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Virtual Tools Effectiveness in Communicating with Patients & Reliability on Healthcare Services in Central Second Health Cluster in Riyadh City Saudi Arabia

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Abstract

Background : The technological development has greatly improved the level of the healthcare sector; from the development of diagnostic and care devices to the emergence of smart applications that help patients and physicians. ***Research aims*** to assess the effectiveness of virtual tools in communicating with patients and reliability on healthcare services in central second health cluster. ***The research problem*** due to The Corona pandemic affected the number of visitors to government and private hospitals, and affected the provision of direct care for people with other diseases away from Corona, the sample size of (147) male and female healthcare providers who had an experience in using the virtual tools to communicate with patients. ***Research tools***: The study depends on the questionnaire tool being the most suitable for this type of studies. Through the ***results*** reached, the following recommendations : Health departments and the concerned authorities should pay attention to developing the technical devices and equipment used in developing communication with patients and workers in other health departments.

Key words: Virtual Tools – Patients- Reliability - Healthcare – effective communication

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Introduction

The technological development has greatly improved the level of the healthcare sector; from the development of diagnostic and care devices to the emergence of smart applications that help patients and physicians. The virtual tools in healthcare are used the telecommunications technology tools to deliver health care services to patients who are at some distance from the provider. Healthcare provider and patients share information, advice, and ideas with a range of people using various channels of communication, including verbal, over the phone, via video calls, e.g., Face Time, Zoom, Microsoft teams, videoconferencing, video collaboration and instant messaging, Google hand-out, Google duo WhatsApp and Skype). Virtual tools involve a spectrum of technologies including facsimile, medical data transmission, audio-only format (telephone and radio), still images, and full-motion video. Robotics and virtual reality interfaces have been introduced into some experimental applications cite. (Kefi & Asan, 2021)

Virtual tools in healthcare are regarded as one of the major innovations in health services, not only from the technological but also from the cultural and social perspectives, since it benefits accessibility to health care services and improves the quality of medical care and organizational efficiency (Marziniak et al., 2018). Virtual tools in healthcare have a role in providing solutions to the challenges posed by socioeconomic changes in health care systems in the 21st century (greater demands on health care, aging populations, increased mobility of citizens, the need to manage large amounts of information, global competitiveness, and improved health care provision), all in an environment of limited budgets and restrictions on spending (Wei et al., 2021).

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The virtual tools in healthcare should be effective communication because they have become a vital factor in providing safe patient care. Communication failure in a health care setting could lead to serious medical errors. It is an interactive process that involves the construction and sharing of information, ideas, and meaning using a common system of symbols, signs, and behaviors (Aceto et al., 2018).

Virtual tools are fueled by digital technologies, which allows us to reimagine the physician visit as a house call without travel. The idea of the virtual visit has been around for decades, and telemedicine has been deployed across specialties and service lines, from primary care to radiology, cardiology to orthopedics. Virtual tools lend themselves well to both the primary and specialist care, allowing them to further their reach, treating patients wherever they are with internet connection. Virtual tools platforms have traditionally launched from a health system they are a typically have the overhead to purchase large equipment kiosks and sophisticated digital technology (Portnoy et al., 2020).

The virtual tools applications are software-as-a-service (SaaS) and as close as the smartphone a doctor – and their patient – keep in their pocket or purse. Today's telehealth platforms no longer require big upfront overhead costs but are part of monthly subscription packages that are as secure and The Health Insurance Portability and Accountability Act (HIPAA)-compliant as they are affordable (Jagadeeswari et al., 2018).

Statement of the Problem

The Corona virus disease 2019(Covid-19) affected on the number of visitors to governmental and private hospitals and affected the provision of direct healthcare for the people

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have an others diseases, whether patients with heart attacked and kidneys disease , or cancer Hospitals were keen to devise new ways to ensure continuity of care for patients through telemedicine, and delivered of medicines for the home.

As doctors in the Kingdom of Saudi Arabia and around the world in various specialties were directed to work in Corona virus disease 2019 (Covid- 19) care units, which reduced the number of outpatient clinics visits and operating rooms. One of the most prominent negative effects of (Covid- 19) infection has cast its shadow on cancer patients, delayed diagnosis, and heart and kidney patients, stressing that fear of catching the infection constituted an obstacle for them to visit the hospital and conduct the required tests. (Manzoor,2019)

The medical sector in the Kingdom of Saudi Arabia has witnessed a great impact from the (Covid- 19), as the number of patients admitted to hospitals increased, due to (Covid- 19) , and it has resulted in the community being completely isolated from the usual daily activities and from the usual health activity, which affected the overall number of visitors to government and private hospitals. At the state level, the researcher noticed a decrease in the number of reviewers in various specialties, especially those with chronic diseases, but this was overcome through the use of telemedicine techniques and the delivery of medicines to them, which provided patients with comfort. (Manzoor,2019).

Reliability and effectiveness of virtual tools (phone calls, video calls), FaceTime, Zoom meetings, Microsoft team meetings, and Skype; on healthcare services in 2nd cluster. There are several problems on the practical use of virtual tools in healthcare services, for example, the difficulties involved in promoting communication between medical facilities and uncooperative

clinicians. There are also problems related to the attendance of the patients to healthcare facilities to meet their physicians and follow up the medical care plan of treatment due to quarantine.

Special preparation for (COVID-19), the preparation aims at increasing the bed capacity in all hospitals to avoid the failure in healthcare systems as happened in other countries. The ministry of health (MOH) announced that all out patient department(OPD) appointments should be shifted virtually through the communication applications like (Zoom, Skype, Microsoft Teams, Phone Calls …etc.) to avoid the presence of patients in hospitals to minimize the exposure. As well as the lack in infrastructure of advanced IT solutions for telemedicine in healthcare systems and the poor knowledge of elderly patients in using the virtual tools to communicate with healthcare providers.

Objective of the research

The objectives of this research are to assess the effectiveness of virtual tools in communicating with patients and reliability of virtual tools on healthcare services in central second health cluster. Also, to assess the importance of communicating virtual tools between healthcare professionals and patients for the success of any healthcare organization. Furthermore, recognizing the factors that leads to the effectiveness of virtual tools in communicating with patients & reliability on healthcare services in central second health cluster. Finally, researching solutions for the effectiveness of virtual tools in communicating with patients and reliability on healthcare services in central second health cluster, and this directly influences the outcomes of healthcare for patients as well as increases quality in the healthcare organization.

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Research Questions

1- What is the effectiveness of virtual tools on improving the accomplishment of health professionals` tasks and duties?

2- Is the virtual tools in communicating with patients' reliable on healthcare services in central second health cluster?

Literature Review

This chapter generally reviewed the relevant academic journals and professional literature on the investigating the effectiveness communicating virtual tools with patients and reliability of virtual tools on healthcare services in central second health cluster during patient care plan counseling. Key points were highlighted such as the need for all healthcare professionals and patients to possess effective communication tools for the provision of high-quality patient care.

A virtual community defined as a social unit that involves members who relate to one another as a group and interacted using communication technologies that bridge geographic distance. The term ‘‘virtual’’ implies properties that unlike these of a traditional community where there is the assumption of geographic proximity, based on the utilization of advanced technologies enabling interactions and exchange of information between members who may not have a face-to-face interaction at any point in time (Demiris, G. 2006).

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The importance of communicating using virtual tools in healthcare is to settings and discussing to comparisons between the effective virtual tools of communications in healthcare (Guo et al., 2018). The focus moves to healthcare professional's communication tools with patients.

Communicating virtual tools with patients is the use of information and communications technology to provide health care services to patients who are some distance from the health care providers. Rather than being a single technology, communicating using virtual tools have become part of a wider process or chain of care (Rosen et al, 2021). It assumed that communicating virtual tools could improve this chain and thus enhance the quality and efficiency of health care services.

Preliminary literature review showed that past studies are primarily focused on virtual tools in healthcare system and how to affect the continuity of healthcare services, and health professionals` tasks and duties. Most of previous review papers focused on how to deal with virtual tools and how to communicate effectively, which represent the first access level of care in healthcare system. (was, 2012).

The literature review showed various recommendations and multiple mechanisms for effective reform of health care services and implements effectively virtual tools on the future. Communicating virtual tools granted healthcare providers and patients the ability to share data and communicate and conduct personalized interactions remotely (Kreps, 2017). This can allow for convenient; high-quality access to care that can reinforce provider-patient interactions. In

addition, communicating virtual tools can assist relieve clinicians of mundane, administrative, or routine tasks, giving them more chances to practice at the top of their license (Wetter, T. 2012).

There is many previous studies about this topic. Over 40 years of research has yielded a wealth of data about the effectiveness and efficacy of many communicating virtual tools applications. There are over 12,000 citations of published works related to communicating virtual tools or telehealth. Over 2,000 evaluative studies related to communicating virtual tools have been published in two journals devoted to communicating virtual tools alone (Hussain et al., 2018). Some of the studies that have evaluated the cost effectiveness, quality of care and patient acceptance of communicating virtual tools.

For communicating virtual tools in primary care settings and utilized for individuals with chronic illnesses, several positive health outcomes were identified, including better self-management of disease, reduced mortality, and high patient satisfaction. A comprehensive review of communicating virtual tools studies showed positive health outcomes among patients with various conditions for health services offered in rural locations. (Portnoy,2020) In a systematic review; communicating virtual tools were shown to provide clinically significant results for management of diabetes and smoking cessation (Lancaster et al., 2018). A review of diabetes management found the utilization of communicating virtual tools led to an improvement in self-efficacy and glycemic control.

in a systematic review of the home communicating virtual tools applications, Found a reduced mortality rate among communicating virtual tools participants (Alaa et al., 2017). Several studies have found that communicating virtual tools can improve the ability of

individuals in self-care and health management. Finally, there have been studies, which show that communicating virtual tools can be utilized effectively to treat minor conditions as compared to regular in office visits.

Studies show communicating virtual tools can reduce costs for patients seeking standard primary care in certain geographic areas where there is known overuse of urgent care clinics. Another aspect to consider in evaluating possible cost savings associated with communicating virtual tools is that more advanced technologies typically have higher operational costs. For example, when using specific in-home devices, two studies found that more sophisticated technology was less cost effective.

Furthermore, some research has shown that using lower technology devices is more cost effective than usual care (Li et al., 2018). In summary, a growing body of evidence demonstrates that urgent care visits, office visits, and hospitalizations have decreased with the use of communicating virtual tools. However, not all studies show communicating virtual tools interventions to be cost-effective, and some find that the initial startup costs associated with installing communicating virtual tools technology and training in its use are high, but worthwhile in the long run.

As well the others find no significant improvement in cost effectiveness when comparing communicating virtual tools to usual care. A study by Pearl and colleagues (2015) found that communicating virtual tools visits are less costly on a per-visit basis than office visits but do not decrease the overall number of office visits across the system. Some meta-analyses have reported

economic savings and cost-effectiveness of a communicating virtual tools intervention but note that many of the studies exhibit poor methodologies for properly evaluating cost efficiencies.

Among the challenges of designing analyses that can prove cost effectiveness are that results may "depend on the geographical, lifestyle, or other characteristics of the patients." In addition, an analysis by researchers concluded that small sample sizes and short time frames have also limited the ability of many studies to establish clear evidence of cost-effectiveness (Watson et al., 2018). A systematic review of real-time communicating virtual tools delivery published in 2017 found mixed results, with some studies showing cost savings and others showing higher costs. As the field develops and as communicating virtual tools are more commonly used to diagnose, treat, and manage a range of conditions, additional rigorous research will be needed to clarify the cost savings of particular communicating virtual tools interventions and the overall efficacy of remote health care versus face-to-face care.

Decades of research has firmly established that communicating virtual tools expand access to health services for individuals living in remote and rural areas. Evidence is beginning to accumulate that communicating virtual tools may be "especially appealing" for those "who are infrequent users of health care and to those who are relatively resistant to usual outreach methods and vulnerable to untreated chronic conditions in the long run." Equally important, development of communicating virtual tools is now intersecting with rapid and ongoing changes in the health care system's organizational structure toward provision of more integrated care models and toward payment protocols that aim to shift reimbursement toward payment for value. These trends are accelerating even as different forms of communicating virtual tools are being used in a

complementary fashion; as electronic health records become mainstream; and as shared electronic record systems are extended to independent practitioners, community hospitals, and providers of various community-based services (McCoy et al., 2018).

For policymakers and stakeholders, these findings suggest that a prudent approach may be to balance the need for regulatory development in such areas as practice standards and scopes of practice in a manner that does not impede the further development of communicating virtual tools services and better-integrated health information technology platforms. As consumers of varying ages are exposed to communicating virtual tools, many are likely to find it useful for accessing health care practitioners and for receiving information and advice about managing their chronic conditions and other challenges (Zhao & Zhang, 2017).

It is possible that as communicating virtual tools interventions become more widespread, they can be tailored to broaden access among those who are less mobile and those who cannot be seen during hours convenient to providers. It is also conceivable that more convenient access to evidence-based health information and personal health care records will benefit family caregivers.

In the swallowing 2019, study which was concerned with measuring patient satisfaction with virtual healthcare services. It was found that 70.5% of doctors believe that virtual clinic visits are better than traditional clinic visits in terms of scheduling appointments, and 94.5% of patients believe that virtual clinic visits are better than traditional clinic visits, stressing that telemedicine technology is a promising technology, and needs more. Trust is on all sides of the healthcare equation, and it has enormous benefits. According to a survey, researchers at

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Massachusetts General Hospital 2019 included 426 patients and 74 physicians to measure how much they rated the value of virtual visits using telemedicine techniques.

Taylor 2020, study Using virtual worlds as a platform for collaborative meetings in healthcare: a feasibility study, he found that Quality of collaborative task outcomes was high in both face-to-face and virtual world settings. Participant interviews elicited advantages for using virtual worlds in healthcare settings, including the ability of the virtual environment to support tools that cannot be represented in equivalent face-to-face meetings, and the potential for virtual world settings to cause improvements in group-dynamics. Reported disadvantages for future virtual world use in healthcare included the difficulty that people with weaker computer skills may experience with using the software. Participants tended to feel absorbed in the collaborative task they conducted within the virtual world, but did not experience the virtual environment as being 'real'

Research Methodology

Study design

In this study, a cross sectional design was chosen to assess the effectiveness in communicating with patients and reliability on healthcare services in central second health cluster in Riyadh, Saudi Arabia. A survey questionnaire was distributed through online social groups

dedicated for healthcare professionals. The main purpose of this survey was to achieve its goals and to identify the effectiveness in communicating and pinpoint the possible suggestions of improving from the perspectives of employees in the healthcare organization who had an experience in conducting virtual tools communication. The study used a descriptive analytical method because it was most appropriate to study aspects related to the topic, as they exist.

Sample/Participants:

The study sample was taken a stratified random sampling method among the three hospitals under the second central health cluster (King Fahd medical city, Prince Mohamed bin Abd-alazize hospital, and Al-yamamah Women hospital) in Riyadh, Kingdom of Saudi Arabia. The sample size of (147) male and female healthcare providers who had an experience in using the virtual tools to communicate with patients.

Materials/Measures:

The independent variable for the current study was the virtual tools used for communication with patients. The data was collected from first part in the questionnaire as well as the tool or modality was used from each participant (see Appendix1). The virtual tools chosen in this study were ; Face Time, Zoom, Microsoft teams, google hand-out, google-duo, WhatsApp, phone call and Skype.

The first dependent variable the effectiveness of virtual tools to communicating with patients. Measured by twelve questions related to Virtual Tools Effectiveness in Communicating with Patients in the second part of the questionnaire.(Kefi,2021)

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The second dependent variable for the study was the reliability of virtual tools on healthcare services. Participants reflected their experience in the third part of questionnaire (see Appendix), which measured the reliability of virtual tools in the healthcare worker duties.**(** Kefi,2021**)**

Questionnaire

The study depends on the questionnaire tool was formulated to answer the research questions, pretest pilot sample of 29 responds was conducted to measure the validity and reliability of the questionnaire, as it gave the respondent an opportunity to think and reflect on the answer, and it was resulted by Cronbach reliability coefficient (Alpha) of 0.88. The questionnaire was divided into three parts. part1 was about the primary data of the respondents, the second part for the study's questions measured the virtual tools effectiveness in communicating with patients, and the third part focused on measuring virtual tools reliability on healthcare services and its various scales. The questionnaire was converted frome hard copy to an electronics and distributed to the study sample members electronically by using google drive.

Results

The research extracted the results of the statistical analysis of the data by relying on the responses of the individuals of the study sample through the electronic questionnaire that the researcher prepared.

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Demographic Data Table1 shows the demographic characteristics of the study participants, where the study sample consisted of 147 individuals working in the field of healthcare services. the researcher found that the number of males in the study equals 63 individuals (42.9%), while the number of females in the study equals 84, by 57.1%. The researcher also found that the ages of the study sample ranged from 20 years to 60 years, and the researcher found that the highest percentage was among the age groups from 20 years to 30 years, as it reached 44.9 %, followed by age groups from 30-40 years with a rate of 40.8%, then the age groups come from-40 years. 50 years at a rate of 8.8%, and finally, age groups from 50 to 60 years of age, at 5.4%. The educational levels of the study sample who have a bachelor's degree, their percentage is equal to 52.4%, followed by those who have a master's degree by 26.5%. Then those who have obtained a diploma by 15.6%. For the study sample with a doctorate degree in the specialty, their percentage is equal to 5.4%. the study found that the sample members are from three hospitals, where the researcher also found that 10.2% of the study sample members were from Al Yamamah Specialist Hospital for Women and 52.4% are from King Fahd Medical City. As well as 37.4% of Prince Muhammad bin Abdulaziz Hospital. As for the jobs of the individuals of the study sample, the researcher found that 2.0% are emergency medicine specialists, 21.1% are nursing cadres, and 21.8% are other jobs. 15% are pharmacists, 19.7% are medical specialists, and 20.4% are respiratory therapist.

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Table1.Demographic characteristics of the study sample

Gender	Frequency	Percent
Female	84	57.1
Male	63	42.9
Age		
20 - 30	66	44.9
30 - 40	60	40.8
40 - 50	13	8.8
50 - 60	8	5.4
Education Level		
Bachelor	77	52.4
Diploma	23	15.6
Master	39	26.5
PHD	8	5.4
Hospital		
Al Yammamh Women Specialist Hospital	15	10.2
King Fahad Medical City	77	52.4
Prince Mohammad Bin Abdulaziz Hospital	55	37.4
Occupation		
emergency medical specialist	3	2.0
Nurse	31	21.1
Other	32	21.8
Pharmacist	22	15.0

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Physician	29	19.7
Respiratory Therapist	30	20.4

Virtual Tools Effectiveness in Communicating with Patients

1. using Virtual Tools In communicating with patients

Through Table 2, the researcher found that 0.32 of the study sample individuals who provide health care to patients have been using Virtual Tools In communicating with patients with patients since before the outbreak of the Corona pandemic, and that 0.68 of them use it during the Corona pandemic, and the researcher found that the Chi square value is equal to 3.61 and the p-value is equal to (0.000< 0.05), which indicates any statistically significant differences. This means that the use of communicating with patients using Virtual Tools In During the Corona is the one that has the largest effect. also found that the vast majority of physicians, therapists, and patient health care providers used virtual Tools on their own, with less than 53.7% and 46.3% through official government agencies. The researcher found that the chi square value is equal to 0.87 and the p-value is equal to (0.52 >0.05), which indicates that there are no statistically significant differences. This means that the use of communicating with patients using Virtual Tools used through official government agencies and on their own alike. Regarding social media have you used to communicate with patients, the researcher found that all social media used were sufficient for the purpose, the value of Chi square is equal to 0.99 and the value of p-value is equal to (0.45 >0.05), which indicates that there are no statistically significant differences This means that the use of social media does not have the preference for selection, as all the results of the sample members are close.

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The researcher found that the number of times using virtual means of communication has become continuous, the study sample individuals see that they use virtual means of communication frequently, with a rate of 0.48, which is the highest rate, and that those who use them sometimes, their percentage is equal to 0.42, and that those who do not use them, their rate is equivalent to 9.5%, and the researcher found that the value of Chi square equals 2.74 and p-value is equal to (0.00< 0.05), indicating the presence of statistically significant differences.

As for the healthcare providers response to deal with Virtual Tools Good, the researcher found that there is a high response from patients in cooperation with doctors through virtual means of communication, as the researcher found that 72.1 their response is high and that the Chi square value is 3.22 and the p-value is equal to (0.00< 0.05. This indicates the existence of statistically significant differences. healthcare providers responses to using Virtual Tools refer to their fear of transmitting Covid-19 disease was very high, at a rate of 0.83, and the Chi square value of 2.89 and the p-value equaling (0.00< 0.05), indicating the presence of statistically significant differences.

Table2. using Virtual Tools In communicating with patients (n=147)

How long have you been using Virtual Tools?	**Frequency**	**Percent**	**Chi-X2**	***p*-value**
Before the Corona pandemic	47	32.0	3.61	0.00
During the Corona pandemic	100	68.0		
What is your reference in using virtual tools?			**Chi square**	***p*-value**
By my self-decision	79	53.7	0.87	0.52
through official government	68	46.3		

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agencies				
What virtual tool have you used to communicate with patients?			**Chi square**	***p*-value**
Face Time	4	2.7	0.99	0.45
Google Due	10	6.8		
Google Hand-out	5	3.4		
Microsoft Teems	28	19.0		
Phone call	28	19.0		
Skype	10	6.8		
WhatsApp message	10	6.8		
Zoom meeting	52	35.4		
How Frequent Do You Use It?			**Chi square**	***p*-value**
Always	71	48.3	2.74	0.00
Never	14	9.5		
Sometimes	62	42.2		
Is the patients response to deal with Virtual Tools Good?			**Chi-X2**	***p*-value**
No	41	27.9	3.22	0.00
Yes	106	72.1		
Patients' responses to using Virtual Tools refer to their fear of transmitting Covid-19 disease?			**Chi square**	***p*-value**
No	25	17.0	2.89	0.00
Yes	122	83.0		

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2. Difficulties encountered when using Virtual Tools

Table 3 illustrates the responses of the study sample individuals to the Difficulties encountered when using Virtual Tools .Whereas the statement Not knowing patients by using means Virtual Tools In its various forms had a high responsiveness, reaching 64.6%, meaning that the approval rate was high, as was the Chi square value of 2.55 and the p-value equaling (0.00< 0.05), indicating the presence of statistically significant differences.

Failure of patients to adhere to the instructions and medical prescriptions in their various forms has a high response as 63.9% of the study sample agree with it. Looking at all in Table 3, the researcher found that the responses of the sample members are high and positive and the Chi square value is high and that statistical significance is high and the p-value equaling (0.00< 0.05), indicating the presence of statistically significant differences.

Table 3. Difficulties encountered when using Virtual Tools (n=147)

Difficulties	Yes%	No%	Chi square	p-value
Patients do not have sufficient knowledge and experience to use virtual instrument methods	64.6	35.4	2.55	0.00
The patient does not adhere to the instructions and prescriptions provided by the health care provider	63.9	36.1	2.50	0.00
Some patients do not have devices that support use of Virtual Tools	71.4	28.6	3.22	0.00
Some patients are elderly and have no desire to Virtual Tools	68.0	32.0	2.89	0.00
Unavailability of internet service for some patients	70.1	29.9	3.20	0.00
Some patients see that Virtual Tools Useless in healthy operation	69.4	30.6	3.01	0.00

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Table 4 shows the effect of Reliability on Virtual Tools in healthcare system HCS and through the results, the responses of the study sample individuals on reliability statements were high, as 53.7% believed that Patients have high confidence in the diagnosis through Virtual Tools as and the value of *p*-value is equal to (0.45 > 0.05), which indicates that there are no statistically significant differences. This is the only statement that has no significant effect. As for the rest of the statements all have a effect, as the researcher found that the responses of the sample members are high and positive and the Chi square value is high and that Statistical significance is high and the *p* -value (0.00 <0.05), indicating the presence of statistically significant differences.

Table4.Virtual Tools Reliability on Healthcare Services

Difficulties	Yes%	No%	Chi square	p-value
Patients have high confidence in the diagnosis through Virtual Tools	53.7	46.3	0.78	0.45
Patients usually communicate a lot through Virtual Tools to repeat questions and confirm the diagnosis or prescriptions that were given to the patient	68.0	32.0	2.25	0.00
The patient does not give the doctor the complete required information because he does not trust it for medical diagnostic purposes	55.1	44.9	2.42	0.00
Some patients do not respond to the contacts they are using Virtual Tools	70.7	29.3	3.02	0.00

Table 5 shows the effect of Reliability on Virtual Tools on(HCS) and through the results, the researcher found that the responses of the study sample individuals on Reliability statements were high, as 0.87 believed that Patients usually trust to the doctor through virtual tools of communication as and the value of p-value is equal to (0.48 > 0.05), which indicates that there

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are no statistically significant differences. This is the only statement that has no significant effect.

Table5. Reliability on Virtual tools

Reliability on Virtual Tools	Chi square	p-value
Patients usually trust to the doctor through virtual tools of communication	0.87	0.48
The patient adheres to the pre-set interview dates on the virtual tools of communication	2.11	0.00
The patient questions the goal of the interview on virtual media of communication	3.12	0.00
The patient trusts the specialist doctor more than other healthcare provider	3.41	0.00
Through the interview on virtual media the patient does not give all the required information	2.14	0.00

Table 6 show the effecting of the Future and cost of use telemedicine. Chi square value for the sentence After the Corona pandemic is over virtual tools can be used to communicate with patients is significant at 0.05 level and the p-value is equal to 0.00 <0.05. Also the sentence In the near future, telemedicine could replace patients home health advisor is significant at 0.05 level and the p-value is equal to 0.00 <0.05.The results in table 6. The findings of Future and cost of use telemedicine indicate that the factors and variables that were formulated have a significant and acceptable effect in interpreting and measuring the effect of factors affecting the cost of telemedicine in the future and after the end of the Corona pandemic.

Table 6. Future and cost of use telemedicine

Future and cost of use telemedicine	Chi square	p-value
After the Corona pandemic is over virtual tools can be used to communicate with patients	2.45	0.00
In the near future, telemedicine could replace patients home health advisor	2.01	0.00

The use of virtual tools in healthcare in the future will reduce the costs of patients' hospital visits	2.22	0.00
The use of free means of communication available on electronic stores reduces the costs of using technological systems in health care	3.11	0.00

Discussion

Through what was exposed and the results obtained from a study Virtual Tools Effectiveness in Communicating with Patients Reliability on Healthcare Services in Central Second Health Cluster. From the results there are 0.32% of the study sample individuals who provide health care to patients have been using Virtual Tools In communicating with patients with patients before the outbreak of the Corona pandemic, and that 0.68% of them use it during the Corona pandemic (covid-19), found that the Chi square value is equal to 3.61 and the p-value is equal to (0.000< 0.05), which indicates any statistically significant differences. The results were consistent with study of Guo et al., (2018) as they found that the important of communicating using virtual tools in healthcare settings discuss with comparisons between the effective virtual tools of communications in healthcare. The focus moves to healthcare professional's communication tools with patients.

Patients' responses to using Virtual Tools refer to their fear of transmitting Covid-19 disease was very high this results cosist the study of (Lancaster et al., 2018).Also the results of the Virtual Tools Effectiveness in Communicating with Patients the rsearcher found that As for the patients

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response to deal with Virtual Tools Good, the researcher found that there is a high response from patients in cooperation with doctors through virtual means of communication, as the researcher found that 72.1 their response is high and that the Chi square value is 3.22 and the p-value is equal to (0.00< 0.05,this results agreed with (Alaa et al., 2017).

For difficulties encountered when using Virtual Tools results the researcher found that the responses of the sample members are high and positive indicating the presence of statistically significant differences. Difficulties encountered when using Virtual Tools, and accordingly the researcher finds that the expressions describing. This results agreed with (McCoy et al., 2018).

Conclusion

Through the statistical analysis of the data and the discussion of the results of the study and its comparison with previous studies, the following results were reached. The above table shows the demographic characteristics of the study sample, where the study sample consisted of 147 individuals working in the field of healthcare services, where the researcher found that the number of males in the study equals 63% individuals, by 42.9%, while the number of females in the study equals 84, by 57.1%. also found that the ages of the study sample ranged from 20 years to 60 years.

The study sample individuals who provide health care to patients have been using Virtual Tools In communicating with patients since before and during the outbreak of the Corona pandemic. The main difficulties encountered when using Virtual Tools is Some patients are elderly and have no desire to Virtual Tools and Some patients see that Virtual Tools Useless in healthy operation.

The reliability on Virtual Tools on HCS the patients having a high reliability, Patients usually trust to the doctor through virtual tools of communication and The

patient trusts the specialist doctor more than other healthcare provider. The Future and cost of use telemedicine After the Corona pandemic (covid-19) is over virtual tools can be used to communicate with patients that means the cost can be increase.

Recommendation

- Through the results and discussions reached, the following recommendations were reached; Health departments and the concerned authorities should pay attention to developing the technical devices and equipment used in developing communication with patients and workers in other health departments.

- Supporting medical development and work in the post-pandemic phase.
- Providing remote medical training for medical staff.
- Work with the competent authorities to develop good virtual means of communication that help in the work of medical personnel to communicate with patients.
- Striving to gain patients' trust by providing quality services and high-level communication.
- Striving to spread the culture of using social networking sites because it helps in patient interviews, diagnosis and prescriptions. It is also low in cost, free to use, and widespread among members of society.

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