The reality of health services in the hospital institution in light of the adoption of modern communication technologies. A field study in the ophthalmology hospital (Algeria-Cuba friendship) and the Cancer Control Centre in El-Oued.

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Received: 21/03/2022 *Accepted: 25/12/2022* *Published:31/01/2023*

Abstract:

The research paper aims to determine the availability of modern communication technologies in healthcare settings. It revealed the motives and gratification resulting from the use of modern communication techniques between the administrative and medical staff of health facilities. In our current studies, we relied on the descriptive method as well as on the questionnaire. The study was conducted by taking a sample of administrative and medical staff.

Through our study, we concluded that information and communication technology is a necessity in the field of health care, as members of the study sample see that its use in the facility will improve health services, motivation and satisfaction to speed up the pace of work.

Keywords: *Service; Health; Technology; Communication; Gratifications*

1. INTRODUCTION

We live today in complex societies. Where progress, development and luxury are a reflection of the civilization of the 21st century. Technology is the main component of this era. It has also experienced crises, economic blockade, epidemics and wars. However, the great role that technology has played, especially on the economic side, cannot be denied. Technology has accompanied human beings in the finest detail of their daily lives, and this great cohesion has become what researchers call a digital human being. Now, all institutions are working to improve their services by exploiting communication technology, regardless of the type of service. We find that in the field of health there has been a great and rapid development with the entry of information and communication technology, whether in the field of medicine or health care. Whether public health or private sector institutions,

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they need ICT in the organization and management process, but their use has also included the medical and quasi-medical aspects of treatment and diagnosis.

- **The problem of searching:**
  - What is the role of modern communication technology in improving health services?

In addition, our problematic branched out into sub-questions:

1. Does the hospital institution, in its internal communications, rely heavily on modern information and communication technology?
2. Do modern means of communication contribute to improving services in health institutions?
3. What are the gratifications achieved through modern means of communication?

- **Hypotheses of the study:**

1. The hospital institution, in its internal communications, relies heavily on modern information and communication technology.
2. Modern means of communication contribute to improving services in health institutions.
3. The means of communication achieve many gratifications for its users from health service providers.

- **Objectives of the study:**

Importance of modern communication technology in the health field.

Knowing the role of means of communication in improving services in health institutions.

Motives and gratifications achieved from the use of communication technology by health service providers.

- **Theoretical approach:**

The researcher does not begin his studies in a vacuum, **where** he usually uses theoretical perceptions about the subject of his study." The uses and gratifications approach were first described in an article by Elihu Katz (1959) in which he was reacting to a claim by Bernard Berelson (1959) that the field of communication research appeared to be dead. Katz argued that the field that was dying was the study of mass communication as persuasion. He pointed out that most communication research up to that time had been aimed at investigating the question "What do media do to people?" Katz (1959) suggested that the field might save itself by turning to the question "What do people do with the media?" (Severin & Tankard , 2014, pp. 293-

294)As well as in the practical aspect to prove or justify the results we obtained.

- **Previous Studies:**

Since the study does not start from a vacuum, so we have relied in our current study on previous studies that dealt with one of the study variables, which would help in defining the study or comparing the results from the most prominent studies, we find:

- **The first study:** The State of Information and Communication Technology and Health Informatics in Ghana. In this paper, we discuss the state of ICT and health informatics in Ghana. We also discuss the state of various relevant infrastructures for the successful implementation of e-Health projects. (Achampong, 2012) This is consistent with the current study, where it dealt with the variable of communication technology in the health sector. The study dealt with electronic health, while our study focused on communication technology within the hospital institution and its use by health service providers.

- **Second study**: Information and Communication Technology in Nigeria the Health Sector Experience .The study explores the impact of mobile phones and the Internet on the health care delivery system in Nigeria. (Idowu & Idowu, 2003) Which is in agreement with the current study, as information and communication technology, while our study focused on modern means of communication in terms of the role as well as the motives and gratifications achieved from these means.

2- Method and Tools:

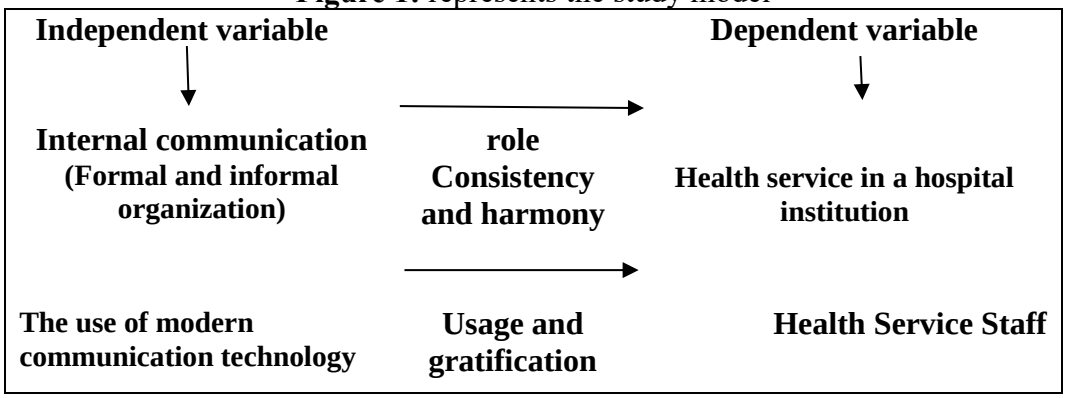
We used the descriptive method in this study "Research methodology consists of the assumptions, postulates, rules, and methods the blueprint or Roadmap that researchers employ to render their work open to analysis, critique, replication, repetition, and/or adaptation and to choose research methods" (Benaquisto & Given, 2008, p. 516). The descriptive method.

2.1-Data collection tool:

A questionnaire used for data collection because "Questionnaires offer benefits of standardized and open responses to a range of topics from a large sample or population. They can be cheap, reliable, valid, quick and easy to complete" (Cohen & Morrison, 2018, p. 471) it included three axes, the first of which contained general data while the second and third axis included closed .and open-ended questions. Place and time: Ophthalmology Hospital Institution. Moreover, the Cancer Control Center. The questionnaire distributed from 1 March 2021 until 11 June 2021.

2-2-Study model:

Figure 1: represents the study model



Source: Prepared by the researchers (based on the problem and hypotheses of the study)

2.3- The sample:

" Saves time and money and gives faster results as the sample size is smaller than the whole population" (Bhardwaj, 2019, p. 158). They selected from the administrative, medical and paramedical staff. An appropriate number of respondents selected about 120 respondents with a size of 60 from each institution. Recover 45 forms from the Hospital Foundation for Ophthalmology in El-Oued, in addition to 45 forms from the Cancer Control Centre.

2.4- The rationale for selecting the sample:

The selection of medical, paramedical and administrative staff is because they are directly involved in the provision of health services to patients in the hospital establishment. In addition, the overlap or involvement of certain medical staff functions with the administrative staff is due to the nature and specificity of health care services within the institution.

Statistical methods: Use SPSS20 program to process and analyse the data. Calculating Frequency and Percentage in Hypothesis Testing.

3-The Theoretical framework:

3.1-Uses of modern communication technology:

Has contributed to paradigm shift the live of human society. Technology knows It" Philosophies of science have developed definitions of technology that go beyond formal dictionary definitions or people's “everyday” intuitions. For example, Teich (1977) asserts that technology includes linguistic and intellectual tools as well as scientific and mathematical techniques. In general, he defines technology as the organization of knowledge for practical purposes" (Isman, 2012, p. 207) "Moreover ICTs have proven to be a

tremendous accelerator of economic and social progress. The speed at which ICTs are diffusing has taken many observers by surprise" (Zain & Aqil, 2010, p. 27)

Table No. 1: Means of communication technology

Digital	**year**	**Digital**	**year**
Mobil phone	1973	The Web	1990
Internet	1969	Smartphone	1992
Personal computer	1975	PDA	1993
Laptop computer	1985	Mosaic browser	1993
Digital prepress	1985	Google	1998
Tablet PC	1989	Facebook	2004

Source: Prepared by the researchers, (LOUBERE, 2021)

There are differences in the classification of modern communication technology. Some researchers believe that it is represented in mobile, fax, e-mail, Internet, video and extranet media. While we find that, there are those who classify social media: such as YouTube, Facebook, Twitter, Instagram, and electronic journalism, as the modern means of communication, as they use the Internet and the computer, and they are also new media.

3.2-Health and health service in the community:

Health in all human societies is a real asset, with the integrity of the individual reflected in all members of society. In addition, sick individuals become a burden on society, which leads to a problem in the development process within these human societies." To some people, health is a general sense of well-being, “feeling good.” For others, health includes the expectations that they will not become ill or will be able to recover quickly. For most, health involves the ability to do what they want to do, with one’s body not presenting difficulty in normal activities" (Winkelman, 2008, p. 14).Therefore, countries in the current era are seeking to improve the quality of health services provided to citizens through the latest technology and science in this field. We find that the health services provided in hospital institutions have witnessed a great change with the entry of modern communication technologies.

Telemedicine is defined as:" Telemedicine is a specific term that refers to the use of communication and digital technologies to communicate with patients, effect clinical diagnoses and deliver health care in remote locations. " (Lupton, 2014, p. 1351).It is also known as: "The term “telemedicine” is very simply a description of supporting medical services through the use of telecommunications. The prefix tele comes from the Greek for “distant.” So,

"telemedicine" literally means providing medical services over distance. Telecommunications used in medical applications can be categorized as sending medical information between a pair of transmitter and receiver. " (Fong & Li, 2020, p. 1).

- **Primary health care:**

Primary health care, as defined by the World Health Organization (WHO), is "essential healthcare" that is delivered in a "practical, scientifically sound and socially acceptable" way; it is "universally accessible" to all in the community who seek it; it is affordable; and it is geared toward "self-reliance and self-determination." Primary care includes basic, routine, and preventive care that is often provided in an office or clinic by a provider who coordinates all aspects of a patient's healthcare needs. It is often the patient's first contact with the healthcare system for a given health problem. Physicians, nurses, or other healthcare professionals can provide primary care. Primary care physicians are generally considered to include those trained in family medicine or general practice, general paediatrics', and general internal medicine. (Mullner, 2009, p. 953)

3.3-ICT in light of the Corona pandemic and its repercussions:

The World Health Organisation declared the substantial spread of the Coronavirus strain COVID-19 on 11th March 2020. (Pears, Yiasemidou, Ismail, Veneziano, & Biyani, 2020, p. 112). In Algeria, the first imported case of COVID-19 was reported on February 25, 2020, when an Italian national tested positive in the southern of the country (Ouargla). On March 1, 2020, the main COVID-19 outbreak began in the northern of Algeria (Blida), when two cases have been confirmed positive after contact with two Algerian nationals residing in France. (Hamidouche & Belmessabih, 2020, p. 1) In March 2020, the emerging COVID-19 pandemic created a compelling reason for in-person care alternatives. Due to lack of a vaccine or effective therapies at that time, social distancing and quarantine regulations were the only widely available interventions. As a result, COVID-19 transformed the delivery of care with breath taking speed. In particular, telemedicine was applied as a solution to continue care. (Bos, van Tubergen, & Vonkeman, 2021, pp. 565-566)

Table No. 3: shows the use of modern technology applications to improve health in light of the Covid-19 epidemic

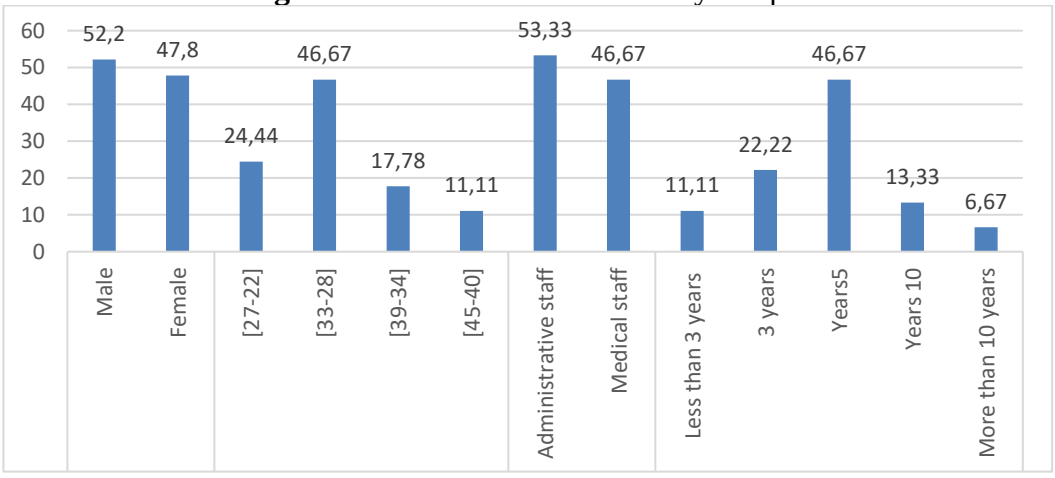
Artificial Intelligence (AI)	*Artificial intelligence (AI) increasingly executes tasks that previously only humans could do, such as driving a car or even performing complicated medical procedures. What is more, AI also outperforms humans in these tasks.* (Kiener, 2021, p. 705)	*The AI can be used to predict the outbreak for COVID-19. The AI has analysis models to test the validity of the statistical data about COVID-19, consequently remove unwanted data. The AI develops robots to burden from the healthcare team Some duties to perform the medical examination of patients.*(Abdel-Basset, Chang, & Nabeeh, 2021, p. 2)
Internet of Things (IoT)	*The IOT concept was coined by a member of the Radio Frequency Identification (RFID) development community in1999, and it has recently become more relevant to the practical world largely because of the growth of mobile devices, embedded and ubiquitous communication, cloud computing and data analytics.* (Patel & Sunil, 2016, p. 6122)	*IoT is a useful technology to Prevent COVID-19 outbreaks. The sensors can make a periodic follow up for hospitalized patients' or home quarantine patients (Ting et al., 2020). IoT can ensure that the healthcare team is taking the PEE right conditions. The IoT can be used to trace the contact people withCOVID-19 patients.* (Abdel-Basset, Chang, & Nabeeh, 2021, p. 2)

Source: (Patel & Sunil, 2016, p. 6122), (Abdel-Basset, Chang, & Nabeeh, 2021, p. 2) & (Kiener, 2021, p. 705)

4- Results and Discussion:

- The use of modern communication technologies improves the performance of health service providers in the hospital institution

Figure 2: Personal data of the study sample**:**



Source: Preparing the researchers.

Figure (2), the results of the field study by gender showed that the sample amounted to 52.2% of employed males, compared to 47.8% for females, and this percentage is close. As for the age groups, the highest percentage was recorded in the [28-33] age group estimated at 46.67%, while the lowest percentage was recorded in the [45-40] age group with 11,11%. We find the age group[34-39], which estimated at 17.78% of the total sample of the study and then came. The age group is [22-27] and it estimated at 24.44% of the total sample of the study. What we have noticed is that there is a diversity in age groups within the two health institutions. In addition, we find that the profession of the study sample is 53.33% of the administrative staff in the two health institutions, while the medical staff is 46.67%. With regard to the experience of the study sample, the largest percentage of the category was 46.67%. More than 5 years, while the lowest percentage was and 6.67% for the experience of occupation for more than 10 years. While we find that 22.22% of more than 3 years have work experience, while for the category less than 3 years it was 11.11%. Although two relatively recent institutions, but the experience of employees gained from previous institutions.

- The use of modern communication technology improves the performance of health service providers in the two hospital institutions:

Table No. 4: The most widely used means of communication technology in the hospital.

Answer	Frequencies	Percent%
Internet	15	16.7
The phone	60	66.7
E-mail	15	16.7
Total	**90**	**100**

Source: Preparing the researchers using the SPSS program.

From Table (3), we found that 66.7% of the total sample use the phone, while 16.7% of the total sample use the internet and e-mail equally.

Table No. 5: The use of communication technology in the hospital contributed to the improvement of the health service.

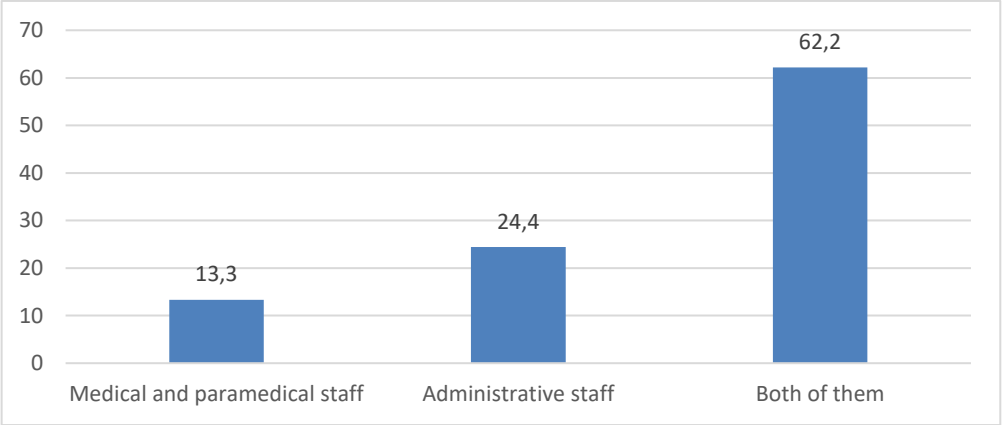
Answer	Frequencies	Percent%
No	6	6.7
Yes	59	65.6
To some extent	25	27.8
Total	**90**	**100**

Source: Preparing the researchers using the SPSS program.

From Table (4) we found that 65.6% of the sample answered yes, hospital communication technology contributes to improving the health

service, while 6.7% of the sample answered that hospital communication technology does not contribute to improving health service, while we found 27.8% that the sample answered to some extent contributes in improving the health service.

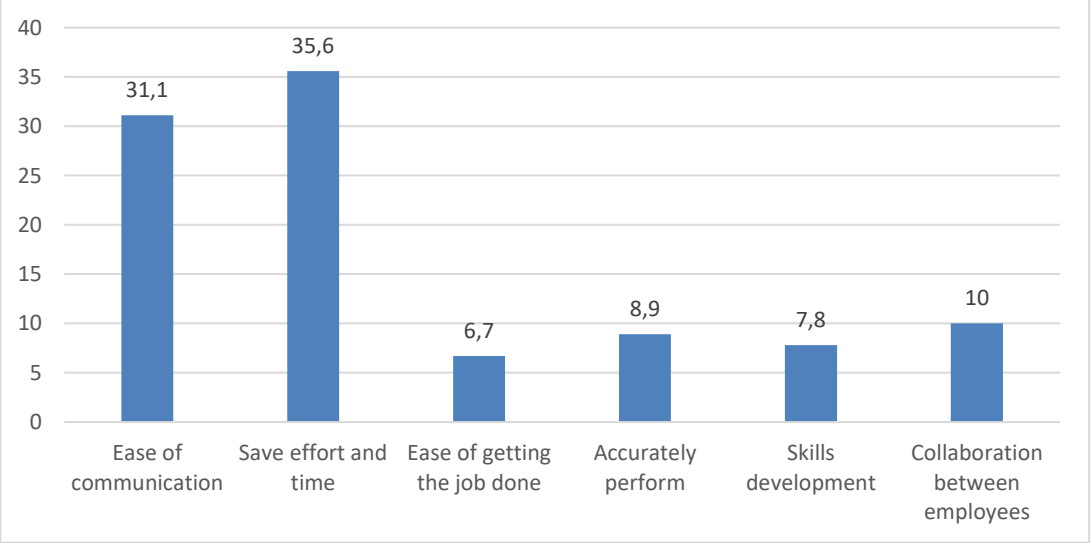
Figure 3: Health service providers and the use of modern communication technologies



Source: Preparing the researchers.

From Figure (3), we found that 62.2% of the total sample reported that the medical and administrative staff use communication technology in the hospital, while we found from the total sample that 13.3% the medical staff less used than the rest

Figure 4: Reasons for frequent use of ICT in hospital



Source: Preparing the researchers.

From Figure (4), we found that 35.6% of the total sample is due to the use of communication technology because it saves effort and time, while 6.7%

of the total sample facilitates the completion of the task, while 31.1% of the total sample is due to it facilitating communication. While 10% of the total sample is due to cooperation between employees, while 8.9% of the sample the total sample total the use of communication technology means for ease of work completion and accurate performance, while 7.8% of the total sample contributes to skills development.

Table No.6: The use of information and communication technology contributed to the development and acquisition of new skills.

Answer	Frequencies	Percent%
No	19	21.1
Yes	71	78.9
Total	**90**	**100**

Source: Preparing the researchers using the SPSS program.

From table (5), we found that 78.9%of the total sample They answered yes that the use of communication technology contributed to the development of their performance and the acquisition of new skills, while we found from the total sample that 21,1% they answered no.

Table No.7: The tasks you accomplish using modern communication technology

Answer	Frequencies	Percent%
Workassignments	67	74.4
Entertainment	14	15.6
Personalworks	7	7.8
Learn and educate	2	2.2
Total	**90**	**100**

Source: Preparing the researchers using the SPSS program.

From table (6), we found the reasons for using communication technology that 74.4% of the total sample answered work tasks, while 2.2% of the total sample answered learning and cultures.

Table No. 8: Can your tasks be accomplished without using ICT?

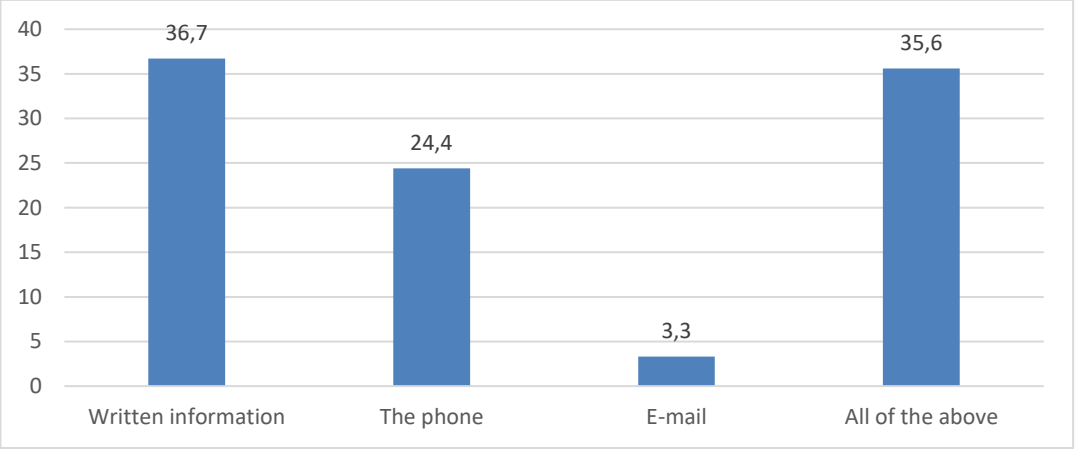
Answer	Frequencies	Percent%
No	25	27.8
Yes	36	40
To some extent	29	32.2
Total	**90**	**100**

Source: Preparing the researchers using the SPSS program.

From table (7), we found that 40% of the total sample answered yes about completing the work without using communication technology while 27.8% of the total sample answered yes, and the tasks cannot be

accomplished without using communication technology while 32.2% of the total sample answered to some extent on the tasks. It is accomplished using communication technology.

Figure 5: The means of communication used to receive orders and instructions from the health administration



Source: Preparing the researchers.

From Figure (5), We found that 36.7% of the total sample responded to receiving orders and instructions from the health administration through the written method, while 3.3% of the total sample responded by email, while 35.6% of the total sample responded to all of the above, while 24.4% of the total sample received orders by phone .

Table No. 9: Do you have difficulty using modern ICT?

Answer	Frequencies	Percent%
NO	65	72.2
Yes	25	27.8
Total	90	100

Source: Preparing the researchers using the SPSS program.

From table (8), we found that 72.2%of the total sample they answered, No, they do not face difficulty in using modern communication technology. While 27.8% of the total sample they answered yes, and they have difficulty using modern communication technology.

Table No.10: Reasons for poor use of modern information and communication technology

Answer	Frequencies	Percent%
The complexity of modern ICT	41	45.6
Weakness of modern ICT	49	54.4
Total	90	100

Source: Preparing the researchers using the SPSS program.

From table (9), we found that 54.6% of the total sample reported poor use of communication technology due to poor user level of modern communication technology, while 45.4% of the total sample was due to the complexity of modern communication technology.

Table No. 11: Does the organization conduct training courses for employees to improve the use of communication?

Answer	Frequencies	Percent%
No	27	30
Yes	31	34.4
Sometimes	32	35.6
Total	90	100

Source: Preparing the researchers using the SPSS program.

From table (10), we found that 35.6%of the total sample answer sometimes the organization organizes training sessions for employees to improve the use of communication while 30% of the total sample answer no while 34.4% of the total sample answer yes, the organization organizes training sessions for employees to improve the use of communication.

Table No. 12: The frequent use of ICT causes

Answer	Frequencies	Percent%
Isolation and alienation	31	34.4
Stress and anxiety	29	32.2
Negligence in getting work done	23	25.6
Entertainment	6	6.7
Spreading rumours	1	1.1
Total	90	100

Source: Preparing the researchers using the SPSS program.

From table (11), we found that 34.4% of the total sample said that the frequent use of communication technology causes isolation and alienation, while 1.1% of the total sample causes spreading rumours, while 32.2% of the total sample answered that it causes stress and anxiety, while 25.6% of the total sample causes neglect to complete work .

Table No. 13: The real motives for using modern information and communication technology

Answer	Frequencies	Percent%
Improving the overall look	31	34.4
Entertainment	25	27.8
Cognitive impulse	34	37.8
Total	90	100

Source: Preparing the researchers using the SPSS program.

From table (12), we found that 37.8% of the total sample answered that the motivation to use the modern communication technology is due to cognitive motives, while 27.8% of the total sample answered that the motivation for entertainment and entertainment, while 34.4% of the total sample attributed it to improving the general appearance.

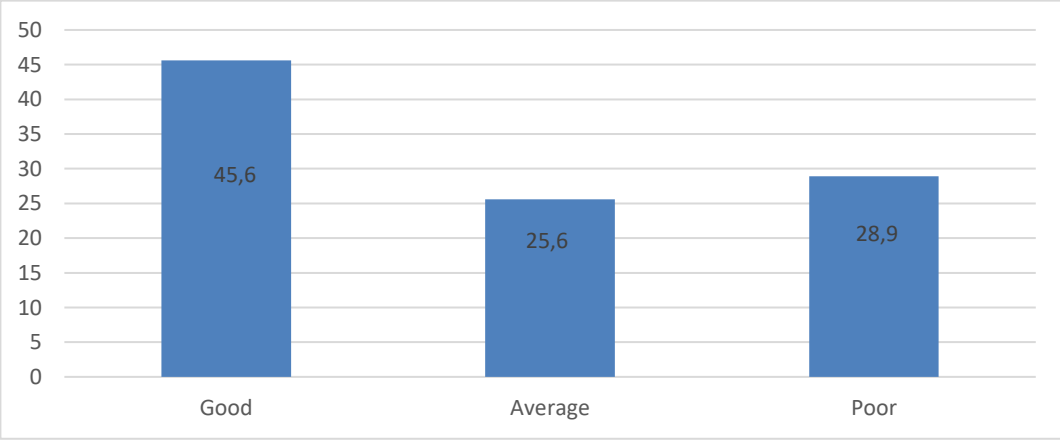
Table No. 14: Disadvantages of using modern information and communication technology in the organization

Answer	Frequencies	Percent%
Privacy hack	35	38.9
Difficulty controlling technology	19	21.1
Lack of equipment in all departments of th0e hospital	36	40
Total	90	100

Source: Preparing the researchers using the SPSS program.

From table (13), we found that 40% of the total sample say that one of the disadvantages of using communication technology is the lack of equipment in all departments of the hospital. while 21.1% of the total sample is due to the difficulty of controlling the technology. While 38.9% of the total sample the overall sample attributed this to a breach of privacy.

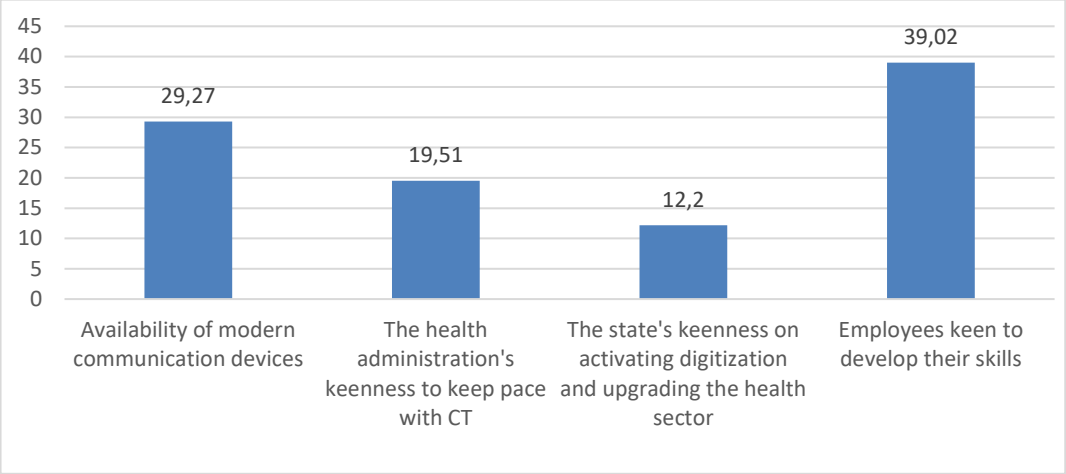
Figure 6: Evaluation of the level of modern information and communication technology in the health institution



Source: Preparing the researchers.

From figure (6), we found that 45.6% of the total sample answered that the level of modern communication technology in the organization is good, while 25.6% of the total sample answered that it is medium, while 28.9% of the total sample answered that the level of modern communication in the organization is low.

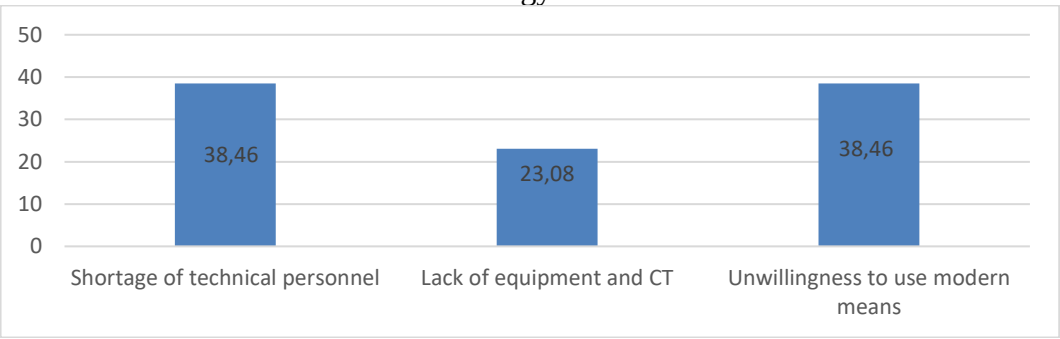
Figure 7: The reasons for the presence of a good level of modern information and communication technology in the health institution



Source: Preparing the researchers.

From figure (7), we found that 39.02% of the total sample is due to the good level of communication technology due to their keenness to develop their skills, while 12.2% of the total sample are keen to activate digitization and upgrade the health sector. while 29.27% of the total sample answered that modern means of communication are available, while 19.51% of the total sample expressed the health administration's keenness to keep pace with communication technology.

Figure 8. The reasons for the low level of modern information and communication technology in the health institution



Source: Preparing the researchers.

From Figure (8), we found that 38.46% of the total sample equally is due to poor use of communication technology due to a lack of technical personnel and unwillingness to use modern means, while 23.08% of the total sample is due to a lack of equipment and communication technology.

4.3- Discussions of results:

It appears from the results of the first hypothesis:

- We find that 66.7% of the study sample answered that the most common means of communication is the telephone compared to the Internet and e-mail.
- In addition, we found 65.6% of the study sample answered that the use of communication technology in health institutions contributed to improving service in them.
- The study sample also indicated that the medical and administrative staff use modern communication technology in the institution, while 24.4% of the study sample reported that the administrative staff uses modern means of communication.

It appears from the results of the second hypothesis:

- According to the opinion of the study sample, it is due to saving effort and time. The use of communication technology also contributed 78.9% to developing performance and acquiring new skills, according to the opinion of the study sample.
- While the tasks were accomplished using communication technology, specific work to work. However, 74.4% of the research sample reported the possibility of completing the tasks without using modern communication technologies.
- In addition, the poor use of modern communication technology is due to the low level of the user.
- However, 35.6% of the study sample answered that the organization conducts training courses for employees to improve the use of communication technology.

It appears from the results of the third hypothesis:

- About the achievement of modern means of communication many motives and satisfaction for health service providers, as the results showed that the frequent use of communication technology according to the study sample 34.4% causes isolation and alienation.
- While the real motives for using communication technology according to the opinion of the sample 37.8% are cognitive motives.
- The satisfaction you achieve is the use and gratification of knowledge.

- While the disadvantages of using modern communication technology in the hospital, 40% according to the opinion of the study sample is due to the lack of it in all departments.
- In addition, 39.02% of the study sample reported that the level of modern communication technology evaluated as good due to the availability of modern communication devices and the employees' keenness to develop their skills.
- The research sample, about 38.46%, who evaluated the level of modern communication technology in the institution, said that it is a weak level due to the lack of frameworks and competencies specialized in technology, in addition to the unwillingness to use modern means.

5- Conclusion:

The internal communications within the official organization in the hospital institution contribute to the improvement and development of the health service by using modern communication technology. The most important results reached are as follows**:**

- Modern information and communication technologies are among the means of internal communication used by health providers in the hospital institution.
- Communication technology has contributed to improving services in health institutions in terms of ease of communication. The completion of work between employees, which reflected positively on the two health institutions.
- There is great care and interest in using communication technology among the administrative and medical staff in the two hospital institutions.
- We find the advantages of modern communication technology on institutions in general and the individual in particular, but it has many negatives, as the increased use causes anxiety and tension in addition to isolation greatly, as well as alienation in work, neglect and failure to complete work, as well as its use for entertainment.
- The poor use of communication technology is often due to the unwillingness of the employee, as well as reliance on written means of communication, perhaps due to fear of communication means in terms of penetration of privacy, distrust of communication technologies due to malfunctions and excessive amounts of equipment maintenance.

6- Suggestions:

- It is preferred to conduct several research and studies, especially regarding the impact of modern communication technology on the patient in the hospital institution.
- It is better to rely on the electronic record in the hospital institution.
- It is better to link all hospital institutions to a system to facilitate communication between institutions within the community.
- It is preferable to conduct awareness campaigns for employees about the effectiveness of using modern communication technology in health institutions.

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