

## Impact of electronic planning management on improving the quality of care in Saudi hospitals

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**Abstract:** In healthcare, documentation is a written or electronically generated record that describes the health status of a client, or the care delivered to that client. Documentation of care is a professional responsibility and ensures practice accountability, these bodies reinforce that good record keeping is integral to clinical practice and is essential to the provision of safe, quality, and effective evidence-based care. Previous studies have reported poor quality of record-keeping by nurses such as insufficient information, unclear, incomplete, or illegible data entry, and missing signatures.

**Aim of the study:** The current study aims to identify the impact of electronic planning management on improving the quality of nursing care in Saudi Arabia by identifying the reality of applying electronic management in Kingdom of Saudi city hospitals, identifying the reality of the quality of nursing care in Kingdom of Saudi city hospitals.

**Methods:** Human Borders: Nursing directors and heads of nursing departments located in the Kingdom of Saudi hospitals. Time limits: The period that took to complete the study extended from the beginning of December 2020 to the end of March 2021. Scientific limits: The current study relied on determining the study variables: a. Electronic Planning Department. B. Quality of Nursing Care

**Results:** The results of the significant differences showed a highly significant difference ( $0.01 > p$ ) for the variable age groups of respondents, where the increase in the number of workers' ages within the second, third and fourth five-year age groups by (22.58%, 23.23%, 21.94%, 14.19%, 7.74%) respectively. The significance of the difference between the numbers of males and females working in the nursing administration leadership course (director and department head) at the level of significance. ( $0.01 > p$ ) despite the relative increase in the number of female workers, at a rate of (64.52 %) compared to the number of males and by (35.48%).

**Recommendation:** Paying attention to training courses in the field of management and that it be conditioned by: Carrying out training before starting work and preparing programs specializing in the field of employment. Continuation of on-the-job training courses, priority It is related to performance if it is an incentive to promote or continue with the site leadership. Diversity of training courses (internal and external) Increase knowledge and update information.

**Keywords:** electronicplanning management; quality; nursing care; Saudi hospitals

## **Introduction:**

In healthcare, documentation is a written or electronically generated record that describes the health status of a client or the care delivered to that client. Documentation of care is a professional responsibility and ensures practice accountability. Nursing and midwifery regulatory bodies emphasize the importance of accurate, clear, and current patient/client records within a legal, ethical and professional framework (e.g., American Nurses Association; Nursing and Midwifery Council (NMC); Nursing and Midwifery Board of Ireland (NMBI)). [1]

These bodies reinforce that good record keeping is integral to clinical practice and is essential to the provision of safe, quality, and effective evidence-based care. Previous studies have reported poor quality of record-keeping by nurses such as insufficient information, unclear, incomplete, or illegible data entry, and missing signatures.[2]

It is known that management is the most important resource of society in the modern era, and a turning point in the lives of societies, in achieving society's goals and ambitions. However, in light of the new electronic society, management has become different in appearance and essence because of what was imposed by the nature of information technology itself, which defined the form of relations between the world's individuals at the local level and even transcended it to the international level.[3]

Hence, it was necessary to abandon the idea of traditional management. Therefore, the new trend in management by transferring it from its traditional nature to the electronic nature heralds the birth of a new field of knowledge known as "electronic management". On this basis, electronic management is a modern field of knowledge and a natural extension of the development of administrative thought. Electronic management accelerates the role of innovation and creativity through the use of electronic means in the performance of the work of organizations, thus achieving a significant reduction in the times of completion of transactions, delivery, and cost, in return for the quality of services provided to customers and reducing the paper backlog by replacing electronic documents with paper ones. [4]

That is why the great technological development that the world is experiencing today places a great responsibility on our necks, which is the responsibility to advance and develop the reality of our vital organizations and make them keep pace with technological progress and the communications and computer revolution.[5]

So we must ask: Where are we in the world in this civilized technological revolution, and what are its effects on us? We must also ask, seriously and objectively: Will we be satisfied with the dependence? Developed societies regarding this revolution and its technologies, including its pros and cons? Or do you think that we can anticipate events and strive to follow an independent path, selection, and awareness in transferring these technologies, and then adapting and employing them optimally for the sake of successful national development and an independent civilized path?.[6], [7]

From the foregoing, the current study will contribute to clarifying the importance of electronic planning management in nursing and its role in the quality of nursing care provided in

health institutions affiliated with the city of Kingdom of Saudi, and this is what led the researcher to adopt the conduct of this study.[8]

The results of the observations and the numerous exploratory field visits to health institutions in the city of the Kingdom of Saudi gave a clear picture of the dimensions of the study problem, its importance, and objectives, and to achieve the elements of the study and its importance for the Saudi Arabia health environment. It was found necessary to study the possibility of achieving a reasonable degree of harmony between the application of electronic management and Saudi Arabia's health environment in a manner that ensures its application with high efficiency.[9]

### **Study problem and questions:**

Administrative creativity is not the product of chance, but rather it is an inevitable result of scientific foundations and rules to follow, and among the most important of these rules is the participation in thought and the availability of information. In the last fifteen years, many concepts that govern the work of managers have changed.

The problem is no longer in the classical management of managing people or other administrative work. Rather, the problem facing managers has become the management of the continuous change that occurs within the organization as it acquires increasing experiences in the continuous external variables in the surrounding work environment. Reliance on information and communication technology has become one of the important pillars on which modern management is based. The information and communication revolution has decisively controlled change management and it is now available to use the available information to achieve the goals of the institution.

The idea of employing information in the administration has developed greatly, as this employment began in the form of reports expressing "what actually happened" within the administrative entity, and then the matter evolved into the analysis of reports to find out the reasons behind the occurrence of the variables "Why did it happen?". These technologies moved the process of employing information to the stage of prediction, i.e. "What will happen?", then it developed to the stage of collecting information and the various effects of decisions, and then moved to the more advanced stage, which is the employment of information to achieve goals or "what do we want to happen?"

The idea of electronic management emerged at the beginning of the sixties of the last century when health institutions in the other world began to relinquish the direction of employing technological development, especially in the field of computers and informatics, after their introduction in the various fields of management. At that time, the e-management label became prevalent in various health services, including nursing.

Thanks to this rapid and sudden development, nursing care has taken advanced positions in the field of quality assurance. However, the administration and nursing services in Saudi Arabia hospitals, including those in the Kingdom of Saudi, did not have the opportunity to occupy a position in this aspect. Rather, they remained the same as they were in the past in terms of the weakness that plagued the vision of technological progress and the attempt to employ technology to advance the traditional administration to be at the level of electronic

administrations in the Far and near world. From here, a formulation of the study problem was reached, whose features can be identified in the next main question:

**Is there an impact of electronic planning management on improving the quality of nursing care in Kingdom of Saudi hospitals?**

### **Aim of the study**

The current study aims to identify the impact of electronic planning management on improving the quality of nursing care in Saudi Arabia through:

1. Identify the reality of applying electronic management in Kingdom of Saudi city hospitals
2. Identify the reality of the quality of nursing care in Kingdom of Saudi city hospitals
  - a. Statement of the impact of electronic planning management on Quality of nursing care in hospitals

### **The importance of the study:**

The nursing profession has found itself in a situation that requires high attention in creating a distinct situation that makes excellence the dominant feature of health care and its outcomes from this concept, the importance of the study emerges in two aspects:

**Scientific importance:** This study and related studies will add knowledge to the preliminary studies about electronic management, especially as I look for the components of this administration and its role in the quality of nursing care.

**Practical importance:** This importance emerges by knowing which of these components of e-management has more impact than others on the quality of nursing services so that it is focused on by officials from the higher management and considering this in the practical aspect as it can emerge in any necessary knowledge and skills that It can be given to workers to affect the quality of nursing care.

**Study Hypotheses:** Based on the study problem and its questions, the following main hypothesis was formulated.

**Main Hypothesis:** There is no statistically significant effect between the Electronic Planning Department on improving the quality of nursing care in Kingdom of Saudi hospitals at the level of  $(0.05 > \alpha)$ .

### **The limits of the study:**

The researcher limited her study to the following limits: Spatial limits: Hospitals located in the province of the Kingdom of Saudi.

**Human Borders:** Nursing directors and heads of nursing departments located in the Kingdom of Saudi hospitals.

**Time limits:** The period that took to complete the study extended from the beginning of December 2020 to the end of March 2021.

**Scientific limits:** The current study relied on determining the study variables:

- a. Electronic Planning Department.
- B. Quality of Nursing Care.

### **Study limitations:**

1. Applying the study to the best three government hospitals in the Kingdom of Saudi.

2. The variables included in the study are two variables: Electronic management components, quality of care Nursing
3. Personnel working in the three government hospitals of They are nursing director degrees and heads of nursing departments.
4. Confidentiality of information and data in government organizations

Thus, it is difficult to collect information through questionnaires, but it is necessary to support interviews.

### **Defining the quality of nursing care:**

The quality of nursing care has been defined as the degree of commitment to contemporary generally recognized standards of good practice and expected results for a specific service, diagnosis, or medical problem, which is everything related to consumer affairs and commitment to the quality of the product provided to them through continuous research and selection of the best ways to satisfy their needs and desires.[10]

The principles and standards adopted in the quality of nursing care

1. The quality of health services means the extent to which the desired health outcomes are achieved and the extent to which they comply with professional principles.
2. Care that is characterized by a high degree of client satisfaction, professional excellence, efficient use of resources, achieves the desired results and reduces patient exposure to risk.[11]

### **Definition of quality:**

Quality is defined as the degree of adherence to existing and agreed-on standards to help define a good level of practice and knowledge of the expected results from the service or procedure. That is, what is meant by quality is the degree to which the desired results are achieved, and the undesirable results are reduced under the state of knowledge in a certain period. Elements of quality nursing care:

1. **Effectiveness of care:** The degree to which the nursing procedures are used to achieve the desired results. that is, performing Care leads to an improvement in life expectancy with the ability to perform a Career and a sense of well-being and happiness on ongoing basis procedures.
2. **Appropriateness:** Choosing the appropriate nurse for the patient's condition.
3. **Acceptance:** The patient's acceptance and society) the use of a particular nursing procedure.
4. **Access to nursing care:** (Access), for example, waiting lists for appointments to obtain care.
5. **Equity:** The extent to which nursing care is available to those who need it, and the lack of disparity in access to it among groups of society for non-health reasons.
6. **Efficiency:** The optimal use of resources and costs, considering other needs and other patients.[12]

### **Measuring the quality of health service:**

Previous studies indicate that there are two methods for measuring service quality: the first is based on customers' expectations of the level of service and their awareness of the level of performance of the service provided, and the second is to determine the gap (or congruence

between these expectations and perceptions by using the ten dimensions that represent aspects of service quality, namely:

1. Immediate access or easy access to service at the right location, at the right time, and without a long wait.
2. Communication or Service Description Accuracy | in a language that the customer understands.
3. Competence means that workers possess the necessary skills, capabilities, and information.
4. Credibility Where employees in the organization consider the customer as trustworthy.
5. Reliability is where the service is provided to the customer accurately, he canRely on them.
6. Responsiveness is where workers respond quickly and creatively to customer requests and problems.
7. Tangibles This element focuses on the tangible aspect of the service, such as the hardware and tools that are used to perform it.
8. Security means that the service is free from risk, adventure, and suspicion.
9. Understand and know the customer that employees are trying to understand the client's needs and to give him personal attention.
10. Courtesy in the sense of dealing with the client with friendship, respect, and appreciation.[13]

Later they were able to integrate these ten dimensions into only five dimensions which are the tangible physical aspects of service reliability, responsiveness, safety, and empathy. These dimensions also contained twenty-two phrases that translate aspects of service quality for each of these dimensions.

It is noted that these five dimensions are from the researchers' point of view general dimensions that the customer depends on in measuring service quality regardless of the quality of service. Management's awareness of these expectations. Therefore, the quality of the health service is measured by the availability of the five dimensions of the health service provided by the hospital. These dimensions are:

**A. Tangible aspects, including the following variables:**

- (1) Attractiveness of buildings and physical facilities.
- (2) Design and internal organization of buildings.
- (3) Up-to-date medical equipment and devices.
- (4) Appearance of doctors and staff.[14]

**B. Reliability, including the following variables:**

- (1) Fulfilling the provision of health services on the specified dates.
- (2) Accuracy and lack of errors in examination, diagnosis, or treatment.
- (3) Availability of different specializations.
- (4) Confidence in employees.
- (5) Take care to solve the patient's problems.

(6) Maintain accurate records and files.

**C. response, and includes the following variables:**

- (1) Speed in providing the required health service.
- (2) Immediate response to the patient's needs, regardless of the degree of preoccupation.
- (3) Preparedness Permanent staff to cooperate with the patient.
- (4) Reply Immediate response to inquiries and complaints.
- (5) inform the patient.[15]

**D. Exactly when the service will be provided and completed. Dr. Security, and includes the following variables:**

- (1) Feeling of security in dealing.
- (2) The specialized knowledge and skill of the employees.
- (3) Etiquette and good manners among workers.
- (4) Continuity of follow-up of the patient's condition.
- (5) Confidentiality of patient information.[16]

**E. Management support and endorsement for workers to perform their jobs efficiently. H.**

**Empathy includes the following variables:**

- (1) Understand the patient's needs.
- (2) Placing the patient's interests  
At the forefront of the concerns of management and workers.
- (3) Adequacy of working hours and time allotted for the service rendered.
- (4) Personal care for each patient.
- (5) Appreciating and empathizing with the patient's circumstances.
- (6) The sense of humor and friendship in dealing with the patient. There are simple

principles by which the quality of performance or the health system can be judged,

**for example:**

1. Minimizing differences in health practice and minimizing medical errors are indicative of quality.
2. Short waiting times between appointments and short waiting times indicate the quality of the system.[17]

About the health system indicates the extent of the patient's impression and opinion of the quality of the system.

Acceptably providing health services for all segments of society in a balanced manner, including children, women, the elderly, people with disabilities, people with chronic diseases, youth, and others, indicates the quality of the health system.

5. Compliance with health and administrative standards and ethics is another evidence of the quality of the system.
6. The existence of clear standards and systems governing the health system, which indicates its quality.

An effective health service at the right time and place for the patient provides evidence of the quality of the health system.

These are general indicators, some of which can be measured objectively, and others remain subject to personal views and the background from which the assessment is based, and again examples are used to illustrate such a philosophy.

1. Quality from a health professional perspective is to provide the best services by the latest scientific and professional developments, and this is governed by three main points: the ethics of health practice, expertise and quality, the health service provided, and concern for workers in health professions with low level or quality stems from inefficiency, inability to Perfect dealing with each other, with the patient and the administrator, as well as not adhering to standards Qualification, practice, and experience.[18]

2. Quality from the perspective of the beneficiary or the patient, may differ from the professional concept by focusing on the method of obtaining the service and its final result, and here it is not enough for the advanced system to focus on imposing regulations and enacting legislation that is based on specific professional or organizational foundations without paying attention to need, desire, ambition and hopes The final beneficiary of all of this, and in the medical service, the first step in treatment must be to know the patient's complaint and need, and the ultimate goal must be to treat or overcome that complaint, and the details between that are useful for the patient, but it is not the goal of reviewing him to seek treatment, and the best The method of knowledge that achieves quality in this aspect lies in measuring the extent of customer satisfaction while they are in the health aspect of patients, in codified ways that can be inferred on the extent of service quality.[18]

3. From the administrative point of view, health quality is concerned primarily with how to use the available resources and the ability to attract more resources to cover the needs necessary to provide a distinguished service. This is at the expense of quality in performance, and this requires administrative efficiency at the planning and executive level and requires efficiency at the technical level and efficiency at the personal level, and requires the good internal administrative organization as well as clear administrative organization in dealing with related parties outside the system. For example, with other financial bodies that affect the number of available resources, the health system administration becomes responsible for developing the professional, objective, and social justifications that allow them to demand more resources, and more precisely, the search for the necessary resources requires the development of public relations for the institution and the health sector, including relations Personal leadership for the health leadership to search for more resources and to deal and persuade the parties concerned to provide those resources Response, and the need for social and personal relationships is more prominent in societies with complex and ambiguous administrative, bureaucratic and political organizations, and the health system, in general, is a complex system that requires a lot of effort in upgrading management quality.[18]

4. There remains another point of view of quality, which is the political point of view or the point of view of the leadership and senior management in the country, and the measurement here often stems from the extent of citizen and resident satisfaction with the performance of his leadership in supporting and developing the health service and the health system, and when the top leadership places its trust in the leadership. The health or executive perspective sets a goal



for it that often does not depart from the framework of achieving citizen satisfaction by providing the best possible health services to him. At the same time, the leadership or political perspective looks for the efficiency of the health system in terms of balancing its expenses with the service it provides and the extent of its ability to formulate strategies A future that guarantees the stability and natural development of the health system within the administrative work system of the state in general, with its economic, technical, social, environmental, and political aspects...etc.[19]

For further clarification, we refer to the importance of looking at quality pg. 24 / 9 of health care as a system, or what we call the health system, and quality is evaluated here according to individual and collective criteria and organizationally, looking at all the main components of the health system, including:

**First:** Infrastructure, which includes management, organization, legislation, and laws that form and govern the work of the medical and health team, and what this includes implicitly, such as the relationships between the members of the health team and with relevant authorities outside the health team and the formation of the leadership administrative team.

**Second:** The physical structure, including buildings and facilities, equipment modernization, and maintenance. etc.

**Third:** Education and training, including vocational assessment, continuous training, and development of competencies.etc.

**Fourth:** The foundations of qualitative quality, such as the review of regulations and how to conduct them..etc..

**Fifth:** Classification of the community practicing health service provision, it's demographic, training, and scientific backgrounds, and its relationship to the extent of Job satisfaction, performance efficiency, etc.

We would like to point out here that the topic of health quality and its synonyms and derivatives is considered a specialized science that is studied independently or within the context of management, organization, and health information topics, and digression in the narrative about the topic without specific titles and illustrations may cause boredom, and therefore the goal in this article was not limited All points related to the subject as much as it is to provide an educational dose that we hope will contribute to forming an awareness and a general understanding of the issue of health development and measuring its quality, as an introduction or clarification of what we have previously touched upon in several articles and what we will address in the future in the field of criticism or evaluation of the health system in general. And the health service provided by various sectors and different health institutions.

### **Benefits of applying quality in hospitals:**

Hospitals face great and multiple challenges, perhaps foremost of which are the increasing costs in the production of medical services, and the challenges of the quality of these services, especially since these hospitals deal with human health and the factor of life and death. Total quality management achieves optimal use of resources, rationing of expenditures, and integrated quality in operations and services provided to patients and hospital auditors. The most

important benefits of applying total quality management in health organizations can be summarized as follows:

**The quality of care provided:** The goal of applying total quality management is to achieve high levels of quality in the medical care provided by hospitals, the optimal use of their material and human resources, the rationalization of expenditures and use, and the evaluation of the quality of productivity represented in health services and permanent work.[20]

**Continuous improvement in the quality of health services** 2. **Customer Satisfaction TQM Targeting Presentation** a high-quality health service in line with the aspirations of its beneficiaries, through a process aimed at continuous quality improvement in line with and exceeding the expectations of customers.[21]

**Raising the morale of employees:** The participation of employees in decision-making is one of the basics of total quality management, as they are considered internal customers that must be satisfied.[22]

### **What distinguishes the current study from previous studies?**

The current study was distinguished from previous studies by its attempt to show the relationship between electronic planning management and nursing care and to clarify the extent of the impact of these components on the quality of this care and its outputs. The current study will clarify the important and relevant prospects for everything that creates and develops electronic planning management in nursing.[23]

The most prominent feature that distinguishes the current study from previous studies is that it is considered a unique study not only at the local level but also at the regional and global levels. Sometimes partial and far from the subject of electronic planning management and its impact on the quality of nursing care at other times, and for this experience, this experience was one of the sets of problems that the study faced in this aspect. **Study Methodology: Method and Procedures**[24]

This part of the study project includes a detailed description of the methods and procedures that are hoped to be followed to achieve the goal of the study by answering its questions and testing its hypotheses. Here, a clear picture of the study's methodology, its society, its members, and the tools and methods that can be used in it after verifying its validity and stability, will be given, in addition to clarifying the study's variables, procedures, and statistical treatments that it is hoped to use in analyzing the study's data to reach its results.[25]

### **Study Approach:**

The curriculum is the way or the way by which a person communicates logically and scientifically consistent with reality and realizes a fact that he was ignorant of, and it is the way to acquire certain knowledge. This means that the method is an intelligence organization that is intertwined in the scientific study, or it is the intellectual steps that the researcher takes to solve a specific problem ().

Research in all scientific fields is to choose an approach commensurate with the problem, and that the nature of the problem imposes a certain approach to reach the truth, as it is the primary tool for collecting information, imposing hypotheses, setting goals, and solving the problem and reaching them. Therefore, we decided to use the descriptive approach using the

sample survey method. This approach is considered an appropriate methodology for studying social phenomena, which provides data on the reality of these phenomena and the relationships between their causes and results and an analysis of them and may show the factors affecting them, and it is useful from that to draw conclusions and recommendations regarding them

## **Study community:**

Determining and selecting the research sample in terms of the method of selecting the sample and its size is of the utmost importance, and the community should be accurately described for all its characteristics.

The research community consists of all nursing directors and heads of nursing departments in the affiliated hospitals in the Kingdom of Saudi. These directors and heads of nursing departments were selected after approaching these departments to obtain fundamental licenses for this purpose.

The study population included all (62) hospitals located in the Kingdom of Saudi, distributed over three health departments: (12) hospitals affiliated to the north area, (17) hospitals affiliated to the west area Health Department, and (33) hospitals affiliated with the east area.

(1) **Public hospitals:** are those health institutions that are based on different functions to provide various nursing care services through relevant departments such as outpatient, emergency, internal, surgical, intensive care, and surgical operations.

(2) **Specialized hospitals:** These are health institutions that are based on different functions to provide specialized nursing care services according to the nature of the relevant specialization, such as children.

The study sample: The study sample included (155) individuals divided into (55) nursing directors and (100) heads of the nursing department.

Non-random purpose, which was selected based on the selection criteria defined by the number of years of work in nursing and the administration of nursing affairs for not less than one year. Thus, the sample is considered part of the study population. Nursing directors and heads of nursing departments have been chosen as they represent the largest number of this segment in government hospitals. In addition to their direct supervision of the management of nursing affairs in the health institutions of the Kingdom of Saudi. Where they prepare the appropriate category that deals with the electronic management system.

## **Study tools:**

### 1. Admin.--Service and Aids in Search:

- Translated Arabic and foreign sources
- International Information Network (Internet).
- The questionnaire for the respondents.
- Personal interviews for professors, specialists, and experts inFields: of management science, nursing, medicine, computer, psychology, statistics.

### 2. Administrative procedures:

- Conducting numerous interviews with a group of expertsand specialists to benefit from their opinions and experience.

- Preparing a questionnaire as the primary tool for collecting

Information and the use of this questionnaire to measure the impact of electronic management on the quality of nursing care in hospitals in the city of Kingdom of Saudi. This questionnaire has been developed for application in this study after reviewing the literature related to the subject of the study. Where it was formed in its initial form, before being presented to the panel of arbitrators, of (31) paragraphs distributed into (2) parts, are the first part: personal data consisting of (8) paragraphs, and the second part: the electronic planning department, which contains (23) paragraphs. As it will constitute a measure of the impact of electronic planning management on the quality of nursing care in Kingdom of Saudi hospitals.

- Presenting the questionnaire to a group of experts and specialists to determine the validity of the fields and paragraphs by deleting the invalid paragraphs and suggesting or adding any modification they deem appropriate.
- The five-point Likert scale was used (strongly agree, agree, not sure, disagree, strongly disagree) with a numerical scale (5, 4, 3, 2, 1), respectively (Table 1).

In addition to the presence of some questions about the demographic characteristics of the respondents and related to the subject of the study represented by the number of years of service in the nursing course in general, the number of years of work in the nursing administration, the number of years of experience in electronic management, the number of training courses in electronic management, and what is the duration of each course for participants.

**Table 1)** Measuring the responses of nurses and heads of nursing departments to the study questionnaire

Response	Strongly agree	Agree	Not sure	Disagree	Strongly disagree
<b>Degree</b>	5	4	3	2	1

Considering the foregoing, the paragraphs of the study questionnaire agreed with the entire group of experts, as the percentage of the agreement reached 100%

**Table (2)** Explanation of the validity of the study questionnaire’s paragraphs regarding the opinions of the twelve (12) experts.

no	Fields	Paragraphs	No. of Paragraphs		agreement ratio
			Valid	Invalid	
1	The first field: preliminary data about the sample members	1-8	80	0	100
2	The second field: the variables related to the study of the phenomenon	1-32	233	0	100

### 3. Preparing the questionnaire instructions:

One of the conditions for a good questionnaire is to include instructions that explain how to perform correctly to reach the goal for which it was set. The instructions serve as an introductory tool for the research, which is preferably simple, concise, and clear, including meanings related to both the test objective and how to record the answers.

**The instructions are as follows:**

- a) Research title and test objective.
- b) The number of paragraphs included 23 paragraphs, including Five axes.

- c) How to record the answer required by individuals, The sample when answering the paragraphs by placing a mark (✓) in front of one of the mentioned alternatives that it deems appropriate for it
- d) Confirmation of the need not to mention the name because the purpose of the questionnaire is for scientific research only and to confirm the confidentiality of the answer.
- e) The necessity of answering frankly and accurately and not leaving anything out Paragraph without an answer to benefit from all the answers.

## **(1) The scientific conditions for the questionnaire:**

### **a) Validity:**

Apparent honesty is one of the most important characteristics of a good scale because it reveals the strength of the scale on what the measurement was made, and this type of honesty is more common and used by researchers, and this is supported by Kerlinger, 1979, as it confirms the importance of the mentioned honesty in educational, psychological, and social sciences. The validity of the questionnaire content was evaluated! If it is distributed to a group of experts and specialists in the following specializations (Business Administration, Nursing, Medicine, Statistics, computers, psychology, statistics). The paragraphs that obtained the approval of the experts with a percentage of (100%) of the opinions of the experts were prepared and they are valid and acceptable and numbered (23) paragraphs, in line with the recommendation of Bloom and others (1983) in this regard, as he says: If the percentage of agreement between the arbitrators is (75%) or More satisfaction can be felt from the sincerity of the scale.

### **b) Reliability:**

Reliability is defined as the accuracy in estimating the individual's true response to the item measured by the scale, or the consistency in the individual's relationship if the same scale is taken several times in the same circumstances. Stability is one of the important factors that characterize any test, and the test is stable if it gives the same results continuously in the case of repeated application to the sample themselves and under the same conditions. The same) if it was re-applied to the same study population again assuming the same conditions, where the reliability coefficients were calculated by adopting the internal consistency method to obtain a high degree of accuracy in the adoption of that information, which resulted in the (Alpha-Cronbach) index to measure the degree of internal consistency on the paragraph level.

### **c) Cronbach Alpha**

The Alpha-Cronbach method is one of the most widely used measures of reliability, as it depends on the consistency of the opinions of individuals from one paragraph to another, or by which an estimate of the so-called internal consistency of the test is obtained. The research depended on the data of the basic experiment sample of (10) respondents, consisting of (4) nursing directors and (6) heads of the nursing department of employees in hospitals in the Kingdom of Saudi, and the statistical bag for social sciences (SPSS) version (10.0) was used by extracting the reliability coefficient and Table No. (4) includes estimating the level of internal

consistency by the approved method for measuring the stability of the observed responses to the investigated questionnaire.

**Table (3):** Reliability coefficients at the level of internal consistency of the investigated questionnaire

Stability index (internal consistency)	Groups	Stability		stability Evaluation
		Minimum scale	Calculated ratio	
Alpha (Cronbach)	Respondents	62	68.1	Verified

It is a very high stability coefficient for the investigated sample, and it can be trusted to estimate the stability of the scale. Where it is clear and beyond doubt the high degree of accuracy achieved and in the general paragraphs of the questionnaire that it is suitable for studying the phenomenon in the same society in the future (under the same conditions), which confirms the validity of the design and adoption of the results of the current research that was based on data collected using the questionnaire previously.

**(2) Objectivity:**

The experts who were presented with the questionnaire to determine its validity, validity, clarity of its questions, and the soundness of its formulation, emphasized that they did not differ in correcting their answers, which confirmed its objectivity, because objectivity “is the test that gives the same results, regardless of their differences.

**(3) Preliminary Research Procedures:**

To achieve the objectives of the research, the following procedures were followed:

**a) Pilot Study**

An exploratory questionnaire was applied to the research sample group (representatives of (10) to estimate the reliability coefficient of the respondents in the test and re-test, where the value of the coefficient was (98 percent), which indicates a high level of stability known as the Intra Examiner test.

An exploratory questionnaire was also applied to the same research sample group (respondents), which was (10) in the tribal period, assigning a specialized expert to estimate the reliability coefficient (degree of reliability in the researcher supervising the data collection process), where the value of the coefficient was (98%), which indicates a high level of stability known as the Stability Inter Examinerstest. Tables (5), (6), and (7) show the results of these transactions.

**Table (4)** Stability - reliability coefficients (researcher - expert) and (Test and retest) in the Pilot Study

Reliability index	The number of matching paragraphs	The number of offending paragraphs	stability coefficient
Researcher - Expert	241	6	85.2
Test and Retest	127	3	97.7

**First: Stability coefficient**

(1) Study Variables:

**Table (5):** Stability coefficients in the pilot study

Stability coefficient	Checked values
The examiner - the expert	12:230 (0.9)
Responder - Test and Retest	18:230 (0.35)

**Second: the resolution**

Table (7): Reliability coefficients for the investigated questionnaire

Stability coefficient	Standard Minimum	Actual values	Evaluation
Alpha (Cronbach)	0.62	0.991	Verified
Correlation between forms	0.55	0.726	Verified
Spearman-Brown	0.64	0.862	Verified
Guttman Split – half	0.59	0.884	Verified

The current study includes the following variables:

1. Independent Variable:

This variable is represented by the Electronic Planning Department.

2. Dependent Variable

It is the quality of nursing care as indicated by the study questionnaire prepared for this purpose.

**Statistical manipulations:**

As previously explained, the computerized statistical package for social sciences (SPSS) will be relied on to statistically process the research data and extract its results after downloading them to the computer, and using the appropriate statistical treatments as follows

**Descriptive statistics methods:**

1. Statistical tables (observed frequencies Percentages, aggregate percentages, and results of moral tests).
2. Mean, standard deviation, standard error, estimate 90% Extended Confidence of the Mean Measurement in the Community, Lowest and Highest Average measure.
3. Cronbach Alpha coefficient of internal consistency of the responses observed for the main sample verified
4. The correlation coefficient between paragraphs in general (Correlation between forms) for the stability of the resolution.
5. Spearman-Brown coefficient, stability, resolution.
6. Modulus The connection between paragraphs in general (Guttman Split - half) for the stability of the resolution.
7. The reliability coefficient (for the survey sample) =  $(1 - (\frac{\text{the number of violation paragraphs}}{\text{the number of the survey sample}} / 230)) * 100\%$   
Where the number 230 refers to the product of multiplying the number of poll members (10) by the number of specialized data items (23).

8. Figures and graphs are represented by (graphic bars).

## **Inferential Statistics Methods:**

To decide whether to reject or accept special statistical hypotheses, The two research sample groups used the following methods:

- (1) Chi-square test ( $\chi^2$  test) for independence To test the differences between the observed frequencies Exactly what would be expected.
- (2) binomial test: The test is the difference between the results of the observed iterations of a binary antagonistic response variable Completely random.
- (3) analysis test Variance (ANOVA) for equal means and significant difference test
- (4) The Levene test for equal variance
- (5) Factor analysis by the method of base compounds and orthogonal factor drugs Var
- (6) Cluster analysis using the Complete Linkage method in hierarchical clustering.



## Results and Discussions

**Table (7)** (Observed frequencies, percentages, and aggregation of primary data for respondents and significant comparisons)

Demographic data	Parameters	%	P-value	X <sup>2</sup>	Statistically significant
<b>Age</b>					
20-24	16	10.32%	<0.0001	32.16	HS
25-29	35	22.58%			
30-34	36	23.23%			
35-39	34	21.94%			
40-44	22	14.19%			
45-50	12	7.74%			
<b>Sex</b>					
Male	55	35.48%	<0.0001	-	HS
Female	100	64.52%			
<b>Education</b>					
Nursing middle school	18	11.61%	<0.0001	37.12	HS
Nursing Institute	70	45.16%			
Nursing College	67	43.23%			
<b>Employment Position</b>					
Manger	48	30.97%	<0.0001	-	HS
Section Head	107	69.03%			
<b>Years of working</b>					
<5	32	20.65%	<0.0001	31.17	HS
5-9	41	26.45%			
10-14	37	23.87%			
15-19	20	12.90%			
20-24	17	10.97%			
>25	8	5.16%			
<b>Number of years of work in the Nursing Administration course</b>					
Not in course	65	41.94%	<0.0001	38.28	HS
<5	55	35.48%			
5-9	24	15.48%			
10-14	11	7.10%			
<b>Number of years of experience in the e-management course</b>					
has no service	135	87.10%	<0.0001	-	HS
<5	20	12.90%			
<b>If the answer is yes, participation in the courses (what is the length of the longest course)</b>					
Not in course	130	83.87%	0.8211	0.421	N.S
<5	5	3.23%			
5-9	10	6.45%			

10-14	10	6.45%	
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It is expected to assume a random distribution, which reflects the restrictive character of those variables and in a direction that confirms the impact of the nature of work in that course and in a manner that enhances the high level of respondents' responses in light of the scale adopted to study the impact of electronic planning management on the quality of nursing services.

**First:** The results of the significant differences showed a highly significant difference ( $0.01 > p$ ) for the variable age groups of respondents, where the increase in the number of workers' ages within the second, third and fourth five-year age groups by (22.58%, %23.23, 21.94%, 14.19%, 7.74%) respectively.

**Second:** The significance of the difference between the numbers of males and females working in the nursing administration leadership course (director and department head) at the level of significance. ( $0.01 > p$ ) despite the relative increase in the number of female workers, at a rate of (64.52 %) compared to the number of males and by.(35.48%)

**Third:** The results of the significant differences in the frequency distribution of the academic achievement variable indicated that there was a significant difference at the level of ( $0.01 > p$ ), which is characterized by a higher number of holders of primary university degrees from graduates of institutes and colleges compared to the secondary certificate, which reinforces the importance of the observed responses to the study of the phenomenon due to its dependence on the category of university degree holders with a percentage of 43.23%.

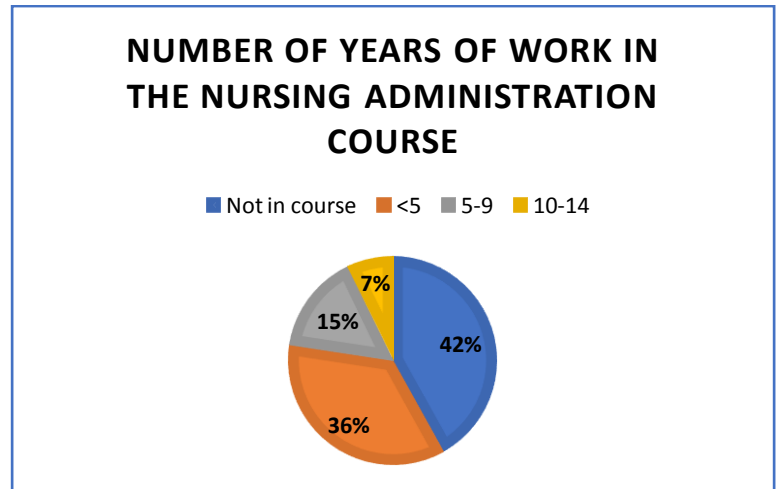
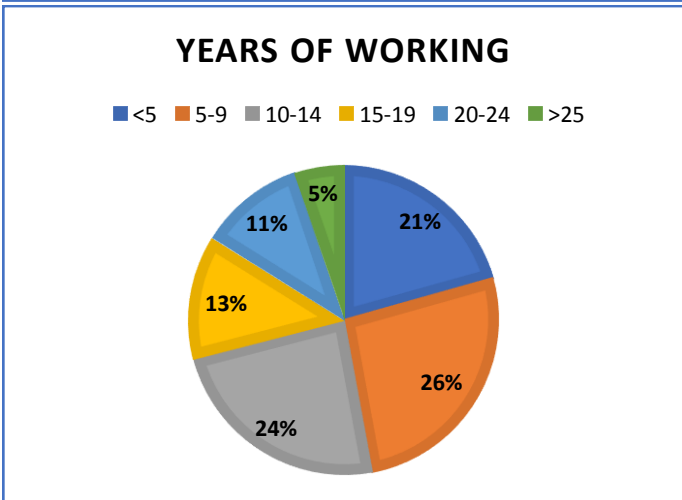
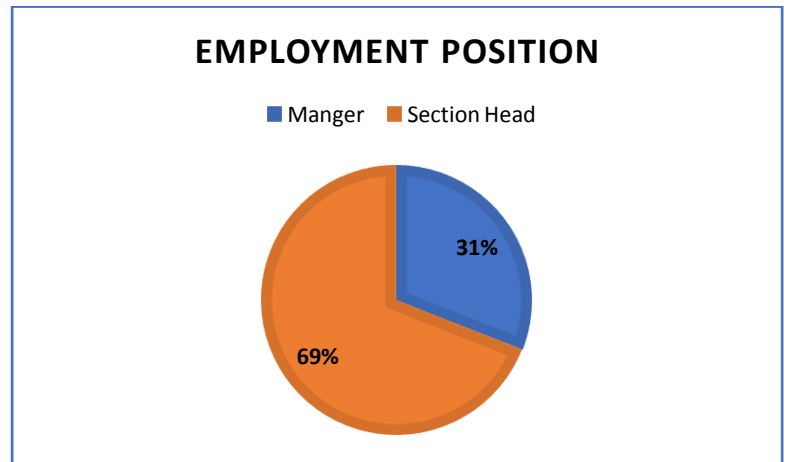
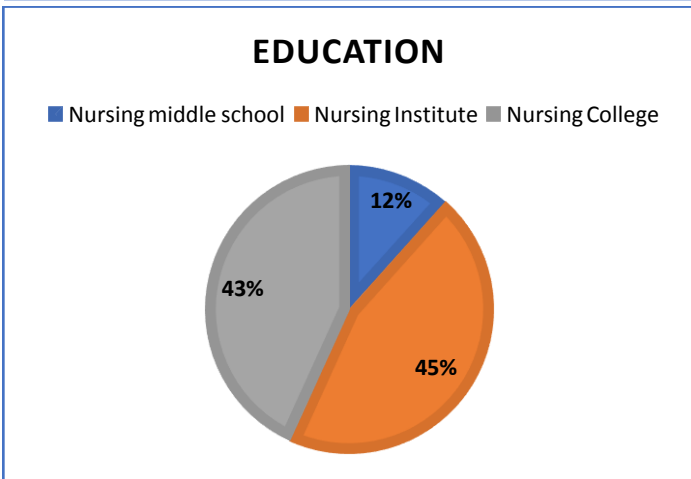
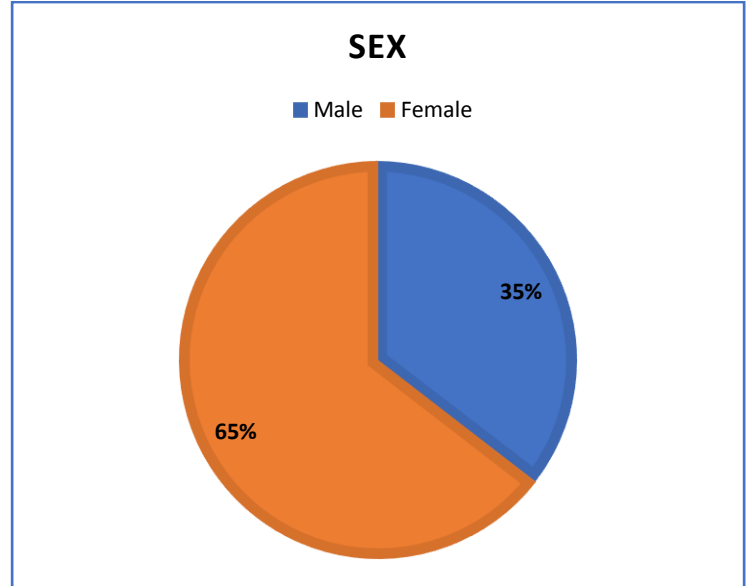
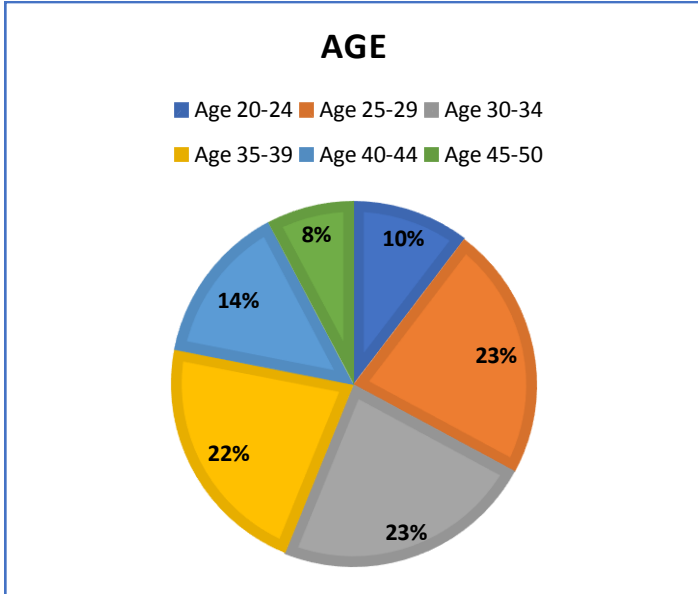
**Fourth:** The results of the moral differences showed the difference in the frequency distribution of the administrative position at the level of significance ( $0.01 > p$ ), where it recorded an increase for the category of department head by (69%) compared to the category of manager (30.97%), which enhances the approved proportionality between the specificity of work in this field.

**Fifth:** The results of the moral differences showed the difference in the frequency distribution of the number of years of work in the nursing course in general at the level of ( $0.01 > p$ ) significantly increased in the first three categories (high numbers of people with short and medium years of service compared to those with long service) and this explains the nature of this course, which requires high activity by those assigned to this type of tasks.

**Sixth:** On the other hand, the results of the moral differences were recorded on the difference in the frequency distribution of the number of years of experience in the electronic management course at the level of ( $0.01 > p$ ) significantly decreased in this category and this explains the predominance of traditional patterns in the nursing process management course by those assigned to them.

**Seventh, and finally:** The results of the moral differences were recorded on the non-differentiation of the frequency distribution of participants in specialized courses in the nursing process management course, according to the different duration of the longest session they have participated in, at the level of ( $0.01 < p$ ), noting the high number of non-participants among the respondents.

and shape(1)It shows, by using the graph, the observed frequencies of the primary data variables of the respondents, the most severe crisis.



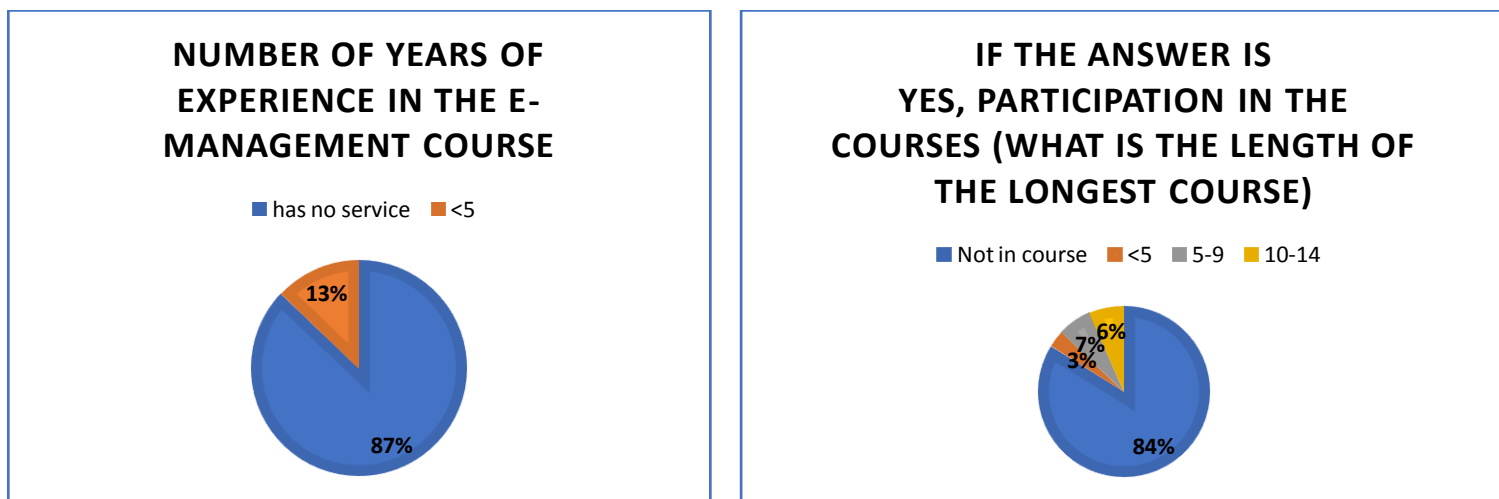


Figure (1) (The circuit diagram of the observed frequencies of the primary data variables of the respondents

Table (8): Descriptive statistics and evaluation of response levels for all respondents to the items studied

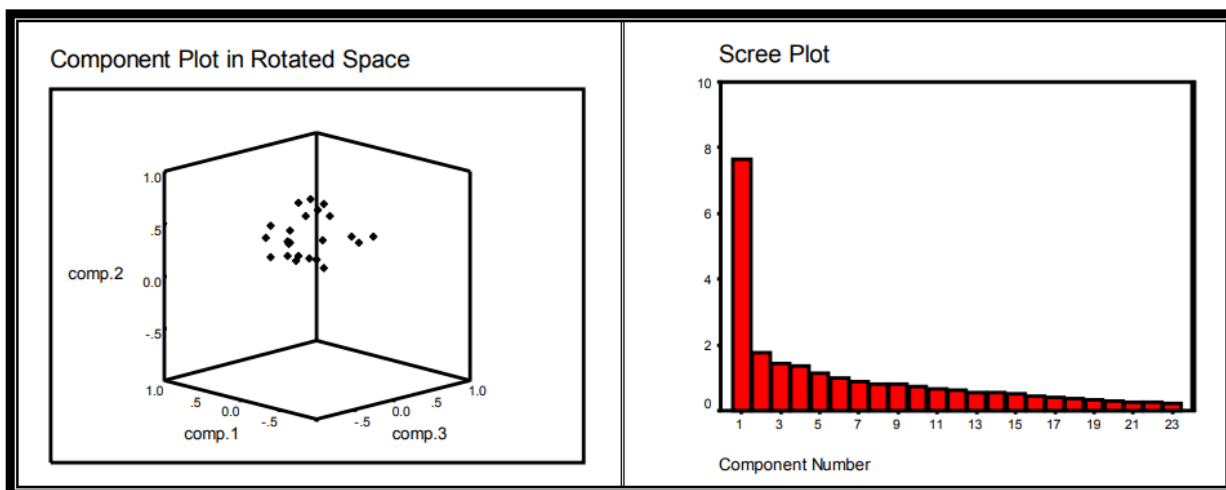
Phrase	numbers	Mean	SD	Relative sufficiency	Evaluation
Task planning, comprehensive evaluation of performance, and management of employees are among the postulates of the Nursing Planning Department in the electronic administration	155	4.22	0.58	91.6	Positive
Planning nursing tasks on a sound scientific basis that ensures accuracy in implementation in a timely and predetermined manner	155	4.58	0.26	89.7	Positive
The adoption of sound scientific foundations contributes to maximizing nursing services and monitoring the rate of administrative and individual nursing performance.	155	4.69	0.48	88	Positive
Periodically reviewing the plan of all kinds for all working levels increases the identification of the outcomes of the nursing process	155	4.87	0.66	89.2	Positive
The electronic nursing administration helps maintain the data of customers with the health institution	155	4.51	0.825	88.6	Positive
The electronic introductory tool in consolidating the relationship with the beneficiaries of the health institution	155	4.68	0.88	88.7	Positive
The electronic nursing administration is based on saving time and effort for the health institution in	155	4.33	0.52	88.2	Positive

Phrase	numbers	Mean	SD	Relative sufficiency	Evaluation
managing the affairs of the beneficiaries					
The beneficiary management within the electronic nursing administration is based on creating a documentation system for the detailed data of clients that can be referenced, benefited from, and communicated with.	155	4.85	0.41	88.6	Positive
The electronic nursing administration helps to create an electronic archive for each type of nursing procedure	155	4.89	0.32	88.7	Positive
Document management contributes to the preservation and storage of all data and communications exchanged within the department and between other departments and senior management	155	4.25	0.41	88.5	Positive
Document management is based on preserving and retrieving information in a framework of security and confidentiality	155	4.66	0.26	88.9	Positive
The electronic nursing administration helps to find a comprehensive nursing database	155	4.28	0.52	88.4	Positive
The electronic nursing administration contributes to facilitating the exchange of messages quickly and easily - e-mails	155	4.39	0.66	89.1	Positive
The nursing administration contributes to electronic rationalization in providing the largest possible amount of confidentiality of information	155	4.61	0.63	89	Positive
The Nursing Administration is based on rationalizing the use of resources - human, material, and financial	155	4.58	0.61	90.2	Positive
Electronic nursing administration is based on activating the communication between employees electronically	155	4.87	0.54	91.6	Positive
Electronic nursing administration helps to overcome Spatio-temporal barriers.	155	4.55	0.52	91.4	Positive
The electronic nursing administration helps to create quick and innovative means for the participation of the largest number of workers in all activities and events	155	4.82	0.44	89	Positive
The electronic nursing administration is based on the use of the dialogue circuit by presenting	155	4.16	0.46	89.6	Positive

Phrase	numbers	Mean	SD	Relative sufficiency	Evaluation
various topics (general or specialized) that are adopted as one of the mechanisms to remove barriers between nursing workers					
The electronic nursing administration is based on a survey of opinions about nursing services to measure the amount of development	155	4.89	0.41	86.2	Positive
The electronic nursing administration relies on the electronic agenda in organizing appointments, recording activities, and standardizing the work models used in line with the nursing work outputs.	155	4.88	0.65	85.4	Positive
The Nursing Administration adopts electronic means to announce the activities it undertakes	155	4.58	0.52	85.6	Positive
The electronic nursing administration uses electronic presentations to spread the culture within the health institution to ensure the continuity of communication and the sequence of ideas in the nursing home	155	4.68	0.55	86.2	Positive

**Table (9) Statistics, responses of the general respondents, the axes of the study in the light of the measurement averages**

independent variable	numbers	Mean	SD	SE	p-value≤0.05 considered statistically significant (95% confidence interval).		P-value	F value	Statistically significant
					Low limits	High Limits			
Electronic Planning Department	155	4.6	0.38	0.02	4.16	4.89	0.001	4.414	Sig.



**Figure 2)** The latent roots of the number of compounds extracted by orthogonal rotation (Varimax .).

It is clear beyond any doubt by reviewing the results of Table (9) to the high level of the observed responses and the general respondents in all the paragraphs of the questionnaire by evaluating the cut-off point for the approved scale represented by the (uncertain) level which is located at the degree of measurement (3) where all results have recorded The averages of the measurement and in all the paragraphs of the questionnaire are higher than that, which reflects the consensus of the respondents with what the electronic planning department came up within the nursing course in question.

And with a high positive evaluation in light of the calculated relative competency results

Significant at the level of significance adopted between the levels of those variables compared to what is expected for them assuming a random distribution, which reflects the restrictive character of these variables and in the direction that confirms the impact of the nature of work in that course. Finally, the results of the respondents showed a decrease in the number of participants in the courses specialized in electronic management. Thus, the images that explain the enhancement of the high level of respondents' positive responses become clear in light of the scale adopted to study the impact of electronic management components on the quality of nursing services, as a result of the large gap and the shortage they have in this course.

The aforementioned conclusion expresses in one way or another a basic fact, which is the necessity of practicing electronic management and engaging in related courses regardless of the number of years of work in nursing, nursing management, and electronic management before and after the implementation of the electronic management system in Kingdom of Saudi city hospitals, and it is necessary Also, the preparation and organization of courses that include all nursing workers, especially those in charge of administrative work or who will be entrusted with future electronic administrative tasks, and before the application or implementation of the electronic management system. Together, these factors will play an important role in developing the capabilities of nursing directors and heads of nursing departments towards applying all

administrative procedures related to nursing electronically, thus promoting the quality of nursing care to an advanced level over the current system.[26]

The results of evaluating response levels at the level of the questionnaire paragraphs, in general, indicated a high rise in the observed responses and the general respondents, the trend of the level of comprehensive support towards the importance of electronic planning management in the quality of nursing services, with a high (positive) direction in light of the calculated relative competencies results. Also, the results of evaluating the observed responses by transferring according to the measurement averages at the level of the main axes were recorded, the respondents agreed with what the electronic planning department came in the nursing course in question and a high positive evaluation in the light of the results of the calculated relative competencies as well, and this, in turn, confirms what was stated in the previous paragraph inevitably.[27]

The study's mechanism is nothing but the discovery of the fact that the electronic administration was not an approved system in the management of nursing affairs and nursing care in the hospitals of the city of Kingdom of Saudi. As the electronic planning department no longer has any presence in the practice of administrative work by nursing directors and heads of nursing departments. But what is clarified by their responses in the current study is that electronic planning management has a positive impact on nursing management and care and thus constitutes an important factor in its development and quality improvement, and thus the answer to the main question of the study has fulfilled its conditions. [28]

3- Using Al-Ghosn's method of graph paper known as the Explorer. No abnormal or extreme response was recorded within the fields of the questionnaire axes, which reflects the high level of homogeneity of respondents towards the paragraphs of the electronic management components in question, which in turn reflects the high levels of stability achieved and which enhances the validity of the questionnaire's adoption to study the phenomenon (under The same conditions) on the same society in the future.

In other words, the results of the current research are characterized by a high degree of confidence in terms of the degree of reliability and generalization depending on the data collected from the study community. The trend of the questionnaire axes of the electronic planning department in the nursing course to the asymmetry of the questionnaire axes in the test of the composite statistical hypothesis and at the level of responses that were recorded towards more than one point.[29]

The cut-off threshold is represented by the level of (not sure) at the approved significance level, which reflects the different levels of response according to the different axes of the electronic planning management of the respondents in the research sample, where it is clear that there are significant differences between the axis of the electronic planning management and the rest of the other axes, which reflects the different trends of respondents towards this The axis that reflects the essence of the electronic management process.[30]

After all of the above, the study concluded that the electronic planning administration has a positive impact on the future of nursing administration and nursing care in Kingdom of Saudi hospitals. In the Kingdom of Saudi hospitals, as they suffer from shortcomings and delays in



keeping pace with the electronic development experienced by the countries of the other world, which have preceded us and preceded us in this field. Nursing care.[30]

The results of the study were able to give a clear picture of the levels of the direct impact of electronic planning management on the quality of nursing care. If this indicates anything, it indicates that this component plays a more important role in influencing the future of electronic management and the quality of nursing care on which it is based. Thus, we have provided adequate answers to all the questions and assumptions you made in the current study.[30]

## **Recommendations:**

In light of the foregoing, a set of recommendations can be made, namely:

(1) The necessity of preparing and implementing specialized programs concerned with electronic management to prepare qualified, scientific, and practical administrative leaders in the field of electronic planning management, in line with the requirements of working in the nursing course, as well as raising the capabilities of the director or head of the department concerned with this course, with the need to ensure readiness for continuing education and keeping pace to raise the capabilities of employees and improve their performance in a correct and proper manner

(2) Reliance on e-learning curricula in general, and electronic management, especially in the nursing course in light of what is achieved in universities in developed countries. To achieve this, the responsibility for implementing the above can be placed on nursing institutes and colleges, with the need to initiate the development of specialized studies in electronic nursing administration within those educational facilities exclusively and not as is the practice of some others

(3) Encouraging workers in the field of Nursing by engaging in educational and training courses related to electronic management, with the development of a registration, follow-up, and evaluation system, and providing incentives to participants

(4) Conducting comprehensive national studies, based on the comparison, targeting the largest number of health institutions in the public and private sectors and nursing workers to identify obstacles to the implementation of E-management and providing suggestions, solutions, and appropriate methods for the development of technical, administrative and leadership aspects.

(5) Paying attention to training courses in the field of management and that it be conditioned by:

- i. Carrying out training before starting work and preparing programs specializing in the field of employment.
- ii. Continuation of on-the-job training courses, priority. It is related to performance, provided that it is an incentive to promote or continue with the site leadership.
- iii. Diversity of training courses (internal and external). Increase knowledge and update information.

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