Application of HEART technique in health care system and accuracy of its results

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Abstract

Introduction: Human error is considered as a crucial challenge in occupational settings. Health care system is amongst occupational environments with high rate of human errors. Numerous preceding studies noted that more than 2/3 of medical errors are preventable. Accordingly, different methods are suggested to evaluate human errors, especially in nuclear industries. The aim of this study was to evaluate the application and accuracy of HEART technique in medical health system.

Material and Method: This qualitative study was conducted in surgical intensive care units of a hospital in Shiraz city. All nurses recorded errors were categorized regarding the given tasks and then all tasks were ranked based on the number of errors. The probability of nurses' tasks error was estimated through AHP-HEART method and the resultant ranking was compared with the recorded errors. Additionally, the prioritization of contributing factors to errors, determined by AHP and AHP-HEART methods, was compared employing Pearson statistical test.

Results: Based on the results, there was a concordance in the rate of nurses' error determined by HEART method and the recorded errors. However, no significant correlation was between errors contributing factors determined by AHP and AHP-HEART methods.

Conclusion: This study suggested that although HEART technique was successful to rank the tasks considering the magnitude of error probability, but the coefficients of error producing conditions should be customized for nurses' tasks in order to provide appropriate control measures.

Key words: *AHP, HEART, Human Errors, Intensive Care Unit, Nurses*

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