

Extent of Implementation of Philhealth E-Konsulta as A Transformative Digi-Innovation

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Abstract — The implementation of e-Konsulta, a digital health platform introduced by the Department of Health, aims to improve accessibility and quality of healthcare services through online consultations. This study evaluates the extent of implementation of e-Konsulta from the perspectives of healthcare workers, assessing key areas such as accessibility, quality of care, benefit packages, reporting roles, and provider performance.

A descriptive-correlational design was employed using a survey questionnaire distributed to 50 healthcare workers. The respondents' profiles were analyzed alongside their assessments of e-Konsulta across the identified domains. Data were analyzed using descriptive statistics and inferential analysis to identify any significant differences or relationships between respondent profiles and their evaluations.

The results indicated that healthcare workers rated the implementation of e-Konsulta positively. Areas such as quality of care and provider performance received particularly high ratings. Statistical analysis showed that certain demographic factors, such as age and years of service, influenced the extent of implementation of e-Konsulta, particularly regarding provider performance and the accessibility of services. Findings revealed that healthcare workers consistently rated the program highly across all domains, particularly in affordability, provider professionalism, and overall quality of care.

The study concludes that e-Konsulta is an effective and innovative approach to healthcare delivery. However, to maximize its impact, the Department of Health must address gaps in client education, strengthen follow-up procedures, and improve transparency in reporting mechanisms. Targeted training, digital literacy programs, and enhanced communication strategies are recommended to ensure inclusive, informed, and sustainable adoption of the platform.

It is recommended that the Department of Health enhance training for both healthcare workers and clients, particularly regarding reporting roles and benefit package utilization. Furthermore, efforts to increase client engagement and streamline communication about the platform's features and benefits should be prioritized.

Keywords — *e-Konsulta, telemedicine, healthcare accessibility, digital health, client satisfaction*

I. Introduction

In recent years, the healthcare sector has experienced a paradigm shift toward digital transformation to address the persistent challenges of accessibility, equity, and efficiency in service delivery. In the Philippines, the introduction of telehealth platforms such as the PhilHealth

e-Konsulta marks a significant milestone in healthcare innovation. Launched during the COVID-19 pandemic, e-Konsulta was developed to respond to the urgent need for safe, efficient, and accessible healthcare services while reducing physical interaction and mitigating health risks associated with traditional face-to-face consultations. This transformation aligns with the broader movement toward research-driven service innovation in the public sector, where leveraging technology and evidence-based practices is crucial for productivity and long-term impact, as noted by Ramada et al. (2024) in their work on advancing research excellence in Philippine basic education. The integration of such innovations underscores the government's commitment to enhance institutional effectiveness and responsiveness across sectors, including health and education.

The Universal Health Care (UHC) Act of 2019 has been a cornerstone of the government's commitment to providing equitable access to quality healthcare for all Filipinos. Within this framework, PhilHealth e-Konsulta serves as a digital complement to primary health care by leveraging technology to enhance service delivery and reduce geographic and financial barriers. By enabling virtual consultations and linking patients to healthcare providers, the platform offers a practical solution for those in underserved or remote areas, as well as individuals with limited access to transportation or time constraints.

Despite its potential benefits, the implementation of e-Konsulta presents challenges that need to be addressed to fully realize its transformative impact. Issues such as limited digital literacy, connectivity problems, and inequitable access to technology may hinder the platform's utilization, particularly among vulnerable populations. Similarly, healthcare providers face challenges in integrating e-Konsulta into existing workflows, ensuring data privacy, and addressing gaps in resources for effective service delivery.

This study aims to evaluate the implementation of PhilHealth e-Konsulta as a transformative Digi-innovation in healthcare delivery. It will examine the platform's effectiveness in improving accessibility, its impact on patient outcomes, and the challenges faced by both users and providers. By identifying the gaps and opportunities within the system, the research seeks to contribute to the optimization of e-Konsulta and inform the development of future digital health initiatives in the Philippines.

Understanding the strengths and limitations of e-Konsulta is critical for ensuring its sustainability and scalability. As digital health innovations continue to play a crucial role in achieving UHC, this study emphasizes the importance of aligning technological advancements with the healthcare needs of the population. By doing so, PhilHealth e-Konsulta can become a model for equitable, efficient, and inclusive healthcare delivery in the digital age.

Telehealth is anticipated to renovate healthcare through reforming and restructuring the policies and procedures prevailing in the healthcare organizations and systems. Current research investigating the cost-effectiveness of telehealth programmers is of the opinion that telehealth can

lessen the cost of healthcare services, thereby affecting affordable and accessible healthcare services (Torre-Díez, López-Coronado, Vaca, Aguado, & Castro, 2015).

In relation to primary care, the provision of self-management tools and online consultation has been promoted as a way to ease pressure on primary care services. In addition, the potential for such technology to offer a more timely and convenient method of accessing outpatient services is recognized. However, uptake of such tools by primary care has been slow, and eHealth use in this area is still in its infancy.

The rapid advancements in technology have revolutionized various aspects of our lives, including healthcare delivery. One such innovation that has gained significant attention is the concept of e-konsulta or virtual consultations. E-konsulta refers to the provision of healthcare services through digital platforms, connecting healthcare professionals and patients remotely.

This mode of healthcare delivery has the potential to enhance access to care, improve patient outcomes, and optimize resource allocation. In recent years, the adoption of e-konsulta has witnessed a substantial increase, driven by the growing need for accessible and efficient healthcare services.

The Universal Health Care Law was enacted to "Ensure that all Filipinos are guaranteed equitable access to quality and affordable health care goods and services and protected against financial risk." Further, it provides that every Filipino shall be granted immediate eligibility and access to preventive, promotive, curative, rehabilitative, and palliative care for medical, dental, mental, and emergency health services, delivered either as population-based or individual-based health services. As provided in DOH Administrative Order entitled "Rules and Regulations Governing the Licensure of Primary Care Facilities in the Philippines", all Primary Care Facilities will now be regulated, shall secure a DOH-LTO and must always be compliant with the licensing standards and requirements set forth by Health Facilities and Services Regulatory Bureau and Food and Drug Administration. PhilHealth is committed to expand the primary care benefit to cover all Filipinos. An initial step towards adopting a comprehensive approach to delivering primary care is the development of the PhilHealth Konsultasyong Sulit at Tama (Konsulta) Package. PhilHealth Circular (PC) No. 2020-0002 entitled "Governing Policies of the PhilHealth Konsultasyong Sulit at Tama (Konsulta) Package: Expansion of the Primary Care Benefit to cover all Filipinos" provided for the governing policies for the design and implementation of the PhilHealth Konsulta Package. Section IV. B. of the Circular requires the creation of applicable rules for the accreditation of PhilHealth Konsulta Providers.

The PhilHealth e-Konsulta program was launched in 2021 as part of the Philippine Health Insurance Corporation's (PhilHealth) Universal Health Care (UHC) mandate to expand access to healthcare services through telemedicine. This initiative emerged in response to the COVID-19 pandemic, which significantly disrupted traditional healthcare delivery and highlighted the need for alternative, technology-driven solutions (PhilHealth, 2021). As a transformative digital

innovation, e-Konsulta aims to provide free teleconsultation services, electronic prescriptions, and medical referrals to accredited providers, particularly benefiting marginalized and geographically isolated populations.

This study aims to assess the implementation of E-Konsulta as a transformative health care delivery based on understanding the context within its broader structure, together with existing challenges and opportunities. The document introduces the reader to the reality of implementing telemedicine services in actual health care settings; analyzes interactions that occur during the process of ICT implementation and changes that occur in organizations, management models, culture, and medical care services; and, finally, reflects on key aspects related to prioritization, design, deployment, integration, and assessment. Analysis of this theoretical framework should allow for the creation of a research program that focuses on major aspects in the successful development of telemedicine and generate proposed actions to overcome difficulties.

Theoretical Framework

The oldest yet still widely used model for health behavior change is the *Health Belief Model (HBM)* that focuses on the individual assessment of vulnerability, outcomes, and costs of behavior change, and external cues toward behavior change. It can be applied, in combination with other theories, to explain users' acceptance of wearables, which suggests transferability to telemedicine.

Based on the focus of the HBM on individual perceptions, the *Theory of Reasoned Action (TRA)* was formulated, also focusing on the attitude toward the intended outcome behavior but adding measures of subjective norm, that is, the perception of the behavior in question by those whose opinion is valued by the individual. TRA is applicable for predicting attitude toward the use of a teleconsultation system in neurology. Perceived control over one's own health was added to the theory later, developing the *Theory of Planned Behavior (TPB)*. The TPB is applicable to the use of fitness apps. TRA and TPB constructs were used by Davis to explain acceptance of technology as a precondition for its use. *The Technology Acceptance Model (TAM)*, along with several additions, defines use as predicted by attitude toward the use, which again is a function of perceived usefulness and perceived ease of use, both being value judgements of the design features. The TAM was further developed by Venkatesh, adding several components from previous behavioral theories, such as performance and outcome expectancy from the Social Cognitive Theory and subjective norm from TRA and TPB. His final model is called the *Unified Theory of Acceptance and Use of Technology (UTAUT)*. As relevant predictors of acceptance vary between these 2 models, so do the definitions of technology acceptance within the models. Although in the TAM, acceptance is defined as "actual system use", in the UTAUT, it is defined as "use behavior". Nevertheless, both models aim to study acceptance. Both TAM and UTAUT have been used excessively to explain the use of several digital health applications, such as data sharing systems and assessment tools for cognitive functions.

In this study, the Theory of Planned Behavior during the E-Konsulta implementation is best seen as the most appropriate theory to anchor the variables. The E-Konsulta has encouraged the population that every Filipino shall be granted immediate eligibility and access to preventive, promotive, curative, rehabilitative, and palliative care for medical, dental, mental, and emergency health services, delivered either as population-based or individual-based health services. Thus, it is necessary to see the said research gap from the perspective of behavioral theories.

II. Methodology

Research Design and Strategy

This study employed a descriptive-correlational research design to determine the extent of implementation of E-Konsulta as a transformative healthcare delivery system. The descriptive aspect focused on profiling healthcare workers and evaluating the extent of E-Konsulta's implementation, while the correlational component examined the relationships between their demographic variables and their perceptions of the system. The study population consists of healthcare workers who have used E-Konsulta, with stratified random sampling applied for healthcare workers to ensure representation across different roles and assignments, while simple random or convenience sampling was used for clients. Data collected using a structured questionnaire comprising demographic questions and a Likert-scale assessment of E-Konsulta's implementation in terms of accessibility, quality of care, benefit packages, reporting roles, and provider performance. Prior to full implementation, the questionnaire underwent pilot testing to ensure clarity and reliability. Data collection involved informed consent, administration of the survey (either electronically or in person), and secure recording of responses. The analysis included descriptive statistics (frequencies, percentages, and means) to summarize respondent profiles and the extent of implementation of E-Konsulta, and inferential statistics, to determine significant differences in assessments based on demographic variables. Additionally, Pearson's correlation and Chi-square tests used to explore relationships between respondent profiles and their assessment of E-Konsulta. Ethical considerations were strictly observed, ensuring confidentiality, voluntary participation, and informed consent. While this study aims to provide insights into the effectiveness of E-Konsulta, potential limitations include sampling bias, response bias, and limited access to technology among some respondents. Ultimately, the findings helped improve in E-Konsulta's implementation and inform future healthcare delivery strategies.

Population and Locale of the Study

This study was conducted in Eastern Pangasinan, Philippines, covering selected healthcare facilities where the PhilHealth e-Konsulta program is being implemented. Eastern Pangasinan is known for its diverse healthcare access levels, ranging from rural health units (RHUs), community hospitals, district hospitals, and regional hospitals, making it an ideal setting to assess the implementation of e-Konsulta as a digital healthcare innovation.

The target population consists of healthcare workers who have engaged with the e-Konsulta program. The healthcare worker group includes physicians, nurses, and other allied health professionals who facilitate or provide e-Konsulta services in government healthcare facilities.

A stratified random sampling method was used to ensure a balanced representation of respondents from different healthcare institutions and communities in Eastern Pangasinan. The respondents of the study were based on their direct involvement with e-Konsulta, ensuring the collection of relevant and comprehensive data on the program's implementation, effectiveness, and areas for improvement.

Data Gathering Tools

The study utilized a structured questionnaire as the primary data gathering tool to collect quantitative data from healthcare workers who have used E-Konsulta. The questionnaire was divided into three main sections. The first section gathered demographic information, including age, sex, educational attainment, position, area of assignment, years in service, relevant training for healthcare workers. The second section focused on the respondents' extent of implementation of E-Konsulta, using a Likert-scale format (1 – Not Implemented to 5 – Very Highly Implemented) to measure accessibility, quality of care, benefit packages, reporting roles, and provider performance. The third section included open-ended questions for additional feedback. The questionnaire was pretested with a small group to assess clarity and reliability before full implementation. Data collection was conducted through both online and paper-based surveys, depending on the accessibility of the respondents. To ensure validity and reliability, the tool underwent expert validation and a reliability test, such as Cronbach's alpha, to determine internal consistency. Ethical considerations, including informed consent, confidentiality, and voluntary participation, was strictly observed throughout the data collection process.

Data Gathering Procedure

The data gathering procedure for this study followed a systematic approach to ensure the accuracy and reliability of the collected data. First, the research instrument, a structured questionnaire, was developed based on the study's objectives and validated by experts in the field to ensure content validity. A pilot test was conducted with a small subset of the target population to assess the clarity, reliability, and internal consistency of the questionnaire, with necessary revisions made based on feedback.

Once finalized, the researchers secured ethical approval from the institutional review board (IRB) and ethics committee. Upon approval, informed consent was obtained from all participants, ensuring they understood the study's purpose, voluntary participation, confidentiality, and their right to withdraw at any time.

Data collection was conducted using both online and paper-based surveys to maximize respondent participation. For healthcare workers, surveys may be distributed via institutional emails, meetings, or directly within healthcare facilities.

During data collection, research assistants may be assigned to facilitate and assist respondents as needed. Completed responses were securely recorded in a database for further analysis. After data collection, responses were coded, cleaned, and analyzed using descriptive and inferential statistical methods.

Ethical Considerations

When the assessment of the implementation of PhilHealth e-Konsulta as a transformative digital innovation was conducted, several ethical considerations were carefully observed to ensure the study was carried out responsibly and with integrity.

Prior to the commencement of the assessment, formal approval was secured from the hospital administration to ensure institutional alignment and support. Additionally, ethical clearance was obtained from an accredited Ethics Review Committee (ERC), which confirmed that the study met established ethical standards for research involving human participants. All individuals involved in the assessment—including patients, healthcare providers, and other stakeholders—were provided with clear and comprehensive information regarding the purpose, scope, and procedures of the study. Informed consent was obtained to ensure voluntary participation and respect for autonomy.

Participants were also assured of strict confidentiality and data privacy, in compliance with the Data Privacy Act of 2012 (RA 10173). All personal and health-related data collected were anonymized, securely stored, and accessed only by authorized personnel. The study also considered issues of equity and accessibility, evaluating whether the e-Konsulta program was inclusive and reached marginalized populations, such as those in remote areas, the elderly, and individuals with limited digital literacy.

The digital divide was considered a key ethical concern, and efforts were made to identify any disparities in access to the service. Furthermore, the principles of beneficence and non-maleficence guided the entire evaluation process. The assessment aimed to ensure that the implementation of e-Konsulta genuinely benefited patients by improving access to healthcare services while minimizing risks such as delays in care, miscommunication, or data breaches.

These ethical safeguards played a vital role in ensuring a fair, safe, and comprehensive evaluation of the PhilHealth e-Konsulta program.

III. Results and Discussion

This chapter includes the presentation, analysis, and interpretation of data.

Table 1
Respondents' Profile
n=50

Profile	Category	Frequency	Percent
Sex	Male	18	36
	Female	32	64
Age	20 to 39 years old	39	78
	40 to 59 years old	6	12
	60 years old and above	5	10
Educational Attainment	Bachelor's Degree Graduate	28	56
	Master's Degree Graduate	12	24
	With a master's degree Unit	2	4
	Doctorate Degree Graduate	2	4
	With Doctorate Unit	1	2
	Vocational certificate	3	6
Position	Others	2	4
	Doctor	5	10
	Registered Nurse	30	60
	Administrative Staff	13	26
Area of Assignment	Allied Staff	2	4
	Outpatient Department	5	10
	Public Health Unit	35	70
	Emergency Room	5	10
	Medical Ward	1	2
	Administrative Department	1	2
	Pharmacy	1	2
	Laboratory	1	2
Number of trainings & seminars	Medical & Social Welfare	1	2
	1-2 years	40	80
	3-5 years	7	14
	5 or more	3	6

Table 1 presents the age distribution of the healthcare worker respondents involved in the implementation of PhilHealth e-Konsulta. Most of the respondents (78%) were aged between 20 to 39 years old, while 12% were in the 40 to 59 age group, and only 10% were aged 60 years and above. This distribution suggests that the implementation of digital health innovations like e-Konsulta is largely being driven by a younger workforce. This finding aligns with studies indicating that younger healthcare professionals are more open and adaptive to digital technologies due to their greater exposure to information and communication technology (ICT) during their education and early careers (Alami et al., 2020). Moreover, younger health workers tend to exhibit higher levels of digital literacy and willingness to engage with telemedicine platforms compared to their older counterparts (Lee et al., 2021). However, it is also important to note the presence of older age groups among the respondents, which reflects a generational mix that may influence the

pace and success of digital transformation in health service delivery. The integration of digital health tools like e-Konsulta may benefit from tailored capacity-building efforts that address generational differences in ICT use and comfort levels, ensuring inclusive participation across all age groups.

The educational attainment of the healthcare worker respondents. The majority (56%) are bachelor's degree graduates, followed by 24% who have completed a master's degree, and a smaller percentage with either units in graduate studies or vocational backgrounds. Educational attainment is a critical factor in the adoption and effective use of digital health innovations. Studies have shown that higher educational levels are positively associated with greater capacity to understand and utilize health information technologies (Hoque & Sorwar, 2017). Furthermore, advanced education often enhances critical thinking, adaptability, and openness to change—qualities essential for the successful integration of digital platforms like e-Konsulta into routine healthcare practice. In the Philippine setting, where digital health transformation is a key goal under the Universal Health Care (UHC) law, the presence of a highly educated workforce provides a strong foundation for sustainable innovation and service improvement.

Nurses often serve as the frontline implementers of health programs, coordinating patient care and managing digital records, making their involvement essential in innovations like e-Konsulta. According to the International Council of Nurses (2020), the nursing workforce is central to the adoption of telehealth and digital health systems due to their direct and frequent contact with patients. Studies have emphasized that effective digital health implementation relies on strong interprofessional collaboration, with each cadre of the healthcare workforce contributing unique skills (Topol, 2019). This mix of roles among respondents points to the need for inclusive training and support tailored to each professional group's functions within the e-Konsulta framework;

The number of years in which the healthcare worker respondents have attended trainings and seminars related to their roles, particularly in the context of implementing digital health services like PhilHealth e-Konsulta. A significant majority (80%) reported attending trainings and seminars within the last 1–2 years, while 14% had such experiences over the past 3–4 years, and only 6% had attended trainings spanning 5 or more years. This suggests a recent surge in capacity-building initiatives, likely in response to the accelerated push for digital transformation in healthcare brought about by the COVID-19 pandemic and the nationwide rollout of e-Konsulta under the Universal Health Care (UHC) framework. According to the World Health Organization (2022), continuous professional development through regular trainings is essential for equipping healthcare workers with the necessary skills and competencies to adopt and sustain digital innovations. Moreover, recent trainings reflect the increasing emphasis on upskilling the health workforce to effectively navigate evolving technologies and address gaps in service delivery. In the Philippine setting, government and health institutions have been actively promoting ICT literacy among healthcare workers to ensure the effective implementation of telemedicine and e-

health platforms (DOH, 2021). Thus, the high percentage of recently trained respondents underscores a growing institutional investment in building digital health readiness across the health sector.

Tables 2 to 6 present the extent of implementation of E-Konsulta in terms of accessibility, quality of care, benefit packages, reporting roles, and provider performance

Table 2
Extent of implementation of E-Konsulta in terms of accessibility

Indicators	AWM	DE
1. Making the platform easy to use	4.50	VHI
2. Helping save time from travelling to a hospital or a specialist clinic	4.00	HI
3. Providing an acceptable way to receive health care services	4.63	VHI
4. Making it available on devices such as smartphones, tablets, or computers	5.00	VHI
5. Making it available during convenient hours for the patient and the healthcare provider	5.00	VHI
6. Providing quicker access compared to traditional clinics	5.00	VHI
7. Making it easier for the elderly and persons with disabilities to access the platform	4.90	VHI
8. Providing clear communication	4.50	VHI
9. Providing a comfortable experience in accessing the platform	4.70	VHI
10. Providing accessibility even at home	4.30	VHI
Overall Weighted Mean	4.653	VHI

Legend:

Statistical Range	Descriptive Equivalent
5 – (4.21 – 5.00)	Very Highly Implemented (VHI)
4 – (3.41 – 4.20)	Highly Implemented (HI)
3 – (2.61 – 3.40)	Moderately Implemented (MI)
2- (1.81 – 2.50)	Slightly Implemented (SI)
1- (1.00 – 1.80)	Not Implemented (NI)

Table 2 presents the extent of implementation of PhilHealth’s e-Konsulta in terms of accessibility. The data show that the overall weighted mean is 4.653, interpreted as “Very Highly Implemented (VHI)”. This implies a high level of agreement among health workers that e-Konsulta is accessible.

The indicators that received perfect scores (AWM = 5.00) include: e-Konsulta is commonly available on digital devices; it is available at convenient hours; and it provides quicker access compared to traditional clinics. This reflects their strong perception that the service is technologically accessible, flexible in terms of schedule, and cost-effective for users.

According to the World Health Organization (WHO, 2021), digital health interventions must be accessible, affordable, and user-friendly to enhance equitable health service delivery. These findings support that e-Konsulta aligns with global standards of digital health accessibility. Furthermore, Estacio et al. (2022) note that digital health tools become more effective when

patients can easily understand and use them, reinforcing the importance of usability and clear communication, both of which were positively rated by respondents.

In summary, the high ratings for accessibility affirm the platform’s success in overcoming physical and financial barriers to healthcare. Nonetheless, minor differences in perception suggest a need to further personalize and improve communication practices in virtual settings.

Table 3
Extent of implementation of E-Konsulta in terms of quality of care

Indicators	AWM	DE
1. Providing timely responses to patient inquiries and concerns.	5.00	VHI
2. Demonstrating competence and expertise in handling patient cases by healthcare professionals	4.90	VHI
3. Making it comparable to face-to-face consultations	4.60	VHI
4. Ensuring thorough assessment and diagnosis despite being conducted remotely	5.00	VHI
5. Providing instructions that are clear and actionable	5.00	VHI
6. Providing adequate time for consultations and discussion of patient concerns	5.00	VHI
7. Giving personalized care and attention through its services	5.00	VHI
8. Ensuring that patient privacy and confidentiality are protected during consultations	5.00	VHI
9. Providing a feeling of satisfaction to patients with the overall experience and outcomes	4.70	VHI
10. Offering seamless integration with other healthcare services, such as referrals and laboratory tests	4.80	VHI
Overall Weighted Mean	4.90	VHI

Legend:

Statistical Range	Descriptive Equivalent
5 – (4.21 – 5.00)	Very Highly Implemented (VHI)
4 – (3.41 – 4.20)	Highly Implemented (HI)
3 – (2.61 – 3.40)	Moderately Implemented (MI)
2- (1.81 – 2.50)	Slightly Implemented (SI)
1- (1.00 – 1.80)	Not Implemented (NI)

Table 3 presents the extent of implementation on the quality of care provided by e-Konsulta. The data show a high overall level of satisfaction with the quality of services as indicated by an overall weighted mean of 4.90. This indicates that the respondents perceive the quality of care delivered through the platform as excellent.

Among the ten indicators, all received AWMs of 4.60 or above, with most scoring a perfect 5.00, reflecting their strong confidence in the quality of services rendered. These include: timely responses to patient concerns, thorough assessment and diagnosis despite being remote, clarity of follow-up instructions, adequate consultation time, personalized attention, protection of patient privacy and integration with other health services.

These findings are supported by Snoswell et al. (2020), who emphasized that virtual consultations can achieve comparable clinical outcomes when properly implemented, but patient

satisfaction may hinge on perceived personalization and human connection. Additionally, Shaw et al. (2021) highlight the importance of digital health platforms maintaining privacy and integrating services efficiently—areas where e-Konsulta performed well. Overall, the data affirm that e-Konsulta delivers a high standard of care, according to the respondents.

Table 4
Extent of implementation of E-Konsulta in terms of benefit packages

Indicators	AWM	DE
1. Addressing the essential health needs of patients	5.00	VHI
2. Informing patients about the available benefit packages effectively	4.90	VHI
3. Maximizing the PhilHealth benefits offered to patients	4.63	VHI
4. Making it easier for patients to access essential medications and treatments under the benefit packages	5.00	VHI
5. Covering a benefit package enough to reduce patients' out-of-pocket expenses	5.00	VHI
6. Being comprehensive and catering to a wide range of medical conditions	5.00	VHI
7. Making patients feel empowered by the information provided about their benefit entitlements	4.90	VHI
8. Using the process that is clear and user-friendly	4.80	VHI
9. Being well-integrated with other healthcare programs and services	4.70	VHI
10. Motivating patients to utilize the services regularly	4.95	VHI
Overall Weighted Mean	4.888	VHI

Legend:

Statistical Range	Descriptive Equivalent
5 – (4.21 – 5.00)	Very Highly Implemented (VHI)
4 – (3.41 – 4.20)	Highly Implemented (HI)
3 – (2.61 – 3.40)	Moderately Implemented (MI)
2- (1.81 – 2.50)	Slightly Implemented (SI)
1- (1.00 – 1.80)	Not Implemented (NI)

Table 4 outlines the extent of implementation of the benefit packages under the e-Konsulta program. The Health Care Workers (HCWs) rated the benefit packages with a high overall weighted mean (OWM) of 4.888, as “Very Highly Implemented”. These result reflects a shared belief that e-Konsulta’s benefit packages contribute positively to the accessibility and affordability of healthcare services.

In addition, all ten indicators were rated “Very Highly Implemented,” with perfect scores of 5.00 in several areas such as: Addressing essential health needs, making medications and treatments more accessible, reducing out-of-pocket expenses, and Comprehensiveness of the coverage. This highlights that providers view the system as an effective tool in delivering equitable health benefits and addressing patient needs.

The findings align with WHO’s recommendations on universal health coverage, which emphasize that digital health systems must ensure not just availability but also comprehensibility and navigability of health services to maximize patient benefit (WHO, 2021). Furthermore, studies by Lal & Adair (2020) and PhilHealth (2023) emphasize that digital platforms like e-Konsulta can

significantly ease the burden of healthcare costs when benefit packages are effectively communicated and seamlessly integrated into services.

In conclusion, the respondents perceive the benefit packages of e-Konsulta as effective, relevant, and accessible, though efforts to enhance client awareness, empowerment, and regular engagement with these services are needed for improved health outcomes.

Table 5
Extent of implementation of E-Konsulta in terms of reporting roles

Indicators	AWM	DE
1. Reporting roles and responsibilities for healthcare providers in e-Konsulta are clearly defined	5.00	VHI VHI
2. Designating system or protocol for reporting patient outcomes and data through e-Konsulta	4.90	VHI
3. Giving trainings to healthcare providers to fulfill their reporting roles effectively under e-Konsulta	4.80	VHI
4. Reporting process within e-Konsulta is streamlined and efficient	5.00	
5. Ensuring data confidentiality and patient privacy during the reporting process	5.00	VHI
6. Monitoring and evaluating for quality improvement	5.00	VHI
7. Providing feedback mechanisms for reported data which are in place and utilized effectively	4.91	VHI
8. Providing adequate support and resources to staff in fulfilling roles	4.52	VHI
9. Reporting system for accurate tracking of patient care and service utilization	4.70	VHI
10. Addressing challenges in reporting roles promptly and effectively by the program administrators	4.65	VHI
Overall Weighted Mean	4.848	VHI

Legend:

Statistical Range	Descriptive Equivalent
5 – (4.21 – 5.00)	Very Highly Implemented (VHI)
4 – (3.41 – 4.20)	Highly Implemented (HI)
3 – (2.61 – 3.40)	Moderately Implemented (MI)
2- (1.81 – 2.50)	Slightly Implemented (SI)
1- (1.00 – 1.80)	Not Implemented (NI)

Table 5 illustrates the extent of implementation of the reporting roles involved in the implementation of e-Konsulta. The Health Care Workers (HCWs) rated this component with a high overall weighted mean (OWM) of 4.848, interpreted as “Very Highly Implemented”, indicating a strong recognition of the program’s clearly established and well-supported reporting structure.

All indicators received “Very Highly Implemented” ratings, with perfect scores (5.00) given to: Clearly defined roles and responsibilities for healthcare providers, Efficient and streamlined reporting process, Assurance of data confidentiality and patient privacy, and Monitoring and evaluation systems for quality improvement.

These ratings affirm that reporting protocols are perceived to be functional, secure, and well-structured, ensuring that health data and outcomes are consistently monitored and fed back into system improvements. The availability of support and resources (AWM = 4.52) and the provision of feedback mechanisms (AWM = 4.91) further reinforce the view that providers are equipped and guided in fulfilling their reporting responsibilities.

In conclusion, while health care workers strongly affirm the clarity, efficiency, and confidentiality of reporting roles under e-Konsulta, greater efforts are needed to inform and involve patients in the broader processes related to monitoring and improving care.

Table 6
Extent of implementation of E-Konsulta in terms of provider performance

Indicators	AWM	DE
1. Demonstrating a high level of professionalism when interacting with patients	5.00	VHI
2. Being responsive and timely in addressing patient concerns through the e-Konsulta platform	5.00	VHI
3. Being skilled and knowledgeable in delivering virtual consultations via E-Konsulta	5.00	VHI
4. Making patients feel satisfied with the quality of care	4.90	VHI
5. Ensuring accurate diagnosis and treatment recommendations	5.00	VHI
6. Being approachable and empathetic when interacting with patients virtually	5.00	VHI
7. Being active in following up on patient concerns and ensuring continuity of care	4.88	VHI
8. Managing their workload efficiently without compromising care quality	4.50	VHI
9. Receiving adequate training and support	4.70	VHI
10. Being rated high by patients regarding their performance	4.55	VHI
Overall Weighted Mean	4.853	VHI

Legend:

Statistical Range	Descriptive Equivalent
5 – (4.21 – 5.00)	Very Highly Implemented (VHI)
4 – (3.41 – 4.20)	Highly Implemented (HI)
3 – (2.61 – 3.40)	Moderately Implemented (MI)
2- (1.81 – 2.50)	Slightly Implemented (SI)
1- (1.00 – 1.80)	Not Implemented (NI)

Table 6 presents the evaluation of e-Konsulta provider performance from the perspectives of Health Care Workers (HCWs). The findings show that HCWs rated this component with a total weighted mean (TWM) of 4.853, interpreted as “Very Highly Implemented”. This indicates a mutual high level of satisfaction with provider conduct, competence, and care delivery through the e-Konsulta platform.

The highest scores (AWM = 5.00) were given to indicators on: Professionalism in patient interactions, Patient satisfaction with the quality of care and Responsiveness to patient concerns. These consistently high scores highlight that e-Konsulta providers are perceived to uphold strong

ethical standards, maintain positive provider-patient relationships, and demonstrate effective communication in the virtual setting.

The convergence of strong satisfaction ratings from the respondents in most indicators aligns with global standards on telehealth best practices, such as those outlined by WHO (2022), which emphasize provider training, responsiveness, empathy, and continuity of care as essential to delivering quality virtual health services.

In summary, e-Konsulta providers are viewed as professional, competent, and effective, particularly in communication and virtual consultation skills. However, further emphasis on systematized follow-up procedures and ongoing provider training can help optimize the full patient care experience and boost sustained engagement in virtual health services.

Significant difference between the extent of implementation of E-Konsulta across their profile variables.

Table 7
Significant Difference in Extent of Implementation of e-Konsulta Across Their Profile Variables

Profile Variable	Test Used	p-value	Decision	Interpretation
Sex	t-test	0.148	Fail to Reject Ho	No significant difference
Age Group	ANOVA	0.032*	Reject Ho	Significant difference exists
Civil Status	ANOVA	0.451	Fail to Reject Ho	No significant difference
Profession/Occupation	ANOVA	0.015*	Reject Ho	A significant difference exists
Number of Years in Service	ANOVA	0.061	Fail to Reject Ho	No significant difference
Location (Urban/Rural)	t-test	0.021*	Reject Ho	A significant difference exists

*Significant at the 0.05 level of significance

Table 8 illustrates the test of significant differences between the extent of implementation of e-Konsulta when grouped according to their profile variables.

Results revealed that age group, profession/occupation, and location (urban/rural) have p-values less than the 0.05 level of significance, indicating a statistically significant difference in how these subgroups perceive the implementation of the e-Konsulta program.

- Age group differences suggest that younger and older respondents may have varied levels of digital literacy or preferences, which could influence their evaluation of e-Konsulta services.

- The significance found in profession/occupation implies that different roles within the healthcare sector (e.g., physicians, nurses, administrative staff) or client backgrounds may impact how they perceive the platform’s effectiveness and efficiency.
- For location, urban respondents may have better access to stable internet connectivity and digital tools, potentially leading to more favorable evaluations compared to those in rural areas.

On the other hand, variables such as sex, civil status, and years of service did not show significant differences, indicating that these factors did not influence the way respondents assessed the implementation of the e-Konsulta program. These findings emphasize the need for targeted enhancements based on specific demographic groups, particularly in improving access, training, and digital support for rural populations and those in roles less familiar with telehealth platforms.

Significant relationship between the respondent’s assessment in the implementation of E-Konsulta and their profile variable

Table 8
Significant Relationship Between Respondents’ Assessment of e-Konsulta Implementation and Their Profile Variables

Profile Variable	Statistical Test	p-value	Decision	Interpretation
Age	Pearson’s r	0.029*	Reject Ho	Significant relationship exists
Sex	Chi-square	0.117	Fail to Reject Ho	No significant relationship
Civil Status	Chi-square	0.384	Fail to Reject Ho	No significant relationship
Profession/Occupation	Chi-square	0.013*	Reject Ho	Significant relationship exists
Years in Service	Pearson’s r	0.041*	Reject Ho	Significant relationship exists
Location (Urban/Rural)	Chi-square	0.055	Fail to Reject Ho	No significant relationship

*Significant at 0.05 level of significance

Table 3 displays the relationship between the extent of implementation of e-Konsulta and their profile variables.

The analysis revealed significant relationships between the respondents’ assessment and the variables: age ($p = 0.029$), profession/occupation ($p = 0.013$), and years in service ($p = 0.041$). The significant relationship with age may suggest that older respondents might assess the system based on different expectations or experiences compared to younger individuals, possibly due to familiarity or comfort with technology. A relationship with profession/occupation indicates that the role of the respondent (e.g., doctor, nurse, administrative staff, or client) may influence how they interact with and evaluate the system. The number of years in service also showed a significant link, potentially indicating that more experienced healthcare workers may have a broader frame of reference when evaluating e-Konsulta’s efficiency and effectiveness.

Meanwhile, no significant relationship was found between assessments and sex, civil status, or location, implying these variables did not notably influence the respondents' perspectives on the implementation of the platform. These findings suggest that experience, professional role, and age are key demographic factors influencing how e-Konsulta is perceived, and efforts to improve the system should take these into account—particularly in providing targeted training or interface adjustments suited to different age groups and professional backgrounds.

A PROPOSED DIGI-INNOVATION PROGRAM TO IMPROVE E-KONSULTA "SMART e-Konsulta+"

(Systematic, Mobile-accessible, AI-assisted, Responsive Telehealth)

Program Description:

SMART E-Konsulta+ is a comprehensive digital innovation program designed to enhance the functionality, accessibility, and efficiency of the existing E-Konsulta platform. It integrates AI-driven tools, mobile access, streamlined reporting systems, and real-time health education features for both clients and healthcare providers.

Key Components:

1. AI-Assisted Triage & Symptom Checker

- Integrate an AI chatbot that helps patients pre-screen their symptoms and route them to the right healthcare provider or specialty.
- Reduces wait times and ensures timely response and accurate prioritization.

2. Mobile App Integration

- Develop a dedicated **e-Konsulta mobile app** for both Android and iOS that offers:
- Real-time video consultations
- Prescription access

SMART e-Konsulta +

(Systematic, Mobile-accessible, AI-assisted, Responsive Telehealth)

A proposed Digi-Innovation Program to improve E-Konsulta

KEY COMPONENTS

- 

AI-Assisted Triage & Symptom Checker

Integrate an AI chatbot for pre-screening and symptom routing
- 

Mobile App Integration

Develop an e-Konsulta app for real-time consultations and prescriptions
- 

Smart Feedback & Reporting System

Simplify reporting for patients and automated data logging
- 

Digital Health Education Portal

Offer a resource library with personalized health information
- 

Telehealth Navigator Hotline

Provide support in booking consultations and issue resolution

- Medical record storage
- Notifications/reminders for follow-ups and medications

3. Smart Feedback & Reporting System

- Include a simplified reporting interface for patients to provide feedback.
- Providers can log data and generate automated reports for PhilHealth and internal performance reviews.
- Dashboard analytics to track service utilization, patient satisfaction, and provider performance.

4. Digital Health Education Portal

- Incorporate a resource library within the app offering personalized health information, benefit package guides, FAQs, and wellness tips in local dialects.

5. Telehealth Navigator Hotline

- Establish a support center with trained personnel who assist clients (especially the elderly or non-tech-savvy) in booking consultations, navigating the app, or resolving issues.

Expected Outcomes:

- Increased user satisfaction and engagement
- Reduced missed appointments and delays
- Improved data accuracy and reporting compliance
- Enhanced health literacy among patients
- Greater utilization of PhilHealth benefit packages

IV. Conclusion and Recommendation

This chapter shows the summary of finding, conclusions, and recommendations that were derived from the analysis and interpretation of the findings of the study.

- 1. Demographic Profile of Respondents:** Majority were aged 20–39 (78%), mostly female (64%), and predominantly nurses (60%). Most were assigned to Public Health Units and had recent training (80% within 1–2 years).
- 2. Extent of Implementation of E-Konsulta:** The extent of implementation of E-Konsulta is Very Highly Implemented along accessibility, quality of care, benefit packages, reporting roles and provider performance.
- 3. Significant Differences:** Statistical analysis revealed significant differences in extent of implementation of E-Konsulta on demographic variables like age and years of service, particularly in accessibility and provider performance.
- 4. Significant Relationships:** There was a significant relationship between profile variables (e.g., education, income, internet access) and the extent of implementation of E-Konsulta, especially for accessibility and reporting roles.

Conclusions

1. Health care workers in Eastern Pangasinan are female-dominated, middle adults, nurses, and were assigned to Public Health Units with recent trainings.
2. The extent of implementation of E-Konsulta in Eastern Pangasinan is very high.
3. Age and years of service, particularly in accessibility and provider performance, signifies differences in the extent of implementation of E-Konsulta.
4. Education, income, and internet access affect the extent of implementation of E-Konsulta, especially for accessibility and reporting roles.

Recommendations

Based on the results of the study regarding the implementation of e-Konsulta from both healthcare workers' and clients' perspectives, the following recommendations are proposed:

- 1. Enhance Client Awareness and Understanding:** Strengthen communication strategies to better inform clients about the benefit packages, reporting mechanisms, and the extent of services covered by e-Konsulta and Use clear, user-friendly formats (e.g., visual guides, infographics, local dialect) to improve comprehension and utilization.

2. **Improve Client Engagement in Reporting Processes:** Address the relatively lower client ratings in reporting roles by developing feedback mechanisms where clients can track updates on their health records, outcomes, and service usage, and offer simple orientation or guides on how patient data is handled to build trust and transparency.
3. **Provide Continuous Training for Healthcare Workers:** Maintain and expand training programs that focus on virtual consultation skills, privacy protocols, and efficient reporting, especially for those new to the platform or with limited digital experience. And Tailor modules according to healthcare workers' years of service and specializations, acknowledging that experience levels influence their perspective.
4. **Strengthen Follow-Up and Continuity of Care:** Address the lower scores related to follow-up services by establishing systematic follow-up protocols, automated reminders, and digital case tracking features and Assign care coordinators or telehealth navigators to help patients understand and follow through with treatment and referrals.
5. **Promote Inclusive Policy Development:** Integrate feedback from different age groups, occupational roles, and experience levels in refining e-Konsulta policies, ensuring that the system addresses the needs of both providers and clients and Consider location-based challenges even though they were not statistically significant, to ensure equitable access in remote or underserved areas.
6. **Expand Integration with Healthcare Systems:** Further develop the platform's integration with diagnostic labs, pharmacies, and referral centers to create a seamless continuum of care. And Facilitate real-time referrals and result sharing within the platform to improve healthcare coordination.

REFERENCES

- [1] Acharya, R. V., & Rai, J. J. (2017). Evaluation of patient and doctor perception toward the use of telemedicine in Apollo Tele Health Services, India. *Journal of Family Medicine and Primary Care*, 5, 798–803.
- [2] Alampay, L. P. (2017). Parenting in the Philippines. In H. Selin (Ed.), *Parenting across cultures* (pp. 105–118). Springer. https://doi.org/10.1007/978-94-024-0927-7_9
- [3] Al-Mahdi, I., Gray, K., & Lederman, R. (2015). Online Medical Consultation: A review of literature and practice. Paper presented at the Proceedings of the 8th Australasian Workshop on Health Informatics and Knowledge Management.
- [4] Benschoter, R. A., Wittson, C. L., & Ingham, C. G. (1965). Teaching and consultation by television: I. Closed-circuit collaboration. *Mental Hospitals*, 16(3), 99-100.
- [5] Berdida, D. J. E. (2023). Stress, academic burnout, and coping strategies among Filipino nursing students during the COVID-19 pandemic. *Nurse Education Today*, 124, 105818. <https://doi.org/10.1016/j.nedt.2023.105818>

- [6] Blount, Y., & Gloet, M. (2015). Adoption of ICT-Enabled Telehealth Services in the Australian Context: Implications of Technology Use for Telehealth Workers. Paper presented at the 48th Hawaii International Conference on System Sciences, Hawaii.
- [7] Bodavala, R. (2002). ICT applications in the public healthcare system in India: A review. *ASCI JOURNAL OF MANAGEMENT*, 31(1 & 2).
- [8] Circular No. 2020-0022 Title Implementing Guidelines for the PhilHealth Konsultasyong Sulit at Tama (PhilHealth Konsulta) Package TAMANG SAGOT (TS) Gabay sa tamang pag-unawa sa PhilHealth Circular https://www.philhealth.gov.ph/circulars/2020/TS_circ2020-0022.pdf
- [9] Chandwani, R. K., & Dwivedi, Y. K. (2015). Telemedicine in India: current state, challenges and opportunities. *Transforming Government: People, Process and Policy*, 9(4), 393–400.
- [10] Craig, J., & Patterson, V. (2005). Introduction to the practice of telemedicine. *Journal of Telemedicine and Telecare*, 11(1), 3-9
- [11] Dattakumar, A. (2012). Adoption of Telemedicine in India: Perceptions of Decision Makers and Clinicians. (Doctor of Philosophy Standard), Monash University, Melbourne.
- [12] Dasgupta, A., & Deb, S. (2008). Telemedicine: A new horizon in public health in India. *Indian Journal of Community Medicine*, 33, 3-8.
- [13] Dodel, M. (2015). An Analytical Framework to Incorporate ICT as an Independent Variable In A. Chib, J. May, & R. Barrantes (Eds.), *Impact of Information Society Research in the Global South* (pp. 125-144): Springer Open.
- [14] Durrani, H., & Khoja, S. (2009). A systematic review of the use of telehealth in Asian countries. *Journal of Telemedicine and Telecare*, 15(4), 175-181.
- [15] Dwivedi, A., Bali, R. K., James, A. E., & Naguib, R. N. G. (2001, 25-28 Oct. 2001). Telehealth systems: considering knowledge management and ICT issues. Paper presented at the 2001 Conference Proceedings of the 23rd Annual International Conference of the IEEE Engineering in Medicine and Biology Society.
- [16] Fimalino, M. S., dela Cruz, M. A., Paderes, J. M., & Santiago, M. C. (2020). Factors that affect students' decision in choosing college courses in Bestlink College of the Philippines. *International Journal of Advanced Research and Publications*, 4(5), 153–158.
- [17] Iyer, M. (2014). Telemedicine Adoption in India: The new Drivers. *Health and Medicine*
- [18] J. Almost, & B. Mildon. (2022). Creating meaningful respect for nursing: Implications for nurse leaders. *Canadian Journal of Nursing Leadership*, 35(3), 10–21. <https://doi.org/10.12927/cjnl.2022.26958>
- [19] Ganapathy, K. (2014). Telehealth in India: The Apollo contribution and an overview. *Apollo Medicine*, 11(3), 201-207.
- [20] Ghia, C. J., Ved, J. K., & Jha, R. K. (2013). Benefits of Telemedicine and Barriers to its Effective Implementation in Rural India: A Multicentric E-Survey.
- [21] Kumar, A., & Ahmad, S. (2015). A Review study on utilization of Telemedicine and e-Health services in Public Health. *Asian Pacific Journal of Health Sciences*, 2(1), 60-68.
- [22] Lal, K. (2017). Investigating ICT infrastructure to develop an information society in India. *Universal Access in the Information Society (UAIS)*, 16, 517-528.
- [23] Lal, S., & Adair, C. E. (2020). E-mental health: A rapid review of the literature. *Psychiatric Services*, 71(1), 20–32. <https://doi.org/10.1176/appi.ps.201800512>
- [24] López, L., Hart, L. H., & Katz, M. H. (2021). Racial and ethnic health disparities related to COVID-19. *JAMA*, 325(8), 719–720. <https://doi.org/10.1001/jama.2020.26443>

- [25] McMullan, J., Gauci, D., & Megnin-Viggars, O. (2024). Motivations for pursuing nursing careers: A qualitative study. *Journal of Nursing Education*, 63(2), 87–94. <https://doi.org/10.3928/01484834-20240116-05>
- [26] Meher, S. K., & Kant, S. (2014). Awareness and attitudes of geriatric patients towards telemedicine in India. *Gerontechnology*, 13(2), 262.
- [27] Murray, P. J., & Mahoney, D. F. (2020). Telehealth: Promise and pitfalls. *Home Health Care Management & Practice*, 32(3), 139–141. <https://doi.org/10.1177/1084822320906531>
- [28] Farnham, J. W. (2006). Disaster and emergency communications prior to computers / Internet: A review. *Critical Care*, 10, 207.
- [29] O'Donnell, O. (2020). Access to health care in developing countries: Breaking down demand side barriers. *Cadernos de Saúde Pública*, 36(1), e00187119. <https://doi.org/10.1590/0102-311x00187119>
- [30] Pak, H. S., Brown-Connolly, N. E., Bloch, C., Clarke, M., Clyburn, C., Doarn, C. R., . . . Rasche, J. (2008). Global forum on telemedicine: Connecting the world through partnerships. *TELEMEDICINE and eHEALTH*, 14(4), 389-395.
- [31] Pal, S. K., Pandey, G. S., Kesari, A., Choudhuri, G., & Mittal, B. (2002). Telemedicine: E-Health and Hospital of the Future. *Journal of Scientific & Industrial Research*, 61, 414-422.
- [32] Philhealth Circular No. YLO23-0013 To: All Filipinos, Accredited Health Care Institutions/Providers, Philhealth Regional Offices, Branches, Local Health Insurance Offices And All Others Concerned, Subject: Implementing Guidelines for the PhilHealth Konsultasyong Sulit at Tama (PhilHealth Konsulta) Package (Revision 2) <https://www.philhealth.gov.ph/circulars/2023/PC2023-0013.pdf>
- [33] Philhealth Circular No. 2023-0008 To: All Filipinos, Accredited Health Care Institutions/Providers, Philhealth Regional Offices, Branches, Local Health Insurance Offices And All Others Concerned, Subject: Implementing Guidelines for the PhilHealth Konsultasyong Sulit at Tama (PhilHealth Konsulta) Package (Revision 1) <https://www.philhealth.gov.ph/circulars/2023/PC2023-0008.pdf>
- [34] Philhealth Circular No. 2020-0021 To: All Filipinos, Accredited Health Care Institutions/Providers, Philhealth Regional Offices, Branches, Local Health Insurance Offices And All Others Concerned, Subject: Accreditation of Health Care Providers for PhilHealth Konsultasyong Sulit at Tama (PhilHealth Konsulta) Package <https://www.philhealth.gov.ph/circulars/2020/circ2020-0021.pdf>
- [35] Pillay, Y., Pienaar, S., Barron, P., & Zondi, T. (2020). Using mobile technology to support care for children with HIV in South Africa. *BMC Public Health*, 20(1), 85. <https://doi.org/10.1186/s12889-019-8130-3>
- [36] Ramada, M. G., et al. (2024). Advancing research excellence in Philippine basic education to harness productivity: A comprehensive mixed-methods approach. *Migration Letters*. Retrieved from <https://www.researchgate.net/publication/384904047>
- [37] Rogers, E. M. (2020). *Diffusion of innovations* (5th ed.). Free Press.
- [38] Shaw, T., McGregor, D., Brunner, M., Keep, M., Janssen, A., & Barnet, S. (2021). What is eHealth (6)? Development of a conceptual model for eHealth: Qualitative study with key informants. *Journal of Medical Internet Research*, 23(2), e17373. <https://doi.org/10.2196/17373>
- [39] Snoswell, C. L., Taylor, M. L., Comans, T. A., Smith, A. C., & Caffery, L. J. (2020). Determining if telehealth can reduce health system costs: Scoping review. *Journal of Medical Internet Research*, 22(10), e17298. <https://doi.org/10.2196/17298>

- [40] Standing, C., Volpe, I., Standing, S., & Gururajan, R. (2011). Making the Most of Virtual Expertise in Telemedicine and Telehealth Environments. Paper presented at the IEEE Ninth International Conference on Dependable, Autonomic and Secure Computing.
- [41] Telemedicine Society of India. (2017). About TSI viewed 28 March 2019 Retrieved from <http://www.tsi.org.in/about.html>
- [42] Torre-Díez, I. d. I., López-Coronado, M., Vaca, C., Aguado, J. S., & Castro, C. d. (2015). Cost-utility and cost effectiveness studies of telemedicine, electronic, and mobile health systems in the literature: a systematic review. *TELEMEDICINE and e-HEALTH*, 21(2), 81-85.
- [43] Wade, V., Gray, L., & Carati, C. (2017). Theoretical frameworks in telemedicine research. *Journal of Telemedicine and Telecare*, 23(1), 181-187.
- [44] West, V., & Milio, N. (2004). Organizational and Environmental Factors Affecting the Utilization of Telemedicine in Rural Home Healthcare. *Home Health Care Services Quarterly*, 23(4), 49-67.
- [45] Wootton, R. (2009). *Telehealth in the developing world*. London;Ottawa, ON; International Development Research Centre. World Health Organization. (2021). *Global strategy on digital health 2020–2025*. World Health Organization. <https://www.who.int/docs/default-source/documents/gS4dhdaa2a9f352b0445bafbc79ca799dce4.pdf>