


Productivity in hospital management

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<p>Keywords: <i>Productivity, management, medical centers, organizational structure</i></p> <hr/> <p>Article Type: Review Article</p> <hr/> <p>Corresponding author's Email: amacademic@yahoo.com</p>	<p>Abstract</p> <p>Background and purpose: Examining challenges and solutions to improve productivity in hospitals and medical centers and using various resources for effective production and supply of goods and services requires knowledge and the use of economic and social legalities and tools. Today, the role of productivity in development programs is considered one of the development indicators. If we consider the goal of applying economics to be the optimal allocation of resources, we can safely say that productivity is one of the most important evaluation indicators in order to achieve this goal. Methodology: The current research is a review. Using the terms productivity, hospital management, stress, cost, productivity and effectiveness in Proquest, Pubmed, Database, (SID) Scientific Information, Ovid, Google Scholar, Science direct, Iranmedex, Springer and Scopus databases, articles that were published in English or Farsi about productivity were collected. Results: The review of articles showed that efficiency and effectiveness are two important and effective factors in productivity. Improving productivity should be considered as a result of various factors, including a suitable organizational structure, efficient implementation methods, healthy work tools and equipment, a balanced work environment, and, most importantly, qualified and competent human resources. Conclusion: In this regard, it is necessary to conduct investigations in the hospital to identify effective factors and determine solutions to improve productivity.</p> <hr/> <p>This article has been published as open access according to CC BY-NC 4.0. All rights to publish this article belong to the author.</p> 
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Introduction

Productivity aims to maximize the use of resources, human power, capital, production of raw materials, time, etc. In a practical way and by reducing production costs, to expand the market, increase employment, increase real wages, and improve living standards in a way that benefits employees, managers, and consumers. Productivity examines the ratio between the number of goods and services produced (output) and the number of resources used to produce them (input). This definition includes all resources accessible to managers (including human power, capital, production raw materials, time, science and new technologies, etc.). The optimal use of resources is one of the basic goals of every organization. Hospitals, as one of the most important components of the health system, are looking for the optimal use of resources due to increased costs and lack of resources. Improving productivity can help hospitals achieve this goal. On the other hand, organizational commitment is one of the most important factors in improving service quality in organizations (Kolivand and Kazemi, 2013).

Today, improving productivity is the main goal of many organizations. The effort to improve productivity requires the belief that a person can perform his tasks and tasks better than yesterday. The European Productivity Agency has defined productivity as the degree of effective use of each of the production factors, and has defined productivity as the degree of effective use of each of the production factors, and has defined productivity primarily as an intellectual perspective that always tries to improve existing conditions (Sadeghi et al., 2017).

Hospital care, health and health are among the most important work activities worldwide. Today, the importance of health and hygiene and especially saving human lives around the world, is not hidden from anyone. Since the activities related to these matters are usually done as a team, increasing the productivity of teamwork in hospitals, health, and health care is of great importance (Karimi, Mozafari, and Baran Dost, 2018).

The importance of productivity and optimal use of limited resources in hospitals is one of the most important missions of medical centers.

The ever-increasing advances in medical knowledge and technology, changes in lifestyle and cultural and social structure, changes in disease patterns, people's medical needs, and rapid population growth have caused the provision of the aforementioned services to face new problems and obstacles. It is possible to solve these problems with the help of the principles of economics; Therefore, it is necessary to apply the applied principles of economics to combine production factors and resources as well as provide the required services. One of the issues that should be considered from an economic point of view in the management of systems is the issue of productivity. Today, the role of productivity in development programs is considered one of the development indicators. The need to comply with the principle of efficiency in using available resources and facilities to achieve

organizational goals and efforts to increase them is visible to everyone. Although efficiency is recommended in all sectors, for the reasons given below, the issue of the efficiency of scarce resources and their accurate evaluation for the optimal use of resources in order to provide, maintain and improve human health in the health sector becomes doubly important. In fact, the allocation of resources and its productivity, together with attracting the effective participation of communities at all levels with full respect for justice and access and enjoyment of health care services with the desired quality, is considered one of the most important and first issues of the sector (Kolivand and Kazemi, 2013).

Increasing the efficiency of the facilities of medical centers and reducing medical costs is one of the strategic goals of the country's health and medical departments (Ghaderi and Moradhasel, 2021). The research of Muradhazali and Qadri in 2015 showed that the correct implementation of medical equipment maintenance management significantly reduces the costs of purchasing and repairing equipment (Moradhazali and Qadri, 2018).

In evaluating the management productivity of hospitals, the needs and tendencies of the patients should also be such that the answer to the three management questions, what issues should be taken into consideration? Which solutions are the priority? How to implement priority solutions effectively? Be considered.

A suitable organizational structure, efficient implementation methods, healthy work tools and equipment, a balanced work environment, and, most importantly, qualified and competent human resources are among the necessities managers must consider achieving optimal productivity. Labor productivity, especially in the healthcare sector, is the most severe challenge that the management of countries will face in the future. It will reduce issues such as the decline in the quality of life in society and the reduction of social security. Its increase will save costs, increase wages and profits, increase the quality and desirability of goods and services, increase the level of satisfaction and general welfare of the society, increase production and employment, etc. This requires a planned and all-out effort by the officials and improving working conditions and motivational methods, improving systems, procedures, laws, methods, technologies, etc. (Sadeghi et al., 2017).

Increasing service quality, increasing employee satisfaction, increasing employee loyalty, increasing customer satisfaction, and increasing customer loyalty are among the effective factors in productivity. Assessing and documenting health and health conditions, reviewing medications, assigning the degree of urgency to the disease, etc. are among the effective factors in the productivity of nursing work teams. Reducing environmental stress is one of the effective factors in increasing the productivity of nursing work. Transparency in goals, transparency in leadership, creative (not destructive) conflict, effective communication, mutual respect and trust, and workers' awareness of their roles and duties are among the effective factors in the productivity of work teams. Members' assurance of financial support from team leaders and organizations and members' assurance of functional support from

team leaders and organizations are among the effective factors in productivity (Karimi, Mozafari, and Baran Dost, 2018).

Investigating the challenges and solutions to improve productivity in hospitals and medical centers and using various resources for the effective production and supply of goods and services requires knowledge and the use of legalities and economic and social tools. This is also true in the healthcare sector. Therefore, this research aims to investigate the factors affecting productivity in hospital management.

Methodology

The method of this article is a review, and a series of effective factors on productivity in hospitals are mentioned, and solutions to improve it are mentioned. This study was conducted in April 1400 using the words productivity, hospital management, stress, cost, productivity and effectiveness in Proquest, Pubmed, Database, (SID) Scientific Information, Ovid, Google Scholar, Science Direct, Iranmedex, Springer and Scopus databases. Articles that were published in English or Farsi about productivity were used.

Results

Productivity is basically a set of efficiency and effectiveness of the organization. The degree to which predetermined goals are achieved in any organization shows the level of effectiveness in that organization. On the other hand, productivity is related to the correct execution of work in the organization. In other words, decisions are made to reduce costs, increase production, and improve the quality of products/services. Productivity is the ratio of actual productivity to standard productivity (Karimi, Mozafari, and Baran Dost, 2018). Two important and effective factors in productivity are efficiency and effectiveness, which are like two wings of a bird in achieving the desired productivity. The nature of hospital service work is such that it should be done as a team in all areas, so it is inevitable to have a teamwork spirit in all hospital service personnel.

Improving productivity should be considered as a result of a combination of various factors. The primary owners of healthcare are those who seek their interests in a more rational and efficient healthcare system functioning by receiving better services. The lack of efficient and effective services to improve health reduces the quality of life and prevents productivity improvement in other economic sectors. It also causes an increase in illness, disability, and lack of physical and mental health, resulting in problems arising in social, economic, and political fields. In the health sector, the hospital is considered one of the important institutions providing healthcare services in the country. With its special facilities, it plays an essential role in the return of the physical and mental health of sick people in society, the training of health and treatment specialists, medical research, and finally, the improvement of the health level of society. According to the World Bank study,

between 50 and 80 percent of health sector resources in developing countries are allocated to hospitals, so the optimal and correct use of their resources should be the focus of attention of hospital managers and officials. The results of the review of books, scientific texts, and various studies show that due to the difference in the characteristics of the internal and external environment of organizations, the composition of factors affecting productivity is different in different units (Mosizadeh and Amir Esmaili, 2011).

Taking advantage of creativity in work teams and building trust and cohesion are among the effective factors in the productivity of work teams. Knowing the necessary stages of work and the critical points of work are among the effective factors in the productivity of nursing work teams. Commitment, critical thinking, and collaborative motivation are among the effective factors in the productivity of nursing work teams. Forming harmony and intimacy among work team members effectively increases productivity (Karimi, Mozafari, and Baran Dost, 2018).

One of the effective factors in the productivity of hospital work teams can be found in human-personality factors because hospital work teams consist of two or more people, each of whom has a unique personality and spirit. Another effective factor in the productivity of hospital work teams is the leadership and guidance factors; it is clear that every team needs leadership and guidance in the first place. Therefore, examining the leader's characteristics can be very fruitful in measuring and evaluating the productivity of a hospital work team. Another factor that is effective in the productivity of hospital work teams is health and health factors, considering that the field of work of these teams is related to the health and health of patients. Therefore, it seems inevitable to investigate this factor as well. The policies used in work teams are also effective in their productivity. Economic factors are among the important factors in the productivity of any work team, and hospital work teams are not excluded. Using modern technologies, updating technology, and improving the quality of services provided to patients are among the effective factors in the productivity of hospital work teams, which are examined in the form of technological factors. Since hospital work teams, like any other work team, are made up of a group of people, the socio-cultural characteristics of people will definitely be effective in their productivity, so this issue is investigated in the form of socio-cultural factors. Pre-employment training as well as in-service training are among the effective factors in the productivity of hospital work teams; therefore, scientific and educational factors have been included as effective factors in the productivity of hospital work teams. The goal of any service is definitely customer satisfaction. Today, customer satisfaction is included in the main goals of every organization as an integral part, so it will be inevitable to investigate the factor of customer satisfaction in the productivity of hospital work teams (Karimi, Mozafari, and Baran Dost, 2018).

In evaluating the dimensions of workforce productivity by Hedayati Rad and his colleagues, the role of management in improving productivity includes two important areas of conventional management tasks, planning, organizing and monitoring, decision-making, technology selection, etc. The second role and field of management is related to providing good opportunities for the effective use of the workforce. Appropriate and humane communication between management and employees; the appropriateness of the salary of the employees with their educational qualification and organizational position and the proportionality of the income from the employees' jobs in meeting the needs and expectations of them and their families; physical conditions of the work environment; variety of employee duties; independence and freedom of action of employees in doing work; the possibility of promotion and advancement based on fundamental and logical criteria are among the factors of job satisfaction and employee motivation in this research, which, based on the research findings, have a great impact on improving productivity (Mosazadeh and Amir Esmaili, 2011).

Honari and colleagues confirmed the positive relationship between human resource productivity and motivational factors. It seems that reward systems, as one of the appropriate motivational factors, play a significant role in improving the productivity of human resources from the employees' point of view, in other words, establishing a reward system is one of the powerful management tools that can be used to increase the motivation of employees. Allahvardi and his colleagues in an article entitled prioritization of factors affecting the productivity of human resources from the point of view of middle managers of Isfahan University of Medical Sciences recognized the organization's management style as the main factor in improving the productivity of human resources. Ellis and Dick also concluded that using the right leadership style improves productivity (Mehrabian and Hasanipour, 2016).

Human power is considered as the most important factor in improving productivity in the healthcare system, so that this factor is known as an important and fundamental element in explaining the differences in productivity and growth in different countries (Jaafari et al., 2019).

Since hospitals are the largest and most expensive operating unit of the health system and they use a large part of capital, financial and human resources. Human power is the most important capital of the hospital in terms of having the power of thinking and creativity, because all the changes, improvement and increase of productivity in technical and organizational systems and processes are done by humans. Therefore, improving the productivity of hospital care and reducing costs with optimal use of existing capacities should be in the center of attention of hospital administrators and officials (Jaafari et al., 2019).

Decision-making is one of the most important tasks of productivity management at all levels, and the major decisions of managers are mostly related to the allocation and use of resources. In fact, management is an important social task for making decisions in the field of resource allocation; Also, the desirability of the decision-making process of the hospital depends on the skill of managers in measuring and evaluating information, and the most important task of a manager is to review and analyze information. The quality of decision-making is related to the quality of the analyzes performed, and measurement and evaluation are essential parts of productivity management. The evaluation process requires achieving indicators to express a set of goals, events, or conditions.

In a study, Towak and Buck concluded that hospital manager and nursing managers could effectively improve productivity by providing enough resources to detect occupational stress in time and providing opportunities for organizational and social support to nurses (Mousizadeh). and Amir Ismaili, 2011).

Establishing correct and appropriate communication with clients is to consider the unit of a continuous survey of clients and service recipients from the subset of customer-oriented factors that, according to research findings, have a great impact on increasing productivity (Mosizadeh and Amir Esmaili, 2011).

Kaplan and Norton considered the customer's opinion to be the most important factor in measuring the organization's performance. Gaters and Waterman stated that knowing customers' needs is one of the characteristics of successful organizations. From a systemic point of view, examining how customers are satisfied is one of the characteristics of successful organizations and one of the most important indicators of the organization's health. Customer satisfaction has been established as a final indicator for development activity (Mosizadeh and Amir Esmaili, 2011).

In Mehrabian and Hasanipour's study (2015), it was observed that providing environmental conditions, providing suitable facilities and mechanisms, governing the work culture, and empowering employees to play a significant role in increasing the productivity of human resources in the hospital (Mehrabian and Hosanipour, 2016).

One of the most important goals of organizations is to achieve quality. The root of the concern for quality is the interest in the survival and continuity of the organization. Quality in the healthcare sector has a broad concept that includes not only improving the quality of products, services, and processes but also what is related to costs, productivity, and the participation and development of people. Satisfaction is one of the aspects of a person's health, and if the patient's satisfaction is not paid attention to, the health system has acted contrary to its mission. Human resources are one of the important elements of progress that can lead to the effectiveness and success of the organization. The effect of nurses' services on the quality of care and patient satisfaction is not hidden from anyone. Therefore, it is necessary to carry out interventions that maintain and improve the quality of care and

increase patient satisfaction. In hospitals and other organizations, humans play an essential role as the main axis of the organization. Inadequate salaries or inefficient payment system causes problems such as dissatisfaction of patients and employees, leaving the service, or other organizational problems. One of the goals of management in the organization is to attract, maintain and promote competent human resources, and in this way, the design of a fair payment system is one of the most important factors in achieving this goal. In this regard, in order to improve the efficiency and effectiveness of the human resources of the health system, the rules for improving the productivity of the clinical staff of the health system and the performance-based payment plan have been approved. The subject of these rules is the deduction of hours worked by clinical staff and pay based on performance. In the studies of Khoshab et al., it has been shown that the implementation of performance-based payment rules and productivity promotion probably did not significantly affect patients' satisfaction with nursing care. This is despite the fact that one of the implementation principles of these laws is to increase the efficiency and effectiveness of health and treatment measures. The simultaneous implementation of these laws has not been able to motivate the nursing staff enough to increase their productivity and, as a result, increase the satisfaction of patients (Khoshab et al., 2017).

Based on the findings of Hedayati Rad and his colleagues' research in 2019, the overall productivity of hospital employees of Iran University of Medical Sciences was average. Among the seven dimensions of human resource productivity, the environment dimension had the highest average and the motivation dimension the lowest (Jaafari et al., 2019).

Observance of justice among work team members is an effective factor in productivity (Karimi, Mozafari, and Baran Dost, 2018).

Based on the results obtained from Saraf and Takhti's study in 2018, the performance-based payment system has a significant effect on income, and the performance-based payment system has a significant effect on medical staff costs. Considering that in hospitals as well as in other organizations, humans play an essential role as the main axis of the organization, and the employees work according to government laws and regulations, insufficient salaries or unfair and inefficient payment systems will cause problems. In the studies of Nourizadeh and his colleagues, it shows that the implementation of the method of organizing the work environment (5S) can increase the productivity of nursing staff working in the operating room. Therefore, it is recommended as one way to increase nurses' productivity in hospitals (Saraf and Takhti, 2018).

According to Javadi and Jafari's study, there was a significant and positive relationship between organizational commitment and productivity. There was a significant and positive relationship between the components of organizational commitment (continuous, emotional, and normative commitment) and productivity. Hospital managers must find ways to increase productivity and, as a result, the quality of services provided to patients

by recognizing the factors that increase employee commitment to their organization (Javadi and Jafari, 2013).

According to the study of Mehrabian and Hasanipour (2016), environmental conditions, leadership style, organizational culture, empowerment and motivational factors were the most important components of human resource productivity; providing environmental conditions, providing appropriate facilities and mechanisms, governing the work culture and empowering employees play a significant role in increasing the productivity of human resources in the hospital (Mehrabian and Hasanipour, 2016).

In a study by Wichian et al. regarding the factors affecting the productivity of faculty members of public universities, environmental conditions were identified as the most important factor affecting the productivity of human resources (Wichian, Wongwanich, and Bowarnkitiwong, 2009).

According to the study of Raadabadi and his colleagues, the highest weight or priority was related to rewards and salaries and benefits, and the lowest weight or priority was related to supervision and supervision. The components of job security, job promotion, job position, working environment conditions, communication with colleagues, communication with personal life, and management policy also got the next priorities. Also, the ranking of the components in female and unmarried employees was higher than that of male and married employees. Modifying the reward mechanisms in hospitals and using levers such as performance-based management can improve the motivation and performance of employees. In addition, efforts to strengthen social relations among workers will also help to increase this satisfaction as one of the influential components (Raadabadi et al., 2018).

According to Yaghoubi et al.'s study regarding the length of stay index, the sub-criterion of discharge on the last days of the week, in the index of bed occupancy rate; The sub-criterion of the timely visit of a specialist or resident has the highest final weight in the bed performance index; sub-criterion of on-time specialist or resident visit with the highest final weight in the daily bed cost index; the sub-criterion of the cost of consumables and capital with the final weight had the highest impact on the productivity index. Regarding the prioritization of factors affecting the productivity index in the hospital in order to increase productivity, it is suggested to develop a continuous training program for medical staff to pay attention to the appropriate triage in the emergency department, to use effective cost strategies in the hospital and to manage the maintenance of hospital equipment (Yaghoubi, Agharahimi, and Javadi 2012).

Discussion and Conclusion

Improving productivity is the result of a combination of various factors. It is necessary to improve the quality of services and health continuously and to improve the performance of

clinical services, increase productivity and optimal use of facilities, and customer-oriented measures of health and treatment units through reforming the processes and structure of economic management (Mosizadeh and Amir Esmaili, 2011). The organization of hospitals is formed as a team; therefore, investigating and exploring the productivity of hospital work teams can be a shortcut to achieving effective productivity in a hospital (Karimi, Mozafari, and Baran Dost, 2018). In addition to identifying actual costs, designing and implementing a new costing system can provide appropriate information to hospital managers and health planners (Nouri et al., 2016). Today, in a very complex world, with new technologies and the competitiveness of organizations, the financial stability of hospitals is only possible by having adequate, high-quality, and affordable medicines and medical devices at the time (Moradtsehle and Qaderi, 2018).

The principles of productivity management include the following principles and guidelines:

1. Hospital managers should identify and correct the factor that inhibits productivity.
2. Productivity improvement programs should be continuous and comprehensive.
3. Productivity improvement programs should include the participation of all employees
4. Productivity improvement programs should have the support and participation of all levels.
5. Managers must determine and justify the goals of improving productivity for all units and guarantee the commitment of all people.
6. Managers should specify productivity indicators for each unit.
7. Managers should design and implement the productivity measurement and evaluation system according to the set goals.
8. Performance evaluation of managers should be based on the effectiveness of productivity improvement programs (Kolivand and Kazemi, 2013).

Increasing productivity in hospitals is influenced by various factors, so it is necessary to carry out necessary investigations in this regard in the hospital to identify the effective factors and to determine solutions to improve productivity, and in this regard, the following solutions are suggested. Experiences and surveys show that several factors can significantly impact improving productivity in medical centers. Examples of ways to improve productivity in medical training centers and hospitals are:

Using the appropriate management method according to the requirements

Efforts to reduce the bureaucracy ruling the centers

Designing and compiling supervisory mechanisms

Improving organizational culture

Paying more attention to issues related to human resources

Determining the actual tariffs for diagnostic and therapeutic services

Supervision of the correct implementation of the plan of the new hospital management system

Time Management

Better and more effective training of employees

Use appropriate communication structure

Design and implementation of a fair payment system

We hope to have a small contribution to the growth and excellence of the organization by trying to remove obstacles and strengthen the effective factors for improving productivity (Healthcare Services Management Website, 2013).

Conflict of Interest

According to the authors, this article has no financial sponsor or conflict of interest.

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