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EVALUATING THE IMPACT OF DIGITAL HEALTH TECHNOLOGIES ON PUBLIC HEALTH OUTCOMES: A GLOBAL PERSPECTIVE

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ABSTRACT
Regarding high-income middle and low regions, acute privatization trends reflect that DHTs positively impact major public health indicators. However, the degree of this impact depends upon a certain regional income level. In the high-income areas, DHTs have been associated with a decreased mortality rate (-8.5%), the number of readmissions to the hospital (-12.4 %), increased vaccination coverage (+ 15.0 percent), and health literacy (+ 22.0 %). It works on middle and low-income people, though such effects are not profound and positive. This implies that the usage of DHTs in healthcare delivery also varies with the income level. For instance, high-income country providers surveyed reported that they use telemedicine services in 72% of cases or more, while these figures were 45% for middle-income providers and 23% for low-income providers. Still, patient and provider perceptions of DHTs are similar in several ways. The self-perceived organizational readiness score, propcreateFrom sources, adoption ease, DHT cost, and DHT accessibility are higher among hospitals in high-income regions than those in middle-income and low-income regions. Finally, while DHTs have global health advantages, developing region patients/providers use them least despite the DHTs as more valuable less expensive, and accessible than the developed region patients/providers.

Keywords: Digital Health Technologies, Income, Key health indicators, Mortality, Rates of readmissions to the hospital, Vaccine rates, Health literacy, Telemedicine, Impressions

INTRODUCTION
Mobile health (mHealth) applications, telemedicine, wearables, artificial intelligence, and data analytics are now making a profound impact on public health around the world. These advancements have appeared to be more decisive in some of the most challenging areas in health care including the provision of quality care, disease prevention, and management. The recent global health crisis such as the COVID-19 pandemic demonstrated the effectiveness of these technologies in reducing the disruption of healthcare, aiding clinical decision-making, and expanding service delivery to hard-to-reach populations.[1] When diverse stakeholders such as governments, providers, and citizens use digital health solutions, it becomes crucial to learn the effectiveness of public health to guarantee that those technologies are both beneficial and effective contributors to the improvement of health equity.[2] Digital health has pushed the border of healthcare into the era of always-connected and always-connected during the widespread usage of portable devices. It helps people maintain their health and

manage chronic illnesses; helps healthcare providers offer care using technology; and helps public health to analyze the public's health without delay.[3] The pandemic has shown that both developed and low/middle-income countries with developing or developed healthcare systems have sought to strengthen their healthcare systems by adopting new Digital health solutions. WHO has specifically pointed to digital health as the enabler of attaining the ultimate goal laid down in SDG 3 (Sustainable Development Goal 3) of UHC (Universal Health Coverage) taking into account the limited availability of resources to deliver such health outcomes.[4]

Even so, there are challenges in implementing digital health technologies in public health systems' delivery. Even in developed countries, there is a concern based on the level of health information technology as determined by the level of development in digital infrastructure, regulatory frameworks, and health policies in different countries.[5] However, questions of data protection and ownership, practical digital competencies, and the risk of the emergence of new forms of health disparities should be given attention to achieve the best outcomes of digital health for public health. In addition, digital health solutions are not only a technical subject, but they also have to adapt to the local health requirements, cultural values, and patients' habits.[5]

This introduction will then discuss how this landscape of digital health technologies is changing the landscape of public health in various contexts across the world. These case studies, assessment of the key issues, and prospects for the advancement of digital health allow us to gain a better understanding of how these innovations help improve health outcomes around the world and how they apply to areas with limited resources.[6] In doing so although great potential for enhancing Public Health can be seen through the use of technologies in chronic disease management, great care must be taken with how and when such innovations are introduced to promote sustainable improvement in health for all.[6]

Digital health is a broad concept that can be defined as a set of technologies, applications, and solutions dedicated to supporting decision-making for better medical service delivery, health management, and disease tracking. These technologies include mobile health (mHealth) applications, Telemedicine platforms, Wearable, electronic health records (EHRs) Health Information Systems, and more recently Artificial Intelligence / Machine learning-based diagnostic and predictive analytical tools. Every type of technology in digital health has features that may be utilized in numerous points of public health.[7]

For example, mHealth solutions can help a person track illnesses, take required doses on time, or control nutrition and exercise. Smartwatches and fitness trackers intended to provide real-time health tracking, are especially valuable to catch early signs of diseases and encourage prevention.[8] This means that telemedicine, which can be described as networks that provide a general platform for patient-to-doctor communications at any distance, has been highly valuable in offering exceptional coverage to practice medicine in rural and usually marginalized places. Moreover, these connected AI systems can help to detect and analyze the large quantity of data from the public health field, to predict disease requirements and epidemics, as well as allocate resources effectively during health management crises.[9]

Addressing the challenges of feasibility, capability, acceptability, relevance, and sustainability of Digital Health Technologies. Digital health technologies influence public health effectiveness in terms of timely provision of service, increased quality service delivery, and cost-responsive strategies. Healthcare accessibility is hampered by deficiencies in systems and human resources in many areas, particularly LAMICs (Low- and Middle-Income Countries).[10] This is because digital solutions overcome these barriers by allowing the use of telemedicine services, remote consultations and community-based health imparting. For instance, in poor areas of rural India where the availability of facilities of expert healthcare is severely constrained, several telemedicine programs have allowed the patient to talk with specialists without having to cover vast distances. It is useful to address that such initiatives do not only enhance access to healthcare but also mitigate healthcare costs that would be otherwise borne by both the clients and health facilities.[11]

Another domain that seems to have seen large effects of digital health technologies is quality of care. As for EHRs and clinical decision support systems (CDSS), healthcare providers can make informed decisions that are based on an analysis of the records. For example, in the United States, CDSSs that

were implemented and incorporated in hospital systems draw down medical mistakes as well as enhanced cure compliance.[12] In addition, digital health solutions enable preventative care, and consequently, interventions differ from generic, general treatments or administrations of health care and welcome treatments or care for physical and mental well-being, unique to each person's health status. These paradigm alterations of moving from a more 'lumping together' kind of model to a more person-specific one will likely enhance the efficacy of intervention and lead to enhanced long-term health.[13]

From a public health point of view, digital health technologies complement the processes of promoting and facilitating the prevention and control of diseases. Big data and AI can be used in epidemiological surveillance systems to detect diseases, analyze patterns, and significantly predict an outbreak so that relevant action can be taken. Such systems proved to be effective especially throughout the COVID-19 pandemic wave when real-time data and digital contact tracing enabled governments around the world to track the spread of the virus and pursue appropriate containment measures.[14] Also, the use of technological tools in the dissemination of health information enables many people to enhance their preventive health knowledge and enhance healthier behaviors.

Mobile health applications in sub-Saharan Africa have been advocates for change through the expansion of maternal and child health. Examples include the Mobile Alliance for Maternal Action (MAMA) which delivers key health information about maternal/child care to expectant mothers through mobile phone SMS and message alerts. Such interventions have been proactive in improving ANC (Antenatal Care) attendance and Safe Motherhood practices indicating how mHealth could be used in reducing the menace of maternal mortality in resource-constrained environments.[15]

Currently, several countries in the Asia-Pacific countries including Japan and South Korea have implemented the use of the power of AI and Data analytics in health care. The diagnostics that are under the AI include those that screen diseases such as tuberculosis and cervical cancer which are common in the rural areas where access to required health care services is scarce. In the same way, China's practical implementation of digital contact tracing during the COVID-19 pandemic shows the way how such technologies can be implemented en masse for protection against subsequent infections. These examples illustrate how digital health technologies can be tailored to regional health priorities, ultimately contributing to better health outcomes in diverse contexts.[15]

As much as there is evidence that digital health technologies offer great promise for advancing public health, several barriers limit their adoption across healthcare sectors or populations. One of the challenges is limited physical infrastructures, especially in resource-poor environments, which greatly hinders the use of informed healthcare solutions. The use of digital platforms in implementing health interventions is however difficult in areas without internet connection or erratic power supply. Consumer protection, and more so the protection of their personal information, is especially important when dealing with health information. This means that public health organizations must make sure adequate protection measures are in place to reduce cases of unauthorized use of patient data.[16]

Hence, the future of digital health in public health experiences a paradigm shift with the future AI, machine learning, and the Internet of Things (IoT) technologies on the horizon. Big Data with predictive analytics with the help of Artificial Intelligence could change the basis of preventive medicine, and potential high-risk groups could be easily targeted. Some IoT technologies embedded in public health systems including connected health monitoring could enhance the possibility of undertaking constant health check-ups as well as reap real-time data obtainment at a higher level than before. It is expected to move from a more or lessness reactive public health paradigm to a phased preventive and promotional one that reduces future technology-reliant detection, prevention, and promotion capacities.[17]

Moreover, funded telemedicine services and mobile health applications will be further developed, as countries consider legal solutions for the telehealth services in interstate mode. These frameworks will be of significant importance as the utilization of health services over the borders of an individual country is in progress and the effective, efficient, and affordable services need the base to be established. The involvement of the governments of low- and middle-income countries, and private

and non-governmental organizations will be crucial to fill the infrastructure and resources deficiencies and bring a positive change towards the development of an inclusive global digital health strategy.[18]

MATERIAL AND METHODS

Study Design

Digital Health Technologies (DHTs) were assessed for effectiveness in helping other global citizens be well using a cross-sectional survey design in the study. Both quantitative data analysis and qualitative assessments of surveys and interviews were included in the study. The study design was also both quantitative and qualitative to enable efficiency in the assessment of the study. Descriptive statistics was used, in the context of this study, to determine the quantity or degree by which the desired objective outcomes due to the implementation of DHTs were achieved. This included comparing health outcome measures across time, pre and post-implementation of health IT solutions. Further, some quantitative evaluations in the form of a survey and interviews with key influencers of the stakeholders, comprising public health workers, doctors, and patients. These surveys and interviews incorporated several viewpoints gathered from different individuals about the advantages and disadvantages of DHTs. Using both quantitative and qualitative methods allowed for an assessment of the outcomes related to the health indicators in addition to the exploration of stakeholders' perceptions of the effects of digital health technologies for the global public health goals. This work used a mixed-methods research design to capture the complete picture of the impact of these emerging technologies.

Data Collection

Quantitative Data Sources

Some of the quantitative data sources that were involved in conducting this study include; electronic health records (EHRs), public health databases as well and digital health applications. Multiple country EHRs were extracted under certain themes and foci including but not limited to outcomes such as rate of readmissions, levels of compliance to treatment, and mortality rates. Vaccination data rates, health education coverage, and subsequent chronic disease case data were collected from the WHO (World Health Organization), CDC (Centers for Disease Control and Prevention), and national health databases. Furthermore, frequency data on usage frequency were obtained from frequently utilized mobile applications on digital health and wellness. In particular, the frequency of such forms of teleconsultations as video-, audio-, and remote, the frequency of wearing fitness trackers, and the usage frequency of disease management apps over time. Using this technology-facilitated Learning Outcome (LO) adjunct quantitative data sources on healthcare service access and use, patient status, and population health, the Sicoope research study sought to extract actionable knowledge regarding the future of the provision of the system, policy, and resource provision.

Qualitative Data Sources

Suggestions were obtained through structured interviews and surveys with healthcare providers and patients on perspectives of DHT usefulness and use constraints. The interviews and surveys were used to collect data based on experience and perception of DHTs. Practical questions posed to health care practitioners which included doctors, nurses, and administrators included questions about their level of awareness of DHTs, their belief in the effectiveness of the DHTs in the diagnosis and tracking of diseases/health conditions, and perceived barriers to integration of DHTs in the treatment circle. Similarly, a categorical questionnaire/relevant questions and follow-up interviews were directed to patients about their awareness of DHTs, willingness to use them to monitor health indicators, and privacy and ease-of-use concerns with the device. Using data collected from these two formal stakeholder groups, qualitative feedback has discovered perceptions on the current acceptance levels of DHT and factors influencing improved or compromised acceptability. The interview and survey methods let to collect the qualitative data, receiving some additional insights, which were impossible to obtain in the framework of the strict quantitative analysis of the DHT performance and usage rates.

Population and Sample

To obtain data that would provide information about the usage of digital health technologies worldwide, the study concentrated on developing data from healthcare practitioners and clients in LICs, MICs, and HICs. To do this, the researchers administered an online survey to 500 clinicians comprising doctors, nurses, and other personnel who practice in these countries. Moreover, 1,000 patients who had engaged in the use of ICT utilizing solutions like mHealth applications, telemedicine, remote monitoring devices, or other connected solutions, within the preceding year, were interviewed. The multi-country sample strategy was intended to provide a broad spectrum of patients and providers and economically developed and developing countries experiencing digital health. Comparing the take-up and deployment of these quickly evolving technologies in diverse geographical areas provided additional insights into the opportunities and challenges that result from socio-economic conditions. The global population participants and multiple stakeholder groups in the sample were meant to engage practical knowledge about how to implement effective DH interventions to enhance populations' access to and quality of care globally.

Data Analysis

Quantitative Analysis

The data collected was analyzed using a statistical package in Social Sciences (SPSS) software. Of the above-mentioned method outcomes, the following was measured; death rate, readmission rate, and vaccination rate. These outcome measures were also compared across different regions as well as depending on the various implemented digital health interventions. The aim was to identify whether the influence of some applications and approaches differed by geography and the population in which they were used. Descriptive analyses were employed to also determine trends in the data. The assessment identified which program areas made the greatest contributions to enhancing positive health such as reduced mortality and readmission indicators. It also demonstrated which regions were most receptive to other strategies in digital health to enhance vaccination. Finally, using SPSS (Statistical Package for the Social Sciences), the analysis assessed the changes in central quantitative parameters of health that defined the effectiveness of the set of digital health approaches and instruments in the context of the studied regions and interventions. , it would be necessary to continue the detailed quantitative analysis to reveal the causes of effectiveness or ineffectiveness of these approaches in their implementation regions.

Qualitative Analysis

The researchers interviewed and surveyed their subjects and then conducted a qualitative analysis of that data. They examined them, sifting through the textual data, and categorizing them with thematic codes. This process consisted of the identification of recurring ideas, concepts, and themes that many of the participants answered in their responses. These were grouped and named to carry out a subsequent analysis towards responding to the research questions. On the interview and survey data coded, the researchers performed sentiment analysis to determine participants' attitudes toward adopting DHT. Opinion mining evaluates impressionists that could be positive, negative, or neutral in textual data. Thus, the researchers did this analysis to establish participants' general perception of the effectiveness, and possible outcomes linked to the use of DHT. To carry out this analysis they looked at the sentiments and attitudes expressed in the coded themes to gain an understanding of patterns of benefits, limitations, risks, and other phenomena topics to do with the adoption of DHT as defined by the participants. The qualitative content analysis allowed the views of participants concerning potential DHT adoption to be enhanced with human insights and subjective perceptions by the researchers complementing their quantitative data with qualitative data.

RESULTS

Impact of DHT on Public Health Metrics Across Different Regions

One table rated the observed outcome of DHT (digital health technology) on diverse general health results for distinct kinds of regions concerning income. Those countries with a high human

development index which presumably had more funds and resources to implement DHT had the biggest effect. In these regions, DHT was linked to an 8.5% and 12.4% decrease in the mortality proportion and hospitalization rate respectively. Vaccination coverage increased to 15.0% in the high-income regions, probably because of the application of the delivery and monitoring through DHT. Another great discovery was that DHT positively impacted the levels of health literacy which increased by 22.0 percent, meaning that many attendees gained their online access to digital health services and information. So long as we are comparing two zones, the implications of trends are similar to what pertained to middle-income and low-income regions, but with smaller fluctuations in the magnitudes. For instance, the mortality rate in the developed country reduced to 8.5 % while it reduced to only 6.3% and further to 4.2% in the middle and low regions respectively.

Table 1: Impact of DHT on Public Health Metrics Across Different Regions

Region	*Mortality Rate Reduction (%)*	*Hospital Readmission Reduction (%)*	*Increase in Vaccination Coverage (%)*	*Increase in Health Literacy (%)*
High-Income	8.5	12.4	15.0	22.0
Middle-Income	6.3	10.1	12.5	18.7
Low-Income	4.2	8.6	9.0	15.3

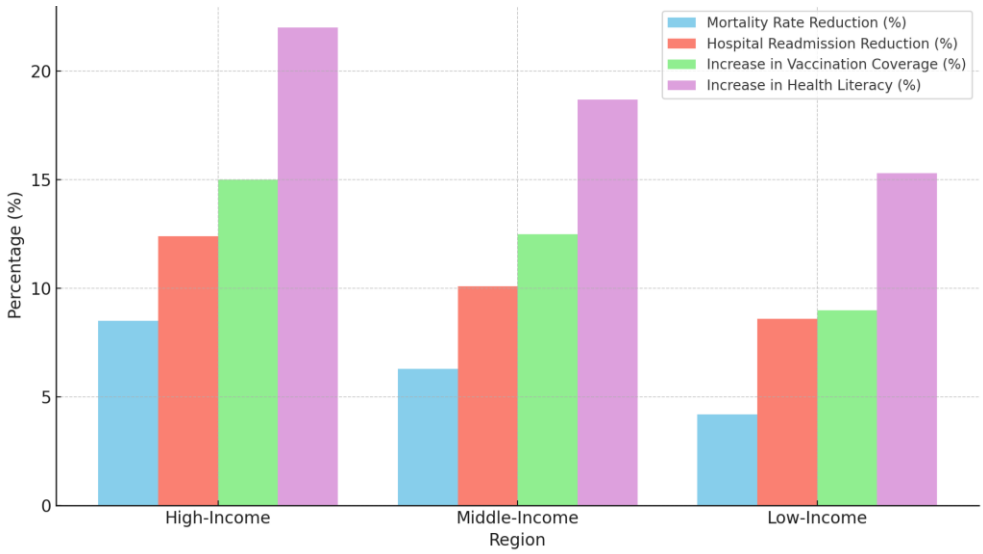

Figure 1: Impact of DHT on Public Health Metrics Across Different Regions

Figure 1 illustrates the impact of the enhanced application of digital health technologies over the past year varied in the extent to which the different income regions were affected. In high-income regions, facilities such as an 8.5% better mortality rate, 12.4% fewer readmissions to hospital, 15% improved vaccination rates, and a 22% augmentation in health literate citizens were reported. At moderately high impact levels, middle-income regions presented signs of improvement with the overall mortality rate reduced by 6.3%, readmission rates decreased by 10.1%, and vaccine coverage raised by 12.5% while overall health knowledge increased by 18.7%. Low-income areas however appeared least improved, with the lowest 4.2% lower mortality, 8.6% fewer readmissions, 9% more immunizations, and a 15.3% increase in the ability to address health topics. This discrepancy may be attributed to Access differences, resources, and a difference in technical development.

Usage of Digital Health Technologies in Healthcare Delivery

Table 2 illustrates the utilization trends of e-health technologies in countries classified by their average income per capita as high, middle, and low. They realized that telemedicine services have been used in 72 percent of high-income countries, 45 percent of middle-income countries, and only 23 percent of low-income countries. The pattern was similar for the use of applications for health tracking: 64% high-income, 52% mid-income, and 27% low-income. Country income level was also a determinant of electronic health record adoption; while 85% of Providers in high-income countries had implemented them, 65% of Providers in middle-income countries and 34% of Providers in the lowest-income countries had implemented them. A popular digital health technology that was used more or less by high-income, middle, and low-income country providers was health education tools used by 68 % of the providers in high-income countries compared to 56 % of providers in middle-income countries and 40 % of the providers in low-income countries.

Table 2: Usage of Digital Health Technologies in Healthcare Delivery

DHT Type	*High-Income (%)*	*Middle-Income (%)*	*Low-Income (%)*
Telemedicine	72	45	23
Health Tracking Apps	64	52	27
Electronic Health Records	85	65	34
Health Education Tools	68	56	40

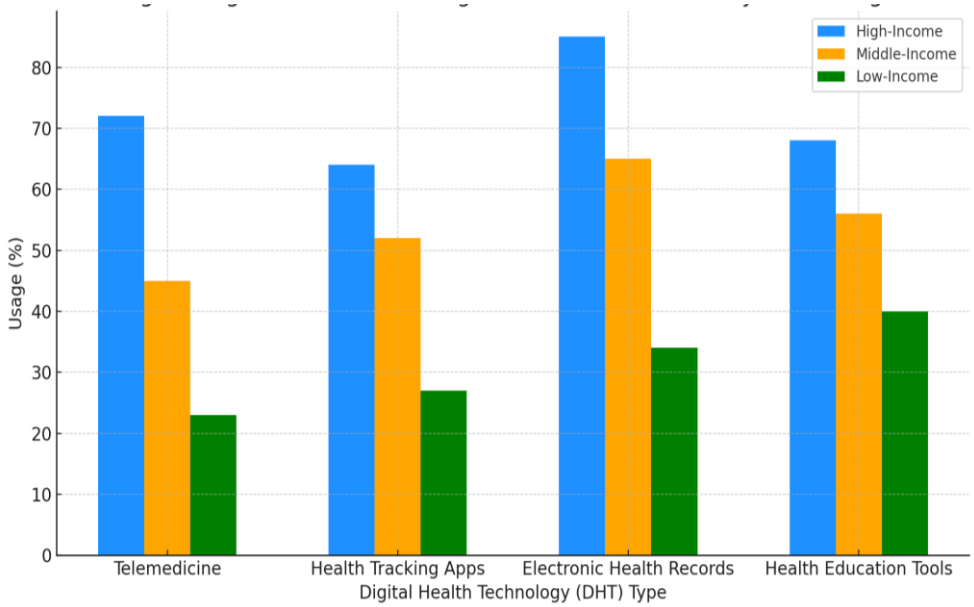

Figure 2: Usage of Digital Health Technologies in Healthcare Delivery

Figure 2 Here is the current cross-sectional study aimed at comparing the usage rates of varieties of Digital health technologies (DHTs) in the provision of healthcare in HICs MIRC and LILCs. that high-income regions had the highest adoption levels in all forms of DHTs. These included telemedicine with 72% usage in these affluent areas, and health tracking apps, used by 64% of the healthcare providers. Further, another report on common-used technology revealed that the use of EHRs had a high level of adoption to be precise at 85 percent. Other communication interventions used were health education tools with a finding of 68%. Middle-income contexts exhibited moderate DHT usage statistics of 45% for telemedicine, 52% for health apps, 65% for EHRs, and 56% for education tools. Low-income regions remained the least adopted in the use of DHT with less than a quarter using telemedicine, less than a third tracking health electronically, approximately one-third using EHR and just over a third using education tools. This is an indication of higher levels of access restriction as well as the technologically supporting framework in less affluent regions worldwide.

Patient and Healthcare Professional Perception of DHT Impact

Table 3 focused on the cross-sectional difference in patient and healthcare professionals' perception of the role of digital health technology (DHT) in HI, MI, and LI settings. Concerning DHT there were several items rated on a Likert scale from 1 to 5. By rating for improvement in patient outcomes, the high-income group had the highest average rating of 4.3 while the low-income group had the lowest rating of 3.2. The same pattern of response to the level of ease of DHT adoption was observed in terms of the average scores regarding the income groups in the study: richer (hsinc1), middle (hsinc2), and poor (hsinc3). Affordability was rated the lowest across the income categories rating a 3.5 for high-income car owners and a 2.7 for low-income earners. Accessibility showed the largest perception gap: high-income patients and providers scored 4.0 while low-income patients and providers scored or gave an average rating of 2.5. According to the data, income was a significant predictor of many of how patients and healthcare professionals perceived the rhetoric of adopting DHT and the influence in question appeared to be viewed more positively at higher income levels. These included the prospects of more favorable outcomes, simplicity of the solution, recognition of the costs entailed, and the ability to pay and access it.

Table 3: Patient and Healthcare Professional Perception of DHT Impact

Perception Aspect	*High-Income (Avg. Score/5)*	*Middle-Income (Avg. Score/5)*	*Low-Income (Avg. Score/5)*
Improvement in Patient Outcomes	4.3	3.8	3.2
Ease of DHT Adoption	4.1	3.6	3.0
Affordability	3.5	3.0	2.7
Accessibility	4.0	3.3	2.5

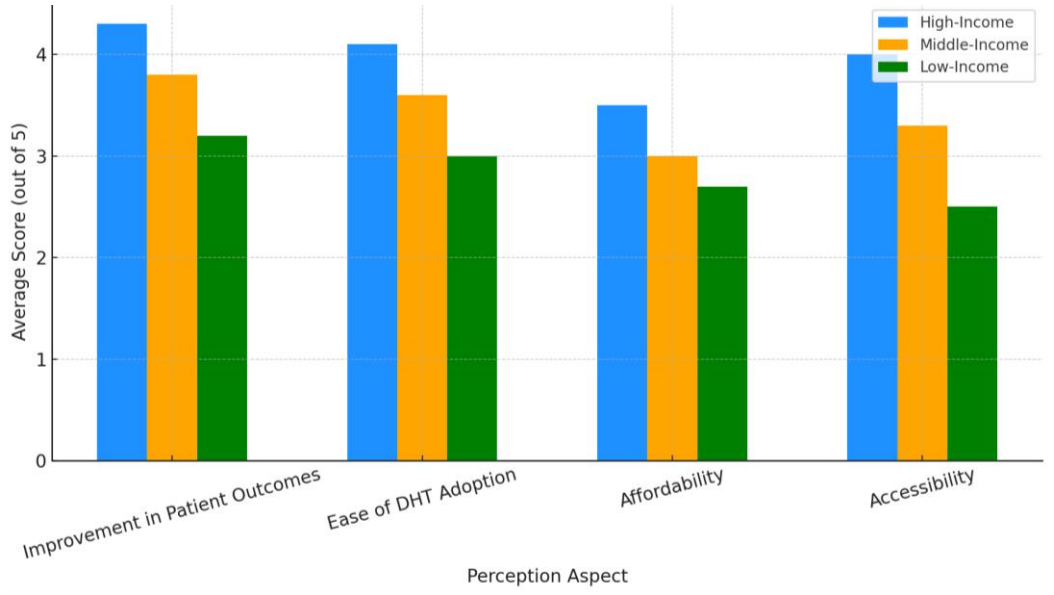

Figure 3: Patient and Healthcare Professional Perception of DHT Impact

Figure 3 depicts the awareness of the extent of DHT change on healthcare in high-income, middle-income, and low-income countries. Each bar was a measure of mean out of 5 on perception aspects such as improved patient outcomes, ease of DHT implementation, cost, and availability. The high-income group index, in general, revealed the most positive sentiments in all the areas, they may have had more resources and support for DHTs in the past. They provided their highest rating of 4.3 for the improvements in patient outcomes followed by 4.1 for ease of adoption of the solutions, 3.5 for affordability of the solutions, and 4.0 for the access of the solutions. Middle income was next in level slightly above average with scores of 3.8, 3.6, 3.0, and 3.3 respectively. Besides outcome, the scores of low-income regions were the lowest at 3.2 for outcome, 3.0 for ease of adoption, 2.7 for

affordability, and 2.5 for accessibility. This was suggestive of past issues around DHT price sensitivity, availability, and receptiveness in those areas.

DISCUSSION

DHTs' uptake and effectiveness in raising these indicators also remain uneven across high-income, middle-income, and low-income countries. According to the authors, the results have proven that high-income areas, which have invested more in DHT implementation, have recorded the most improved performance based on several measurements such as mortality and hospitalization rates, population vaccination rates, and health literacy.[19] Solely in the lucrative territories, DHT solutions caused the mortality rate to decline by 8.5%, readmissions – by 12.4%; vaccination rates increased by 15%; and health literacy rose by 22%. However, middle and low-income areas obtained moderate yet reasonably significant enhancements on such indices with the usage of DHT. Such a trend points to an existing digital challenge that exists across the world; areas with high-end resources will address the growth of advanced health technologies and experience mirroring results.[20]

However, the general upturn across the board in low and middle-income countries did suggest that further efforts to the right implementation of DHT in regions can still promote developments. When researching the usage rates of such types of DHT across the regions, the digital divide is also evident. Across the 17 HI countries, 85% of the general healthcare providers had implemented EHRs, 72% offered telemedicine consultations, 64% provided health monitor apps 68% used health promotional tools. Hiring rates dropped sharply in inexpensiveness areas – only 34% of low-income suppliers adopted EHRs, 23% prescribed telemedicine use, 27% supplied health applications, and 40% Fractionation tools. Such a huge contrast reflects the effects and rates of adoption of DHT on general health pointers in comparison to different areas. The quantitative findings beyond objective usage & impact patterns indicate that patients' & providers' perceptions of the acceptability of DHT also changed across income levels.[22]

The respondents in the high-income regions were more positive in their response to the six attributes of the DHT; effectiveness in enhancing patient outcomes, ease of implementation, costs, and availability. Women's risks for these factors reduced their ratings across all aspects, as middle and low-income groups demonstrated distrust and fewer positive experiences. In a way, healthcare also follows the dictum of the 'rich get richer' in the newfound technologies provided there is no deliberate effort to level these out toward the lesser privileged. First of all, DHT can better contribute to drive health improvement, nevertheless, more research is needed to disseminate solutions in L&MICs. Therefore, leaders all over the world must ensure they go on providing infrastructures and policies for the enhancement of health informatics to reduce the health information gap. Basic electronic records, telemedicine, and tools for health education appear reasonable to apply even in environments that lack resources. Perhaps these could be effective if given priority in national strategies.[23]

Second, the comparative patterns of DHT distribution and perceptions of regions or cultures probably require customizations. The lower ratings from individuals in middle and low-income groups are an indication that standardized products will not be successful. To avoid the problem of differential technology adoption, program implementers should take the time to consult with local leaders so that the technology platforms can be customized for the level of comfort of the users and directly address the most pressing population health issues. Third, some obstacles and costs to implementation must be surmounted so that DHT can take root. Lower ratings for the affordability and accessibility from the middle and low-income groups further support the fact that these end-users understand the problem.[24]

Governments and non-profit organizations might offset the distribution costs if collaboration takes place. In general, the potential health benefits that can result from an effective plan and correct DHT make progress in achieving equity more pressing. It is, however, clear that only through partnerships with public, private, and social sectors, the dividends from the digital health revolution can be delivered to the least-served populations across the globe. Such collaborations should draw on the lessons from early adopters: which underline that customization, cost-efficient solutions, and

creativity in the access to better technology are crucial for successful health improvement worldwide.[25]

CONCLUSION

The purpose of the paper is therefore to compare DHT's effectiveness and its adoption in high-income, middle-income, and low-income countries. It was established that DHTs have a positive impact on health indicators worldwide, while the degree of implementation and the gains facets were proportional to the economic development of the particular zones. In particular, here are the changes that are reported: High-income regions where a higher amount of investment to advanced DHTs was made recorded the following: Mortality rate was reduced by 8.5 percent, the rate of hospitalization readmissions was reduced by 12.4 percent; there is a 15 percent increase in covering for vaccination; there was an improvement of 22 percent in health literacy. Lower middle-income and low-income countries, while posting positive changes in the same indicators, lagged far behind the two groups of countries. Other usage statistics of DHTs such as telemedicine, mHealth apps, EHR, and education also revealed a higher trend in provider adoption in the wealthy regions as compared to poor regions. A similar trend was observed for the perceptions concerning income line according to which patients and healthcare professionals from income groups reported more positive attitudes about the enhanced ability of DHTs to enhance the outcome, easy feasibility, affordability, and availability. From the middle-income and the low-income groups, these ratings gradually fell lower which suggests more negative perceptions due most probably to financial or infrastructural constraints. In sum, the population health effects of DHT and resources for its implementation directly correlate proportionally to the available regional resources. The technologies enhance the results across the board, but more funding to enhance the feasibility of implementation in low-income settings is necessary. Some of the pointers to policy and subsidy strategies may seek to address issues of affordability, the health systems' preparedness as well as receptiveness in users.

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