures, the value and beauty of a person may be associated with the lightness or darkness of the color of their skin.[15] For example, umbrellas are used in many Asian cultures because pale, white skin is preferred to tan skin.

Western cultures tend to focus on having a youthful appearance, as well as the removal of skin defects or blemishes. Cosmetic companies, as well as dermatologists and plastic surgeons, emphasize the importance of maintaining or regaining a youthful appearance to sell cosmetics or medical products or procedures that purport to create a more youthful appearance. Many Eastern cultures, however, value and respect the aging process and its attendant skin lines or wrinkles, and older adults are revered for their lived experiences and wisdom.

Some cultures or religions emphasize modesty and may dictate that skin be covered with clothing. For example, women in Middle Eastern cultures may be subject to punishment if any area of skin is exposed in public.[16] In contrast, some traditional Indian dress leaves a bare midriff, and some European cultures permit nude sunbathing on public beaches. In Japan, generations of women and men go to spas together for bathing and relaxation.

Covering the skin and wearing a particular type of clothing (habits) are important to certain religious orders of nuns. Buddhist monks shave their heads, revealing the skin on their heads, as an outward sign of devotion and appreciation of minimalism. This can be compared with other cultures who value clothing aesthetics or other forms of skin adornment.

The relationship between spirituality and culture is reflected by rituals related to the skin. Native American tribes tattoo their skin in honor of their ancestors or Gods, whereas in Japanese culture, tattoos are often viewed unfavorably and are not permitted in many work situations. In Judaism, the removal of the foreskin of a baby boy by a rabbi or his representative is considered a sacred act.[17] Skin cleansing rituals are also important to those of the Orthodox Jewish faith and to the Muslim faith. In Orthodox Judaism, women take ritual baths at the mikva at the end of their monthly menses to purify themselves. In both the Jewish and Muslim faiths, there are bathing rituals at the time of death. These rituals must be performed by an appropriate member of the faith who possesses knowledge of the culturally correct procedures to show respect to the care of the body and prepare it for final burial.[18]

END-OF-LIFE DIMENSIONS

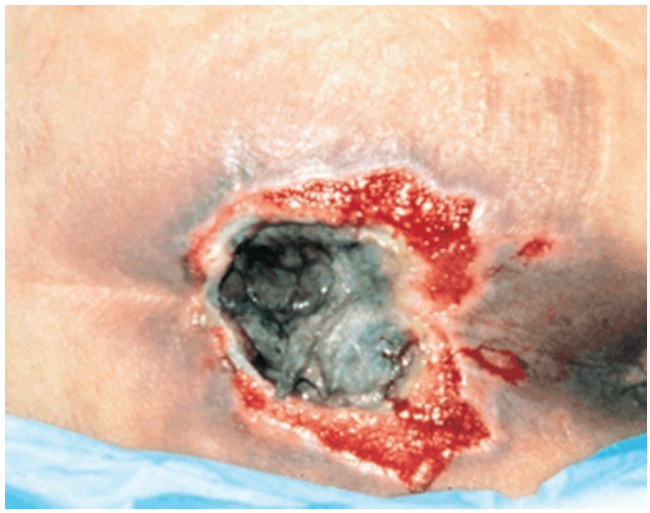
The skin is reflective not only of aging across the lifespan, but also it outwardly reveals the processes of living and dying. At the end

of life, many organs begin to fail because they can no longer carry out their functions. Levine[19] believes that the skin should be studied as part of the multiorgan dysfunction syndrome, which occurs in the presence of hypotension, anemia, and cardiac and renal failure and leads to hypoperfusion and ultimate necrosis of the skin and underlying structures and tissues. In this context, skin failure may be unavoidable even when preventive interventions are in place.

Although wound specialists recognize that skin failure exists, there has been continued discussion of the delineation, validation, and universal acceptance of the concept of skin failure.[20] Skin failure is sometimes discussed as a separate entity from pressure injuries, whereas some research considers pressure injuries as a manifestation of skin failure in the setting of multiple organ system failure.[19] Pressure injuries, which are a concern in postacute- and long-term-care settings, may share some of the antecedents and characteristics with skin failure; however, the person may be critically or chronically ill but not dying.[19]

Common clinical manifestations of skin breakdown in patients at end of life include Kennedy terminal ulcers (KTUs), which are characterized by a butterfly-, pear-, or horseshoe-shaped ulcer typically located on the buttocks or coccyx (Figure 5) that has an extremely rapid onset, occurring within 6 to 48 hours before death.[21] To improve on the scientific analysis of the KTU, a panel of experts identified skin changes at life's end that include signs and symptoms of wasting, decreased mobility, loss of weight or appetite, dehydration, loss or break in skin integrity, skin tears, decreased immunity, signs of infection (ie, sepsis), or loss of vascular supply.[21]

Figure 5.
KENNEDY TERMINAL ULCER



From Sussman C, Bates-Jensen B. Wound Care. Philadelphia, PA: Wolters Kluwer; 2011.

A third type of terminal skin injury, Trombley-Brennan terminal tissue injury, refers to areas of bruising over bony prominences that have clear lines of demarcation and a deep red-purple color seen on the thoracic or lumbar spine or lower extremities.[21] Levine[22] posits that skin failure is the common denominator for wounds that occur close to death and that these ulcers could be termed *terminal ulcers*, but if the wound occurs before the preactive or active phase of dying, the appropriate term is *pressure injury*.

Skin change at the end of life is of interest to the palliative and hospice community because this type of skin ulceration has been identified as a normal part of the dying process, heralding the phases of preactive and active dying. The incidence of any type of ulcer is linked to increased mortality and death from increased frailty and burden of disease. When a KTU is detected, mortality rates increase, skyrocketing from 20.8% within 30 days of detection to 73.3% after 1 year.[23] It has been reported that 62.5% of pressure injuries found in hospice patients occurred within the last 2 weeks of life.[23] Thus, if death is inevitable, perhaps KTUs are also unavoidable and do not necessarily indicate poor-quality nursing care or negligence.

INTERPROFESSIONAL COLLABORATION AND WHOLE-PERSON CARE

With an understanding that the skin communicates multidimensional information about a person's physical, emotional, psychosocial, and cultural-spiritual life, health practitioners must realize that each dimension of the skin is relevant to care of the whole person and may require not only care from individual health disciplines, but also the expertise of an interprofessional team. For example, although a consultation with a dermatologist may be sought for a skin lesion, rash, or breakdown, the dermatologist may need to consult with a social worker or psychologist if the skin indicates self-harm or signs of abuse or neglect by a caretaker.

To provide whole-person care, patients and caregivers may benefit from education and counseling to understand the dynamic interplay of all dimensions of the skin and holistic interventions to improve well-being and quality of life. Although severe acne, which frequently occurs in adolescents, may require pharmacologic interventions by physicians or advance practice nurses, health educators and school psychologists can play a role in teaching hygiene and helping adolescents cope with associated scarring. For individuals with skin conditions or diseases, practitioners may also provide information regarding in-person or online support groups and other resources. Providers should also give patients information about alternative treatments that empower patients to be actively involved in their own care, which may alleviate anxiety and distress.

A multidimensional skin assessment will allow the determination of diagnoses ranging from skin disease, organ disease, fluid

and electrolyte imbalance, emotional distress, alterations in body image, or spiritual distress, just to name a few. Each diagnosis may require pharmacologic, nonpharmacologic, and/or complementary therapies. Holistic treatment of skin conditions may require use of medications to cure the disease or to decrease signs and symptoms in the presence of incurable or chronic skin conditions. Pain relief is important and can be provided by the use of pain medications, cold packs, or relaxation techniques or guided imagery to alleviate associated stress. Prevention, management, or rehabilitation/restoration of health from skin disorders may require a range of treatments provided by a team of specialists who work together to develop a comprehensive and integrated plan of care.

There are, at present, no skin assessment tools or instruments that encompass the multidimensional aspects of the skin. The healthcare community recognizes the importance of prevention of skin injuries or breakdown and the value of skin assessment tools to identify patients at high risk. For example, the Braden Scale assesses the risk factors associated with the development of a pressure injury, taking into consideration the patient's sensory perception deficits, physical activity levels, mobility, moisture, nutrition, friction, and shear. The Braden Scale score can guide clinicians toward implementing certain interventions, such as alleviating pressure at bony prominences, increasing physical activity and mobility, decreasing friction and shear when moving patients, improving nutrition, and conducting specific wound management protocols.[24]

The development of a multidimensional skin assessment tool would also be beneficial to help document a person's overall health in his/her electronic medical record, with portable access across settings and reflective of changes in the patient's health over time. For example, such a tool could evince not only the advancement of disease or multiorgan failure, but also the interface of physical-emotional-social-spiritual health. Discussion of the information obtained from this tool with a patient's family could reinforce, for example, that terminal ulcers can occur despite meticulous nursing or family care. Further, quantified assessment could lead to early identification, treatment, and education concerning skin failure at life's end and help to relieve emotional distress or feelings of guilt.[25] Ongoing skin assessment provides opportunities for members of the interprofessional team to educate, console, and support the family, and prepare for end-of-life cultural or spiritual rituals.

CONCLUSIONS

The skin provides a wealth of information about a person's health, especially at the end of life. A thorough assessment of the patient's skin from a multidimensional perspective allows health professionals to provide sensitive, informed, and evidence-based care.

The skin represents not only a person's first line of defense, but also a form of communication between a person and his/her world. Throughout a person's lifespan, the skin reflects the wholeness of a person and provides valuable information to healthcare professionals in understanding the interface between a person's internal and external worlds.

PRACTICE PEARLS

- The skin can reflect not only a person's physical state, but also the dynamic interplay of emotional and cultural factors.
- The assessment of the skin can indicate a person's developmental stage, state of nutrition, and health conditions.
- Significant skin changes at the end of life may herald impending death.
- A multidimensional assessment of the skin can have significant implications regarding a person's external and internal worlds and whole-person care.
- Ongoing skin assessment provides opportunities for members of the interprofessional team to treat, educate, and support their patients. ●

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CONTINUING EDUCATION INSTRUCTIONS

- Read the article beginning on page 256. For nurses who wish to take the test for CNE contact hours, visit http://nursing.ceconnection.com. For physicians who wish to take the test for CME credit, visit http://cme.lww.com. Under the Journal option, select *Advances in Skin and Wound Care and click on the title of the CE activity.*
- You will need to register your personal CE Planner account before taking online tests. Your planner will keep track of all your Lippincott Professional Development online CE activities for you.
- There is only one correct answer for each question. A passing score for this test is 13 correct answers. If you pass, you can print your certificate of earned contact hours or credit and access the answer key. Nurses who fail have the option of taking the test again at no additional cost. Only the first entry sent by physicians will be accepted for credit.

Registration Deadline: May 31, 2021 (physicians); June 4, 2021 (nurses).

PAYMENT

- The registration fee for this CE activity is $12.95 for nurses; $22.00 for physicians.