

The Characterization of Pressure Ulcer Prevention and Management via Focus Groups: Perspectives of Consumers and Rehabilitation Professionals

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ABSTRACT

The purpose of the project was to begin to characterize pressure management issues with respect to individuals with a disability who utilize a wheelchair as their primary mode of mobility. A focus group analysis, which included follow-up interviews, identified multiple themes from the consumers' perspective and the rehabilitation professionals' perspective. The consumer themes included education, behavior, technology, information and funding. The rehabilitation professional themes included education, training and application, clinical pathway, technology, funding and behavior. The themes apply to both pressure management in general, and the specific application of a mobile pressure measurement system (Healthy Chair by Dynamic Controls). The themes identify the need for a mobile pressure measurement system that can be utilized by both consumers and rehabilitation professionals in the prevention and healing of pressure ulcers.

BACKGROUND AND RATIONALE

Pressure ulcers provide a significant problem for individuals that utilize a wheelchair as their primary mode of mobility. Pressure ulcers have significant negative monetary, health and quality of life implications (Rappl, Sprigle, & Lane, 2010). By monitoring the duration and magnitude of pressure we can minimize the likelihood of developing a pressure ulcer.

Current commercially available pressure measurement systems on the rehabilitation market are designed primarily for use in the clinical setting, as opposed to the community setting. In order to address this issue, Dynamic Controls (Christchurch, NZ) has developed a wheelchair seat interface pressure measurement system (Healthy Chair) that can measure and record pressure in the community setting.

The purpose of this project is to collect and analyze baseline qualitative data about seated pressure management via two unique focus groups: a consumer group and a rehabilitation professional group. First, the focus groups

will identify themes associated with pressure management in general. Second, the focus groups will identify themes associated with a mobile seat interface pressure measurement systems, specifically the Healthy Chair. The baseline information will guide the decision-making process for further development and implementation of a mobile seat interface pressure measurement system designed to aid in the prevention of pressure ulcers.

METHODS

Research Design

A qualitative research design based on focus groups was utilized to identify themes as they relate to the development of a mobile seat interface pressure measurement system for use over long periods of time in multiple environments (e.g. in-patient rehabilitation, skilled nursing facility, home, work, school, travel)(Krueger, R. A. & Casey, M. A., 2009; Portney & Watkins, 2000; Whittaker, Merry, Dorey, & Maddison, 2012). The Ohio State University Institutional Review Board approved the protocol prior to initiation of the focus groups (IRB # 2012H0216).

Sample

The first focus group centered on individuals with a disability who utilize a wheelchair as their primary mode of mobility (consumers), while the other centered on rehabilitation professionals.

DETAILED STUDY PROCEDURES

An advisory board was convened to develop the line of questioning prior to initiation of the focus groups, and to validate theme development following the focus group activities. The study advisory board consisted of members from the research team, and included an occupational therapist, physical therapist, plastic surgeon and rehabilitation engineer. Each member has over 10 years of experience in the field of pressure management.

The occupational therapist and rehabilitation engineer from the advisory board facilitated the focus group activities. The focus group was broken up into 4 activities: 2 in the morning session and 2 in the afternoon session. A scribe was present to record all activities. Furthermore, audio and video were recorded.

In activity 1, facilitators provided an overview of pressure ulcers and the current recommendations for pressure ulcer prevention utilizing health professional and consumer guides (Garber et al., 2000, 2002).

Activity 2 allowed participants to provide their perspectives associated with pressure ulcer education and prevention, as well as the development of technology to reduce the likelihood of developing a pressure ulcer.

During activity 3, facilitators introduced the Healthy Chair system to the participants. The unique features of the Healthy Chair include integrating the pressure sensor mat under the seat cushion cover, and direct integration into a power wheelchair control system for power. The Healthy Chair system records data locally via a datalogger, and transmits the current pressure status to an iPod Touch via Bluetooth. Participants provided their perspectives associated with pressure ulcer prevention with respect to the Healthy Chair.

Finally, during activity 4 the rehabilitation professionals and consumers identified the key components of a clinical pathway for appropriate utilization of the device in both the clinical and community settings.

Data Analysis

The transcripts were analyzed by the research team using qualitative analysis techniques with oversight by the study advisory board. Following that analysis, a member of the advisory board contacted each participant to ask follow-up questions related to the focus group activities and confirm the themes developed during the focus group

RESULTS

Eight consumers provided informed consent to participate in the study (5 men, 3 women) with a mean age of 43 years (s.d.14). In terms of their primary mode of mobility, three participants use an ultralight manual wheelchair (ULWC), three individuals use an ULWC with pushrim activated power assist wheels (PAPAW), and two individuals use rehabilitation power wheelchairs with rehabilitation seating.

Seven rehabilitation professionals (3 PT, 3 OT, 1 RN) with experience in pressure management provided consent to participate in the study. There were 4 men and 3 women with a mean age of 45 years (s.d. 11). The participants had been practicing as rehabilitation professionals on average

for 17 years (s.d. 13) and had on average 13 years (s.d. 12) of pressure management experience.

Themes

The consumers identified five themes, while the rehabilitation professionals identified six themes.

Consumer Themes

Education. The consumers indicated that a consistent method of education and training related to skin protection does not exist. Given the amount of information the participants were provided when they started using a wheelchair as their primary mode of mobility, it was very difficult for them to remember all of the information.

Behavior. Each person has their own technique for performing a pressure relief, and their own internal clock for determining when a pressure relief is necessary. The participants admit that they don't know if their techniques and internal clock are effective. Finally, and most importantly, behavior doesn't change until there is a consequence. The successful behavior is most easily implemented through the combination of education and continuous feedback.

Technology. The consumers utilize a variety of technology, ranging from traditional mobile phones to smartphones and tablets. The primary requirement was that the technology is simple and easy to use. During activity 2, the consumers identified the need for a remote sensor for measuring pressure. The system should remain on the cushion at all times, should provide real-time feedback and should notify the consumer when an issue arises.

Information. The utilization and privacy of information generated by any device was a critical concern for the consumers. The consumers want to be the gatekeepers of the information. The consumers only want information sent to a rehabilitation professional if she/he has the experience and knowledge to appropriately analyze the information. Finally, members of the focus group were concerned that their health insurance company may get the information, which could have significant financial implications.

Funding. In general, the consumers are interested in self-funding, but are not committed to paying for the system. A key concern is the overall price of a consumer version of the pressure measurement system. They thought it would be appropriate for a third-party payer (e.g. health insurance) to fund the system given it is tied to their overall health and well-being.

Rehabilitation Professional Themes

Education. The rehabilitation professionals in the study all received education on pressure management from numerous sources. The majority of the training came as

post-professional training via on-the-job experiences, conferences and manufacturer in-services.

Training and Application. A second theme revolved around training and application, which relates to how the rehabilitation professionals provide education to the consumers, and how consumers apply this information. The rehabilitation professionals perceive that the information they provide is not of value to the consumer until they get a pressure ulcer. These perceptions were validated by the consumer focus group.

Technology. The clinicians indicated that they utilize a diverse range of technology for personal and professional use. Any technology developed for clinical use must be easy to use, must provide a wealth of information in a short period of time, must provide clinically relevant information, and must have a clear clinical pathway.

Clinical Pathway. During activity 2, the rehabilitation professionals indicated that the current pathway is very reactive as opposed to proactive.

Activity 4 focused on the development of a clinical pathway for the Healthy Chair system. The rehabilitation professionals agreed that a globally accepted clinical pathway for performing a pressure mapping analysis does not exist, but is necessary. The most obvious group that could initially benefit from the Healthy Chair system are individuals who have previously had a pressure ulcer, currently have a pressure ulcer, or are at risk for the development of pressure ulcers.

Multiple continuums of care exist for the potential implementation of the Healthy Chair, including acute care, in-patient rehabilitation, outpatient rehabilitation, skilled nursing, and home health rehabilitation. From the clinical pathway perspective, the Healthy Chair has the potential to provide a history of pressure relieving activities across the continuum of care.

Funding. The rehabilitation professionals indicated in activity 2 that the consumers would not likely self-fund consumer electronic devices or rehabilitation technology devices that support health and wellness activities. During activities 3 and 4, the discussion transitioned to other funding sources beside the consumer and the consumer's third party payer. Overall, there was no consensus among the group on the best funding mechanism for the pressure measurement system.

Behavior. Rehabilitation professionals recognized the importance and difficulty of changing behaviors related to pressure management. Rehabilitation professionals would like to see the consumers take ownership of the information. The key for the change in behavior is that there needs to be a significant value proposition for the rehabilitation professional and the consumer.

CONCLUSION

The purpose of the project was to characterize pressure management issues with respect to individuals with a disability who utilize a wheelchair as their primary mode of mobility. Specifically, the scope of the project focused on reducing the likelihood of developing a pressure ulcer at the human / seat cushion interface. The focus group analysis identified multiple themes from the consumers' perspective and the rehabilitation professionals' perspective. Both the consumers and the rehabilitation professionals identified the need to elicit behaviors that minimize the likelihood that an individual will develop a pressure ulcer at the human/seat cushion interface. Though education is an important component in eliciting appropriate behaviors, specifically pressure relieving activities, a feedback mechanism is necessary for both consumers and rehabilitation professionals. Based on the focus groups and follow-up interviews, the Healthy Chair system provides the feedback necessary to elicit the ideal behaviors in terms of the frequency and duration of pressure relieving activities. Limitations of this project primarily center on the focus group design, which provides depth into the topic of pressure ulcer management, but does not provide the breadth necessary to begin making generalizations about the utilization of mobile pressure measurement systems to elicit the ideal behaviors in terms of pressure relief. The information identified during the focus groups and follow-up interviews provide information that can be utilized to improve the design of the Healthy Chair system, and provide rehabilitation professionals with information that can be utilized in clinical practice.

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