



KEY WORDS

pressure ulcers
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Preventive Skin Care Beliefs of People with Spinal Cord Injury

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Although health beliefs have been correlated with self-care adherence in other chronic conditions, little is known about skin care beliefs after spinal cord injury (SCI). The purpose of this qualitative study was to identify the skin care beliefs of individuals with SCI. The conceptual framework was the Health Belief Model (HBM), which proposes that adherence to a health regimen is motivated by beliefs about susceptibility, severity, barriers, benefits, and self-efficacy. Purposive sampling was used to recruit 22 people with SCI. Content analysis of data collected using semistructured questions was used to identify domains of skin care beliefs, including HBM components. Themes that emerged about skin care beliefs included taking vigilant care, taking charge, maintaining health, and passing up care. Although most participants believed they were susceptible to pressure ulcers and preventive care was important, paradoxical statements about beliefs and preventive behaviors were common. These incongruent responses may reflect ambivalence about competing priorities or the efficacy of preventive practices. Further research is needed to understand this phenomenon. Increased understanding of skin care beliefs will assist in developing tailored teaching programs for people with SCI.

Pressure ulcers (PU) are the most common secondary complication following spinal cord injury (SCI; McKinley, Jackson, Cardenas, & DeVivo, 1999). PUs contribute considerably to healthcare costs and are related to lower life adjustment (Garber & Rintala, 2003; Krause, 1998). Incidence and prevalence rates of PUs range between 20% and 30% in people with chronic SCI (Fuhrer, Garber, Rintala, Clearman, & Hart, 1993; Garber & Rintala; Yarkony & Heinemann, 1995). Carlson, King, Kirk, Temple, and Heinemann (1992) reported that 17% of patients with SCI developed a PU during the first 2 months after being discharged. Recurrence rates of 35%–82% add extensively to the personal and economic costs of living with SCI (Evans, Dufresne, & Manson, 1994; Niazi, Salzberg, Byrne, & Viehbeck, 1997).

Preventive skin care activities taught to people with SCI during acute rehabilitation include daily skin inspection, wheelchair pressure reliefs (WPRs) every 30 minutes, establishing and adhering to turning and sitting tolerance, hygiene, nutrition, and equipment maintenance. However, people with SCI perform these behaviors inconsistently during hospitalization and following discharge to the community (Garber, Rintala, Hart, & Fuhrer, 2000; Merbitz, King, Bleiberg, & Grip, 1985). Although health beliefs have predicted adherence to medical regimens in other chronic conditions (Glasgow, Stryker, Hampson, Ruggiero, 1997; Janz & Becker, 1984), they have been examined rarely in individuals with SCI. The purpose of this study was to describe the preventive skin care beliefs of people with SCI.

Beliefs About Preventive Skin Care

In a study examining the relationship between skin care beliefs and adherence to care, Dai and Catanzaro (1987) reported that perceived PU severity and perceived

benefit of skin care were significantly related to performing care. Adherence was not related to PU susceptibility and barriers to care. However, the study's small sample size (20 Taiwanese male outpatients with SCI) limits the generalizability of findings to other samples. Nevertheless, the findings support the need for further study of skin care beliefs and their potential to influence skin care behaviors.

Basta (1994) reported that individuals with a recent onset SCI viewed most skin care activities as "pretty necessary" or "very necessary," and on average, they were confident in their ability to perform care. In a study of beliefs about PU development and preventive care, Rodriguez and Garber (1994) found that of the 62 men with a history of PU, 69% rated skin checks and 74% rated weight shifts and turns as very important. Eighteen percent of the participants believed they were likely to develop a PU in the next year, and 61% viewed PUs as very serious. Another study (Jones, Marini, & Slate, 2005) indicated that beliefs about the importance of skin care activities differed in people with and without a history of PUs. Study participants who were relatively ulcer free identified buttock sensation and activities such as WPR as most important in preventive care for a PU; those with a recent history of PU focused more on skin checks and early intervention (Jones et al.). Jones and colleagues' study's cross-sectional design precluded the assessment of changes in beliefs with the experience of a PU.

Barriers to performing skin care were examined by Carlson and King (1994) in community-dwelling people with SCI. The belief that preventive skin care activities were not necessary was reported by 50% of participants. Inability to perform care independently was viewed as a barrier by 33% of participants (Carlson

& King). Reinhardt and colleagues (2000) reported differences in the frequency barriers to performing skin care were identified over time. Physical barriers were most common during hospitalization when only 32% of study participants identified no physical barriers to their skin care regimens. At 4 months post-discharge, 71% did not identify a barrier to performing skin care. Perceptions of social-environmental barriers and the belief that care negatively affected quality of life increased in frequency after patients were discharged from the hospital (Reinhardt et al.).

Although PU risk after SCI is multidimensional, the major focus of risk assessment has been the assessment of physical, medical, and demographic predictors and not on behavioral or sociopsychological factors (Carlson & King, 1990; Consortium for Spinal Cord Medicine, 2000). However, Krause and Broderick (2004) reported that behavioral and psychological factors predicted either the history (smoking, depression) or absence (healthy lifestyle) of recurrent PU. The addition of behavioral and sociopsychological variables to risk prediction scales has the potential to increase the accuracy of assessment of PU risk.

Conceptual Model

The Health Belief Model (HBM) proposes that adherence to a health regimen is motivated by beliefs that (1) the person is susceptible to the condition, (2) the condition can have serious effects (*severity*), (3) the recommended behavior will reduce susceptibility or severity (*benefit*), (4) the benefits of performing a behavior outweigh the costs (*barriers*), and (5) the action can be carried out by the individual or caregivers (Strecher, Champion, & Rosenstock, 1997). The likelihood of performing a behavior can be motivated by internal (e.g., sensations, symptoms) or external (e.g., clinicians, family, experiences) cues. People who believe they are susceptible to a serious condition feel threatened and are more likely to consider taking action to improve their health.

Methods

Design

This study used a qualitative descriptive design (Sandelowski, 2000). Qualitative content analysis was conducted on interview data collected using a semistructured interview guide. The setting included two free-standing rehabilitation hospitals, and the proposal was approved by both hospitals' institutional review boards.

Sample and Recruitment

Purposive sampling was used to ensure diversity among participants on level of injury and PU history, both of which may influence beliefs about preventive care. Sampling continued until data

redundancy was reached (i.e., no new information was found in new cases; Sandelowski, 1995). Eligibility criteria included (1) age 18 or older, (2) SCI with an American Spinal Injury Association (ASIA) classification A, B, or C (Maynard et al., 1997), (3) recent onset or chronic SCI, (4) English speaking, and (5) telephone access. Individuals with chronic SCI were eligible whether they were living in a private residence or an institution. Twenty-two of 24 people who were approached for the study consented to participate. A recruitment letter explaining the study's purpose and procedures was sent with the consent form to nine people with SCI who had been discharged from one of the research sites. The letter included a toll-free telephone number participants could use to request further information. Two individuals returned the signed consent form. The remaining participants were recruited in person from inpatient or outpatient services by the authors (who were not on the individual's treatment team). Informed consent was obtained for the interview, audiotaping, and retrieval of medical record data after determining whether the individual was interested in learning about a study of skin self-care. The final sample consisted of 21 participants; one person dropped out before the interview was scheduled.

The mean age for participants was 35 (range 18–66, $SD = 14.1$). Eighty-one percent of participants were male and 76% had complete injuries. Whites comprised 62% of the sample; 33% were African American and one participant (5%) was Asian. Twenty-four percent of the White participants reported Hispanic ethnicity. The level of SCI injury was categorized as either tetraplegia ($n = 10$, 48%) or paraplegia ($n = 11$, 52%). The mean duration of SCI was 7 years (range .08–34, $SD = 9$). Four participants (19%) were inpatients with a recent injury; the remaining participants had been living in the community for at least 6 weeks. Fifteen participants had a history of one or more PU (71%).

Variables and Measures

Background and illness variables. Demographic and illness factors were collected for descriptive purposes. Factors included level of illness (LOI), level of SCI completeness, duration of SCI, PU history, and PU surgery. Illness factors were retrieved from medical records when possible and verified through interviews. People without sensory deficits and who did not use a wheelchair were not recruited to participate in the study.

A semistructured interview guide was developed based on the HBM and a review of the literature examining the adherence to medical regimens. Interviews were conducted face to face (when possible) or over the phone (if necessary), and were recorded and transcribed verbatim. The first author trained the

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coinvestigators how to use the interview guide and reviewed transcriptions for completeness. Sample questions included

- What impact do you think a pressure ulcer would have on your life?
- What do you think are the benefits of or reasons for following your skin care program?
- What are the barriers to doing your skin care? (Barriers prevent you from doing care.)
- What is your understanding of your chances of developing a pressure ulcer in the future?

Participants were asked to describe their current skin care routine, their confidence in adhering to it, and how the routine affected their lives. If a participant had ever had a PU, he or she was asked about its etiology and management.

Analysis

Transcribed interviews and codes were entered into the Ethnograph program to organize data for analysis (Qualis Research Associates, 1997). Data collection and analysis were conducted concurrently to determine when data redundancy occurred. Content analysis was used to code and categorize data. The principal investigator (PI) developed the initial code categories based on the HBM (Miles & Huberman, 1994). Additional codes and code categories that emerged after rereading the first three interview transcripts were subsequently added. The three investigators independently applied these codes to the interviews and added new codes, which were verified by each investigator and integrated into the coding scheme. Coding disagreements between raters were resolved through discussion. Definitions and a code list were developed for each code category and were used to code subsequent data.

Case summaries were developed by one of the investigators to help develop themes. These summaries contained a description of the participant's most salient thoughts (i.e., thoughts emphasized in the interview). The PI read the interviews, summaries, and Ethnograph-coded text to identify patterns of recurrent ideas across cases and link codes to develop themes (Miles & Huberman, 1994). Credibility was ensured through coinvestigators' verification of themes. Also, participants' language was used to label themes, and discrepant cases were identified, further ensuring credibility. Member checks of themes and related codes were carried out with four participants who verified findings (Creswell & Piano Clark, 2007). Date transferability was addressed by using purposive sampling to achieve diversity on important factors, such as history of PU and level

of injury. Memos were written during all phases of analysis to provide data for decision making on new codes and themes.

Results

Fourteen code categories and related codes contributed to the identification of four themes: (1) taking vigilant care, (2) taking charge, (3) maintaining health, and (4) passing up care. The average transcribed interview was 12 pages, ranging from 5 to 22 pages.

Code categories included beliefs about susceptibility and severity and related issues such as making decisions about care. **Table 1** contains the code categories, definitions, and codes. All but one person with SCI believed the consequences of a PU were serious and that they were susceptible to developing a PU. Despite feeling susceptible, most individuals with SCI were confident that they could prevent a PU and could perform the necessary skin care. Participants exhibited awareness of susceptibility to PU, remarking, "You are always at risk," "Your risk increases over the years because you are always sitting," and "Unless you are on top of them [PUs], you can get them fairly easily." Participants also recognized how severely PUs can affect lives. They noted that a PU "would be terrible," and that "You are helpless," "Your whole life is disrupted," and "[You] get depressed." All participants described benefits of skin care, such as preventing PUs, staying healthy, continuing activities, and staying out of the hospital. In contrast, many did not identify any barriers to performing care. Barriers that were mentioned included physical dependence, time consuming, forgetting to perform WPRs, and everyday distractions. Seven of the eight participants who did not identify barriers were either inpatients or had never had a PU.

Misconceptions about care and ways to overcome barriers to care emerged during participant interviews. Factors that motivated skin care included previous experiences or education, family support, physical cues, care of PUs, care routines, and decision making about care. Participants' attributions about what caused PUs to develop (e.g., "The nurses did not turn me enough.") were mentioned in interviews. The following themes emerged from the data.

Taking Vigilant Care

The theme of *taking vigilant care* emerged from beliefs about susceptibility to PUs, benefits of skin care, self-care motivation, confidence in skin care performance, consequences of a PU, and self-care routines. Taking vigilant care involved beliefs about the need for preventive skin care and finding ways to ensure it occurred. Some participants recalled

Table 1. Skin Care Beliefs, Code Categories, Definitions, and Codes for People with Spinal Cord Injury (SCI)

Code Category	Definition	Code
1. Impact of care on life	The need to perform a skin care routine gets in the way of other life activities or has little or no impact on life.	Little or no impact, gets used to it, hard to fit in, reminder of being different.
2. Self-care routine	Descriptions of care regimens, including any type of routine skin care.	Turns, wheelchair pressure reliefs, constant movement, skin checks, equipment, lotions, positioning, sit-and-turn tolerance, nutrition, prevention of incontinence, individualized self-care.
3. Decision making about skin care	How participants make decisions about care.	None
4. Self-care motivation (cues)	Anything that cues, prompts, or motivates participants to perform skin care. It can be something internal, such as sensations or the will to stay healthy; fear; or another person's influence or experience.	Avoid consequences of pressure ulcers (PU), embrace family's and others' help or interest, learn from others' or one's own experience, self-love, sensory cues, discipline.
5. Barriers to care	Negative aspects of self-care, such as a downside to doing something, cost in energy, dollars, time, etc. It can also be something that impedes skin care performance, such as dependence, poor health, fatigue, forgetfulness, inadequate help, etc.	Embarrassment, physical dependence, amount of time needed to perform skin care, hassle, hard to do, socially restrictive, everyday distractions, laziness, forgetfulness, inadequate help, fatigue or discomfort, poor lighting for skin checks.
6. Overcoming barriers to care	Refers to methods to overcome barriers or eliminate them.	Accept need for help with skin care, train help, do what is necessary, use equipment, get a schedule, make skin care a habit, build skin tolerance.
7. Susceptibility to PU	Perception of risk for developing a PU and what the person with SCI believes will decrease the risk.	(a) Perception of risk or susceptibility to PU. (b) Reducing risk by compensating for lapses in care, taking charge of care, problem solving, adapting or changing lifestyle, eliminating the problem, self-discipline, making skin care a high priority, and being vigilant and watchful.
8. Severity of consequences of PU	Beliefs about the severity of PU consequences on the life of a person with SCI or the lives of his or her family members. It includes medical, financial, and employment consequences, and impact on lifestyle.	(a) Impact on self and others: financial, lost time, lost work, dependence on others or burden, sickness, hospitalization, surgery, feelings of helplessness or that a PU would be terrible, depression. (b) Not sure of impact.
9. Benefits of skin care	Effectiveness or benefits of various skin care actions on reducing risk for PU or on the life of a person with SCI in general.	PU-free, stay healthy, decrease PU risk, avoid consequences (avoid illness or hospitalization), feel stress-free and good about self, have peace of mind, continue activities.
10. Confidence and self-efficacy for skin care	Perceptions of self-efficacy or confidence in ability to perform or direct self-care.	None
11. Advice to others	Suggestions of what rehabilitation nurses can tell patients to help them understand the need to perform skin care regularly and to motivate them.	None
12. Prior or current PU: Etiology and management	Comments about having a PU in the past or currently (e.g., care involved, how a PU developed).	None
13. Attributions about PU development	Blaming comments about why a prior or current PU developed.	None
14. Misconceptions about skin care	Erroneous beliefs about preventive skin care or PU care.	None

seeing photos of PUs and were frightened about developing a PU. Other participants had interacted with people who had a PU or had experienced one and understood how they could affect quality of life (e.g., "You see guys rolling around on their stomach," "A pressure sore would affect everything.").

Many participants were confident they could prevent PUs by being vigilant. Expressions such as "Be watchful," "Get off it [a PU] right away," and "Pay attention," reflected this vigilance. One man summarized his belief about being vigilant, "Nothing can stop you from doing care but yourself."

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One man who had a healed PU said, "Skin care is just something you do; skin care is a necessary evil. If you have self-discipline anything is possible.... Take vigilant care; be alert to any changes and look for early signs." The impact a PU would have on his wife motivated him to be vigilant about his care. He said, "It would put a pretty big burden and stress on my wife. That's a motivating factor in maintaining a proper routine."

Another participant with paraplegia who had avoided PUs during the 3 years since his injury talked about developing the habit of "being watchful." He was confident that maintaining his routine would prevent PUs and was motivated by the consequences of a PU to adhere to preventive care. He stated, "I had to change my life a little because I had to keep on it. Keep reminding myself to check my skin.... Pressure sores are nothing to play with."

A man with tetraplegia and a history of Stage 1 PUs expressed strong beliefs in his ability to prevent a serious PU by being watchful, adhering to a care routine, and using cushions and mattresses that were always in good repair. He believed his risk for a PU was low and stated

It's a top thing. It's discipline and it's easier in a routine.... You're always at risk; that's why you check yourself. You see a spot that is bad, you check your equipment, and say why is that spot bad?... Catch it right there in the beginning.

One participant developed a system to compensate for times when he was unable to adhere to his WPR performance schedule. As soon as possible, he would perform several longer pressure reliefs to make up for the lapse.

Discrepant cases included a female inpatient who was unaware of her skin's condition or whether it was being checked by the nurses and other participants who believed their nonadherent routine was working because they had not experienced a PU. A male participant who had never had a pelvic PU had not thought of the consequences of a pelvic PU or that WPRs were necessary; he said, "I don't have to do it often like they taught us in rehab, every 30 minutes or something."

Taking Charge of Care

The theme *taking charge of care* emerged from beliefs about the benefits of skin care, confidence, overcoming barriers, making healthy decisions, and the positive benefits of taking responsibility for proper skin care. The benefits of taking charge of one's skin care included staying healthy and avoiding PUs, as well as leading a more "normal" life. Beliefs about

taking charge included training helpers, using equipment, and fitting care into daily life. One inpatient participant helped direct his own care by communicating with staff members. He said, "I'd be on their case, I'd tell them to give me pressure reliefs. I ask to be turned all the time."

A man with tetraplegia who employed caregivers discussed the importance of checking the condition of his equipment, such as the wheelchair, and elaborated on the need to be in charge of his care.

I trained my people what to look for.... You've got to take charge. I can't see everything so you train your people.... You have very little control when you're in a wheelchair. The only thing you have control over is explaining to people what you want done.

One man took charge by assuring his equipment was high quality. He stated, "Good equipment can reduce your risk...I check it (cushion), when I'm not sitting in my chair. If I'm sitting on my cushion then I know I'm all right." Others were conscious of the need to relieve pressure and check skin at scheduled intervals. As one man said, "You just do it; you schedule it in." Several people with high injuries indicated that although they cannot do typical pressure relief activity, they take control by being in constant motion, such as making small shifts in a wheelchair.

One discrepant case involved a woman who had a history of several PUs and had left care decisions to her husband and caregiver. She said, "I don't even think about it anymore." This participant called several months after her interview to say that she had undergone plastic surgery. She had experienced a PU after she had stopped using an air bed because of costs. Giving ownership of her care to others may have limited her ability to adapt care to changing circumstances. Other participants failed to take charge of their skin care programs and performed skin care activities only when they remembered or if it was convenient.

Maintaining Health

The theme, *maintaining health*, emerged from beliefs about the benefits of and decision making about preventive skin care. Most participants, including those who reported lapses in care, indicated that they wanted to maintain their mental and physical health, including skin integrity. Participants expressed an understanding of the benefits of maintaining a skin care routine, even though they did not always follow through. A woman who had been paraplegic for 4 years spoke about checking her skin, "You know you are OK, and you have peace of mind; you don't have to worry about a certain spot." She indicated she does everything

possible to prevent sores to keep her body healthy and her mind stress free.

Another participant with paraplegia stated that even though skin care behaviors are “socially restricting” he performs them because he “loves himself” and wants to stay healthy. He admitted, “I just don’t like doing it, but skin care has to be a high priority.”

Several individuals mentioned the benefits of eating a healthy diet that includes high-protein foods. A man with tetraplegia, whose injury had occurred during the past year, had a chronic PU that occurred when he was hospitalized and stated

I try to eat a healthy diet and eat three squares a day. I take vitamins and then I do drink a lot of juices. Hopefully, all that acts as a deterrent and helps to get rid of the one I currently have.

This participant mentioned several “hassles” involved with skin care, including feeling embarrassed when people stared at him while he performed WPRs. He indicated that the drive to heal the PU and stay healthy and the support of his wife helped him overcome this and other aggravations.

Passing Up Care

The theme, *passing up care*, emerged from beliefs about barriers to care and its impact on one’s life, care routines, and misconceptions about care. Some participants’ comments reflected ambivalence about the importance of skin care, the need for a rigorous routine when faced with other priorities, and a desire to be free of routines that are a constant reminder of SCI. Many of those who passed up care did not have routines or were tired of being vigilant about their skin care. A participant stated, “You get tired of all that stuff.” Others talked about barriers to performing care, such as the time and effort it requires. Many admitted to “passing up skin care” if there were other things they needed to do. One man mentioned, “Right now skin care is my first priority because I just had surgery, but I see myself falling back into the same routine I was in before.”

A participant discussed gravitating between two mindsets regarding skin care: being less vigilant so he could engage in activities or following a strict skin care schedule that required personal sacrifice but maintained skin integrity. He had had several surgeries, currently had PUs, and was beginning a new job. He stated, “Oh yeah, I saw the breakdown occurring, but like I said, I had just started this job and I didn’t want to take any time off. So I just continued to sit on it.” He expressed skepticism about what clinicians had told him soon after sustaining the SCI—that he could still lead a normal life. He said

You try to go ahead and resume normal life (social life, work), then you have these problems. You can’t do things you

Key Practice Points

1. Although most participants believed they were susceptible to pressure ulcers and preventive care was important, paradoxical statements about beliefs and preventive behaviors were common. These incongruent responses may reflect ambivalence about competing priorities or about the efficacy of preventive practices.
2. Early identification of high-risk health beliefs of persons with SCI can potentially positively affect health outcomes and long-term healthcare costs.
3. Several individuals indicated that care routines were a hassle, hard work, or tiresome. Although such beliefs pose barriers, the literature on SCI seldom addresses such issues.
4. The beliefs identified in this study focused on four themes: taking vigilant care, taking charge, maintaining health, and passing up care.

used to.... You get depressed because you say this is the way it is going to be.

A man with paraplegia talked about skin care being “inconvenient.” He further stated, “If I have things I have got to do, I’ll pass it up. I often get into things and forget to do skin care.” Competing priorities were noted by another man who stated, “I do it every one-half hour, but when I’m doing the daily routine, like when I’m in therapy, I’m doing what I’m doing and might not do it till after I’m done, maybe a half-hour, maybe an hour.”

Another man with chronic paraplegia stated that WPRs are important, but indicated he did not perform them often, saying, “You forget about them, or you’re lazy, I don’t know.” He only checked his skin every other week and had misconceptions about PU etiology. For instance, he was convinced that sitting in a wheelchair 12 to 15 hours a day did not contribute to his sacral/coccygeal pressure ulcers. He said, “I don’t get them from sitting down.”

Other participants reported misconceptions, such as believing PUs only occur if you sit on something hard, like steps, and that checking skin weekly or biweekly enabled early detection of a PU. These beliefs led participants to deviate from the care they had been taught.

Discussion

The beliefs identified in this study focused on four themes: (1) taking vigilant care, (2) taking charge, (3) maintaining health, and (4) passing up care. The beliefs associated with the first three themes promoted positive decision making about performing care behaviors (e.g., benefits of care,

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overcoming barriers, awareness of susceptibility to PUs, severity of PU consequences, confidence in ability to perform care, self-care motivation). In contrast, negative beliefs (e.g., barriers, the impact of care on one's life, misconceptions) were common to the fourth theme, passing up care. Individuals who held positive beliefs were more likely to make preventive skin care a high priority and take ownership of care.

Participants believed they were susceptible to PUs and described the discipline and vigilance needed to prevent PUs. The theme, taking vigilant care, emerged from such responses. A number of these individuals had translated their beliefs into routines of care to overcome barriers and integrate preventive skin care behaviors into their daily lives. Several participants mentioned the importance of significant others as motivators, helpers, and assistants in problem solving and decision making. Being vigilant and taking charge of skin care had two motivations: (1) to prevent or heal PUs and (2) to demonstrate the participants' ability to take control of skin care and be as independent and healthy as possible to avoid burdening loved ones.

Participants internalized information about PU susceptibility and severity that was presented during acute rehabilitation. The knowledge gained during their early education was retained well beyond their inpatient stay, and this information motivated some when they returned home. Several participants believed that depression was an inevitable consequence of having a PU. A participant expressed his doubts about being able to prevent PUs for an extended amount of time because of the care that it requires. His poignant comment that he eats for nutrition rather than pleasure reflected his sadness.

The finding that only one-half of participants indicated they take charge of care is disconcerting. This finding raises the question, "When does a person with SCI begin to 'own' his or her skin care routine?" One of the four inpatients had already integrated the need to take charge. Others, who had been out of the hospital for some time, delegated ownership of the routine to family caregivers or abandoned a routine altogether. Anderson and Andberg (1979) found that people who felt less responsible for their care had higher rates of PU. Thus, beliefs about the need to take charge or be responsible for care may be a risk indicator for PUs.

Krause and Broderick (2004) reported that a healthy lifestyle, including diet and exercise, rather than adherence to skin care practices, reduced the risk of recurrent PUs. Many participants in this study believed that maintaining health reduced PU risk and that health was a benefit of skin care that

allowed participation in enjoyable and necessary activities. Framing preventive skin care as a health-maintenance behavior, similar to brushing one's teeth or taking medication, can promote acceptance of these behaviors.

Most participants believed that they were at risk for PUs, PUs presented a serious health risk, and skin care was important for prevention, all of which are consistent with other reports (Basta, 1994; Rodriguez & Garber, 1994). However, there was a discrepancy between these beliefs and the performance of skin care. Concerns about developing a PU often prompted a cost-benefit analysis to determine whether the behaviors necessary for lowering the risk of developing a PU were worth the effort required to produce benefits. For instance, the participants who admitted feeling embarrassed about doing WPRs in public ultimately tolerated others' stares and continued to do their WPRs. A small number were frustrated by the need for skin care because it made them feel different.

Similar to other reports (Garber et al., 2000; Merbitz et al., 1985), many participants indicated they frequently do not adhere to care practices; some were reluctant to follow skin care guidelines because they wanted to feel "normal" again and not controlled by their condition. Others were skeptical that most skin care behaviors were necessary. Among the latter individuals, some had a history of PUs and others did not. Still others had not integrated skin care into their daily routine and performed care activities only when it was convenient. Some individuals were ambivalent about the efficacy of preventive behaviors and were testing whether they needed to follow the care practices they had been taught. A perplexing finding was the frequency of ambivalence about performing preventive care. Despite knowing the benefits of preventive care and believing PU to be a serious condition, individuals commonly chose nonadherence when confronted with barriers such as conflicting priorities. Ambivalence about performing care has been reported in studies of people with diabetes, HIV, and multiple chronic illnesses (Remien et al., 2003; Townsend, Hunt, & Wyke, 2003; Walker, 2001). Several individuals in our study indicated that care routines were a hassle, hard work, or tiresome. Although these beliefs pose barriers, the literature on SCI seldom addresses this topic. O'Connor, Young, and Johnston Saul (2004) reported that the daily challenges of living with paraplegia add to adaptation difficulties but are seldom acknowledged by clinicians. Given an opportunity to discuss care issues, people with SCI may share surprising information that can lead to a greater understanding of their situations. Embarrassment when performing WPRs emerged as a potential barrier in this study; however,

no discussion of this possible obstacle was found in the literature.

Most participants expressed confidence that they could prevent or heal a PU, despite a history of PUs. Some derived confidence from having healed a PU in the past. For others, confidence may have resulted from interactions similar to the "shared care" concept reported by Sebern (1996). In Sebern's study, family dyads stressed the importance of (1) decisional control by the patient, (2) communication of skin condition and patient need, and (3) reciprocity (i.e., each dyad member has a specific role in skin care). These concepts are echoed in participants' statements about asking for and receiving help, being the expert on care, feeling confident that helpers will carry out their role, and feeling secure that another person will check skin condition and help make decisions. Several participants discussed being motivated for self-care to avoid being a burden on a loved one. Others discussed how they derived motivation from a family caregiver.

Practice Implications

The discouraging cycle of recurrent PUs followed by depression may be prevented through counseling and education to promote ownership of a skin care program. People with SCI should be encouraged from the time they are medically stable to take control of their skin care. Interventions to increase motivation for self-care go beyond presenting information and teaching skills. The value of preventive behaviors should be emphasized as soon as education begins by enlisting family members' support, developing positive self-care beliefs, practicing care daily to increase comfort with skin care skills, problem solving current and potential barriers, getting regular feedback on the performance of skin care behaviors, and knowing and directing one's skin care program.

Although teaching opportunities are plentiful during acute rehabilitation, clinicians may not take full advantage of incidental teaching opportunities. The need for incidental teaching is illustrated by several participants' experiences: the participant who did not perform WPRs when in therapy (and was not reminded to do so) and the woman who was unaware of whether nurses had checked her skin because they had not kept her informed. The importance of skin care behaviors may be reinforced by reminders and by sharing information during routine skin care.

Little is known about the most effective interventions and their timing to promote skin care. The data in this study suggest that self-care assessments are needed throughout the continuum of care. Follow-up visits provide an opportunity to evaluate care beliefs and routines, including barriers, misconceptions, ambivalence, and skepticism about care. These visits also

allow patients to voice concerns about other aspects of life, problem solve barriers to skin care, discuss the work of balancing life priorities with the challenges of care, and receive health and wellness counseling.

A limitation of this study is the cross-sectional nature of data collection. Thus, it is unknown whether a participant's previous experiences of a PU influenced beliefs or behaviors. The data indicate that this may have been the case for several who said they became aware of the importance of skin care after experiencing a PU.

Future Research

The findings suggest areas for future research. Development of measures to guide clinical assessment of skin care beliefs is an important area for research. Further research is needed to better understand why there is a discrepancy between participants' positive beliefs about skin care and their nonadherent behaviors regarding skin care practices. In addition, studies identifying factors related to taking ownership of skin care programs and research testing strategies for motivating self-care can potentially reduce the rate of PUs experienced by people with SCI. Because this study was cross-sectional, it is difficult to assess whether less positive beliefs and ambivalence about skin care were present from SCI onset or occurred later. Future research should evaluate how skin care beliefs and behaviors change over time and identify the factors related to these changes.

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