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The Study of the Role of Pandemic Awareness Applications in A Global Public Health Emergency

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Abstract
The objective of this paper is to study the role of applications which helps to spread awareness among people in the advent of pandemic. In many low- and middle-income countries, the use of mobile phone technology is increasing making m-Health an effective medium of health communication for disease monitoring, prevention and response in those countries .Many countries have used a range of technologies in their fight against the pandemic. Most of the countries are suffering from the novel coronavirus and the world was under lockdown for past 9 months. In those days , applications play a crucial role. All the countries are rushing to develop pandemic applications to capture information, create awareness and tackle the outbreak. Applications have been widely used to help limit the spread of coronavirus. Technologies are playing a crucial role during covid-19 pandemic by keeping our society functional in a time of lockdowns and quarantines and these technologies may have a long-established impact beyond pandemic.

Keywords: *Pandemic, Coronavirus, Applications, Aarogya setu*

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I. INTRODUCTION

The COVID-19 pandemic poses a number of challenges to the well being of the people and the governments across the world. Firstly, a new strain of coronavirus named SARS-CoV-2 was reported from Wuhan, China in 2019. By the end of February, the number of confirmed cases of COVID-19, exceed above 80,000 and the infection spread to 30 other countries. The outbreak was declared as a global public health emergency. COVID-19 has put many more lives at risk. The ongoing coronavirus pandemic is the initial public-health crisis where government collected data seeks to leverage digital technologies, big data and algorithm-driven decision-making on a full-scale. After the introduction of apps, most of the countries have seen their case growth reduce. The role of these apps is dominant in controlling the spread of the virus which is difficult to determine quantitatively, as they were mostly accompanied by stricter lockdowns. Applications are designed with the characteristics like reliability, performance, usefulness, supportive, security, privacy, flexibility, responsiveness, ease of use, and cultural sensitivity[1].

There was less attention from the Government and the virus spread rapidly from person to person. The outbreak expanded day by day. At first precautionary measures were the only solution to stop spreading the virus. International organisations like World Health Organisations (WHO), Centers for Disease Control and Prevention (CDC) recommended necessary guidelines to fight with the pandemic. Countries like India with the greater population announced lockdown and made people quarantine inside their homes. Here comes the technology to deal with the pandemic. Countries shown their interest to develop the applications which support both android and macOS. Indian government had developed official covid app called aarogya setu. This helps in contact tracing, syndromic mapping and self-assessment. Like government top companies in digital technology involve in providing online dashboards , websites and mobile applications to provide useful information, contact tracing which is the process of identifying persons who may are in touch with an infected individual.

Country	**Application**
India	Aarogya Setu
Singapore	TraceTogether
Germany	CoronaData Donation
New Zealand	NZ-COVID tracer
United kingdom	NHS covid-19

Canada	Canada Covid19
Spain	STOP COVID19 CAT
India	COVA Punjab

Table1- Applications developed across the world

II. ROLE OF AAROGYA SETU IN THE PANDEMIC BATTLEFRONT

2.1. Aarogya Setu

Mobile application named Aarogya Setu developed by the Government of India to deliver essential health services to the people of India in the country's fight against COVID-19. This is aimed at augmenting the initiatives of the Government of India, particularly the Department of Health, in proactively reaching out to and informing the users of the app regarding risks, best practices and relevant advisories pertaining to the containment of COVID-19[2]. Aarogya Setu is a mobile app used in both android and iOs platform and launched in India on April 2020 [2].This app gained popularity soon and crossed 50 million installs within 13 days of launch and reached the milestone 100 million install in the 40 days of launch. The Aarogya Setu supports 11 languages. This app ensure that the data is encrypted and maintains the data privacy. The app makes use of Bluetooth and GPS capabilities. It will keep a record of all Aarogya Setu users that it detected nearby using Bluetooth .It will also use GPS log of all the places that the device had been at 15-minute intervals. These records stored on the phone till the time any user tests positive or declares symptoms of COVID 19 in self assessment survey in the app. In such cases, the records are uploaded to the servers. If a first or second degree contact is made the app alerts and gets the users timely medical help[3]. It also helps in identifying COVID hotspots and hence aiding towards curbing the spread of the infection. Aarogya Setu is being updated to make users to have a smoothen experience.

2.2 Tracetogether

Singapore is the only Asian country which has the lowest coronavirus fatality count globally 2020. As of Feb. 03 2021, the Southeast Asian nation only reported 29 deaths among more than 59,584 people who have been infected with COVID-19.The Ministry of Health of Singapore use TraceTogether app is reduce the close contacts with the quarantined and infected people. The nation Singapore succeeded in reducing the spread of coronavirus. The Government Technology Agency of Singapore (GovTech), the in-house IT agency of the Singapore public service, in collaboration with the Ministry of Health (MOH) launched the mobile app called TraceTogether, to help support and supplement current contact tracing efforts within the nation-state in an attempt to scale back the spread of COVID-19[4].

2.3 Corona Data Donation

Germany has launched a smartwatch application that collects pulse, temperature, and sleep pattern data to screen for signs of viral illness[5]. From the data generated in the application authorities assess the gravity of the C0VID 19 incidence across the country. With the introduction of digital health interventions, the country has maintained a low per-capita mortality rate, relative to other countries, despite a high prevalence of cases.

III. CONTACT TRACING APPLICATIONS ARE WITH THEIR OWN DISADVANTAGES

Digital health interventions can increase socioeconomic inequalities and amplify health-care disparities. As it involves the use of the internet and mobile phones it creates a great disparity among the non users. Although 4 billion people across the world used the internet in 2019, usage was disproportionally higher in high-income areas when compared to the low-income and middle-income areas (82% in Europe vs 28% in Africa).

Even in high-income countries, susceptible groups are those low-income neighbourhoods or remote regions who does not have access to broadband signals, smartphones, or wearable technology such as smartwatches[5]. To effectively implement globally, interventions should have the target approach to specified regions where broadband access requires public and private sector investment in technology and infrastructure. At a regional level, subsidised and affordable mobile phone plans, free Wi-Fi hotspots, and training programmes could provide temporary solutions to these lacunas. In regions which are without infrastructure or sufficient funds to support cellular and data coverage, automated applications and devices that should be considered. Many digital health interventions, particularly those do contact tracing the individuals and enforcing quarantine, can violate the privacy policy, while increasing risk among individuals with mental illness. In addition, Oxford University (UK) researchers have suggested that 60% of a country's population would need to use a contact tracing application for it to be an effective mitigation strategy. Some European countries are deploying smartphone tracking application with no central database and no ground positioning system information with

data anonymized. The concerns about privacy and data security are potentially offset by facilitating a return to normal routine without a reincrease in infections[5].

IV. CONCLUSION

The achievement of the digital technologies results in converting the covid-19 incidence curves into flattened to a larger extent. The response from the user for the mobile applications which was created at the time of pandemic made a huge difference in maintaining a low mortality rate. To win in the race of stopping highly transmissible virus, most of the countries involved in deploying the digital technologies to facilitate planning, surveillance, testing, contact tracing, quarantine, and clinical management made front-runners ease in managing disease burden. Countries like Singapore, Taiwan, Newzealand and India's successful in containment and mitigation of the coronavirus through the technology provides the proper insight for other countries who are still facing a surge of cases.

REFERENCES

[1]. Muhammad nazrul islam , Iyolita islam , Kazi md. munim , and a. k. m. Najmul islam " A Review on the Mobile Applications Developed for COVID-19: An Exploratory Analysis",IEEE access,vol 8,pp.145601-145610,2020

[2]. Aarogyasetu https://extranet.who.int/goarn/aarogya-setu

[3]. Coronavirus|What are the concerns sround the aarogya setu app?https://www.thehindu.com/sci tech/technology/coronavirus-what-are-theconcerns-around-the-aarogyasetu-app/article31434768.ece

[4]. Singapore to launch TraceTogether Token device for COVID-19 contact tracing https://www.mobihealthnews.com/news/asia-pacific/singapore-launch-tracetogether-token-device-covid-19-contact-tracing

[5]. Applications of digital technology in COVID-19 pandemic planning and response https://www.thelancet.com/journals/landig/article/PIIS2589-7500(20)30142-4/fulltext

[6]. Rakhishukla, "Role of SocialMedia and Digital Marketing during pandemic", International Research Journal of Modernization in Engineering Technology and Science (IRJMETS), Volume:02,Issue:08,pp.657-.659,August-2020

[7]. Biswajit Mohanty, Abrar Chughtai and Fethi Rabhi," Use of Mobile Apps for epidemic surveillance and response – availability and gaps", Global Biosecurity,2019

[8]. Anu Vashisht, Anmol Bagaria, Subham Kumari, Ojas Kumar Singh, Arushi Gupta, Nitin Bhagat ,"Artificial Intelligence & Covid-19- A Review", International Journal of Research in Health and Allied Sciences(IJRHAS), Vol. 6,Issue 3,pp.14-17,May – June 2020

[9]. Digital technologies in the public-health response to covid-19 https://www.nature.com/articles/s41591-020-1011-4

[10]. The countries who have handled covid-19 best and worst https://www.movehub.com/blog/best-and-worst-covid-responses/

[11]. How aarogya setu app works and how it helps covid fight https://www.livemint.com/ai/artificial-intelligence/how-aarogya-setu-app-works-and-how-it-helps-fight-covid-11594512597402.html

[12]. Coronavirus: Aarogya Setu and 10 Other Apps Deployed by the Government to Track the Pandemic https://www.entrepreneur.com/slideshow/348641