Scientific Paper Entitled :Effect Of Availability Of Necessary Equipment And Supportive Management On The Performance Of Health Cadres

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Abstract

Global health care prices have been rising at an alarming rate, and a large amount of these expenses can be traced to operational inefficiencies related to the administrative and direct medical service delivery procedures. Costs connected to the "overuse," "underuse," or "misuse" of health care resources are thought to total more than half a trillion dollars annually. Consequently, a less detrimental and more effective method of controlling health care costs is focused on reducing "waste" of resources rather than lowering value-added services by lowering payment levels, benefit structures, and eligibility. It is not unexpected that the health care industry is entangled in severe crises pertaining to safety, quality, cost, and access that

seriously jeopardize the health and well-being of numerous people given the existing state of "broken" health care procedures and system failures. This study looked at the variables that affect how well health services are provided in public hospitals in the Kingdom of Saudi Arabia (KSA) as well as possible solutions.

Key words: necessary equipment, supportive management, performance, health cadres.

Introduction

The first point of contact between a patient and the healthcare system is thought to be a primary healthcare centre (PHCC). Many nations use health indicators related to the performance or quality of primary healthcare to assess the effectiveness of their healthcare systems. There is a lot of focus on the value of primary healthcare, from the Alma-Ata Declaration of 1978—which contains the majority of the fundamental ideas supporting primary healthcare—to the Astana Declaration of 2018, which was accepted by every WHO Member state. Primary healthcare is viewed as the cornerstone of an efficient and adaptable healthcare system in both statements and is crucial to promoting health and health outcomes. These factors make funding primary healthcare a top concern, especially in light of the data demonstrating the field's critical role in enhancing public health and reducing medical costs. However, PHC accessibility and services are still a problem in nations like the UK, which are renowned for having top-notch healthcare systems, especially for their rural populations (Hone et al., 2018).

The health sector of the Kingdom of Saudi Arabia (KSA), like that of many other nations worldwide, is facing significant obstacles as a result of the following: (1) rising healthcare costs due to the country's expanding population; (2) unequal access; (3) high costs of healthcare services; and (4) worries about the safety and quality of care. As part of Vision 2030, Saudi Arabia's future vision, the sector is rapidly changing in the KSA in accordance with the National Transformation Program. To successfully realize this vision, three pillars have been adopted: (1) facilitating access to health services; (2) enhancing the quality and efficiency of health services; and (3) promoting health risk prevention. In an effort to achieve these objectives, Saudi Arabia has already begun to refocus attention and investment away from secondary and tertiary healthcare

facilities and toward the reform and restructuring of primary healthcare. Saudi Arabia has been striving to integrate primary healthcare centres (PHCs) with preventive and curative services, offering a wide range of services. In addition to basic dental care, these services include managing infectious diseases through immunization, pregnancy and child health, needed medicine in addition to basic dental care, chronic disease management and follow-up, and health education. Improving PHC centres' capacities for disease prevention, early detection, integrated care, and health promotion requires an evaluation of existing primary healthcare offerings. This data is necessary to identify the primary obstacles to the adoption of early detection and control strategies and NCD prevention practices in PHC facilities in the Kingdom of Saudi Arabia (Tyrovolas et al., 2017).

Global health care prices have been rising at an alarming rate, and a large amount of these expenses can be traced to operational inefficiencies related to the administrative and direct medical service delivery procedures. Costs connected to the "overuse," "underuse," or "misuse" of health care resources are thought to total more than half a trillion dollars annually. Consequently, a less detrimental and more effective method of controlling health care costs is focused on reducing "waste" of resources rather than lowering value-added services by lowering payment levels, benefit structures, and eligibility. It is not surprising that the health care industry is enmeshed in severe crises relating to safety, quality, cost, and access that pose substantial issues to the health status and function of many patients given the current scenario of "broken" health care procedures and system failures (Gutacker, 2013).

The Institute of Medicine (IOM) report identified six interrelated dimensions of quality (safe, effective, patient-cantered, timely, efficient, and equitable) for improving the health care system in response to the rising costs of healthcare and to remove the obstacles to the delivery of high-quality care. "Patient centeredness" has been recognized as a guiding concept for accomplishing performance targets and for revamping and enhancing healthcare as a whole. This patient-cantered approach presents a road map for changing the current system and makes a strong argument for enhancing cooperation between engineering methodologies—methods employed in industrial sectors, mostly in manufacturing—and

medicine in the delivery of healthcare. Global health care systems, particularly those in the United States, Canada, the United Kingdom, the Netherlands, and so forth, are redesigning health care processes at different levels of the delivery system by implementing performance improvement initiatives, lean processes, process optimization, and reduced waste (Al Fraihi et al., 2016).

In the Kingdom of Saudi Arabia (KSA), the Ministry of Health (MOH) is principally responsible for overseeing the medical industry. In addition to overseeing the provision of free healthcare to 28 million people living in 13 distinct provinces, the MOH is in charge of regulating the delivery of healthcare. Additionally, providers of specialist treatment facilities include operators in the private sector. Providing comprehensive, integrated, and high-quality health care services is MOH's mission. Additionally, the MOH creates rules and legislations that oversee the public and private health industries. Despite advancements in healthcare facilities throughout the Kingdom, a number of problems remain. These include a lack of qualified medical personnel, a lack of funding, shifting disease trends, high demand brought on by free services, a lack of a national crisis management policy, difficult access to certain healthcare facilities, a lack of a national health information system, and the underutilization of potentially effective electronic health strategies (Hassanain, 2017).

Significance of study

This study looked at the variables that affect how well health services are provided in public hospitals in the Kingdom of Saudi Arabia (KSA) as well as possible solutions. It demonstrated how the performance of health cadres and performance metrics were impacted by the availability of required equipment and supportive management. It also looked at health cadres' professional growth.

Objective

1. To examine the factors that influence the efficiencies of health service.
2. To show effect of availability of necessary equipment and supportive management on the performance of health cadres.
3. To explore professional development among health cadres.

Literature Review

To improve the performance of its facilities in KSA and the capabilities of the health care sector, the MOH first embraced a broad range of standardized health care performance improvement plans, which were created by the Agency for Healthcare Research and Quality and successfully implemented in the United States. The idea was to emphasize the "patient first" concept in order to foster a culture of quality. However, when this intervention was being devised, a great deal of scepticism surfaced. This was mostly caused by the Saudi MOH's 100% public health care system, where all employees are paid salaries and budgets are based on actual bed counts rather than volume or performance. This meant that neither administrators nor workers had any procedures in place to provide motivation. Moreover, no key performance indicators (KPIs) or quality measurements were present. Based on corporate performance improvement approaches, the quality and development teams at the MOH chose to create and implement performance improvement initiatives in response to the tremendous discontent expressed by administrators and patients with the performance of the hospitals. Ensuring the creation of a performance improvement unit (PIU) within MOH directorates was the initiative's ultimate goal. This unit would be in charge of adopting patient pathways and best clinical practice processes to improve hospital operations. With an emphasis on skill transfer, the unit would also be responsible for localizing and embedding a performance-enhancing culture of safety, effectiveness, patient centeredness, and punctuality (Hassanain, 2017).

Most countries in the world, including the Kingdom of Saudi Arabia, now have a duty to create an efficient, just, and cost-effective healthcare system due to rising healthcare costs and increased demand for healthcare services. Hospital efficiency is essential to the overall effectiveness of healthcare systems because they are the primary users of healthcare resources. In order to implement the required laws and practices for guaranteeing the efficient use of public resources, governments must perform an efficiency analysis of their healthcare sectors and pinpoint the root causes of inefficiency. Determining healthcare system inefficiencies and comprehending the elements influencing public hospital efficiency are crucial. Hospital efficiency is essential to the overall effectiveness of healthcare systems because they are the primary users of healthcare resources. In order to

implement the required laws and practices for guaranteeing the efficient use of public resources, governments must perform an efficiency analysis of their healthcare sectors and pinpoint the root causes of inefficiency. Determining healthcare system inefficiencies and comprehending the elements influencing public hospital efficiency are crucial (Alatawi et al., 2019).

Factors Influencing the Efficiency of Public Hospitals

According to the definition of technical efficiency, a hospital should create the greatest number of outputs from a given input or the given output with the fewest inputs. Seldom is research on the factors influencing efficiency and the technical efficiency assessment of public hospitals carried out in the Kingdom of Saudi Arabia. The number of research with limited conclusions has been shown by a systematic review and meta-analysis of public hospital efficiency studies conducted in the Gulf region. The review discovered just two KSA-conducted studies. The first one, which evaluated the effectiveness of healthcare services in KSA in 2014 at the district level, was completed in 2017. The literature stressed that both internal and external (such as environmental factors) that affect hospital performance and may affect technological efficiency are outside the control of hospital administration. Understanding the elements of technological efficiency and working together with policy planning, daily operation management, and health administration are all necessary to improve the performance of public hospitals. Consequently, in order to better understand the causes of the inefficiencies in KSA's public hospitals and investigate potential strategies for enhancing hospital performance, a qualitative inquiry was carried out with important stakeholders in the health system (Mitropoulos et al., 2016).

Hospital Objectives and Strategic Plans

In order to establish clear goals, identify clinical tasks for improving health outcomes, and specify each practitioner's job description, the hospital's objectives must be set in the context of the MOH's goals and relevant strategic plans must be developed through staff collaboration (Alatawi et al., 2022).

Performance Measurements

Applying policies and procedures—such as mandated monitoring programs by the MOH—is necessary to evaluate hospital performance. The quality of services provided, and

hospital performance as demonstrated by patterns should be included in these actions. It should also incorporate patient input and field visits conducted by the local health affairs department (Alatawi et al., 2022).

Artificial intelligence in healthcare

The medical industry is one of the most promising sectors interested in implementing artificial intelligence (AI) technologies. In the past few years, numerous effective applications built on clinical decision support systems (CDSSs) have been created. As a result, the landscape of the medical area has gradually transformed as a result of AI applications. A large number of medical professionals and computer scientists are collaborating to enhance healthcare services and implement automated systems that can increase the precision of illness diagnosis and prescription of necessary therapies. AI applications aimed specifically for the medical field have aided professionals in formulating diagnostic hypotheses, offering justifications for clinical reasoning, and choosing suitable interventions. In many hospitals across the world, these applications have been quite successful in recognizing and detecting health problems in clinical settings. The crucial issue of reliability confronts AI's recent resurrection. Trust, transparency, and ethics in AI-based healthcare applications are issues that many legislators and scholars have been working to resolve [9]. Adoption of AI in biomedicine and healthcare depends critically on how reliable its applications are. Patients will receive better medical services and care if practitioners and policymakers in the healthcare industry have faith in the applications of AI [8]. In contrast, a major obstacle to the use of modern technology is the unreliability of AI applications. Since clinical and medical decisions have an impact on people's well-being, there are numerous obstacles arising from the growing legal and ethical issues surrounding these kinds of applications (Albahri et al., 2023).

In Saudi Arabia, the Ministry of Health (MOH) is responsible for 60% of public health services. The remaining 40% are provided by the private sector and other governmental organizations, such as university or military hospitals. In the Kingdom of Saudi Arabia, the healthcare system has always been hospital-centric, focusing more on treating illnesses than on preventing them with preventive measures. Because of this, KSA's

healthcare system is rapidly changing and reforming. The goal of transforming healthcare is attracting more attention, and PHC reform and restructuring are becoming the main focus. The implementation of novel clinical pathways, the prevention and screening of chronic diseases, the integration of psychological health services with other types of care, the significant advancement of health technology, capacity building, and the provision of enhanced access to services are among the PHC reforms that may enhance the quality of care and patient satisfaction. Patients acknowledged that there was need for improvement in certain areas but expressed satisfaction with certain aspects of PHC services. These included dental health, waiting times, communication between doctors and patients, access to treatments in remote places, and patient participation in illness management. The quality of PHC's EHRs, safety culture, communicable disease control, emergency services, and laboratory services were well-received by medical professionals. Health professionals' job satisfaction was low for a number of factors, such as burnout, financial incentives, and working circumstances (Alharbi & Aljuaid, 2024).

Job Satisfaction

Health care professionals' job happiness may be correlated with their degree of human relations and work organization. It significantly impacted their output, the standard of care they delivered, and occasionally the expense of medical care. The majority of healthcare professionals experienced health issues that could have affected their job satisfaction. As a result, many of them made the decision to quit the company, which put additional strain on the remaining employees and reduced the quality of treatment they could deliver. Work happiness has multiple dimensions and is influenced by various circumstances. For healthcare professionals, job happiness is a critical factor that influences both their output and calibre of work. The nature of the profession, age, sex, duration of work experience, and sociodemographic factors are some of the variables that affect how satisfied health care workers are with their jobs. In addition, the freedom to express oneself and receive recognition, the quantity of working hours, promotions, and pay. Health care workers deal with difficult shift work and burnout, which lowers their level of satisfaction. Physician job satisfaction was also affected by the tension between work and family and the doctor-patient connection.

Patient satisfaction as shown in professional treatment was positively impacted by nurses' job satisfaction. The work atmosphere, stress levels, and staff scheduling all have an impact on job satisfaction and the quality of treatment given in hospitals. The two main aspects thought to be in charge of boosting the organization's success and improving the effectiveness of the health service are the job satisfaction of healthcare professionals and the calibre of care they deliver. Saudi Arabia, a nation that is rapidly developing, has a scarcity of medical personnel in its hospitals, which may be caused by a lack of job satisfaction among medical personnel (Halawanin et al., 2021).

Professional Development

There are comparatively few models for public healthcare systems that can be found, but each model has its own distinct qualities and is implemented in a variety of ways. Despite this peculiarity, there is always the problem of how to improve healthcare quality without driving up prices for those who pay taxes or insurance. Increasing the quality of private healthcare can be one strategy to encourage people who can afford it to choose it over public healthcare. A similar situation could also exist in the Kingdom of Saudi Arabia, where there is a robust public healthcare system but the private sector is still, in part, very tiny and underutilized. The relationship between the public and private sectors is greatly supported by the newly enacted Vision 2030. It is therefore unacceptable to accept a failing public healthcare system in the hopes that individuals with the means to pay for their care would be more likely to do so. Consequently, the problem depends significantly on output and efficiency once more. A common and ostensibly logical method has been to create a model of the best possible outcomes and quantify the gaps in the current state of affairs. But this will raise the question of what constitutes an ideal or maximum result. Is it life expectancy or life quality? Is it founded on curative or preventive medicine? Measuring the component indicators that collectively contribute to the (health) outcome is an alternate strategy that is becoming more and more popular worldwide (Al-Hanawi et al., 2019).

Aim of the study:

To show effect of availability of necessary equipment and supportive management on the performance of health cadres.

Objective

1. To examine the factors that influence the efficiencies of health service.
2. To show the effect of availability of necessary equipment and supportive management on the performance of health cadres.
3. To explore the professional development among health cadres.

Research Questions:

The current study will answer the following question:

1. What is the factors that influence the efficiencies of health service?
2. What is the effect of availability of necessary equipment and supportive management on the performance of health cadres?
3. What is the professional development among health cadres?

Methods

Research design:

Descriptive analytic cross sectional study design to detect the effect of availability of necessary equipment and supportive management on the performance of health cadres. This design is a systematic and structured technique to collecting data from a sample of persons or entities within a broader population, with the primary purpose of producing a thorough and accurate description of the features, behaviors, views, or attitudes that exist within the target group.

Research Setting:

The study will be conducted in Al Iman General Hospital in Saudi Arabia.

Subject:

Purposive sample of 400 of health cadres , The sample will be selected according to certain inclusion criteria health cadres who working in Al Iman General Hospital in Saudi Arabia, male and female.

Sample size:

Study sample was selected via the systematic random sampling method.

The sample size is an important feature of any empirical study in which the goal is to make inferences about a population from a sample. In practice, the sample size used in a study is

determined based on the expense of data collection and the need to have sufficient statistical power.

Inclusion Criteria:
The inclusion criteria were set as follows:
(1) health cadres who working in Al Iman General Hospital in Saudi Arabia.
(2) female and male.
(3) from Saudi Arabia.

Sampling Technique:
Participants submitted data through a survey. Data will be collected by questionnaire.

Tools for data collection:
It will concern with Participants demographic data as age, gender, marital status and educational level. And four questions about the use of information technology in health sector in Saudi Arabia. Also questions about the effect of availability of necessary equipment and supportive management on the performance of health cadres.

Validity:
The revision of the tools were ascertained by a panel of experts to measure the content validity of the tools and the necessary modification was done accordingly.

Administrative design:
An official permission was obtained from the directors of the hospital. The official permission included the aim of the study, the tools of data collection and the characteristics of the study.

Ethical considerations
Data was provided by participants via surveys. Participants were advised that participation in the study would be optional and that their privacy would be maintained. Data will be gathered by a self-reported questionnaire. The ethics committee will provide approval for this project. Before the questionnaire was administered, each participant provided written informed permission.

Results

Validity and Reliability Tests:

Internal Consistency Reliability Calculation:

After determining the legitimacy of the internal consistency between the statements of each objective and the overall score for the corresponding axis, Pearson's Coefficient Correlation was computed in order to validate the validity of the statement. Following the construction of the research instrument and the establishment of its apparent validity by the presentation of the instrument to a panel of arbitrators who were both knowledgeable and experienced in the area, this step was taken.

For the purpose of determining whether or not the questionnaire has an internal reliability, it was administered to a pilot sample that consisted of thirty members of the healthcare staff. After that, the researchers determined the correlation coefficients in order to assess the internal validity of the research instrument, as the tables that follow demonstrate:

Table (1): Correlation coefficients of items in the first axis with the total score.

Statement number	r	Statement number	r
1	0.408**	7	0.757**
2	0.705**	8	0.506**
3	0.632**	9	0.721**
4	0.746**		
5	0.621**		
6	0.654**		

****: p value <0.001**

It is clear from the previous table that all of the statements are significant at the 0.01 level, as the values of the dimensional correlation coefficients ranged between (0.4 08- 0.757), which are excellent correlation coefficients, and this offers a hint of strong internal consistency coefficients as well. It provides strong validity indications that may be relied in utilizing the present research technique.

Reliability of the study tool:

As for testing the reliability of the questionnaire, we utilized Cronbach's alpha coefficient, and the accompanying table illustrates the reliability axis of the research instrument as

follows:

Table (2): Cronbach's alpha coefficient reliability coefficient for the total score of the questionnaire

	No. of statements	Cronbach's alpha
comprehensive quality standards questionnaire	9	0.742

The table showed that the Cronbach's alpha reliability coefficient for the total score of the questionnaire was (0.742), which is a good reliability coefficient suitable for the study.

Application Method of the Study Tool:

After collecting the study data, the researchers reviewed it in preparation for inputting it into the computer for statistical analysis. Subsequently, they transcribed it onto appropriate tables, provided commentary, and linked it to previous studies. Responses were given five levels: strongly agree (5 points), agree (4 points), neutral (3 points), disagree (2 points), and strongly disagree (1 point). To determine the length of the pentavalent scale cells used in the study Phrases, the range (5-1=4) was calculated and divided by the number of questionnaire cells to obtain the correct cell length (4/5=0.80). This value was then added to the lowest value on the scale (or the beginning of the scale, which is one) to determine the upper limit of the cell. The following table illustrates the method for correcting the Likert pentavalent scale.

Table (3): Method for correcting the scale.

Scale	The weight	The average arithmetic mean value ranges
Strongly Disagree	1	From 1 to less than 1.80
Disagree	2	From 1.81 to less than 2.60
Neutral	3	From 2.61 to less than 3.40
Agree	4	From 3.41 to 4.20
Strongly agree	5	From 4.21 to 5.

Table (4): Socio demographic characteristics of the studied participants

Sociodemographic variables	Cases (n=400)	
	No.	%
Age category (years)		
Less than 25 years	85	21.25%
From 26 to 35 years	130	32.5%
From 36 to 47 years	129	32.25%
More than 47 years	56	14%
Gander		
Male	240	60%
Female	160	40%
Marital status		
single	130	32.5%
married	148	37%
absolute	122	30.5%
Job		
doctor	60	15%
pharmaceutical	80	20%
specialist	55	13.75%
Technical	72	18%
nurse	96	24%
Administrative	37	9.25%
Educational status		
Diploma or less	72	18%
Bachelor's	180	45%
Postgraduate studies (PhD - Master)	148	37%
Years of experience		
1 – 5 years	65	16.25%
6 – 10 years	102	25.5%
11 - 15 years	128	32%
16 – 25 years	105	26.25%

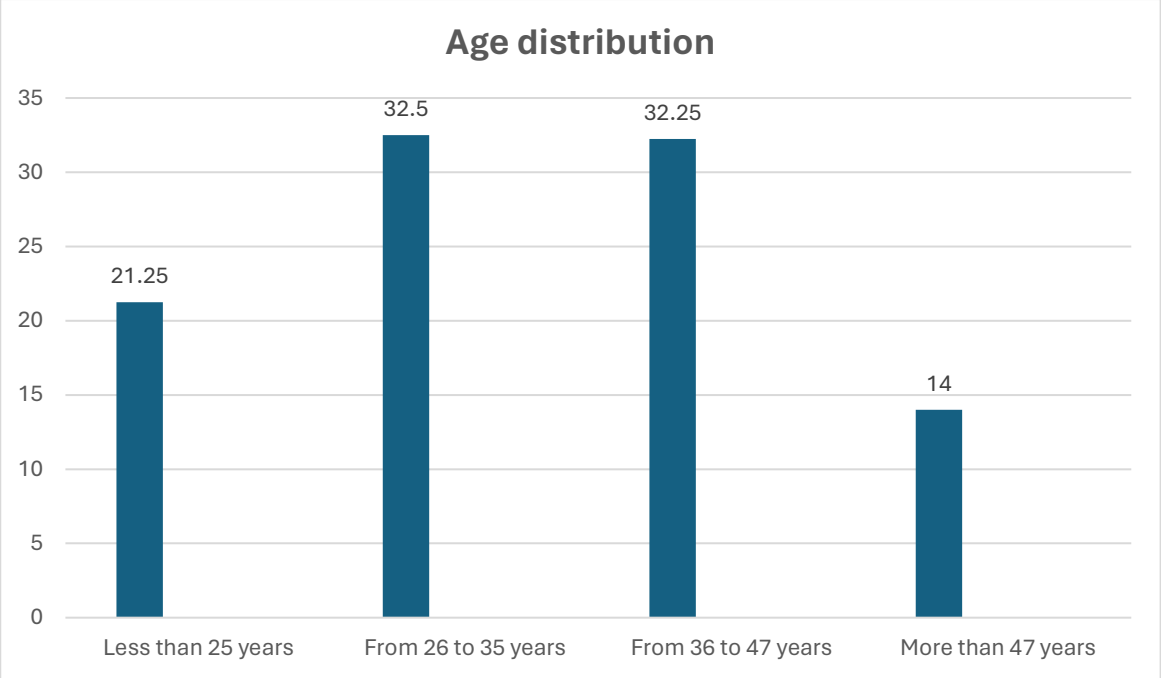

Fig (1): Age distribution among the studied participants

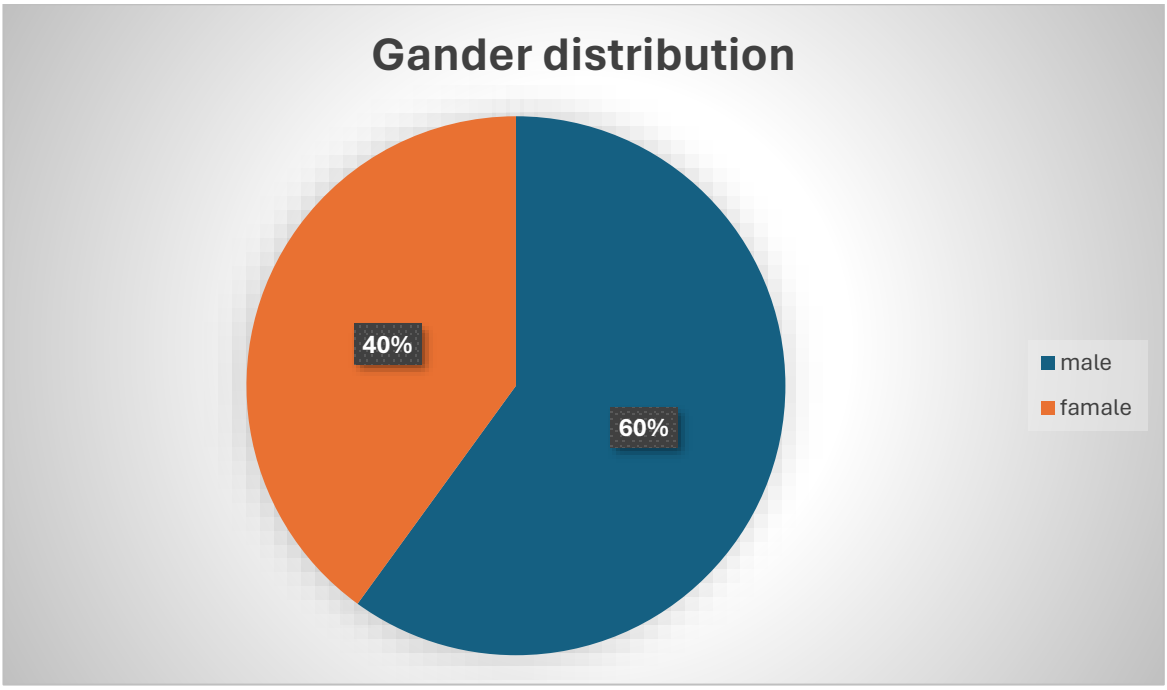

Fig (2): gander distribution among the studied participants

Table (1) & Figure (1-3) showed that 32.25% and 32.5 % of the studied participants were aged 36 -47 years and 26-35 years respectively. Regarding to the gander, more than half (60%) were males and 40% were females. 45% of the studied participants were bachelor's while only %18 was diploma or less. As regard to years of experience, 25.5% of the studied

participants worked from 6 – 10 years.

Secondly: Results Related to the Axes of the Questionnaire:

Table (5): response of the studied participants regarding to Questionnaire

No.		Cases (n=400)			
		Mean	**SD**	**Category**	**Rank**
1-	Do you have access to all necessary equipment required to perform your duties effectively?	4.212	0.712	**Strongly agree**	**3**
2-	The specific equipment or tools that you lack, hindering your performance.	3.458	0.728	**Agree**	**9**
3-	The availability of necessary equipment affects your ability to deliver quality care.	3.7	0.681	**Agree**	**5**
4-	Do you feel supported by the management in your health institution?	3.911	0.79	**Agree**	**7**
5-	Does supportive management contribute to your performance and job satisfaction?	4.021	0.74	**Agree**	**6**
6-	Communication between frontline staff and management regarding equipment needs and resource allocation.	3.85	0.76	**Agree**	**8**
7-	Does the management provide adequate training on the use of equipment and tools?	4.72	0.9231	**Strongly Agree**	**2**
8-	Training programs	4.183	0.965	**Agree**	**4**

	impact your confidence and proficiency in using equipment.				
9-	The overall work environment in terms of supportiveness and morale is supportive and positive.	4.81	0.962	**Strongly agree**	**1**
Total score		**4.02**	**0.79**	**Agree**	

From the results shown in Table (5), it is evident that there is variation in the agreement among the study participants regarding the comprehensive quality standards and the productivity of health personnel in the government health sector in the Kingdom of Saudi Arabia. The participants' agreement averages ranged from (3. 511to 4.81), falling into the fourth and fifth category of the Likert scale, indicating agreement to strongly agreement with the study tool. This demonstrates consistency in agreement among the study participants regarding the effect of availability of necessary equipment and supportive management on the performance of health cadres.

Phrase (9): The overall work environment in terms of supportiveness and morale is supportive and positive. ranked first with an average agreement of (4.81)

Phrase (7): Does the management provide adequate training on the use of equipment and tools? ranked second with an average agreement of (4.72)

Phrase (1): Do you have access to all necessary equipment required to perform your duties effectively? Ranked third with an average agreement of (4.212)

And last rank came to phrase (2): The specific equipment or tools that you lack, hindering your performance. with an average agreement of (3.458)

Discussion

The availability of required equipment and supporting management are critical variables impacting the performance of health cadres within the healthcare industry. Adequate access to critical equipment ensures that health professionals

can carry out their tasks efficiently, contributing to the delivery of high-quality patient care. When health cadres lack basic equipment, their capacity to diagnose, treat, and monitor patients is impaired, resulting to possible delays, mistakes, and unsatisfactory results (Alatawi et al., 2019).

Supportive management has a critical role in building an atmosphere where health cadres may flourish. Management support promotes morale, work satisfaction, and overall performance by giving advice, resources, and acknowledgment for the efforts of frontline personnel. Moreover, when management actively solicits input from health cadres about equipment requirements and distributes resources appropriately, it indicates a commitment to staff welfare and patient safety (Mitropoulos et al., 2016).

In essence, the combination of proper equipment availability and supportive management provides an atmosphere favorable to optimum performance among health cadres. By ensuring that health workers have the tools and support they need, healthcare organizations may boost efficiency, quality of service, and ultimately, patient outcomes. Thus, investment in both equipment and managerial assistance is crucial for sustaining high standards within the healthcare industry (Al Fraihi et al., 2016).

Conclusion

The study shows that health service inefficiencies are still a major problem in Saudi Arabia's public hospitals. Improving hospital performance requires extensive training and awareness-raising among key players in the health systems regarding optimal resource utilization. Given the paucity of data on the subject in the Kingdom of Saudi Arabia and the larger Gulf area, further research is required to advance our understanding of hospital efficiency.

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