Impact of Barcode Medication Administration on Nursing Activity Patterns in Taiwan

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Abstract

The purpose of this study was to explore the impact of BCMA on nursing activity patterns and nurses' usage experience in Taiwan. A total of 4,940 observation items were collected by work sampling method on nurses who used BCMA and those who did not use, and interviewed were conducted to explore users' experiences.. The results of this study were as followed. First, nurses who used BCMA spent more time on indirect care and unit-related activities but less on medication-related activities. Second, nurses' direct care, indirect care, medication-related activities and personal time were significantly different on the day and night shifts. Finally, nurses commented that BCMA could enhance workflow and patient safety, however, hardware insufficiency and system functions needed further improvement. The study results could be a reference for BCMA outcome evaluation.

Keywords:
Barcode medication administration (BCMA), Work sampling observation, Interview, Usage experience.

Introduction

The adoption of barcode medication administration (BCMA) helps nurses to ensure the safety of medication administration. The purpose of this study was to explore the impact of BCMA on nursing activity patterns and nurses' usage experience in Taiwan.

Methods

The study was conducted in a 2,900-bed medical center which developed its own version of BCMA application in house. A total of 4,940 observations were collected by work sampling observation method on two groups of nurses who used and did not use BCMA, and 6 staff members were interviewed with a semi-structure interviews guide.

Results

The results of this study were as followed. First, nurses who used BCMA conducted more activities on indirect care and unit-related care but less on medication- related ones. Second, nurses performed direct care, indirect care, medication-related and personal activities were significantly different on the day and night shifts. Finally, after controlling of shifts, nurses who used BCMA spent more time on indirect care and unit-related activities but less on medication- related activities. In addition, five themes were identified by summarizing nurses' interviews: improving workflow, enhancing the safety of medication administration, insufficient hardware issue, poor system function and other perspectives.

Conclusion

While the BCMA use could direct nurses' practice patterns from medication-related activities to in-direct care and unit-related care, the direct care was not compromised. Additionally, while the BCMA use could improve workflow and patient safety, hardware sufficiency and system functionality deserve more attention in technology adoption process.