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Usability Challenges with Insulin Pump Devices in Diabetes Care:
What Trainers Observe with First-Time Pump Users

by
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Insulin pumps are designed for the self-management of diabetes mellitus in patients and are known for their complexity of use. Pump manufacturers engage trainers to teach patients how to use the devices correctly to control the symptoms of their disease. Usability research related to insulin pumps and other infusion pumps with first-time users as participants has centered on the relationship between user interface design and the effectiveness of task completion. According to prior research, the characteristics of system behavior in a real life environment remain elusive. A suitable approach to acquire information about potential usability problems encountered by first-time users is to obtain this information from the health care professionals who train them.

The purpose of the study was to discover the lived experiences and shared impressions of insulin pump trainers during training sessions with first-time users. Interpretative Phenomenological Analysis (IPA) was used to uncover the phenomena associated with usability challenges that first-time users of insulin pumps face when learning to use the device. Six participants representing a homogeneous sample were recruited from a wide geographic area in the United States, and semi-structured interviews containing open-ended questions were conducted with the respondents.

The data from the lived experiences and shared impressions of the participants were used to develop the following five super-ordinate themes: *Emotion-charged Environment*, *Personalized Training*, *Safety Issues and Disaster Planning*, *Professional Dedication*, and *The Voice*. The essence of participants' experience was described around the pivotal moment when the training sessions are successfully completed and insulin pump therapy becomes alive.

The findings of this study have implications for information systems professionals who conduct research on the safe design and usability of safety critical medical devices. In addition, the findings from this study create opportunities for practice to improve the initiation of insulin pump therapy in patients with diabetes.