

Effect of Smartphone Applications on Patients' Knowledge of Surgery-Related Adverse Events during Hospitalization

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Abstract : Background: As the number of surgeries increases, the incidence of adverse events is likely to become more prevalent. Patients who are somewhat knowledgeable about surgery-related adverse events are more likely to engage in safety initiatives to prevent them. Objectives: To evaluate the impact of a smartphone application developed during the study to enhance patients' knowledge of surgery-related adverse events during hospitalization. Design: Non-randomized, one group, measured pre- and post-intervention. Participants: Thirty-six hospitalized patients admitted to the orthopedics unit of a general hospital in South Korea. Methods. First, a smartphone application to enhance patients' knowledge of surgery-related adverse events was developed through an iterative process, which included a literature review, expert consultation, and pilot testing. The application was installed on participants' smartphones, and research assistants taught the participants to use it. Twenty-five true/false questions were used to assess patients' knowledge of preoperative precautions (eight items), surgical site infection (five items), Foley catheter management (four items), drainage management (four items), and anesthesia-related complications (four items). Results: Overall, the percentage of correct answers increased significantly, from 57.02% to 73.82%, although answers related to a few specific topics did not increase that much. Although the patients' understanding of drainage management and the Foley catheter did increase substantially after they used the smartphone application, it was still relatively low. Conclusions: The smartphone application developed during this study enhanced the patients' knowledge of surgery-related adverse events during hospitalization. However, nurses must make an additional effort to help patients to understand certain topics, including drainage and Foley catheter management. Relevance to clinical practice: Insufficient patient knowledge increases the risk of adverse events during hospitalization. Nurses should take active steps to enhance patients' knowledge of a range of safety issues during hospitalization, in order to decrease the number of surgery-related adverse events.

Keywords : patient education, patient participation, patient safety, smartphone application, surgical errors

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