

Original Article (Qualitative)

Investigation of the antecedent factors of human resource errors in the treatment department in hospitals in Rafsanjan city.

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Abstract

The present study aims to investigate the antecedents of human resource errors in the treatment department in hospitals in Rafsanjan city. This research is applicable in terms of its purpose, and qualitative in terms of its method. The statistical population of the study includes 43 physicians in hospitals in Rafsanjan city. The basis for collecting information is the expertise and specialization of individuals, which were selected as sample members using purposive sampling until theoretical saturation was reached. Data analysis was performed using MICMAC software. The results of data analysis showed that regarding the antecedents of human error in physicians, the highest level of agreement among experts was with the components of incorrect information about the patient and inappropriate method of drug distribution; and the lowest level of agreement with the components of failure to observe the patient's legal rights and failure to apply ethical standards and professional principles. Also, regarding the outcomes of human error among physicians, the highest level of agreement among experts was with the component of creating psychological stress in physicians and increasing complaints among patients and hospital clients, and the lowest level of agreement with the components of developing a comprehensive plan for implementing activities related to health promotion, better and more information collection and dissemination, and the governance of a teamwork culture. Also, the results of interpretive structural equations and MiMak analysis showed that, from the experts' perspective; the weakness of the organization's employees' performance and the weakness of the internal management systems were identified as the first-level criteria, and the criteria of inappropriate mental processes and dysfunctional management characteristics at the second (last) level of the model.

Keywords:

Human error, health promotion, human error of physicians, psychological stress

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Extended abstract

Introduction

Today, sensitive systems with advanced technology are used in many nuclear, chemical, military, and medical industries. Since these systems interact with humans, the potential for risks due to human errors in these processes is high (Tanha et al, 2015). Human error involves the deviation of human performance from specified rules and tasks that exceed the acceptable limits of the system and have an undesirable effect on the system's efficiency (Alvarado & Triantis, 2024). In fact, despite the increasing advances in technology, human resources are still considered the most important and at the same time the most critical element in work systems. In work environments, humans collect, process, and make decisions based on a huge amount of information at any time (Zare et al, 2017); therefore, any error in any of these stages can have catastrophic consequences. These errors are known in various operations as unsafe behaviors or human errors (Mohammadfam & Saeidi, 2015). Human error is often the result of human physiological and psychological limitations and is quite complex (Ncubukezi, 2022).

On the other hand, the issue of hospital errors has become an attractive topic in various medical sectors. The healthcare system is a complicate system consisting of different parts. Errors in medical professions are failures of job processes due to errors in planning to achieve the goal, and have root causes at the system level that lead to undesirable consequences. These consequences are events in which patients and employees suffer multiple injuries. A wide range of studies have shown that human errors have a very large share in causing events (87 percent) (Woods et al, 2020). Medical error is a challenge in health systems around the world, especially in developing countries. In this regard, the best way to prevent errors is to identify errors, identify the root and systemic causes of errors, learn from them, and improve the care system to prevent the recurrence of these errors. Therefore, the present research has attempted to study the influential and affected factors of medical error together in a single model. Thus, in this study, the researcher intends to answer the basic question: What are the factors that cause human resource errors in the treatment department in hospitals in Rafsanjan city?

Theoretical Framework

Human Errors in Medicine

Medical Error: The failure of a planned health and treatment action to achieve the set goals (implementation error) by using a wrong plan to achieve a goal is a planning error. In other words, a medical error refers to an error that occurs due to forgetfulness and failure in planning by incorrect implementation of the health care plan, whether it causes harm to the patient or not. These errors include incorrect diagnosis, incorrect treatment, incorrect prescription and administration of medication, incorrect use of equipment, and incorrect interpretation of paraclinical tests (Purreza et al, 2020).

Shirali et al, (2023) conducted a study titled Evaluation of Human Errors among Nurses Using Two Techniques of Predictive Analysis of Cognitive Errors and Human Event Analysis (Case Study: Specific Responsibilities Task of the Cardiac Intensive Care Unit). The findings of this study indicate the need to increase the workforce, reduce overtime even for people who voluntarily want to work overtime, and scientific planning of Nurses' work shifts and the provision of practical training and stress management methods during emergencies.

Le et al, (2022) conducted a study titled Errors due to Habit and Automaticity in Ignoring Medical Alerts: A Cohort Study. The results showed that prior dismissal of alerts by physicians increased their habitual strength to dismiss alerts. Furthermore, a physician's habitual strength to dismiss alerts was positively associated with the incidence of subsequent

alert dismissals after the initial alert dismissal. It was also found that alert dismissal due to habit learning was present in all levels of physicians, from junior trainees to senior specialists. Furthermore, it was observed that alert dismissal usually occurred after a very short processing time. Our study showed that 72.5% of alerts were dismissed within 3 seconds of alert presentation and 13.2% of all alerts were dismissed within 1 second of alert presentation. We found empirical support that habitual dismissal is one of the key factors associated with alert dismissal. We also found that habitual rejection of warnings is self-reinforcing, indicating significant challenges in disrupting or changing warning rejection habits once they have been formed.

Research Methodology

This research is applicable in terms of its purpose, and qualitative in terms of its method. The statistical population of the study includes 43 physicians in hospitals in Rafsanjan city. The basis for collecting information is the expertise and specialization of individuals, which were selected as sample members using purposive sampling until theoretical saturation was reached.

Research Findings

Data analysis was performed using MICMAC software. The results of data analysis showed that regarding the antecedents of human error in physicians, the highest level of agreement among experts was with the components of incorrect information about the patient and inappropriate method of drug distribution; and the lowest level of agreement with the components of failure to observe the patient's legal rights and failure to apply ethical standards and professional principles. Also, regarding the outcomes of human error among physicians, the highest level of agreement among experts was with the component of creating psychological stress in physicians and increasing complaints among patients and hospital clients, and the lowest level of agreement with the components of developing a comprehensive plan for implementing activities related to health promotion, better and more information collection and dissemination, and the governance of a teamwork culture. Also, the results of interpretive structural equations and MiMak analysis showed that, from the experts' perspective; the weakness of the organization's employees' performance and the weakness of the internal management systems were identified as the first-level criteria, and the criteria of inappropriate mental processes and dysfunctional management characteristics at the second (last) level of the model.

Conclusion

The present study was conducted with the aim of investigating the antecedent factors of human resource errors in the treatment department in hospitals in Rafsanjan city. The results of this study are consistent with the results of Le et al, (2022), Brennan & Oeppen (2022), Rowland & Adefuye (2022), Zyoud & Abdullah (2021), Azarabad et al, (2018), Shirali et al, (2023), Mosadeghrad et al, (2020), and Al-Ahmadi et al, (2020). Shirali et al, (2023) indicated the need to increase the workforce, reduce overtime even for those who voluntarily want to work overtime, and scientifically plan nurses' work shifts and provide practical training and stress control methods during emergency situations.

According to the results of the research, the following suggestion was made:

-Develop a new long-term program, taking into account the weaknesses of previous programs, in cooperation with the organizations responsible for leisure and sports, and hold coordinated meetings with other organizations, especially the Iranian Broadcasting Corporation, to produce joint content and make television and radio programs.