

Impact of Health Expenditures on the Quality of Healthcare Services and
Patients' Satisfaction in Teaching Hospitals
A Case Study at Al-Najaf Al-Ashraf Teaching Hospital

Hameeda Karim Shaalan

Author's Information

College of Administration and
Economic, University of Kufa, Najaf
Iraq

Corresponding author:

Hameeda Karim Shaalan
hameedak.alhadrawi@uokufa.edu.iq

Funding information

Self-funded

Conflict of interest

None declared by author

ABSTRACT

Health care is one of the most important aspects of human life, as it directly affects the quality of life and health of individuals. Health expenses is of particular importance in this context, as it plays a major role in improving the health services provided, and thus increasing the satisfaction of patients with government health services. This study aimed to assess the Impact of Health Expenditures and expenses on Quality of Medical Services and Patient Satisfaction in Teaching Hospital at Al-Najaf City. We included 450 patients who were visited the hospital during the years 2022 and 2023, however, 27 patients refused participation and excluded from the study and the net study sample was 423 patients who completed the interview. Quality of care for the same period was assessed according to the monthly reports of the Quality Control Unit in the Hospital. Health Expenditures were estimated according to the administration and financial affairs department in the hospital and the total budget of the hospital was taken for the years 2022 and 2023 as the total health expenditures for this period and categorized into 4 quarters for each year giving a total of 8 quarters. Findings of the study revealed that a strong positive and direct correlation between health expenditures and each of quality of care and patients' satisfaction. The overall patient's satisfaction was good among the studied group and positively correlated to the quality of care provided in the hospital

Keywords: Health expenditure, Quality of care, Patient's satisfaction, Teaching Hospital

This article is open access published under CC BY-NC Creative Commons Attribution Non-Commercial License: This License permits users to use, reproduce, disseminate or display the article provided that the author is attributed as the original creator and that the reuse is restricted to non-commercial purposes, (research or educational use).



1. INTRODUCTION

The provision of health care to all individuals is consistently central to the plans and programs of policymakers and the health system of each country. Hospitals are among the most intricate and vital entities for delivering healthcare services. They possess a distinct sensitivity to the efficacy of health systems. The regulations governing the establishment and administration of hospitals define a hospital as a medical institution that enhances outpatient and inpatient care while ensuring the comfort and safety of patients and staff through the utilization of diagnostic, therapeutic, health, educational, and research facilities. They are classified according to many criteria, one of which pertains to their mission. Hospitals are classified into two categories: teaching and non-teaching, based on their mission. The objectives of a teaching hospital encompass the provision of health, educational, and research services (Safarani et al. 2018a).

Teaching hospitals are among the most important health institutions that play a vital role in providing healthcare and training doctors and health practitioners. From other point of view, the healthcare expenses and expenditure have shown to be higher in teaching hospitals than non-teaching ones (Ayanian and Weissman 2002). However, in Iraq, no differences in the care costs between the teaching and non-teaching hospitals because the health assurance and health system policy in Iraq, where, since the 1970s Iraq has implemented a fundamental, comprehensive, and free healthcare strategy characterized by a hospital-centric, capital-oriented approach to medical care. Iraq established a healthcare system alike to that of the developed countries, wherein highly qualified professionals provided exemplary medical practices (Alhiti and Abid 2022).

In recent years, the use of medical and health care services has increased, rendering health risk a significant factor in household expenditure and well-being. The rapid advancement of science and technology has led to the widespread application of sophisticated technologies and materials in clinical practice, transforming conventional diagnostic and therapeutic approaches. This enhances diagnostic and therapeutic standards, extends lifespans, and elevates quality of life. Conversely, it escalates medical expenses. Meanwhile, good supervision of costs and quality of healthcare services ensure that diligent individuals receive

the better quality of healthcare services. (Zhu et al. 2014). There is a strong evidence and consensus with no doubt that health expenditure is closely linked to the quality of services provided, as costs impact several areas such as medical equipment, salaries, and training (Baltagi and Moscone 2010; Chunhai 2010). This article aims to review the effects of health expenditure costs on the quality of services in Teaching hospitals in Najaf Al-Ashraf. The study has chosen Al-Najaf Al-Ashraf Teaching Hospital as a model due to its special significance among other health institutions in the city, having been established by specialized German companies according to standard specifications and quality standards set by the World Health Organization. This hospital opened its doors in 2022 to serve the public. Since then, both the central and local governments have shown considerable interest in this hospital and similar institutions across Iraq. The central government has contracted with reputable international companies specializing in hospital management and allocated the necessary capital to maintain operations in line with the scale of this institution, while simultaneously enhancing the quality of services provided to patients based on measurable indicators. From what has been presented above, the importance of this institution becomes clear, justifying its selection as a model in this study.

However, some important concepts and definitions related to the study, such as the definition of health service, quality of health services, the concept of health expenditure, and the relationship between health expenditure costs and the quality of services provided, will be address in the following sections:

Literature Review

Definition of Health Service

Before discussing specific definitions of health service, it's essential to understand the general concept of service. Some scholars have described service as non-physical intangible product of human activity directed to meet a specific need, therefore, a consumer cannot be able to touch or see the services before purchasing and he/she may not able to test assess or evaluate the benefits or outcomes of a service, unless it is already occurs (Albrecht, Green, and Hoffman 2023).

This definition is fairly comprehensive, and the precise definition of service depends on two main factors: the nature of the service provided and the recipient or party receiving this

service, which may be individuals from the community, a private or public institution, and others.

On the other hand, there are other definitions of service proposed by various researchers. For example, S. M. Ikhtiar Alam, in their article from 2022, defined service as the intangible results of human efforts to meet specific needs, which can be facilitated by providing services and charging prices for them through tangible tools, equipment, or systems (Alam 2022). Although service is an intangible concept, it resembles tangible products like goods and merchandise in terms of satisfaction, utility, and achieving consumer acceptance for a price without errors in service delivery. Alam added another crucial factor in this definition, which is the absence of any deficiencies, defects, or mistakes in the service provided, as these can have negative impacts not only on the beneficiary but also on the service provider. This is particularly true for health services, which require high efficiency and effectiveness to minimize the potential for errors, given their negative impact on the lives of beneficiaries. This highlights the importance of quality in service delivery, especially in healthcare. Therefore, several definitions have been adopted for quality of health services (Alam 2022; Albrecht, Green, and Hoffman 2023)

Components of health expenditure:

“Health expenditure” includes every kind of resource used in the provision of care services and products. It encompasses a wide variety of outlays incurred by individuals, governments and organizations aimed at maintaining or improving health. Health expenditure is made up of several elements, however, these elements vary among countries and health systems. In general health expenditure include:

1. Public expenditures: Government expenditure aimed to expand and improve delivery of health care services, undertake public health interventions and develop the facilities. It covers funding of curative institutions like hospitals and clinics, provision of preventive services and health education(Bhattacharya and Qiao 2007) .
2. Private expenditures: Funds paid out by individuals or families as out-of-pocket expenditures for health services, such as direct payment for services covered by Medicare, for health care insurance premiums and for medicines (Bhattacharya and Qiao 2007).

3. Health care services: Costs incurred in the provision of medical services and other professional care such as physician, hospital, surgery and emergency different types of our ordinary procedures.

4. Pharmaceuticals and pharmacy: Expenses incurred for prescription drugs, non-prescription drugs and vaccination (Bhattacharya and Qiao 2007).

5. Preventive services: Contents costs for the services aimed at reducing the risks of incidence of diseases, such as vaccination, screening and other interventions at the population level (Wang, Sing, and Huang 2016).

6. Chronic care: These are the costs incurred for the maintenance of those persons having chronic sickness or disability in nursing homes and through home health aides (Tsiachristas et al. 2016).

7. Health Insurance and medical supplies (Frankovic and Kuhn 2023)

The roles of health expenses

It is also the cost that impacts on understanding equity and efficiency of service delivery:

- The extent to which population is 'covered' by healthcare services. This dimension shows the relative balance between supply and demand for health services in the given population.
- Economic impact: includes cost-benefit growth of each third party together with creation of new jobs in health care.
- Public health outcomes: deals with various health status indicators, quality of life and epidemiological factors. (Behera and Dash 2020; Nixon and Ulmann 2006; Rizvi 2019)

Measurement of health expenditure

Such expenditures are commonly reported as a share of country gross domestic product (GDP) or per capita expenses, which measures the economy's investments in health in relation to economic output size. For particular decision-making, description of health spending is important for the management of systems, for doing research and implementing allocation of activities to increase efficiency in a given health care system, and increase population health in general (Keegan, Connolly, and Wren 2018; Maele et al. 2019).

The concept of health expenditure

Health expenditure encompasses all costs incurred in the provision of health care services and encompassing operational cost, cost of drugs and other equipment as well as personnel cost.

The World Health Organization states that nations that direct larger amounts of funds to health care tend to have better health indicators (Kruk et al. 2018)

Costs for health expenditure and quality of service

1. Medical equipment and supplies: Funding for state-of-the-art medical devices and technology advancement plays an important role towards the standard of care given. For instance, studies show that hospitals that purchase state-of-the-art equipment deliver improved diagnostic and treatment services. Therefore, in 2017, the European Union (EU) implemented two new regulations, the Medical Device Regulation (MDR) and the In Vitro Diagnostic Regulation (IVDR). This strategy aims to create a regulatory structure that is robust, transparent, predictable, and sustainable, assuring a high standard of safety and health while fostering innovation (Hinrichs-Krapels et al. 2022; Shi 2022)

2. Human resources: The hiring, recruiting as well as training of medical workers is one of the critical principles to enhance the quality of service provision. Quality of care can be enhanced through supportive creative leadership, good planning, continuous training and education, efficient management of resources and cooperation among employees (Mosadeghrad 2014).

3. Administrative improvements: Good administrative control including proper allocation of budget and paying attention to other administrative dimensions are crucial in improvement of healthcare quality. From other point of view, a portion of the budget have to be allocated for development and improving the management and operational processes (Alayoubi et al. 2021).

Challenges of health expenditure

Despite the positive impact of health spending, teaching hospitals face many challenges, including:

- Lack of funding: Hospitals may face a lack of funding to meet their operational needs, which negatively affects the quality of services (OECD 2015; Safarani et al. 2018b).
- Unbalanced distribution of resources: Sometimes, resources are distributed unevenly between departments, leading to disparities in the level of services provided.

Through the above, health spending costs play a crucial role in determining the quality of services in teaching hospitals. Investing in equipment, human cadres, and management can

contribute to improving the care provided. Therefore, policy makers and hospitals must work to increase health spending budgets to ensure the provision of high-quality health services. Patient satisfaction is not limited to receiving treatment, but extends to include their entire experience in the health institution. In this context, there are many factors that affect the satisfaction of patients, including (Nasiri et al. 2024)

2. METHODOLOGY

This study is an attempt to understand the relationship between health expenditure costs, quality of health services, and patient satisfaction in teaching hospitals. The study will rely on a comprehensive methodology that ensures accurate data analysis.

2. Study Objectives

- Determine the impact of health expenditure costs on the quality of health services.
- Measure the level of patient satisfaction in teaching hospitals.
- Explore the relationship between service quality and patient satisfaction.

3. Study Design

- Study Type: Descriptive Analytical Study.
- Method: Use of quantitative and qualitative methods.

4. Study Sample size and sampling technique

The sample size was determined based on the number of patients in Al-Najaf Teaching Hospital during the year prior to the study and using the standard equation to calculate the sample size in the OpenEpi program through the official website of this program. By applying the standard equation, it was found that the sample size was 384. 10% of the calculated number was added to avoid non-response among some patients and to increase the sample size. Accordingly, the total number of the sample became 423 participants. The number was rounded to 450 participants who were selected in a sequential manner and upon leaving the hospital.

- Selection methods: The sample is selected randomly to ensure representation of different categories of the study population.

Data Collection Tools

1. Questionnaires: A questionnaire was designed for the study based on the short form PSQ-18 questionnaire which was prepared by Marshall GN

Scoring of the questionnaire was a scale of 5 points with 1 score for the least satisfaction and 5 for the maximum satisfaction.

Questionnaire consisted of 7 domains with a total of 50 items with different number of items per each domain as followed

- a. General satisfaction domain (2 items) possible total score: 2-10
- b. Technical quality (4 items) possible total score: 4-20
- c. Interpersonal aspect (2 items) possible total score: 2-10
- d. Communication skills (2 items) possible total score: 2-10
- e. Financial domain (2 items) possible total score ; 2-10
- f. Time spent with doctor and waiting (2 items) possible total score: 2- 10
- g. Accessibility to the services, availability and convenience (4 items) possible total score: 4-20

The overall possible total score: 18-90

2. Costs of health services: Available data according to the department of administration and financial affairs of the hospital, and the annual reports of the Federal Iraqi Ministry of Health

3. Quality of services provided:

We used the SERVQUAL scale which consisted of 5 dimensions, for purpose of this study the 5 quality dimensions denoted as QD1, QD2, ..., QD5;

- Tangibles (QD1) which assessed the physical environment of the hospital, cleanliness, equipment, and the appearance of staff.
- Reliability (QD2); delivering the healthcare services as are proposed and dependability.
- Responsiveness (QD3); assess the ability of healthcare staff to effectively provide the patient's needs and concerns
- Assurance (QD4); Evaluate the proficiency, politeness, and expertise of healthcare personnel, along with the confidence they instill in patients.

- Empathy (QD5); Assess the extent to which healthcare personnel demonstrate empathy and personalized attention towards patients

Each of these dimensions measured on a score of 1-5 and the average total score represents the level of quality.

4. Level of patient satisfaction: Measured according to the responses of the patients who visited the hospital and interviewed during the study period. Patient's satisfaction categorized into three categories, according to the total satisfaction score, the mean weighted transformed score of the satisfaction scale was calculated and categorized as followed a score of 1.00- 1.80 strongly disagree, 1.81-2.60 disagree, 2.61-3.40 undecided (neutral), 3.41 – 4.20 satisfied and 4.21-5.00 strongly agree

The scoring system applied also on the 7 dimensions of the PSQ-18; including General satisfaction, Technical quality, Interpersonal manner, Communication

5. Interviews: Interviews were conducted with the study participants at Al-Najaf Teaching Hospital to assess their satisfaction with the services provided in the hospital by answering the questionnaire questions.

Data collection procedures

- Through the interview. The researchers fill a total of 450 questionnaires for the selected study participants.
- Conducting personal interviews with patient's within the study sample.
- Collecting data for the period from October 2022 to March 2023.

Data analysis and Expected results

- Quantitative analysis: Using statistical programs such as SPSS to analyze quantitative data, in order to determine the relationships between variables.
- Qualitative analysis: Content analysis of interviews to extract main themes and trends.
- Providing detailed results on the relationship between health expenditures, costs, service quality, and patient's satisfaction.
- Providing recommendations to improve the quality of health services based on the research results

Ethics

- All official agreements and approval were obtained from Najaf Health Directorate
- Obtaining the consent of all study participants approval before conducting the study.
- Ensuring confidentiality of information and protecting the privacy of participants.

3. RESULTS

In this study a total of 450 patients were interviewed, however, 27 patients were refused to participate in the study and the remaining were 423 patients giving a response rate of 94% and their data were analyzed. Among the studied group, 46.6% patients visited the outpatient's clinic for different causes, 19.1% for medical department, 16.1% surgical department, 5.2% for radiology department, 3.8% for rehabilitation and physiotherapy and 41 patients (9.2%) came from emergency department, (**Table 1**). The mean age of the patients was 41.7 ± 11.1 (range: 20 – 70) years, and majority of the patients, 85.6%, were older than 30 years. Females were relatively dominant contributing for 52.2%. Distribution of the level of education revealed that 31.4% had primary school level or read and write, 35.2% secondary school level and 33.3% had institute, college or higher level of education. 86 women were housewives, 152 (35.8%) patients were employed, 26.5% were unemployed or free workers, 10.6% were students, and 6.6% were retired, (**Table 2**). The overall satisfaction of the studied group showed that 29 (6.9%) patients were very dissatisfied about the healthcare services that provided in the hospital, 48 (11.3%) were dissatisfied, 83 (19.6%) undecided (neutral), 245 (57.9%) were satisfied and only 18 patients (4.3%) were very satisfied. However, the overall mean score of the total patients was 3.47 ± 0.87 , which is within the interval of satisfaction indicated that the overall trend of patients was towards "satisfied", (**Table 3**). According to the available financial data for the years 2022 and 2023, it had been observed that the amount of budget and the expenditures were rising steadily from the first quarter of (January-March), 2022 to the fourth quarter (October-December), 2023, (**Figure 1**). For the quality of care, it had been found that the mean score of quality of care for each of the 5 dimensions of the SERVQUAL scale was 3.76 ± 0.14 for Tangibles (QD1), 3.93 ± 0.13 for Reliability (QD2), 4.13 ± 0.16 for Responsiveness (QD3), 4.3 ± 0.21 for Assurance (QD4) and 4.07 ± 0.28 for empathy (QD5), giving an overall mean score

for the whole period 2022-2023 of 4.04 ± 0.18 . All the mean scores located within the good levels, (**Table 3**). The breakdown of overall quality scores according to the 8 quarters of the years 2022-2023 showed that quality score increased significantly at each subsequent quarter, the mean quality score increased from 3.71 at the first quarter in 2022 to reach 4.22 at the end of the fourth quarter of the year 2023, (P. value < 0.001), (**Figure 2**). Distribution of the 423 hospital client patients according to their overall satisfaction scores for the years 2022 and 2023, showed that 6.9% of the clients were very dissatisfied, 11.3% dissatisfied, 19.6% were neutral or undecided, 57.9% were satisfied and only 4.3% were very satisfied, (**Table 4**). The cumulative classification of these levels was performed by gathering the first and second levels; (very dissatisfied and dissatisfied) as a new category “unsatisfied”, the fourth and fifth levels (Satisfied & Very satisfied) as “Satisfied”, the neutral/undecided level was kept, according to the new levels, 18.2% of the clients were unsatisfied with the healthcare services in the hospital, 19.6% were neutral and 62.2% were satisfied, (**Figure 3**). We further assessed the correlation between quality of care dimensions and patient’s satisfaction, it had been significantly found that all the five dimensions of quality of care have a significant strong positive (direct) effect on the patients satisfaction with variable strength of such correlations, the stronger correlation was found with the Responsiveness ($r = 0.836$) followed by Empathy ($r = 0.815$), Assurance ($r = 0.807$), Reliability ($r = 0.776$), and Tangibles ($r = 0.756$), in all correlations, P. value < 0.001, (**Table 5**) however, according to the r values all the correlations were strong enough to be taken into account. Moreover, we conduct a contingency table and cross-matching among hospital’s expenditures, quality of health care provided in the hospital and the hospital’s client patients satisfaction across the studied period 2022 and 2023 according to the quarters of the years. According to our findings and when take a look at the expenditures for the same period that patients visiting the hospital to receive its services in addition to the quality of care we found an almost linear correlations among the three parameters (expenditures, Quality of care and patients’ satisfaction). By conducting linear regression analysis we found that health expenditure was a strong predictor of quality of care and 84.4% of the variance in the quality of care can be explained by health expenditure ($R = 0.921$, $R^2 = 0.848$). We found also a significant direct correlation between quality of care and patients’ satisfaction and that 74% of change in

patients' satisfaction can be due to quality of care ($R = 0.860$, $R^2 = 0.740$). Moreover, a significant direct correlation was found between health expenditures and patients' satisfaction and that 54.6% of the change in the satisfaction can be attributed to the health expenditure ($R=0.739$, $R^2=0.546$). According to these findings health expenditures have a substantial impact on both quality of care and patients' satisfaction, (**Table 7**). From other point of view, we noticed that the trends of quality of care, patient's satisfaction and health expenditures were parallel in a positive correlation across the quarters of the years 2022 and 2023, (**Figure 4**).

Table 1. Distribution of the study participants according to the hospital department

Hospital department	No.	%
Outpatient clinic	197	46.6
Medical department	81	19.1
Surgical department	68	16.1
Radiology department	22	5.2
Physiotherapy department	16	3.8
Emergency department	39	9.2
Total	423	100.0

Table 2. Baseline characteristics of the studied group

Variable	No.	%
Age (year)		
≤ 30	61	14.4
31 - 40	148	35.0
41 - 50	124	29.3
51 - 60	67	15.8
> 60	23	5.4
Gender		
Male	202	47.8
Female	221	52.2
Level of education		
Read and write	52	12.3
Primary school	81	19.1
Secondary school	149	35.2
Institute after secondary	94	22.2
College/higher	47	11.1
Occupation/job		
Housewife	86	20.3
Employed	152	35.9
Unemployed/Free work	112	26.5
Student	45	10.6
Retired	28	6.6
Total	423	100.0

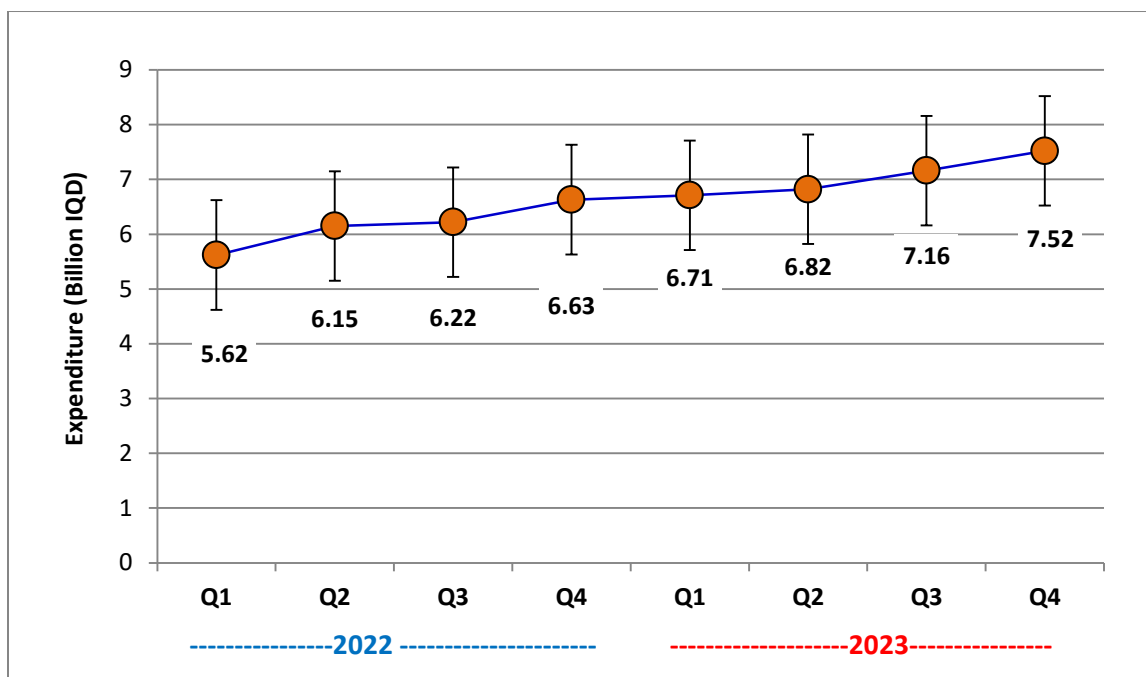


Figure 1. Line-Marker showing the percentage of health expenditure out of total budgets of health directorate during the period January 2022 to June2023 (Q1: first, Q2 second, Q3 third, Q4: fourth quarters of the year, IQD: Iraqi dinar)

Table 3. Mean and standard deviations scores of the five dimensions of quality of health care for the period 2022-2023

Dimension	Mean	SD
Tangibles (QD1)	3.76	0.14
Reliability (QD2)	3.93	0.13
Responsiveness (QD3)	4.13	0.16
Assurance (QD4)	4.30	0.21
Empathy (QD5)	4.07	0.28
Overall Quality	4.04	0.14

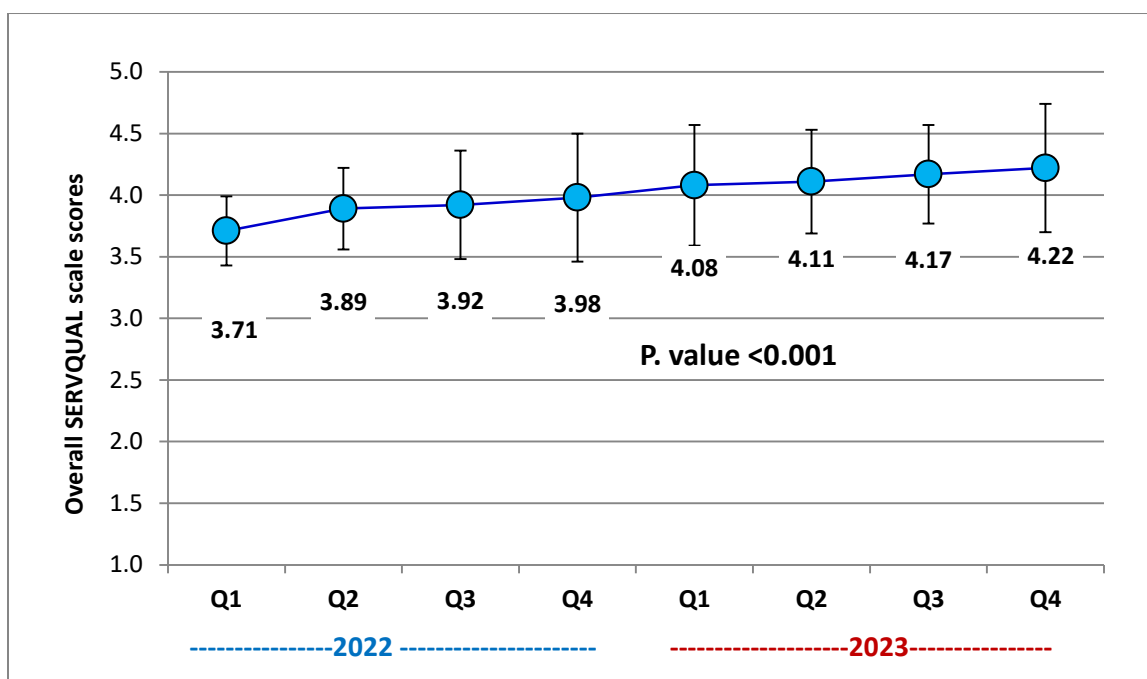


Figure 2. Line-Marker showing the overall SERVQUAL scale scores across the 8 quarters for the years 2022-2023

Table 4. Overall satisfaction levels of the studied group

Patient's satisfaction	No.	%
Very dissatisfied	29	6.9
Dissatisfied	48	11.3
Neutral/undecided	83	19.6
Satisfied	245	57.9
Very satisfied	18	4.3
Total	423	100.0
Overall mean score: 3.47 ± 0.87 (satisfied)		

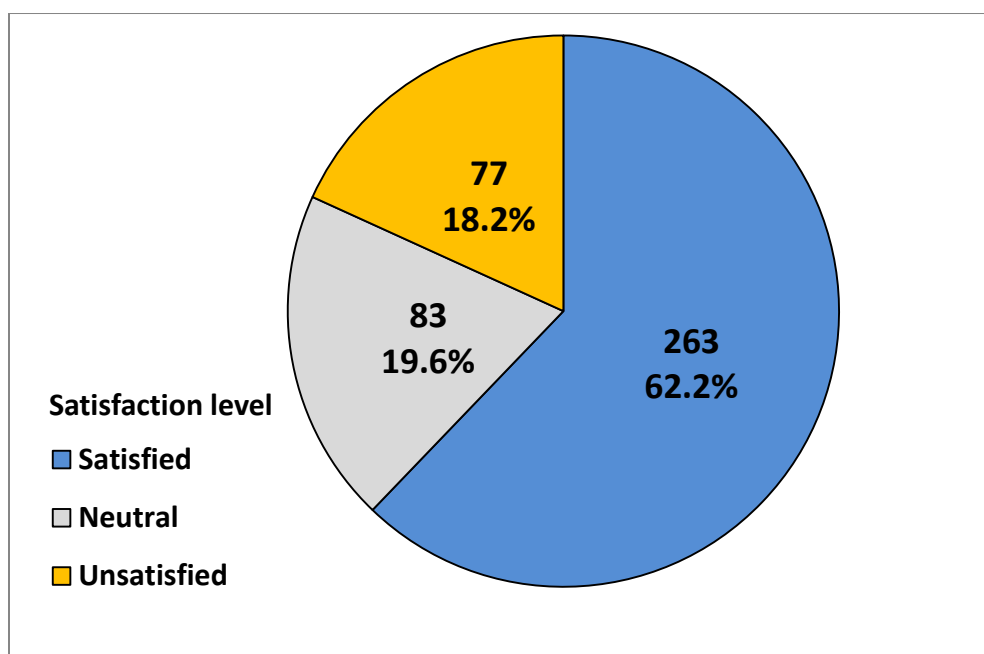


Figure 3. Distribution of the hospital's client patients according to three satisfaction levels

Table 5. Results of bivariate correlation of Quality dimensions and Patient's Satisfaction

Correlation parameters of Quality dimension vs. Satisfaction score		
Quality dimension	Correlation coefficient (r)	P. value
Tangibles	0.756	<0.001
Reliability	0.776	<0.001
Responsiveness	0.836	<0.001
Assurance	0.807	<0.001
Empathy	0.815	<0.001

Table 6. Distribution of total Expenditure of the hospital, average quality of care score and average overall satisfaction score according to the quarters of the years 2022 and 2023

Year	Quarter of the year	Expenditure (billion IQD)	Quality of care score	Satisfaction score
2022	Q1	5.62	3.71	2.10
	Q2	6.15	3.89	2.61
	Q3	6.22	3.92	3.28
	Q4	6.63	3.98	3.41
Total/ average for the year 2022		24.62	3.88	2.85
2023	Q1	6.71	4.08	3.74
	Q2	6.82	4.11	3.89
	Q3	7.16	4.17	3.96
	Q4	7.52	4.22	4.11
Total/ average for the year 2023		28.21	4.15	3.93

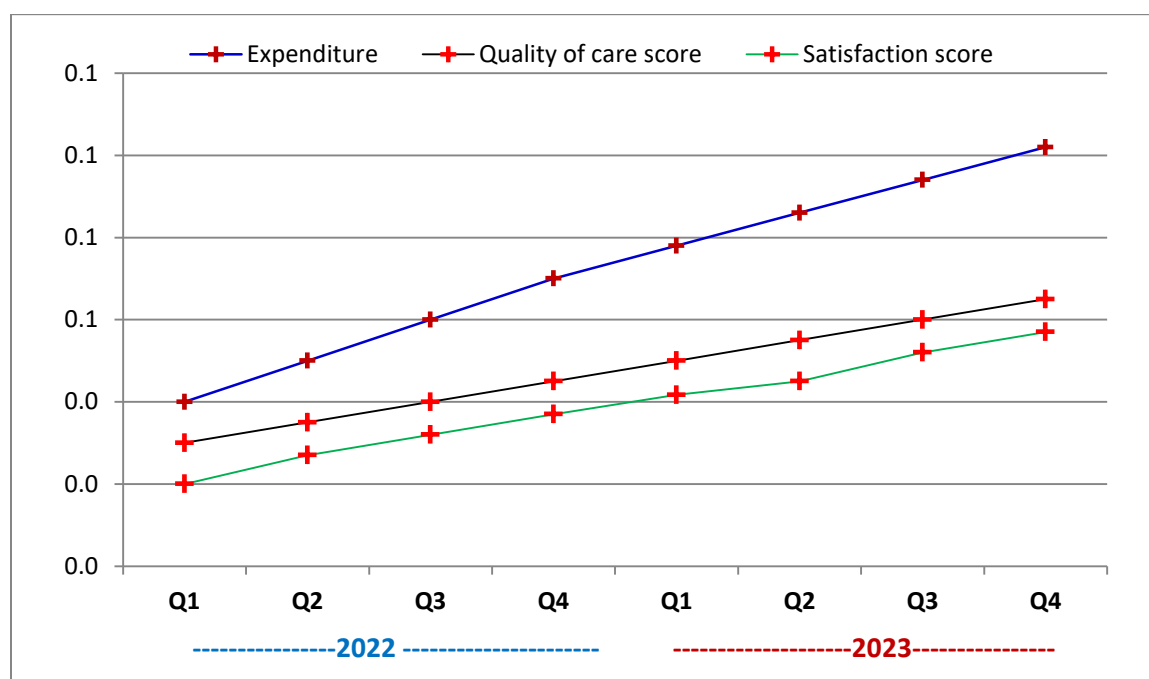


Figure 4. Trends of changes in the health expenditures, quality of care and patients' satisfaction during the quarters of the years 2022 and 2023

Table 7. Results of bivariate correlation among health Expenditures, Healthcare quality and Patient's satisfaction

Variable		Expenditures	Healthcare Quality
Healthcare Quality	R	0.921	
	R ²	0.848	
Patient's satisfaction	R	0.739	0.860
	R ²	0.546	0.740

All correlations were significant at P. value <0.001

R: correlation coefficient, R² : coefficient of determination

4. DISCUSSION

Health care is one of the most important aspects of human life, as it directly affects the quality of life and health of individuals. Health expenses is of particular importance in this context, as it plays a major role in improving the health services provided, and thus increasing the satisfaction of patients with government health institutions (Xesfingi and Vozikis 2016). Health expenditure is a key indicator of the quality of health services. When governments invest in improving hospital infrastructure, providing modern medical equipment, and training health personnel, this leads to the provision of better medical services. Reducing waiting times and improving the interaction between patients and medical staff are positively reflected in patient satisfaction (Hussey, Wertheimer, and Mehrotra 2013). Adequate spending on medicines and treatments ensures that the necessary treatments are available to patients. For one reason or another, patients do indeed feel more satisfied when they obtained the prescribed medications. On the other hand, it has been observed that interruptions and or rationing of medication may bring some level of discomfort to the patients which in turn affects their overall experience in a negative way (Pariyal, Jain, and Gudhe 2021). Rehabilitation of health workers is another important component in raising the standards of service provision. In that, trained and experienced doctors and nurses are able to handle different cases more effectively and efficiently. This boosts the patients' confidence in the healthcare system and therefore enhances their experience (Batbaatar et al. 2017).

Health expenditure is not just a number in the budget, but rather an investment in the health and well-being of society. By improving the quality of services, ensuring the availability of medicines, training cadres, and using technology, government health institutions can increase patient satisfaction. Therefore, governments' interest in health spending is positively reflected in the patient experience and enhances their confidence in the health system (Jacques and Noël 2022).

Patient satisfaction with health services is one of the basic indicators that reflect the quality of health care provided. Patient satisfaction is not limited to receiving treatment, but extends to include their entire experience in the health institution. In this context, there are many factors that affect patient satisfaction, including Quality of healthcare (Alibrandi et al. 2023), physical setting of the healthcare setting (Alkazemi et al. 2020; Otani et al. 2020), Interpersonal communications (Mujiyanti et al. 2023), Availability of services and facilities (Rajbanshi et al. 2014), short waiting time (Xie and Or 2017) and fair costs of services (AlOmari 2022; Arista and Idris 2019) in addition to the Psychological and emotional support (Adamson et al. 2012), all these are important factors that affect patients satisfaction.

Therefore, patient satisfaction in health facilities depends on a variety of factors, from the quality of health care to effective communication and psychological support. By improving these factors, healthcare organizations can enhance patient experience and increase patient satisfaction, which positively impacts the health of the community as a whole. Several previous studies documented that quality of health care has a direct effect on patients satisfaction, on the other hand, other studies documented that improvement in the healthcare quality mainly depend on the expenditures and budgets of any health organization (Batbaatar et al. 2017; Hussey, Wertheimer, and Mehrotra 2013; Safarani et al. 2018b). In Iraq few studies that correlates these three factors and there still a wide gap to be filled in this topic, therefore, in the current study we aimed to investigate the effect of health expenditures on the quality of care and the final outcome, patient's satisfaction. We found significant direct (positive) correlations among the three studied parameters; health expenditures, quality of healthcare and patients satisfaction, however, health expenditure represents the corner stone in these correlations; it showed a direct strong effect on the quality of care and a substantial effect on patients' satisfaction and also it has an indirect

effect on patients' satisfaction through its effect on the quality of healthcare. In a previous study, Raghupathi et al. documented that higher expenditures can result in better health and improvement of quality of healthcare (Raghupathi and Raghupathi 2020). Beylik et al. found a strong evidence that health expenditure has a positive effect on the quality of care (Beylik et al. 2022). From other point of view, Oladosu found a significant relationship between health expenditures and health outcomes and (Oladosu, Chanimbe, and Anaduaka 2022). On the other hand, Abbas et al. analyzed the socio-economic determinants of health quality during the years 1990-2019 and found that adequate health expenditure have a strong effect on the health quality and accessibility in Pakistan (Abbas, Xu, and Sun 2022). Conversely, Hussey et al. reported that the correlation between healthcare costs and quality was inconsistent and the association was weak to moderate (Hussey, Wertheimer, and Mehrotra 2013). The discrepancy among studies could be attributed to the differences in the health systems in different countries. In Iraq, the healthcare services are almost free of charge, the hospitals' clients charged only small amount of no more than \$2 USD for all the services received in the hospital and no further out of pocket costs paid in the governmental hospitals. In other countries, the cost of healthcare may reach \$ thousands USD. These costs varied according to the insurance systems of the countries, for instance, in Jordan, patient may pay up to \$40 USD for medical care (Bietsch et al. 2020).

Studies that assessed the effect of quality of care and patient's satisfaction are many and almost showed the same conclusion that good quality of health care is a significant predictor of patient's satisfaction (Kalaja 2023). In our study we found a strong significant positive association between quality of healthcare provided in the hospital and patient's satisfaction. However, different determinants contribute to get good quality of care. It had been documented that patient is more satisfied when they received services with dignity, autonomy and when the services meet the patient's expectation. Rauf et al. proved that quality of healthcare was positively and directly affect the patient's satisfaction (Rauf et al. 2024). So as, Faris S Alghamdi from Saudi Arabia concluded that patient's satisfaction was directly affected by the quality of care (Alghamdi 2014). Therefore our study consistent with and supported the findings of previous studies in the fact that patient's satisfaction strongly affected by quality of care, regardless of other factors that affect satisfaction.

5. CONCLUSIONS

In light of our findings and previous literatures we can concluded the following:

1. Health expenditures in teaching hospitals in AlNajaf city were good enough to cover vast majority of the requirement of the hospital and its improvement and development.
2. Almost all the expenses of the healthcare services are covered by the governmental budget and very little is shared by the patient.
3. health expenditures increased by almost 20% in 2023 compared to the total budget in 2022
4. A strong positive and direct correlation was found between health expenditures and quality of care.
5. Overall patient's satisfaction was good among the studied group. However, 18.2% of the study participants were unsatisfied , 19.6% were neutral and 62.2% were satisfied.
6. A strong direct positive correlation was found between quality of care and patients' satisfaction towards healthcare services provided in the hospital.
7. Amount of health expenditures has associated with patient's satisfaction in two ways; direct association and indirect through the effect on quality of care.

According to these conclusions we suggest conducting further studies particularly on national level including multiple hospitals and healthcare services and larger number of participant patients. Also we recommend further improvement in the budget of teaching hospitals which can be reflected in improvement of quality of care and development of these hospitals.

6. BIBLIOGRAPHY

- Abbas, Hafiz Syed Mohsin, Xiaodong Xu, and Chunxia Sun. 2022. "The Role of State Capacity and Socio-Economic Determinants on Health Quality and Its Access in Pakistan (1990–2019)." *Socio-Economic Planning Sciences* 83: 101109.
- Adamson, Keith, Jatinder Bains, Lydia Pantea, Jessica Tyrhwitt, George Tolomiczenko, and Terry Mitchell. 2012. "Understanding the Patients' Perspective of Emotional Support to Significantly Improve Overall Patient Satisfaction." *Healthcare quarterly (Toronto, Ont.)* 15(4): 63–69.
- Alam, S M I. 2022. "Definition, Concepts, and Unique Characteristics of Services" *Jahangirnagar University, Bangladesh.*: 2020. <https://www.researchgate.net/publication/360755160>

- Alayoubi, Mansour M, Zakieh M Arekat, Mazen J Al Shobaki, and Samy S Abu-naser. 2021. "The Effect of Administrative Control on Improving the Quality of Health Services: An Empirical Study on Al-Awda Hospita." *Quality - Access to Success* 22(184): 217–31.
- Albrecht, Maria Gomez, Mark Green, and Linda Hoffman. 2023. "Services: The Intangible Product." In *Principles of Marketing*, ed. Linda Hoffman Maria Gomez Albrecht, Mark Green. Texas, USA: OpenStax, Rice University, 375. <https://openstax.org/details/books/principles-marketing>.
- Alghamdi, Faris S. 2014. "The Impact of Service Quality Perception on Patient Satisfaction in Government Hospitals in Southern Saudi Arabia." *Saudi medical journal* 35(10): 1271–73.
- Alhiti, Hazim Abdul Rahman, and Jinan Salman Abid. 2022. "Comparing Iraq and USA Health Systems: 2009-2019." *Maaen Journal for Medical Sciences* 1(1): 63–69.
- Alibrandi, Angela, Lara Gitto, Michele Limosani, and Paolo Fabrizio Mustica. 2023. "Patient Satisfaction and Quality of Hospital Care." *Evaluation and Program Planning* 97: 102251.
- Alkazemi, Mariam F, Sara Bayramzadeh, Nouf B Alkhubaizi, and Ayman Alayoub. 2020. "The Physical Environment and Patient Satisfaction Ratings on Social Media: An Exploratory Study." *Facilities* 38(1/2): 86–97.
- AlOmari, Firas. 2022. "The Mediating Role of Hospital Image: The Impact of Care Cost and Service Quality on Patient Satisfaction." *Journal of Innovation in Business and Economics* 6(01): 1–16.
- Arista, Riska, and Haerawati Idris. 2019. "The Relationship of Hospital Cost, Service Quality and Patient Satisfaction." *Jurnal Ilmu Kesehatan Masyarakat* 10(2): 132–38.
- Ayanian, John Z, and Joel S Weissman. 2002. "Teaching Hospitals and Quality of Care: A Review of the Literature." *The Milbank quarterly* 80(3): 569–93, v.
- Baltagi, Badi H, and Francesco Moscone. 2010. "Health Care Expenditure and Income in the OECD Reconsidered: Evidence from Panel Data." *Economic Modelling* 27(4): 804–11.
- Batbaatar, Enkhjargal, Javkhlanbayar Dorjdagva, Ariunbat Luvsannyam, Matteo Mario Savino, and Pietro Amenta. 2017. "Determinants of Patient Satisfaction: A Systematic Review." *Perspectives in public health* 137(2): 89–101.
- Behera, Deepak Kumar, and Umakant Dash. 2020. "Is Health Expenditure Effective for Achieving Healthcare Goals? Empirical Evidence from South-East Asia Region." *Asia-Pacific Journal of Regional Science* 4(2): 593–618.
- Beylik, Umut, Umit Cirakli, Murat Cetin, Eyyup Ecevit, and Osman Senol. 2022. "The Relationship between Health Expenditure Indicators and Economic Growth in OECD Countries: A Driscoll-Kraay Approach." *Frontiers in Public Health* 10: 1050550.

- Bhattacharya, Joydeep, and Xue Qiao. 2007. "Public and Private Expenditures on Health in a Growth Model." *Journal of Economic Dynamics and Control* 31(8): 2519–35.
- Bietsch, Kristin, Rebecca Rosenberg, John Stover, and William Winfrey. 2020. "Determinants of Health Insurance Coverage and Out-of-Pocket Payments for Health Care in Jordan: Secondary Analysis of the 2017-18 JPFHS."
- Chunhai, T. 2010. "An Economic Analysis of the Excessive Increase of the Medical Cost in China." *J Jiangxi UniFinanc Econ* 3: 11–15.
- Frankovic, Ivan, and Michael Kuhn. 2023. "Health Insurance, Endogenous Medical Progress, Health Expenditure Growth, and Welfare." *Journal of Health Economics* 87: 102717.
- Hinrichs-Krapels, Saba, Bor Ditewig, Harriet Boulding, Anastasia Chalkidou, Jamie Erskine, and Farhad Shokrane. 2022. "Purchasing High-Cost Medical Devices and Equipment in Hospitals: A Systematic Review." *BMJ open* 12(9): e057516. doi:10.1136/bmjopen-2021-057516.
- Hussey, Peter S, Samuel Wertheimer, and Ateev Mehrotra. 2013. "The Association between Health Care Quality and Cost: A Systematic Review." *Annals of internal medicine* 158(1): 27–34.
- Jacques, Olivier, and Alain Noël. 2022. "The Politics of Public Health Investments." *Social Science & Medicine* 309: 115272. doi:https://doi.org/10.1016/j.socscimed.2022.115272.
- Kalaja, Rezarta. 2023. "Determinants of Patient Satisfaction with Health Care: A Literature Review." *European Journal of Natural Sciences and Medicine* 6(1): 43–54.
- Keegan, Conor, Sheelah Connolly, and M-A Wren. 2018. "Measuring Healthcare Expenditure: Different Methods, Different Results." *Irish Journal of Medical Science (1971-)* 187: 13–23.
- Kruk, Margaret E, Anna D Gage, Catherine Arsenault, Keely Jordan, Hannah H Leslie, Sanam Roder-DeWan, Olusoji Adeyi, et al. 2018. "High-Quality Health Systems in the Sustainable Development Goals Era: Time for a Revolution." *The Lancet. Global health* 6(11): e1196–1252.
- Maele, Nathalie Vande, Ke Xu, Agnes Soucat, Lisa Fleisher, Maria Aranguren, and Hong Wang. 2019. "Measuring Primary Healthcare Expenditure in Low-Income and Lower Middle-Income Countries." *BMJ Global Health* 4(1): e001497.
- Mosadeghrad, Ali Mohammad. 2014. "Factors Influencing Healthcare Service Quality." *International journal of health policy and management* 3(2): 77–89. doi:10.15171/ijhpm.2014.65.
- Mujiyanti, Sri, Rosmayasari, Ani Haryani, and Dina Rahmawati. 2023. "Interpersonal Communication Skills of Nurse and Patient Satisfaction in Outpatient Unit." *KnE Social Sciences* 8(14 SE-Articles).

- Nasiri, Asghar, Mohammad Amerzadeh, Hasan Yusefzadeh, Saeideh Moosavi, and Rohollah Kalhor. 2024. "Inequality in the Distribution of Resources in the Health Sector before and after the Health Transformation Plan in Qazvin, Iran." *Journal of Health, Population and Nutrition* 43(1): 4.
- Nixon, John, and Philippe Ulmann. 2006. "The Relationship between Health Care Expenditure and Health Outcomes: Evidence and Caveats for a Causal Link." *The European journal of health economics* 7: 7–18.
- OECD. 2015. *Fiscal Sustainability of Health Systems Bridging Health and Finance Perspectives*. OECD Publishing.
- Oladosu, Ayomide Oluwaseyi, Timothy Chanimbe, and Uchechi Shirley Anaduaka. 2022. "Effect of Public Health Expenditure on Health Outcomes in Nigeria and Ghana." *Health Policy OPEN* 3: 100072.
- Otani, Koichiro, Yihao Deng, Patrick A Herrmann, and Richard S Kurz. 2020. "Patient Satisfaction, Quality Attributes, and Organizational Characteristics: A Hierarchical Linear Model Approach." *Journal of patient experience* 7(5): 801–6.
- Pariyal, Priyanka S, Ahmindra Jain, and Vandana Gudhe. 2021. "Assessment of Patient's Satisfaction about the Availability of Medicines at Hospital and Cost Affordability: A Study Protocol." *Journal of Pharmaceutical Research International* 33: 154–60.
- Raghupathi, Vijju, and Wullianallur Raghupathi. 2020. "Healthcare Expenditure and Economic Performance: Insights From the United States Data." *Frontiers in public health* 8: 156.
- Rajbanshi, L, G P Dungana, Y K Gurung, and D Koirala. 2014. "Satisfaction with Health Care Services of out Patient Department at Chitwan Medical College Teaching Hospital, Nepal." *Journal of Chitwan Medical College* 4(1): 11–18.
- Rauf, Abdul, Norhilmi Muhammad, Hamid Mahmood, and Yuen Yee Yen. 2024. "The Influence of Healthcare Service Quality on Patients' Satisfaction in Urban Areas: The Case of Pakistan." *Heliyon* 10(18): e37506.
- Rizvi, Syeda Anam Fatima. 2019. "Health Expenditures, Institutional Quality and Economic Growth." *Empirical economic review* 2(1): 63–82.
- Safarani, Samaneh, Hamid Ravaghi, Pouran Raeissi, and Mohammadreza Maleki. 2018a. "Challenges and Opportunities Faced by Teaching Hospitals in the Perception of Stakeholders and Hospital System Managers." *Education in Medicine Journal* 10(4): 9–21. doi:10.21315/eimj2018.10.4.2.

- Safarani, Samaneh, Hamid Ravaghi, Poursan Raeissi, and Mohammadreza Maleki. 2018b. "Financial Challenges of Teaching Hospitals and Providing Solutions." *Journal of education and health promotion* 7: 155.
- Shi, Yuan. 2022. "'State-of-the-Art' in New EU Medical Device Regulations: A Review of Its Development in Medical Device Law, the Interpretations from Stakeholders, Impacts, and Possible Solutions for Implementation." University of Bonn. Available at : https://www.dgra.de/media/pdf/studium/masterthesis/master_shi_yuan_2022.pdf.
- Tsiachristas, Apostolos, Carolien Dijkers, Melinde R S Boland, and Maureen P M H Rutten-van Mölken. 2016. "Impact of Financial Agreements in European Chronic Care on Health Care Expenditure Growth." *Health policy* 120(4): 420–30.
- Wang, Fuhmei, Jung-Der Sing, and Yu-Xiu Huang. 2016. "Health Expenditures Spent for Prevention, Economic Performance, and Social Welfare." *Health Economics Review* 6: 1–10.
- Xesfingi, Sofia, and Athanassios Vozikis. 2016. "Patient Satisfaction with the Healthcare System: Assessing the Impact of Socio-Economic and Healthcare Provision Factors." *BMC health services research* 16: 94. doi:10.1186/s12913-016-1327-4.
- Xie, Zhenzhen, and Calvin Or. 2017. "Associations between Waiting Times, Service Times, and Patient Satisfaction in an Endocrinology Outpatient Department: A Time Study and Questionnaire Survey." *INQUIRY: The Journal of Health Care Organization, Provision, and Financing* 54: 0046958017739527.
- Zhu, Xiaolong, Qiong Cai, Jin Wang, and Yun Liu. 2014. "Determinants of Medical and Health Care Expenditure Growth for Urban Residents in China: A Systematic Review Article." *Iranian journal of public health* 43(12): 1597–1604.

Citation:

Shaalán H.K Impact of Health Expenditure and expenses on Quality of Medical Services and Patient Satisfaction in Teaching Hospitals: A Case Study of Al-Najaf Al-Ashraf Teaching Hospital. *AJMS* 2024; 10 (1): 125-49