AWARENESS and ADAPTION of E-PRESCRIPTION among CIVIL SERVANTS in ANAMBRA STATE.

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Abstract -The ineligible handwriting of prescriptions has been attributed to be the cause of many deaths in the health care system globally. In the bid to reduce the death rate to its minimal rate, the electronic prescription system was introduced which some medical practitioners have adopted and started using, but the patients how aware are they? This paper examined awareness and adaptation of E-prescription among civil servants in Anambra State. The aim of the study is to ascertain the awareness level of patients and their readiness to adapt to this new health innovation. Diffusion of Innovations theory was used. A Survey method was used with the adoption of a questionnaire as a data collection instrument. A sample of 367 patients was drawn from the population of the study which comprises Civil Servants in Anambra State. The summary of the findings showed that there is low awareness of this new health innovation among civil servants. Also, it is discovered that they are not yet ready to adapt fully to the E- prescription system and that distortion of communication flow between the patients and health personnel is their major concern. The study recommended that before any health innovation like e-prescription is introduced into the health system, there should be conscious and aggressive awareness campaigns and enlightenment of the innovations to the public. That all forms of communication channels, especially the mass media and interpersonal communication, should be employed to enlighten and educate the public about e-prescription and its inherent benefits.

Index Terms - Awareness, Adaptation and E-Prescription

I INTRODUCTION

Since the advent of digitalization and the internet, the world has witnessed tremendous changes in every area of life. In the area of information, the introduction of information communication technologies (ICT) has helped in no way to enhance communication flow/process, the healthcare system was not left out, as it has experienced an improvement in healthcare and healthcare delivery.

People are embracing these new technologies that will make communication flow easier, faster and safer. Karehka (2012) adds that technology is being relied upon for communicating, travelling issues, business and even pleasure such as living a comfortable life.

Over the years, in the health sector, there has been a chain of communication, from doctors (prescribers) to patients to nurses/pharmacists. And these communications have always been done in a traditional way of handwriting the prescription which according to Rasmi (2020) can lead to misreading, misinterpretation risk and misunderstanding of the prescription.

This has given rise to great concern over a decade now in the health sector on how to curb medication errors and the adverse outcome of misinterpretation as a result of a poorly handwritten prescription. The concern led to the emergency of the Electronic prescription (E-prescription) which Samadbeik et al (2013) aptly considered as a viable and definitive solution to counter shortcomings of the current paper-based prescription system.

Bulut et al (2019) further described electronic prescription as one of the important steps taken to use information systems in the field of health to facilitate and enhance communication between institutions in prescription processes and increase patient safety and satisfaction.

According to the California health care Foundation, E-prescription is entering a medication prescription into an automated data entry system such as a handheld PC or others, thereby generating a prescription electronically, instead of being written on a piece of paper.

Similarly, US Centers for Medicare and Medicaid Services(CMS) also defined Electronic prescription as the transmission using electronic media of prescription or prescription-related information between a prescriber, dispenser, pharmacy benefit manager, or health plan, either directly or through an intermediary including an e-prescribing Network.

Since the last ten years, many countries have embraced this new trend of electronic prescription, countries as the UK, Poland, Turkey etc. In contrast, Nigeria seems to be lacking in this new innovation of adopting and adapting the E- prescription. According to the study, by Omotosho (2018), individuals (private) are ready to embrace E-prescription but the government's lack of funding has been a major challenge.

Statement of Problem

It has been observed that poorly handwritten prescriptions have led to misreading and wrong administration of medication which have resulted in worse medical conditions in patients.

The electronic prescription which according to the e-health initiative foundation is a computer-based electronic generation, transmission and filling of prescriptions taking the place of paper prescriptions; has helped to reduce the errors of traditional drug prescribing.

Literature has shown that medical practitioners (prescribers and pharmacists) are ready to adopt this new innovation to help facilitate communication between them and patients and make medication safer, better and faster. (Omotosho, 2013). But the problem is, are the patients aware of this new health innovation and are they ready to adopt this new development in the health sector?

Objectives of the Study

This study explored awareness of e-prescription among civil servants in Anambra state and readiness to adapt to E-prescription. However, the specific objectives are;

1. To examine the awareness level of E-prescription among Civil servants in Anambra State
2. To find out the disposition of Civil servants in Anambra State towards E-prescription.
3. To assess the proportion of Civil servants in Anambra State that are ready to adapt to E-prescription.

Research Questions

In line with the objectives of the study, three research questions guided the study thus:

1. What is the awareness level of E-prescription among Civil servants in Anambra State?
2. What are the dispositions of Civil servants in Anambra State towards E-prescription?
3. What proportion of Civil servants in Anambra State are ready to adapt to E-prescription?

II. LITERATURE SURVEY

Conceptualization and processes of e-Prescription

A common direction of development in many countries of the world including Canada, the USA, the United Kingdom, Australia, Spain, Japan, Sweden and Denmark is the digitalization of healthcare services among which is in the area of electronic prescription. Generally, a medical prescription is an order often in written form by a qualified health care professional to a pharmacist or other therapist for a treatment to be provided to their patients. Prescriptions often stand as a communication mechanism between the health care providers and the patients involved. Before the innovation of e-prescription, handwritten prescriptions were perceived with shortcomings such as errors of prescription, theft of prescriptions and forgeries of prescription pads (Michael, 2012). The basic goal of e-prescription is therefore apparently to forestall the inadequacies of handwritten or paper prescriptions and equally to improve the standard of patient care and increase their safety during the treatment process (Natalia, Agnieseka and Lukasz, 2021).

Electronic prescribing (EP) is an integral part of e-Health, involving the use of information and communication technology in healthcare systems. Electronic prescription or e-prescription in the abridged form is the use of healthcare technologies to improve prescription accuracy, increase patient safety and reduce costs, as well as enable secure bi-directional, electronic connectivity between physicians, patients and pharmacies. Hence, it is assumed that the technologies providing e-prescription offer new opportunities for sharing knowledge and communication with all those involved in the patients' care pathways including patients, caregivers, and healthcare professionals across health delivery systems. Omotosho (2018) sees e-prescription as a computer-based electronic generation, transmission, and filling of a prescription, which is a result of new advanced technologies replacing paper and faxed prescriptions. Similarly, Corley (2003) distinguished e-prescribing from paper-based health records by aptly describing it to mean a fully digitalized process of writing, transmitting and fulfilling a medical prescription and which has the potential to bring substantial benefits to a health care system if fully implemented. E-prescribing system provides prescribing drugs electronically Rasmi (2020).

These definitions share the same idea with the US Centers for Medicare & Medicaid Services (CMS) which elaborates e-prescription as the transmission using electronic media, of prescription or prescription-related information between a prescriber, dispenser, pharmacy manager, or health plan, either directly or through an intermediary, including an e-prescribing network. E-prescribing is one part of the larger move to increased utilization of health information technologies (HITs). Along with other HITs such as electronic health records (EHRs) and health information exchanges, e-prescribing is seen as a tool for improving patient-centred care. Bell and Friedman (2005)

highlight that e-prescribing systems enable the electronic transmission of prescriptions via a secure network between prescribers such as physicians' offices and pharmacies including community pharmacies.

Also called electronic prescribing, or "e-Prescribing," the process detailed by National Center for Biotechnology Information (2014) requires that the health care providers enter prescription information into a computer device – like a tablet, laptop, or desktop computer – and securely transmit the prescription to pharmacies using a special software program and connectivity to a transmission network. When a pharmacy receives a request, it can begin filling the medication right away for the patient. A simple analogy of how e-prescription works are given by the New York State Department of Health (2016) which categorically states that a patient's prescription will be sent from the prescriber's computer to the pharmacy's computer instead of the earlier paper prescription from a doctor or other health care professional. Adebayo, Kazir and Adewunmi (2013) shares the same knowledge when they described that e-prescription can be achieved by providing prescribers with a secure means of electronically accessing up-to-date health plan formulary, patient eligibility and medication history at the point of care and securely transmitting the prescription electronically into the pharmacy's computer, or system. The foregoing description is a clear indication of the need for access to technologies such as a computer networked system, information and communication technology skills and disposition to the use of e-prescription for effective implementation Meanwhile, Vejdani, Varmaghani and Meraji (2022) also support patient's education and awareness as the basic requirement for effective utilization of e-prescription as well as accurate patient's health information that would be inputted in the databases, particularly for chronic or special patients.

Since the major goal of e-prescription is to reduce errors in medical treatment, researchers like Gerstle and Lehmann (2007) require that there is a detection and correction system which allows prescribers to quickly identify errors that could come from choosing the wrong patients from the list of available patients in the menu, hence, there is an agreement that patients should be correctly identified during prescribing.

Opportunities and Challenges of E-Prescription: An Awareness Factor.

Over the years, hand-written prescription has been a preferred communication method for physicians in decisions relating to medication therapy and for pharmacists to distribute medications. Meanwhile, medical researchers Tabassum, Abedin, and, Rahman (2022) argued that doctors' handwriting within the decades of paper prescriptions has been observed to be illegible as they have to serve a lot of patients in a short span of time. A 2001 British paper reported that more than 10 per cent of handwritten prescriptions contained errors; while U.S. studies have found that 20 percent of handwritten prescriptions or more were unreadable or readable only with effort. Based on a 2006 report, the National Academies of Science Institute of Medicine; indicates that for every 3.2 billion prescriptions annually, over 7,000 deaths and 1.5 million medical errors would probably occur due to poorly handwritten prescriptions. To many people, it has become an assumed generalization that doctors don't have perfect handwriting which could either be an intentional act meant to discourage self-medication on the part of patients; or due to work pressure or even taken to mean an innate gift peculiar to doctors. The sloppy handwriting makes everything so confusing that despite the prescription from the doctor, the pharmacist is unable to understand the name of the medicine and the patient is unable to understand whether he is given the right medicine or the wrong one. This actually leads to a distortion in the transmission process of communication following the argument of McQuail (2010, p.71) that communication is engaged for the pleasures of reception as much as for any useful purpose such as to deliver an effective therapeutic prescription for patients' treatment.

Based on Punch (2021) reports, doctors' scribbled notes were meant to keep a personal record of a patient's medical history; and were generally seen only by the doctor. However, with dozens of other professionals having to work together over time, doctors became one element of a large, multidisciplinary healthcare team requiring that the old methods of paper prescription or handwritten notes be comparable to a dinosaur long overdue for extinction.

Nevertheless, the era of widespread access to the Internet and new technologies; introduced opportunities which engulf patients with privileges that they could become more involved in the process of their treatment through online communication with medical staff. Meanwhile, studies are replete with opportunities for physicians and pharmacists and which this research deemed necessary to also discuss forthwith:

Opportunities for Physicians, Pharmacists and Patients

Today, the necessity of using electronic prescription systems can be felt more than ever due to their many opportunities. Electronic prescribing (e-prescribing) can improve physicians' workflow, increase pharmacy efficiency, and improve patient safety. Electronic prescribing (e-prescribing) as a tool not only eliminates interpretation errors from handwritten prescriptions, it creates a communications bridge between the physician, pharmacist and patient (Bliss, 2013). E-prescription has enhanced openness and transparency in the field of prescribing medicines and more importantly opened a whole new method for future developments which aims to share information and statistics; and improve medical care and the quality of decision-making (Karin and Anett, 2019). Another major advantage is that physician visits are no longer needed for routine, repeat prescriptions. Patients can contact the doctor by e-mail or by phone using Short Message Communication (SMS) and then collect the medicine from the pharmacy. More so, patients do not need to worry about carrying a paper prescription or losing it. Through the patient portal, they can have a complete overview of their medicines and also a data log for every prescription. The main benefit of E-prescribing for patients is the guarantee of therapy management process safety. E-Prescribing can minimalize medication error risk and adverse drug events resulting from manual/handwritten prescribing errors and further improve patient safety and quality care.

Misinterpretation of handwritten prescriptions can be avoided. In an ideal e-prescribing system, the prescription can be adjusted based on the patient's current condition, patient's allergy, diagnosis, weight, and age to reduce the risk of drug interaction and also to ensure drugs and dose accuracy. E-prescribing can also keep the patient's whole therapy history that allows the prescriber to adjust therapy based on the patient's health records and also ease the prescriber to double-check the patient's medical needs. This can reduce the patient's drug costs and also improve prescribing efficiency. The prescription can be sent to the pharmacy of the patient's choice electronically and can be taken immediately when the patient comes to the pharmacy.

The benefits of E-prescribing for physicians are the safety and accuracy of prescription that ensures physician's satisfaction, reduce the possibility of malpractice accusation, and most importantly reduce call back from pharmacy due to prescription errors related to doctors' handwriting.

As for pharmacists, E-prescribing facilitates them in the process of drug preparation with no need to call the physician back to confirm the prescribed medication. In addition, communication between pharmacists and physicians is done in a "paperless" manner so that errors related to the prescriber's handwriting can be avoided. These changes can save time and money used in the prescription process. Another advantage for pharmacists is the ease of archiving since e-prescriptions are stored electronically and can be retrieved quickly unlike traditional prescriptions which are stored in chronologically archived paper files or computer scans, that have to be manually searched by the pharmacy with the attendant stress and waste of time.

From the state's point of view, the benefit is big data collection that enables the updating of policies based on thorough data analysis.

Challenges of adaptation for patients, prescribers and pharmacists

As with any new technology, a number of potential barriers or challenges to the adoption of e-prescribing have been discovered in research studies: Ashley, Gary and Donald (2016), Almutairi, Potts, and Al-Azmi (2018), and Rasmi (2020).

The most basic challenge related to the patient is the patient's reluctance to use E-prescribing. Some patients may be uncomfortable with e-prescriptions and rather ask the doctor to provide manual prescriptions. Also, some patients that travel frequently or away from home for a certain period of time are more likely to ask for a manual prescription instead of an E-prescription. Communication between patient-prescriber-pharmacist also becomes a challenge in E- prescribing implementation. In several studies, patients have reported that they were unaware that an e-prescription was waiting for them at the pharmacy. Perhaps in the future, pharmacies, pharmacists, and researchers may seek to identify ways to facilitate personal communication among the patient, prescriber, and pharmacist to reduce problems that arise when dealing with e-prescriptions. E-prescription causes some communication barriers for the patients; Frail (2014) found out that patients felt a loss of personal contact and attention with the health care providers which has instead been directed to the computer. Another communication barrier is the inability of the patients to access the drug name they are prescribed prior to arriving in the pharmacy A possible solution to this barrier according to research findings would be for health prescribers to give patients a printout of the medications being e-prescribed or medication information related to the drugs being e-prescribed. It is also argued that it is necessary that patients be supplied with the name of the pharmacy to which the e-prescription was sent, especially for elderly patients and patients who use multiple pharmacies (Fischer, 2014). Another discouragement for patients is the fear of disclosure of privacy of

patient information. E-prescribing, like other forms of EHRs, stores and transfers personal health information, which raises concerns about the privacy of patient information Greenberg (2010).

On the part of prescribers and pharmacists, most barriers are technologically and policy-based. According to Porterfield's research, a lack of financial support for training and re-training of staff on competence for the newest technology could raise a financial burden for them that they may not be willing to bear. Another impediment is the E-prescribing system requires expert and technical development to avert issues related to hardware problems, workflow redundancy, software problems, and other problems such as cost, time consumption, and connection issues. Guideline therapy that keeps changing also requires continuous system updates to meet with latest guidelines. In addition, not all e-prescribing systems have the ability to adjust drug doses for special patients such as kids, older patients and patients with disabilities (Hahnn and Lovett, 2014).

Rasmi (2020) indicates a possible technical error, like mistyping, computer crashes, entry mistakes and unauthorized record retrieval. Leawaty and Wibowo (2018) enumerate other errors including the error in quantity input, directions, dosage, drug type, and also patient input error. Another difficulty that one might encounter is computer software. Computer software can't take into account every patient's condition and prognosis; what may be one's contraindication may be a lifesaving therapy for another. Besides, electronically transmitted and stored data are susceptible to a host of security issues such as hacking and virus attacks. Such issues may lead to not only breaches of patient privacy, but also be used for other criminal purposes such as inappropriate prescribing of controlled substances or high-cost medications. (Nataraj 2011 and Lanham, Cochran, and Klepser 2016)

E-prescribing could create some new workflow challenges. There can be some delays on the prescriber and pharmacy side. For example, Rasmi (2020) explained that prescribers might not submit the e-prescription immediately after a patient visit, and then cause delays at the pharmacy, often resulting in a phone call from the pharmacy to the prescriber's office after a patient can no longer wait for drugs to be filled out. E-prescribing system is also not ideal for the Emergency Room (ER) because it takes longer than the manual prescription. Especially between peak hours, the software could be much slower if the server can't adjust. The use of different E-prescribing system at different hospitals also become a barrier, especially for physicians who work at multiple hospitals would need even a bigger effort to understand and be able to use all of the systems correctly. Based on Almutairi's experiment in 2018, the main barrier to E-prescribing implementation are cost-related, time-related, lack of efficiency, negative perspective with technology, limitation of computer use capability, limitation of interoperability, difficulty to correct the input data, and limitation of system capability to perform the required tasks. Furthermore, there may be concerns regarding differences in healthcare policies and the enforcement of local privacy and data protection laws. Implementation of electronic prescribing will need legislation or rulemaking to provide clear and concise standards and policies for prescribers, pharmacists, and regulators.

Empirical results on adoption and adaptation of e-Prescription

Despite the fact that the e-Prescription system is an essential tool for the healthcare industry, e-Prescription adoption and utilization remain low in developing countries Feldman (2011). Research indicates that adaptation poses a greater challenge to implementation and use in countries that have successfully adopted the use of e-prescription.

Numerous reasons are given for low electronic system adoption such as resistance by the users, the opposition to transition from paper-based to the electronic system, technical competency of the frontline users, ease of use of a given electronic system, lack of organizational readiness, poor training, lack of government support on implementation and security and confidentiality issue.

Studies by Papakonstantinou (2017) and Schattauer, (2016) that conducted interview studies on electronic information systems found that users' perception is more likely to be affected by their computer skills. A patient response from an in-depth interview reads:

*"I remember when the idea of the electronic system was first introduced; doctors were on strike, demanding that the previous state of things should not change. They didn't want to learn new technologies, and were reluctant to go online because all their moves could be traced that way and they didn't like that of course! It meant they could no longer have shady deals!" (*Papakonstantinou 2017).

A doctor's response to an interview reads:

"When e-prescription was first introduced we stopped writing the diagnosis and proposed treatment on the patient's health booklet, and very rightly so. Meanwhile, paper prescription facilitates potential breach of medical confidentiality as whoever gains access to the booklet will be able to see every medical information of the citizen." (Schattauer, 2016)

A doctor responded to the competency factor thus:

"E-prescribing (direct transmission of prescriptions to the pharmacy) is the key feature driving improved efficiency. Being able to e-prescribe is great. It's easy. It makes things much faster. I find it faster now, simply because I know the system better, that's really where the efficiency has come from". (Schattauer, 2016)

A Physician interviewed (Schattauer, 2016) noted the need for ongoing training due to extensive system refinements:

"Extensive efforts were put into training prior to the transition. And then whenever a change is made…suddenly it slams you to a halt, then you gotta slow down… And every prescription suddenly needs to be rewritten, like we were at the beginning"

Theoretical Framework

This work is hinged on the Diffusion of Innovations Theory and Agenda Setting Theory. The **Diffusion of Innovation theory** was developed by E.M Rogers in 1962. The Theory posits how an idea, innovation and products are communicated, diffused or spread over time into a social system through certain channels. According to Wayne (2019), the endpoint of diffusion is that people, as part of a social system, adopt a new idea behaviour or product. The adoption of a new product, innovation or idea is a process that does not happen instantly, this is because the members of the society have different characteristics that make it difficult for innovations to be adopted simultaneously. So, it is important to understand the characteristics of the population before any idea is communicated.

Interpersonal Communication channels and Mass media have been seen as effective in making the process of diffusion and adoption swifter and faster. This is aptly captured by Morris and Ogan (1996) that "in today's world, information technologies such as the internet and cell phones; which combine aspects of mass media and interpersonal channels, represent formidable tools of diffusion".

Similarly, Asemah, Nwammuo & Nkwam-Uwaoma (2017) opine that … diffusion of innovation involves both interpersonal communication channels (macro) and mass communication channels (micro). By utilizing both mass and interpersonal communication channels, people can get information about an innovation and perceive its usefulness.

The theory according to Wayne (2019) further outlines categories of adopters as follows:

Ø Innovators: - Those people that always want to be the first to know. They have a good receptive ability to new ideas. They are always ready to try new things. Little or no effort is needed to convince them of a new idea because they are naturally adventurous.

Ø Early Adopters: - These are leaders at different levels of authority (opinion leaders) who already know that there is a need for change and are comfortable adopting new ideas. These people do not need much information to convince them, all they need is a manual on how to implement/ use the idea or product.

Ø Early Majority: - These are evidence seekers. They also adopt new ideas quickly more than the average person, once there is evidence that the idea works. This set of people can be convinced by showing the effectiveness of the idea in form and in stories.

Ø Late Majority: - They also adopt innovation only when they have seen it used by the majority of the people. They do not like changes. They can be appealed to using the information of how people have tried the product and adopted it successfully.

Ø Laggards: - These are the very slow adopters; they are hard to convince. They are conservative in nature and do not accept change due to tradition or other factors. They can only be convinced by the use of fear appeals and pressures from people from other categories.

In relation to this study, the theory explains how the information about e-prescription which is a new innovation is diffused and the possible stages of adopting the innovation by members of society. It posits that understanding the target population is an integral factor in the adoption of a new idea or product or innovation. What this means is that civil servants are perceived to fall into the five categories of adopters with different convincing patterns; and can be influenced by other factors which are part of the reasons why the adoption and adaptation of e-prescription may not be done simultaneously.

Wayne (2019) affirms this by listing five factors that influence the adoption of an innovation which also plays out in the different categories of adopters. They are;

· Relative Advantage- the degree to which an innovation is seen as better than the one it replaces.

· Compatibility- How well does the new innovation go with the needs, values and experiences of potential adopters?

· Complexity – How difficult is the innovation to use or understand?

· Trialability – How many times can the innovation be tried or tested before an assurance of use is made?

· Observability – The extent to which the innovation provides tangible results.

III. METHODOLOGY

The research design adopted for this study was a survey. The population comprises of all civil servants in Anambra state, from grade level 01-16 which is 8184 (statistics provided by Anambra state Civil Service Annual Report 2018). The choice of Anambra state civil servants was because they have access to different healthcare facilities under the health insurance scheme.

A sample size of 367 was statistically determined for this study using an online calculator for determining sample size; specifically, calculator.net.

This calculator computes the minimum number of necessary samples to meet the desired statistical constraints. Sample size:367.

This means 367 or more measurements/surveys are needed to have a confidence level of 95% that the real value is within ±5% of the measured/surveyed value.

Multi-stage sampling technique was adopted. At the first stage, 21 Ministries in Anambra state were divided into 3 groups or clusters according to their functions as follows; Administrative sector, Economic sector and social sector. To ensure that every civil servant within the ministries in the clusters had an equal chance of being sampled, a simple random sampling technique was adopted, using a "**Statistical Random Numbers Table**". Randomly, each group in the population of the study was assigned a number. From the numbers in the random numbers table, two ministries from each sector were randomly chosen as shown in the table below. From each of the Ministries, a particular number of respondents was chosen based on the proportion represented by each ministry in the sample (367) calculated as follows:

$$NR = \frac{n \times 367}{N}$$

Where NR = number of units (to be selected from a cluster)

n = total number of units in the cluster

N = population

GROUP	MINISTRY	POPULATION	SAMPLE SIZE
Administrative Sector	Office of the Head of Service,	323	60
	Ministry of Diaspora Affairs, Culture and Tourism	190	35
Economic Sector	Ministry of Agriculture,	420	78
	Ministry of Lands	326	60
Social Sector	Ministry of Health,	337	62
	Ministry of Education	391	72
TOTAL	**6 Ministries**	**1987**	

In distributing the questionnaire, the researcher used a Non- Probability Convenience Sampling, whereby questionnaires were served only to respondents who were available at the time and showed a willingness to be sampled; when the researcher visited each of the chosen ministries. A Questionnaire contained 16 questions (open-ended and closed-ended) was used as the instrument for data collection. Data gathered were presented and analyzed using SPSS 19 data analysis software.

The Pre-test/ Validity

The pre-test and validation of the research instrument involved 25 respondents, to test the validity of the field, to assess if the items in the instrument are best suited to address the measurable variables and to use the information generated to evaluate the preliminary research questions. The results from the pre-test show that the instrument was understood to a large extent by the respondents as virtually all the respondents could fill out the items. All the ambiguity was cleared before data collection.

IV. Data Presentation and Analysis

Findings from this study were drawn from data obtained from 367 respondents from the 21 Ministries in Anambra state.

Demographic Data

On gender status, 241 respondents representing 64.5% were males while 130 respondents about 35.4% were females. This shows that the majority of the respondents are female. In terms of age of the respondents, about 11 representing 2.9% of the entire 367 respondents, between the ages of 26-30 attempted the questionnaire. 128 respondents 34.9% were between the ages of 31-34, 161 respondents or 43.9% were between the ages of 35-39, and 67 respondents about 18.3% of the entire respondents were between the ages of 40 and above. From the data, it can be deduced that the respondents were more young civil servants, who are very active in the service and have dependents who need health care.   On marital status, 352 of the respondents representing 95.9% were married, while 15 respondents (4.1%) were single. This shows that the majority of the respondents are married. On Grade level of Respondents, out of the total 367 respondents surveyed, 41 respondents representing 11.2% were in grade levels 1-6, 162 respondents representing 44.1% of the entire respondents were in grade levels 7-9, 132 respondents 36% were in grade levels 10-12 while 32 respondents representing 8.7% of the entire respondents were in grade levels 13-16   From the foregoing analysis, a large number of civil servants that are in grade levels 7 to 12 responded to the questionnaire, possibly, because they are readily available and less busy, unlike the top management cadre from grade levels 13 and above.

1. **Research question 1:** What is the awareness level of E-prescription among Civil servants in Anambra State?

Table 1 level of awareness

Variables	Response	Frequency	Percentage (%)
Have you heard of E-Prescription?	Yes	56	15.3
	No	311	84.7
	Total	**367**	**100.0**
How did you get to know about E-prescription?	Healthcare provider	35	9.5
	Internet	12	3.3
	Colleague	9	2.5
	Do not know	311	84.7
	Total	**367**	**100.0**
Do your healthcare provider make use of E-prescription?	Yes	101	27.5
	No	266	72.5
	Total	**367**	**100.0**

Responses to table 1 above show that the majority of Civil Servants have not heard of e-prescription (84.7%), on the source of their knowledge, 84.7% said they have no knowledge of e-prescription. Also, the majority of the respondents' healthcare providers do not use e-prescriptions (72.5%).

Research question 2: What are the dispositions of Civil Servants in Anambra State towards E-prescription?

Table 2 dispositions towards e-prescription

Variables	Response	Frequency	Percentage (%)
Do you generally Understand this e-prescription	To a large extent	71	19.3
	To some extent	99	27.0
	Do not understand	197	53.7
	Total	**367**	**100.0**
What is your feeling towards e-prescription?	Useful	93	25.3
	Not useful	143	39.0
	Useful but takes time	74	20.2
	Do not really understand	57	15.5
	Total	**367**	**100.0**
Do you believe that It's for the best interest of patients to use e-prescription in hospitals?	To a large extent	127	34.6
	To some extent	92	25.1
	To a little extent	148	40.3
	Total	**367**	**100.0**

Responses to table 2 above show that the majority of Civil Servants in Anambra State do not understand the e-prescription system (53.7%). And they also feel that the e-prescription system is not useful (39.0%) as they believe to a little extent that the system is for the best interest of the patients. This could be a result of their lack of understanding of the system which correlates with the findings in the first table that the civil servants in Anambra state are not aware of E-prescription.

Research question 3: What proportion of Civil Servants in Anambra state is ready to adapt to E-prescription?
Table 3

Variables	Response	Frequency	Percentage (%)
To what extent are you ready to adapt to e-prescription	To a large extent	126	34.3
	To some extent	101	27.5
	Not ready	140	38.2
	Total	**367**	**100.0**
What section in your healthcare facility do you think that e-prescription is needed the most?	Consulting room	83	22.6
	Pharmacy section	62	16.9
	Every section	188	51.2
	No section	34	9.3
	Total	**367**	**100.0**
What are your major Concerns in adapting to e-prescription?	Network problem	91	24.8
	Lack of understanding	114	31.1
	Distorts communication between the health personnel and patients	115	31.3
	Wastage of time	47	12.8
	Total	**367**	**100.0**

Responses to table 3 above show that the majority of Civil Servants in Anambra State are not yet ready to adapt to this new health innovation (38.2%). And they also agreed that every section in the hospital need e-prescription (51.2%), it further showed that their major concern among others in adapting to e-prescription is that it will distort the communication flow between the health personnel and patients (31.3%).

Analysis of Research Questions

The first research question sought to find out the awareness level of E-prescription among Civil servants in Anambra State. Data in Table 1 indicate that the majority of Civil Servants have not heard of e-prescriptions (84.7%), on the source of their knowledge, 84.7% said they have no knowledge of e-prescriptions. Also, the majority of the respondents' healthcare providers do not use e-prescriptions (72.5%). Therefore, it could be stated, that a greater number of Civil Servants in Anambra state are not aware of the new health innovation called e-prescription.

The second research question sought to find out the dispositions of Civil Servants in Anambra State towards E-prescription. Data in Table 2 indicate that the majority of Civil Servants in Anambra State do not understand the e-prescription system (53.7%). And they also feel that the e-prescription system is not useful (39.0%) as they believe to a little extent that the system is in the best interest of the patients. This could be a result of their lack of understanding of the system which correlates with the findings in the first table that the civil servants in Anambra state are not aware of E-prescription.

The third research question sought to find out the proportion of Civil Servants in Anambra state that are ready to adapt to E-prescription. Data in Table 3 show that the majority of Civil Servants in Anambra State are not yet ready to adapt to this new health innovation (38.2%). And they also agreed that every section in the hospital need e-prescription (51.2%), it further showed that their major concern among others concerns in adapting to e-prescription is that it will distort the communication flow between the health personnel and patients (31.3%). Consequently, it may be admitted that concerns like distortion of communication flow and lack of proper awareness and understanding may be the reasons why a majority of civil servants are not yet ready to adapt to this new health innovation.

V. Discussion

It was discovered in this study that a greater number of Civil Servants in Anambra state have not heard about this new health innovation. In addition, the study also revealed that the majority of the healthcare providers of these Civil Servants do not use the e-prescription. The implication of the foregoing is that there is a low awareness level and education about e-prescription among patients, which might be as a result of the fact that most of their healthcare providers do not use the new health innovation. This can be said to be in tandem with the submissions of Vejdani, Varmaghani and Meraji (2022) that patient education and awareness are the basic

requirements for effective utilization of e-prescription that patients… and if the reverse becomes the case, then adaption of e-prescription will definitely be difficult.

The study identified that the majority of Civil Servants in Anambra State do not understand the e-prescription system, resulting in the feeling that the e-prescription is not useful and they also believe to a minimal extent that it is in the best interest of the patients. This also could be the outcome of a lack of awareness and proper education about the new innovation. These dispositions of the civil servants towards e-prescription were aptly captured and summarized in Wayne's (2019) five factors that influence the adaptation of innovation which are; Relative advantage, Compatibility, Complexity, Trialability and Observability.

The study further revealed that Civil Servants are not yet ready to adapt to e-prescription as they see the distortion of communication flow as the greatest challenge to adapting to this new innovation; although they agreed that the e-prescription should be used in every section of the healthcare facilities. The result from this study agrees with the research done by Feldman (2011) that adaptation poses a greater challenge to implementation and use in countries that have successfully adopted the use of e-prescription and numerous reasons are given for low electronic system adoption such as resistance by the users, the opposition of transition from paper-based to the electronic system, technical competency of the frontline users, and ease of use of a given electronic system, lack of organizational readiness, poor training, lack of government support on implementation and security and confidentiality issue. Similarly, the Distortion of communication flow re-echoed the finding of Frail (2014) that patients felt a loss of personal contact and attention with the health care providers which is instead been directed to the computer.

VI. Conclusion

This study concludes that adaptation of e-prescription among Civil servants is a far cry because of a lack of awareness and understanding about the new innovation, and the fear of loss of personal contact with the health personnel forms the major obstacle to effective adaptation. Just as the tenets of the diffusion of innovation theory suggested, for an adaption of an innovation to be accomplished especially innovations that will replace an old one, there must be awareness of the need for innovation. In addition, from the result of this study, it could be said that the majority of the healthcare facilities have not started making use of the new innovation and they lack the necessary technologies to embark on e-prescription. However, a more definite statement in this respect could be authoritatively made only after further research that would integrate more variables and expand the sample size for more reliable findings.

The study recommends as follows;

· That there should be aggressive and massive patient education, awareness and enlightenment crusade about this new health innovation called the e-prescription and its benefits before implementation of the system begins. This is in order to eliminate to its minimal all resistance and fear. Therefore, all communication channels should be employed especially mass communication and interpersonal communication which according to scholars is the most effective in diffusing any innovation.

· Since people will be more convinced if there is continuous and massive use of the innovation, the government should aid the process of fast diffusion of e-prescription by sponsorships and making policies that will enable every healthcare facility to adopt the use of e-prescription.

· There should be constant training of the healthcare personnel on how to maintain and sustain the communication flow between them and their patients since this is one of the major concerns of patients.

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