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Patient Perceptions of the Role of Nutrition for Pressure Ulcer Prevention in Hospital

An Interpretive Study

Shelley Roberts ■ Ben Desbrow ■ Wendy Chaboyer

ABSTRACT

PURPOSE: The aims of this study were to explore (a) patients' perceptions of the role of nutrition in pressure ulcer prevention; and (b) patients' experiences with dieticians in the hospital setting.

DESIGN: Interpretive qualitative study.

SUBJECTS AND SETTING: The sample comprised 13 females and 7 males. Their mean age was 61.3 ± 12.6 years (mean \pm SD), and their average hospital length of stay was 7.4 ± 13.0 days. The research setting was a public health hospital in Australia.

METHODS: In this interpretive study, adult medical patients at risk of pressure ulcers due to restricted mobility participated in a 20 to 30 minute interview using a semi-structured interview guide. Interview questions were grouped into 2 domains; perceptions on the role of nutrition for pressure ulcer prevention; and experiences with dieticians. Recorded interviews were transcribed and analyzed using content analysis.

RESULTS: Within the first domain, 'patient knowledge of nutrition in pressure ulcer prevention,' there were varying patient understandings of the role of nutrition for prevention of pressure ulcers. This is reflected in 5 themes: (1) recognizing the role of diet in pressure ulcer prevention; (2) promoting skin health with good nutrition; (3) understanding the relationship between nutrition and health; (4) lacking insight into the role of nutrition in pressure ulcer prevention; and (5) acknowledging other risk factors for pressure ulcers. Within the second domain, patients described their experiences with and perceptions on dieticians. Two themes emerged, which expressed differing opinions around the role and reputation of dieticians; they were receptive of dietician input; and displaying ambivalence towards dieticians' advice.

CONCLUSIONS: Hospital patients at risk for pressure ulcer development have variable knowledge of the preventive role of nutrition. Patients had differing perceptions

of the importance and value of information provided by dieticians.

KEY WORDS: nutrition, patient knowledge, pressure ulcer, prevention

Introduction

Pressure ulcers (PUs) are associated with significant costs to both patients and the health care system.^{1,2} Issues such as pain, discomfort, decreased mobility and independence, wound exudate, odor, social isolation, and poor body image have been described by individuals who have experienced PUs.³ In the hospital setting, PUs are associated with an increased risk of complications and lengthy healing times, resulting in longer length of stay (LOS) and higher hospital costs.¹⁻⁷ In the Australian public hospital setting, PUs increase LOS of acute admissions by a median of 4.3 days,⁸ and a recent study estimated the total cost of PU in Australian public and private hospitals in 2010-11 was US\$1.64 billion (\pm US\$1.05 billion).⁹ In the United Kingdom, the estimated annual cost of treating PU to healing time in hospital and long-term care settings was £1.4 billion to 2.1 billion in 1999 to 2000.¹⁰ Clearly, the

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patient burden and hospital costs associated with PU in the clinical setting are significant, and preferably avoided through effective pressure ulcer prevention (PUP).

Historically, risk factors such as pressure, moisture, shearing forces, and friction have been a primary focus for PUP.¹¹⁻¹³ In addition, research suggests that malnutrition is an important risk factor for PU development. Malnutrition is associated with an odds ratio of 2.6 (95% confidence interval: 1.8-3.5; $P < .001$) of developing a PU in the public hospital setting in Australia.¹⁴ Current evidence suggests that oral nutrition support for patients at risk of PU is effective in reducing the incidence of PU development by approximately 26%, resulting in substantial cost savings.¹⁵ However, there is no evidence to date that a dietician consultation is associated with a reduction in PU risk.

Hospitalized patients often fail to eat enough to meet their estimated energy and protein requirements.¹⁶⁻¹⁸ It is crucial, therefore, to improve the nutritional intake of patients at risk for PU, in order to reduce their risk of PU development. Patients may play a more active role in their nutritional care in hospitals if they understand the link between nutrition and PUP. Evidence suggests that patient education around PUP is lacking. A study of patients in 89 institutions in the Netherlands reported that only 14.7% of high-risk patients were educated about PU causes and prevention strategies.¹⁹ To our knowledge, research focusing on patients' understandings around nutrition of PUP or their experiences with and opinions of dieticians is lacking. Therefore, the aims of this study were to explore (1) patients' perceptions on the role of nutrition in PUP and (2) patients' experiences with dieticians. Understanding patients' perceptions around nutrition for PUP and dietician input in the clinical setting may provide a foundation for targeted interventions to promote good nutrition and prevent PUs.

■ Methods

This interpretive qualitative interview study is part of a larger, multisite, mixed-methods study conducted across 4 medical wards in 2 metropolitan hospitals in Southeast Queensland, Australia. Both hospitals have established PUP programs, and preventive strategies have been implemented into regular clinical practice. Ethical approval for study procedures was obtained through Queensland Health (reference number HREC/11/QTHS/111) and Griffith University (reference number NRS/40/11/HREC). All participants signed a consent form prior to data collection.

The sample comprised adult medical patients who received care in 4 inpatient medical units who had reduced mobility (ie, bed-bound, wheelchair-bound, or requiring a mobility aid or physical assistance) and were therefore deemed at risk for PU development. Reduced mobility was chosen as an inclusion criterion to identify patients at risk of PU because it is a widely recognized risk factor and

strong predictor of PU in the clinical setting.^{4,6,20} Participants were eligible for inclusion if they could provide consent (aged ≥ 18 years, cognitively intact), had a hospital LOS of 3 or more days, and met the criteria for reduced mobility. The study sample was selected using a maximum variation purposive sampling technique (ie, a mix of men and women, younger and older patients, patients with and without experience with PU).²¹

Data Collection

Individual patient interviews were conducted on the ward, in a quiet area, and at a time convenient for the patient. The interviews lasted 15 to 30 minutes. Using a semistructured interview guide, patients were asked about their perceptions of the role nutrition played in PUP and their experiences with and opinions about the role of dieticians. Three nutrition-related questions were asked. They were based on literature review and current clinical practice guidelines, which suggest that nutritional intervention and education are important components of PUP. Prompts were used to gain additional information as required. Individual interviews were conducted by a research assistant with experience in qualitative data collection. Interviews were recorded with a handheld digital recording device and transcribed for analysis.

Data Analysis

Interview transcripts were analyzed using inductive content analysis, which provides a systematic and objective means to make valid inferences from verbal data to describe and quantify phenomena.²²⁻²⁴ This technique takes into account meanings, intentions, consequences, and the context in which data were collected.²⁰ Because the interview questions encompassed 2 domains (knowledge of nutrition in PUP and experience with dieticians), data from each interview were analyzed in relation to these domains. To become familiar with the data, transcripts were read and reread, and notes were taken by 2 of the authors. For each domain, codes were developed from the verbatim statements of participants, which were then grouped into subthemes identified from the data. Subthemes were then classified into themes within each domain. Frequent discussion among the research team was undertaken to ensure that the codes accurately reflected the data, and that the themes and subthemes adequately encompassed the data.

Trustworthiness of findings in qualitative data analysis is often considered in relation to credibility, dependability, and transferability.²⁵ We used purposive sampling which ensured a broad representation of patients, and regular meetings with the research team ensured codes, subthemes and themes accurately reflected the data for transferability and credibility. A code book and memos were written to document the analytic process, including decisions about emerging subthemes and themes, providing an audit trail of the analysis.

■ Results

The sample comprised 13 women and 7 men. Participants mean age was 61.3 ± 12.6 years (mean \pm SD, range 24-80 years), and their mean hospital LOS was 7.4 ± 13.0 days (range 3-62 days). After 16 interviews, no new information was emerging; however, 4 more interviews were completed to ensure data saturation. Within each domain, a number of themes emerged. A summary of the domains, themes, and subthemes is provided in Table 1.

Domain 1: Patient Knowledge of Nutrition in PUP

The first domain had 5 themes that expressed respondents' perceptions of the role of nutrition for preventing PUs. Consistent with inductive approaches to qualitative analysis, we did not identify an overarching theme, nor was any theme prioritized over the others as each provided a unique perspective. In addition, we refrained from counting frequencies of emerging themes.

The first theme was "recognizing the role of diet for PUP." Participants acknowledged that nutrition as important for prevention of PUs. Nevertheless, while most patients thought that nutrition played a role in prevention, they were unsure exactly what that role was. As respondent 1 stated, "I'm not a dietician and I'm not a medical expert, but I would suggest that nutrition is very, very important." Some patients stated that consuming a poor diet will result in a higher likelihood of developing a PU. Other patients described a good diet as being a protective factor for PU, and weight loss (in the buttocks area) was described as a factor that may increase the risk of PU. "The good food is building you up all the time, and you may even be putting on weight. And it's usually when someone loses a lot of weight in their bottom area that these things happen quicker. The skin comes apart quicker. Whereas with well-padded bottoms, it takes a while to happen."

Losing weight if overweight or obese was also described as a measure for PUP and healing. One participant postulated that consuming "heavy foods" in hospital would lead to patients feeling full and heavy, encouraging them to stay in bed rather than resuming mobility. Another participant, unsure of the role that nutrition played in PUP, supposed that nutrition affects your blood, and if your "blood's out" (ie, blood test results abnormal), you may be more likely to develop PU. On the whole, this theme reflects patients' recognition that nutrition plays a role in PUP, but the description of that role was ambiguous.

The second theme, "promoting skin health with good nutrition," portrays how patients linked skin health and nutrition, even if they did not fully understand the mechanisms behind this relationship. Some participants made general statements that nutrition was related to skin health, while others said that poor nutrition would cause skin to break down more easily. Several participants men-

tioned dietary protein as an important factor for skin integrity. Protein was also mentioned as important for wound healing and prevention of infection. One patient thought that fluid intake would play a role in PUP; however, they were unsure of its exact role. Although respondents did not articulate the exact relationship between nutrition and skin health, they appeared to have a broad understanding of this notion. One respondent noted, "I should assume that if you weren't eating properly, and aren't getting the right nutrition, of course your skin's going to break down twice as much." Another observed, "You need vitamins and minerals and proteins in the right ratio so that your skin, your body tissue maintain its intactness, because if it doesn't maintain intactness, then you're prone to infection."

The third theme, "understanding the relationship between nutrition and health" describes the perception that nutrition was important for health in general and would be expected to play a role in PUP. As one respondent articulated, "I know nutrition is important for all areas of health, and so it would have a part to play with pressure sore prevention."

The fourth theme "lacking insight into the role of nutrition and PUP" depicts the lack of understanding or knowledge of a relationship between nutrition and PUP expressed by some participants. Some respondents stated that they had "no idea" how nutrition and PUP may be related, and others reported that they had not given this potential connection much thought before. One respondent related, "I've got no idea, really. No, none whatsoever." Another observed, "I don't think nutrition plays a role in bed sores.... I don't think it's to do with nutrition. I wouldn't have thought so anyway."

The final theme in the knowledge of nutrition and PUP domain was "acknowledging other risk factors for PU." Within this theme, patients described other risk factors they considered to be of importance for PUP; they were skin health, age, pressure, shear and friction, and comorbid conditions. Skin health and integrity were mentioned most frequently, but no link was made between skin health and nutrition. Keeping skin healthy was described as an important way to prevent PUs, and patients mentioned delicate or thin skin as being associated with vulnerability to PU development. Age was identified as a factor affecting skin health and integrity. Participants noted that aging is linked to more fragile skin that is prone to skin tears. The combination of older age and medications such as warfarin was linked to fine skin that bruises, tears, and bleeds easily. Participants also acknowledged that older patients should be monitored for PU because they are at high risk. Pressure on the body associated with lying/sleeping positions and prolonged time spent in bed were described as factors involved in the development of PU. Several participants stated that "...heels rubbing on the bed" acted as a risk factor for PU development. Finally, patients expressed the belief that various illnesses were

TABLE 1.**Description of Domains, Themes, and Subthemes**

Domain	Theme	Subtheme
Patient knowledge of nutrition in PUP	Recognizing the role of diet in PUP	<ul style="list-style-type: none"> • Nutrition probably plays a role in PUP • Poor diet/weight loss (especially in the buttocks) is a risk factor for PU • Good diet/weight gain (when underweight) is a protective factor for PU • "Heavy food" may reduce mobility • If overweight, losing weight is important for PUP and healing
	Promoting skin health with good nutrition	<ul style="list-style-type: none"> • Nutrition plays a role as it is related to skin health • Poor nutrition would cause skin to break down more easily • Protein, vitamins, and minerals maintain skin/tissue integrity and prevent infection • High protein diet for skin integrity and healing • Fluid intake may play a role (unsure what)
	Understanding the relationship between nutrition and health	<ul style="list-style-type: none"> • Nutrition is important for all areas of health, so it would have a role in PUP • Nutrition plays a role as it is the well-being of the body • Better nutrition results in better health and circulation • If you have a healthy body, you won't get PU as bad
	Lacking insight into the role of nutrition in PUP	<ul style="list-style-type: none"> • Unsure how nutrition and PUP may be related • Has not thought about nutrition as a factor in PUP • Doesn't think nutrition has a role
	Acknowledging other risk factors for PU	<ul style="list-style-type: none"> • Main issue is skin integrity • Pressure, positioning, and medical conditions are important risk factors for PU • Friction/shear as a risk factor • Skin health is important • Age and medications affect skin health • Older patients are at risk
Patient feedback on dieticians	Receptive of dietician input	<ul style="list-style-type: none"> • Feels lucky to be seen by the dietician • Appreciates nutritional information provided • Dieticians are happy and bright
	Displaying ambivalence toward dieticians' advice	<ul style="list-style-type: none"> • Patients do not think they need to see a dietician • Already knows how to eat • Dietician appointment did not meet expectations • Patient felt disempowered • Conflicting advice from dietician and specialist • Did not gain any new knowledge from dietician • Did not like prescribed diet

Abbreviations: PU, pressure ulcer; PUP, pressure ulcer prevention.

important in PU development. As one participant noted, "I think it's to do with the patient, what's wrong with them, and the way they lie." Another stated, "Well the main reason [for developing a PU] is pressure on the body from the bed and the angles you sleep." A third respondent observed, "I tend to think it's more if the skin's thin and delicate."

Domain 2: Patient Feedback on Dieticians

The second domain "patient feedback on dieticians" comprised 2 themes, describing patients' experiences with and perceptions of dieticians. These included (1) receptive of dietician input and (2) displaying ambivalence toward dieticians' advice.

The theme "receptive of dietician input" describes positive experiences during interactions with dieticians. These participants expressed willingness to participate in nutritional education and gratitude toward dietetic input. They tended to describe dieticians as happy and bright and felt appreciative of the information and services they provided. As one respondent noted, "I'm lucky enough to have been referred, to a dietician." Similarly, another stated, "It had just so much information; leaflets and talking to the nutritionist, it was lovely."

In contrast to theme 1, the theme "displaying ambivalence towards dieticians' advice" reflects conflicting views of the value of dietetic advice. Some participants expressed the opinion that they did not need to see a dietician,

primarily because they already knew how and what to eat to keep healthy. Some stated that the need to consult with a dietician never crossed their minds, while others stated that meeting with a dietician was necessary only if diagnosed with a disease that required a special diet. One respondent described the need for a dietician, "...only if I needed it. Well, if I had any sort of diseases or sicknesses that needed, um, to be on certain diets, I'd be interested then. But for, like, everyday life I've got a fair idea what's good for me and what isn't, you know. So not really, no." Another patient reported that an appointment with a dietician did not meet her expectations; she further stated that she left this appointment feeling disempowered. This participant also discussed receiving conflicting advice between the dietician and her diabetes specialist. "She (dietician) was telling me things that were in opposition to what my specialists were telling me. (Specialist): 'You need to lose weight'. (Dietician): 'No, you won't be losing weight. When you're diabetic you put weight on'." Other participants thought that they did not learn anything new from their dietician as compared to nutritional information gained from everyday life. As one participant opined, "Well, she [dietician] didn't provide me with anything I didn't already know. I was quite bored." Some stated they did not like the diet they were prescribed, or disliked restrictions on certain foods, resulting in discontinuation of their prescribed diet.

■ Discussion

This study is the first to our knowledge to explore awareness of the role of nutrition for PUP among patients at risk for PU development. Participants were patients at 2 Australian hospitals where both PUP and patient education were important parts of clinical practice, and it was initially postulated that their knowledge of the importance of nutrition in PUP would be adequate. Instead, we found variable levels of understanding of the role of nutrition in PUP. Some respondents had a personal history of PU or had experience through family members. These experiences may have influenced their perceptions around nutrition for PUP and the importance of dieticians. Nevertheless, study findings suggest that patients had inadequate knowledge of nutrition and PUP despite well-developed programs that include consultation with a dietician and appropriate counseling. We, therefore, recommend additional education focusing on PUP that includes the role of nutrition for all patients deemed at risk for PU development.

Based on the variable levels of knowledge expressed by study respondents, we also recommend individual assessment to determine patients' level of knowledge and motivation to be involved in their care. Research suggests that basic literacy levels in adults may not be sufficient to understand oral or written information regarding their medical condition and health care.²⁵ Health literacy is

defined as an individual's capacity to obtain, process, and understand information and services needed to make appropriate health decisions.²⁶ Health literacy in the hospital setting is especially important since education must be delivered in a setting of an acute illness. A study based in the United States found that 81% of English-speaking patients over 60 years of age lacked adequate health literacy to make informed decisions about their health care.²⁷ Researchers have also reported that patient education materials and consent forms in hospital are often above patients' reading levels, rendering their comprehension even more challenging.²⁸⁻³¹ We recommend consideration of patients' education, literacy levels, and prior knowledge of nutrition when planning education for acutely ill persons at risk for PU development.

Participants in this study expressed differing perceptions of the importance and value of information provided by dieticians. Some patients expressed their gratitude toward dietetic input in the hospital setting, but others deemed it unnecessary. These findings suggest that the role and importance of dieticians are unclear to patients in the hospital setting, and this lack of knowledge may affect patients' responsiveness to PUP programs that include nutrition education. Interventions such as educational interventions related to nutrition and PUP must be compatible with individuals' values, beliefs, and current needs, and they must be perceived as feasible and beneficial.³² This observation is reflected in previous studies exploring staff perceptions on the role of clinical dieticians.^{33,34} A study conducted at a public hospital in Queensland, Australia, used thematic analysis to explore staff perceptions around nutrition care.³³ They found that the role of the dietician was unclear to nursing and allied health staff such as pharmacists, speech pathologists, physiotherapists, and occupational therapists. The health care providers also expressed mixed views on whose responsibility it was to identify and provide nutritional care to malnourished patients.³³ Similarly, a cross-sectional survey of 237 internal medicine physicians and clinical dieticians in Michigan found that most responses to questions around the role and responsibilities of dieticians differed between professions.³⁴ If the role of dieticians is unclear among clinicians involved in PUP and wound care, it is not surprising that patients lack an adequate understanding of how consultation with a dietician may provide benefit for prevention of PU development. Even though evidence supporting the effectiveness of dietary counseling in PUP or management of malnutrition in hospitals is lacking,³⁵ nutrition education may be an important component of PUP programs. This is reflected in international PUP guidelines, which suggest that patient education is an important aspect of PUP.^{36,37} Additional research is needed to determine the effectiveness of patient and nutritional education on PUP.

Some participants displayed a lack of confidence in dieticians, and they suggested they did not learn anything new from the dietician, disliked the prescribed dietary

plan, or thought advice from their dietician contrasted to information given by their other providers. While dieticians are experts in nutritional care, recent research suggests that general practitioners are the most recognized health care professional providing nutritional care to patients with chronic disease in Australia, followed by dieticians.³⁴ Although this study was based in the primary care setting, it highlights the importance of a consistent approach to the information provided by all health care professionals providing care for an individual patient.

Clinical Implications

Three main recommendations arise from this study. We found that patients at risk of PU development expressed varying levels of knowledge of the role of nutrition in PUP, and require tailored education in this area, taking into account their health literacy. We hypothesize that tailored education may raise patients' knowledge of nutrition and PU development and increase their participation in their nutritional care. We also recommend clarification of the role of dieticians in the clinical setting, as patients appear to lack an understanding of the potential health gains to be made from dietetic input and nutritional care in hospital. A better understanding of this role and its importance in PUP may increase patients' responsiveness to dietetic input and participation in their nutritional care.

Limitations

Interview questions were asked after each patient had participated in an observational study targeting the patients' role in PUP. As patients knew their oral intake was being monitored, their awareness of a potential role of nutrition in PUP may have been increased, influencing results of this study. Participant's clinical conditions may have influenced their responses. We sought to minimize this potentially confounding influence by ensuring that interviews were conducted when patients felt well enough to participate, ensuring that patients remained comfortable during the interview, and informing participants that the interview may be ceased at any time if they felt tired or distressed. Another potential limitation is that analysis occurred several months after data collection; therefore, member checking was not possible as patients had been discharged from hospital. Selection bias is a consideration in any research. In qualitative research, purposive sampling is used to achieve variation in the experiences being explored and in this study, recruitment occurred until data saturation was reached.²¹ It is always possible that some views were not represented in our sample.

Conclusions

Findings from this study suggest that patients at risk of PUs have conflicting views on the role of nutrition in PUP.

Owing to the compromised nutrition seen in many persons at risk for PU development, we believe that selected patients will benefit from nutritional education aimed at PUP that is tailored to suit their literacy levels. A better understanding of the role of dieticians within the clinical setting may improve patient participation in their nutritional care and associated outcomes.

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