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The Current State of Medical Error in South Korea

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Abstract

Medical error has become an international concern with a growing acknowledgment revolving the significance of medical error and its consequences on both the patient safety and the healthcare quality. Although healthcare leaders quickly moved into actions, medical error is a persisting problem that continues to pose a serious threat to patient safety. This article examines two more significant contributing factors to medical error that are unique to Korean medicine: the concept of authoritarianism and the scarcity of available medical error data. Extraordinary economic growth and the promulgation of the authoritarian constitution led the rise of authoritarianism in South Korea. Several studies corroborate that authoritarianism persists and has still survived into the 21st century South Korea public sphere. This paper examines the association between authoritarianism and medical error and offers some potential solutions. Internationally, systems for sharing data about medical error have emerged as an important strategy for improving patient safety as they promote increased error reporting and enable root-cause analysis. In South Korea, there is currently no medical error data available in any literature. This paper flags the lack of medical error data in Korean medicine and suggests some viable solutions to remedy this issue.

Keywords: Medical error.

Introduction

Patient safety is receiving an increased attention internationally with the rise awareness for the magnitude of the occurrences and repercussions of medical error in medicine. Since the institute of Medicine in the US reported that between 44,000-98,000 people die in hospitals each year because of medical errors, researchers have investigated the severity of medical error in healthcare organizations. Another study in 2008 also found that the medical error cost in the US was $8.8 billion [1]. The results of many studies on medical errors in several countries indicate that medical errors are not only costly but also often preventable. Medical errors also elicit other unwanted outcomes like compromising patient confidence in the healthcare system. Subsequent studies from other countries substantiate that medical error is not the unique issue to the U.S but is an international problem.

Prior research has examined potential factors contributing to medical error. Several studies emphasized the significance of safety cultural factors in reducing and preventing error. While exploring the relationship between safety climate and medical error, researchers indicated that better safety climate was associated with fewer incidence

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of medical error [2]. In 2009, the World Health Organization attributed the lack of a system for monitoring patient safety as the Korean healthcare's most serious problem. Since this nomination, hospital administrators have started to prioritize patient safety and to reduce the prevalence of medical error [3]. Although it is getting more acknowledged that medical errors are not a guarded professional secret in Korea, Korea has a long way to go regarding medical error. Currently, Korea has no documented data on error rate, published statues, and error reporting infrastructure. Many insightful studies and research focused on medical errors were conducted in western countries. With no data available, acquiring a better understanding of factors influencing medical error becomes that much harder [4]. Therefore, research on various relationships including but not limited to individual and organizational characteristics is much needed in Korea. Insightful findings will then enable healthcare policy makers to identify the attributes necessary for improving patient safety in healthcare organizations. Understanding the characteristics associated with medical error will also help efficiently develop interventional strategies to reduce medical error [5].

This article focuses on two critical aspects that may directly lead to medical error in South Korea. The first component addresses authoritarianism and its association with medical error. Weingart and Page found that hospitals with a better safety climate had a lower incidence of patient safety indicators [2]. Some studies even suggest that medical errors may also be related organizations' power hierarchies. Authoritarianism is still deeply rooted in South Korea and may be associated with medical errors. In their study, Kagan and Barnoy found that fear of supervisors' reaction to errors was the most significant barrier in reporting errors. This highlights the necessity of creating non-blame workplace cultures that further produce nonpunitive environments for clinicians and other medical staff to practice [6]. Unfortunately authoritarianism in Korea leads to an increased chance of punitive actions for hospitals, and these actions often engender greater medical errors. The article explores the problematic authoritarian ambience of Korean medicine and suggests a few potential solutions such as a safety culture and better leadership [7]. The second body flags the scarcity of available medical error data in Korea. The lack of data on the incident and rate of medical errors is one of the most significant impediments to error reduction and prevention efforts in healthcare [8]. This article examines few methodologies of accruing medical error data in other countries and urges the need to implement such systems in Korean medical organizations to analyze and remedy the root causes of errors. Then it further suggests some viable solutions including but not limited to the use of information systems [9].

Definition of Medical Error

The Agency for Healthcare Research and Quality considers medical error to include "an action item" or "an action that is not taken" that results in or has the potential to result in harm to patients. The federal Quality Interagency Coordination Task Force focuses on whether the event is preventable, treating medical errors as adverse events that are preventable with our current state of medical knowledge [10]. Other definitions exist that focus on different domains like how to determine whether an error has occurred or not. In addition to being aware of different definitions of medical error, it is crucial to understand that patients and clinicians at individual level may have their own views on what formulates medical error. For instance, patients may have a broader perception of error [11].

The term "adverse event" often ambiguities the definition of medical error. Adverse event, in contrast to error, refers to any injury caused by medical management. The American Society for Healthcare Risk Management uses the term "adverse event" to refer to a negative or bad result steaming form diagnostic, medical, or surgical care. Although there is a slight overlap, an occurrence of an adverse event does not imply error [10]. These two concepts are illustrated in a Venn diagram shown in Figure 1.

More modern interpretations of medical error have been constructed. For instance, some scholars strictly defined error as an omission with potential negative consequences for the patient that would have been wrongly judged by skilled, which better reflects the realities of modern medicine [12,13]. A clear conceptualization of medical error mentioned above will help guide through the rest of this article.

Authoritarianism in South Korea and its Effect on Medical Error

The nature of medicine is highly hierarchical and heavily depends on supervision by authority figures. Unfortunately, this unique structure of medicine often prevents information from flowing seamlessly between team members, which further prevent the exchange of information and the objective assessment of risk. Communication can be adversely impacted when members on teams have different levels of professional stature [14]. This gradient is particularly destructive if senior members wield some influence in the career advancements of those that are being supervised; this concept of authority gradient was first mentioned in the IOM's report as a potential contributing factor to medical error. Unfortunately, little has been acknowledged in the literature since this initial discovery. In fact, the role of authority is often highly valued; many would argue that

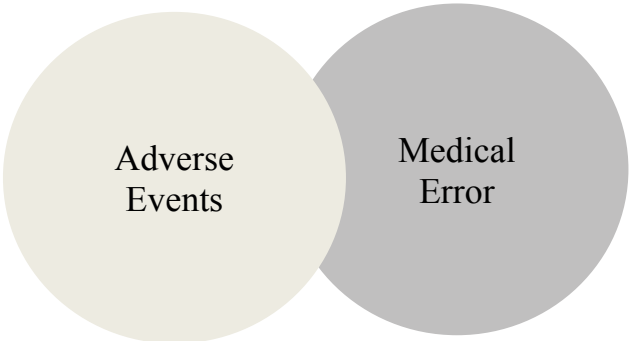

Figure 1: The relationship between adverse event and medical error.

when properly wielded, authority gradients would minimize medical error [3].

In the late 1950s, modernization theorists indicated optimism about the outlooks for democracy in economically advanced third-world countries as industrialization was expected to elicit the conditions for democracy. However, extraordinary economic growth in some countries of East Asia in the late 1970s did not lead to the development of democracy [15-17]. This contrary result arose beliefs that economic development was associated with the rise of authoritarianism. President Park Chung Hee led the promulgation of the authoritarian constitution in 1972 and ruled with broad emergent powers. After the authoritarian regime of Korea supposedly fell in 1987, Korea worked to transform their political system into a liberal democracy. However, Shin established in his research that the democratic transition failed to eliminate the legacies of authoritarianism in Korean society and contributed to the maintenance of authoritarian civic organizations [18]. Additionally, this study corroborated that Korea civil society is still far from being democratic. Other studies also argue that authoritarianism persists and has still survived into the 21st century South Korea public sphere.

The Korean Air nut rage scandal is an exemplar illustration that demonstrates how authoritarianism is still pervasive in South Korea. On December 5, 2014, Vice President of Korean Air (KAL) and daughter of the company's chairman, Cho forcefully returned the plane that was scheduled to fly from New York to Korea. The sole reason for this delay was later discovered that Cho was unhappy with the way macadamia nuts were served in a paper bag. When the story became public, Cho and KAL were heavily criticized based on issues of morality, leadership, and failure of the authoritarian management system of a global company. This case invited internal criticism and confirmation of South Korea's chronic authoritarian system [8].

There have been some recent cases where authoritarianism played a significant role in medical error. A resident administered intrathecal vincristine to a patient, against his own judgment, pressed by a senior physician [19]. After repeatedly questioning his superior, he finally accepted the judgment of his supervising physician. The patient died [3]. Aside from thiswell-knowncase, there are many anecdotal accounts of authority gradients in medical error; however, there is still a dearth of relevant reports in the literature acknowledging the association between authoritarianism and medical errors [20,21].

Medicine is a rigid and hierarchical structure. Sinclair found that physician trainees were inclined to value their seniors' experience over their own knowledge, and were willing to give deference to personal authority over scientific merit in clinical decisions. Different opinions in patient care are not entirely uncommon [16]. However, if this conflict is left unaddressed, it can impact individual and team performance and perpetuate preventable error. Although this specifically deals with relationship between physician and junior resident, similar relations are well known between doctor and nurse [21].

The recent IOM report on medical error underscores the significance of teams and the need to improve communication among team members. One possible solution to facilitate this goal is creating a structured teamwork that emphasizes communicative openness where decision making is shared equally by every participating member. This could be a potential model for improving patient care. A chart that addresses some recommendations to formulate this model is shown in Figure 2.

Authority is an irrevocable facet of any high-structured system, and a reasonable degree of obedience to authority figures is necessary especially within complex organizations like medicine. Without compliance, safety violations will probably even increase. The point is obedience should not be blind. Authority figures in Korean medical organizations should be more attuned to those being supervised and aware of the potential for abuse of power. Authorities should also not lose sight of their own fallibility. Changes in teamwork concepts mentioned above will require cultural change in healthcare. Recognizing authoritarianism, improving cooperative communication, and finding strategies to optimize teamwork can facilitate the flow of information and enable enhanced patient care decisions [3]. Leadership in hospitals is crucial for ensuring quality of care and safety that can also better patient satisfaction. Additionally, effective leadership may create and promote a culture of patient safety and innovation in a healthcare environment. Leadership and efficient operations may elicit reduction in medical errors in healthcare. Key of patient safety in quintessence is leadership at every level. Supervisors need to develop a vision and strategy, communicate them to staffs, and findmeans to incorporate improvement programs [20].

A safety culture can promote shared knowledge and emphasize teamwork that can minimize events that may potentially endanger patients. An organizational culture of patient safety is associated with error made by healthcare

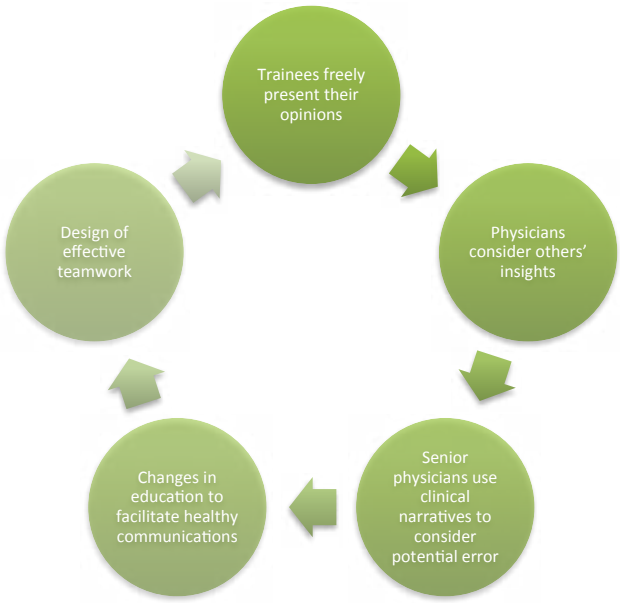

Figure 2: A potential model to improve patient care and facilitate better team work in medicine.

staff. A safety climate may also be necessary to increase comfort for staffs to discuss concerns and issues encountered during patient care. This culture enables employees to document errors and to motivate error reporting. Also, previous research has found that a safety culture is positively correlated with error reporting rate [13]. Improved medical error reporting may only occur in an environment that encourages reporting such errors.

Authoritarianism is also deeply rooted in Korea judicial system, which may lead to medical error. Judges are faced a positivist crisis at their capacity to protect individual rights. For instance, in 1979, the courts in Korea were criticized for their alleged acquiescence to the Park's authoritarian regime. Since the Constitutional Court of Korea was first established, it has successfully contributed to the development of constitutional democracy by prioritizing the values of fundamental basic rights. However, in the early 21st century, the Constitutional Court of Korea experienced many politically controversial cases, which also include ones dealing with medical error [17]. These cases substantiate that the deliberative democracy in the Court is still underdeveloped.

In contrast, many recent legal developments have affected the interface between Japanese medicine and the judicial system, heightening external scrutiny of the medical profession. Some changes including but not limited to reforms in judicial handling of medical malpractice emphasize stronger concern for individual rights and social transparency. Japan is also taking a more rigorous stance toward medical error than is the United States and other nations with common law heritages. Despite such tremendous developments in Japan, South Korea's courts grant tremendous deference to the medical profession. The number of medical error claims has been rising, and increasing public concern over highly publicized errors and cover-ups at hospitals reinforce this trend. South Korean judicial process' reform may be the key to regain public trust in the accuracy and transparency of the profession's evaluation of its members' errors and to provide guidance for executable improvements in the future.

The Lack of Medical Error Data in South Korea

One of the major impediments to error reduction and prevention efforts in healthcare is the scarcity of data on the incident and rate of medical errors. Despite the high incidence of medical errors, they are often underreported in healthcare facilities. This barrier is especially a concern in Korean medicine. One of the very few studies with the medical error data available investigated the preventable death rate in Daegu, South Korea. There were 358 traumatic deaths during the study period, and of 234 patients selected for the final analysis, the number of preventable death was 59 (25.2%) [15]. This preventative death rate is much higher than the rate found in foreign studies.

Internationally, organizational systems for sharing data about medical error have become an important strategy for improving patient safety [1]. However, only few studies have examined the benefits of data sharing. For data sharing to meet its optimum efficiency, it should not only promote error reporting but also execute root-cause analysis and process improvement; the design of the reporting system should underscore about these processes in addition to errors. Once properly designed, a reliable database on the causes of medical errors can provide useful insights for their prevention.

Complied data enables healthcare organizations to evaluate causes and construct resolutions to reduce the risk of errors. The Medication Errors Reporting Program of the United States Pharmacopeia and the Institute for Safe Medication Practices (MEDMARX) is a great example of external error reporting mechanism. Employees of subscriber systems enter, review, and release data to a central data repository that is then available for all subscribers to search. The sharing of data allows medical error types and facts contributing to errors to be known and serves to alert clinicians to safety hazards where actual, intercepted, and potential errors are all included [20]. MEDMARX has been successful and thus corroborates benefits of the availability of medical error data for root-cause analysis.

In South Korea, there is currently no medical error data available in any literature. From their surveys, Kim and Bates concluded that a quarter of Korean hospitals had no official channel for medical error reporting. Even the study mentioned above focuses on preventable death rate, a relevant scope of interest yet still not identical to medical error. Globally, data-sharing systems where hospitals routinely share information on medical errors indicate a growing trend in efforts to improve patient safety at every level, and this endeavor must be implemented in South Korea to ensure patient safety and medical error prevention. In the United States, over 24 states have mandated some form of incident reporting. Korean medical systems should work toward satiating this premise that the identification of medical conditions is a fundamental first step to analyze and even remedy the root causes of errors, and such reporting systems often only occur in the context of sharing of their data. The beginning of data-sharing is based on the premise that it will lead to continuous learning that is essential to continued improvements in patient safety. In other words, data sharing will enable community-wide learning. The potential benefits of the functioning of data-sharing system are described in the chart shown in Figure 3.

Individual Korean organizations may not take on these initiatives; however, participation in a data-sharing cooperation provides shared rational and even benefits of peer influence. Pooled data from increased reporting can facilitate the diagnosis of systemic causes of unsafe conditions and may suggest potential systemic solutions. Several studies including the Pittsburgh Regional Healthcare Initiative (PRHI) set out to understand the effects of medical error data-sharing on the group of participating organizations. They all provide suggestive evidence for group level effects of data-sharing on medical error. They also demonstrate that all hospitals in their studies showed increased number of reported errors in response to error data-sharing. Based on these findings, the value of implementing such data-sharing

Figure 3: A step-wise benefits of medical error data sharing system.

systems within Korean medicine is strongly suggested. In South Korea, medical errors are rarely shared across hospital partly because of the nature of the adverse events. In so being, hospitals are missing a critical opportunity to learn from these devastating incidents. Failure to identify errors leads to reoccurrence of mistakes and deteriorating patient safety in healthcare organizations. Therefore, an efficacious medical error reporting system is a necessity.A nation error reporting system needs to be established in the future to effectively design medical error prevention and management systems at the national level. One way to establish an effective reporting system is the use of information systems.

Several studies indicate that the incidence rate of committing medical error is higher than the reporting rate. This underscores the importance of establishing an effective reporting system for recording, managing, and analyzing medical error in healthcare organizations. Reporting error is fundamental to error prevention. Thus, the presence of a well-organized reporting system is critical for effective prevention programs. An effective reporting system is the cornerstone of patient safety.

Conclusion

Healthcare is a matter of life and death, and medical error is a persisting problem that poses a serious threat to patient safety. Currently, reducing medical error is an international concern. There has been a growing recognition regarding the significance of medical error and its consequences on both the patient safety and the healthcare quality. The Agency for Healthcare Research and Quality considers medical error to include "an action item" or "an action that is not taken" that results in or has the potential to result in harm to patients. Patients and families are not the only ones affected by medical error. The consequences of medical mistakes are overwhelming and psychologically unhealthy for practicing physicians as well. For many physicians and nurses, their own experiences with medical errors had a lasting influence on both their personal and professional development. Clinicians who are involved may suffer psychological trauma where extreme cases may preclude then from ever returning to their clinical roles. Current issues with medical error should be addressed to benefit both parties involved.

Since the report, *To Err is Human: Building a Safe Health System*, healthcare leaders moved into actions. But how far has Korean health care come in patient safety since 1999? The report *To Err is Human,* first introducedthe concept of authority gradient as a potential contributing factor of medical error. This is even a more significant issue in conservative countries like South Korea where extraordinary economic growth led to the development of authoritarianism. However, little has been acknowledged in the literature focusing on the effect of authority gradient in medicine. Medicine is a highly-organized structure in which authority inevitable is an innate feature. While a reasonable degree of obedience to authority figures is deemed necessary, studies referred in this article suggest that authority in medicine contributes to communication barriers, which may perpetuate preventable error. This article examines the current state of Korean authoritarian medicine and offers some potential solutions such as a safety culture and a better leadership.

Despite the high incidence of medical error, they are often underreported in healthcare facilities, and this barrier is especially a concern in Korean medicine as there is currently no medical error data available in any literature. In South Korea, the medical error data is rarely shared because of the nature of the adverse events. Internationally, an organizational system for sharing data about medical error has become an important tactic to improve patient safety. This data sharing will not only promote higher error-reporting but also allow root-cause analysis and potential improvement from examining the previous data. This system must be implemented in Korean medical organizations to ensure patient safety and medical error prevention. This implementation will facilitate an increased number of coalitions working together to ultimately improve patient safety. Individual Korean facilities may not take on these initiatives at first, but participation in a data-sharing cooperation may prove a shared rational and benefits of peer influence.

Hospitals in Korea are starting to implement some initiatives to improve patient safety including Korea Institute for Healthcare Accreditation (KOIHA); however, the rate of medical errors has not decreased. Japan's recent endeavors to regain public trust in medicine's capacity especially juxtaposes with the current state of medicine in South Korea. Even now, cover-ups of medical error at hospitals of high repute received front page criticism in Korean media, and public distrust of the sacrosanct medical profession has become a national concern. By addressing the suggestions mentioned in this article, Korean medicine will be able have a critical opportunity to learn from medical error incidents and convert threats of medical error into opportunities if lessons are learned from the mistakes.

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