From a Safety Perspective, Human Health Care and Its Pharmacy Component

Talal Saad Alahmadi[1], Talal Hammad Althubyani[1], Mohammed Ibrahim Aldabil[2], Bader Oudah Aljohani[1], Abdul Aziz Mohammed Alaidai[1], Hussein Awda Alkasher[1], Meshari Nasser Alruwaytie[1], Mohammed Matar Aljohani[1]

[1]Health Care Security
[2]Pharmacist

Abstract

As an important aspect of state operations and a component of national security, healthcare plays a vital role in both public and national safety. Its goal is to arrange and guarantee that the general public has access to reasonably priced medical care. Technical, human factor or security management, systemic security management, and cognitive complexity are the four stages of the origin of healthcare safety development and the corresponding safety models of formation. It was found that the concerns surrounding the development of the pharmaceutical industry's safety receive little attention at any point. We have put forth a model of the evolution of pharmaceutical safety formation, taking into consideration the evolution of safety models that emerge during the four stages of the genesis of safety science. Simultaneously, it is suggested that future research concentrate on new holistic concepts of safety, like "Safety II," evaluation, and validation techniques, particularly in the pharmaceutical industry, where the topic's development remained in the second stage of scientific evolution, the search for drug-related pharmaceutical errors.

Keywords: safety, security, public health, health care, pharmacy.

1. Introduction

As a major state activity and especially as a component of national safety, which aims to plan and guarantee accessible medical care for the populace, healthcare plays a critical role in public safety. It should be recognized that safety depends on the state's capacity to safeguard national interests in the healthcare sector from potential threats and to guarantee the realization of the human right to life and health, medical assistance, and medical insurance to remove risks that endanger life and health (Iflaifel , 2020).

The problem of healthcare safety is also linked to other issues, including the practical sanitary preventive activities, pharmaceutical safety, the safety of medicinal products, epidemiological and ecological control, and the medical, social, and economic efficiency of healthcare institutions (Pashkov, 2009). As a result, the issue of how the healthcare system evolved as a structural component of national security is still relevant today. The processes of providing medical and

pharmaceutical care from the perspective of safety science have been implemented, in addition to the coordinated efforts of healthcare professionals, patients, consumers, regulatory bodies, and politicians (Reason , 1990).

The work's objectives were to conduct a scientific investigation into safety concerns in the "human–healthcare–pharmacy" system, replicate the development's beginnings and key methods, identify any remaining problematic elements, and support the current lines of scientific inquiry. The research hypothesis makes the assumption that, as previously stated, healthcare safety and the phases of safety science development are connected to the establishment of pharmaceutical safety as a system component.

Healthcare Safety:

Since the safety of the system is one component of the quality of medical care, the primary concern is how to apply the "Safety II" theory to healthcare without sacrificing other crucial healthcare tenets. However, promptness, effectiveness, equity, and patient- centeredness are also critical. This is mirrored in some later research, where patient involvement is acknowledged as a crucial step in establishing the system and ensuring patient safety, and the integration and combination of organization-oriented and person- oriented strategies is still in the design phase (Simonsen , 1999).

Simultaneously, safety was defined as a methodical investigation of the adverse effects of medications and devices on people throughout the entire drug life cycle (Flynn , 1999).

Development of Safety Models:

We suggested a model of the evolution of the formation of pharmaceutical safety, taking into account the evolution of safety models that emerged during the four stages of the genesis of safety science. The creation of normative legal acts that govern specific facets of pharmaceutical activity—such as pharmacy manufacturing technology, medication storage conditions, sanitary standards, etc. defines the technology stage (Alguire , 1998).

The "seven-star pharmacist" concept was superseded by the "nine- star pharmacist" concept at the system safety management stage. The remaining modifications pertain to the theoretical content of other concepts as well as the normative support of the ideas of GxP, pharmaceutical care, and social responsibility. The stage of cognitive complexity is still characterized by a similar development. In this case, the idea of the "Ten-star pharmacist" took the place of the "Nine-star pharmacist." We think that one way to improve pharmaceutical safety will be to create legal and regulatory frameworks that address all ideas and how they relate to one another when used in pharmaceutical practice (Klockner, 2021).

Safety Management Systems:

This feature, which contributes to the development of holistic safety and patient care, can be regarded as a new stage in safety management systems. According to these medical facilities and environmental intelligence, some scientists advise viewing safety as a complex of people, organizations, and the environment. These approaches are still more in line with the reductionist methodology described above, though. Although it is thought to be important to provide and

train healthcare professionals on safety culture issues, pharmacists are once again overlooked. Furthermore, updates are being made to the concerns of digital information security, which encompasses all connections between pharmaceutical and medical care in socio-technical systems, including the same environment and the patients who use it (Jacobs , 1989).

The safety indicators of pharmaceuticals were left as basic, however, by scientific studies that questioned the conceptual underpinnings of the development of the pharmaceutical safety system. The pharmacist, who is a mandatory member of healthcare multidisciplinary teams and who fulfills ten key professional roles according to the concept of the "Ten-star pharmacist," is not taken into consideration in other scientific works on pharmaceutical safety. These roles include caregiver, decision-maker, communicator, manager, lifelong learner, teacher, leader, researcher, entrepreneur, and change agent (Millenson , 2002).

A pharmacist and a doctor provide the same level of care to their patients. In the context of population, pharmaceutical company, and environmental safety, as well as national defense and economic independence, the third stage of pharmaceutical safety development will offer a set of steps to reduce the risks connected with the distribution of pharmaceutical products. However, more thorough and methodical research is needed before it can be put into practice (Smith, 2019).

2. Recommendations:

Particularly in the pharmaceutical industry, where the development of this topic remained at the second stage of the evolution of science the search for pharmaceutical errors related to drugs—future research should concentrate on new concepts, such as holistic concepts of safety, like "Safety II," and evaluation and validation methods.

This work's limitations include the inability to search other specialized databases because the search only yielded full-text publications, only English or Ukrainian results, and lacked search sensitivity. Notably, the terms MeSH employed in the article still allowed for the inclusion of some related concepts, such as "pharmaceutic" OR "pharmaceutics" OR "pharmaceutical preparations," which lessens the likelihood of overlooking important research. To a greater extent, our task involved a general analysis of the safety situation in the pharmaceutical industry, along with an outline of the key concepts borrowed and a search for directions for further research, because the topic of safety is broad and the search keywords cover important concepts.

3. Conclusion:

We can identify four stages of the system's development with the corresponding safety models of formation, technical, human factor or safety management, system safety management, and cognitive complexity by analyzing the scientific literature on safety issues in the "human–healthcare–pharmacy" system.

It was determined that the problems of the development of the pharmaceutical industry's safety receive little attention at any point. We have proposed a model of the evolution of pharmaceutical safety formation, taking into account the evolution of safety models that emerged during the four

stages of the genesis of safety science. Simultaneously, it is suggested that future research concentrate on new holistic concepts of safety, like "Safety II," as well as evaluation and validation techniques, particularly in the pharmaceutical industry, where the development of this topic remained in the second stage of scientific evolution, the search for drug-related pharmaceutical errors.

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