WEB APPLICATION FOR HEALTH WORKERS

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Abstract: India's Auxiliary Nurse Midwives (ANMs) is village-level female health workers who provide essential primary care services to pregnant women, mothers and new born children. ANMs cater to populations of 3,000-5,000 people, and their work mainly involves providing primary healthcare services for maternal and child health, family planning, nutrition and immunization programmers. Another extremely important part of the job is collecting healthcare data. ANMs capture around 200 key indicators related to health, nutrition and immunization of pregnant women, mothers and new born children in their paper registers. Like many other ANMs, handles more than one village, and on an average day carries 12-15 separate registers to record key data indicators while on the go. The proposed new application is helping them log healthcare data.

Keyword: Auxiliary Nurse Midwives, female health workers, web application.

I. INTRODUCTION

Healthcare organizations are constantly designing effective systems aiming to help achieve customer satisfaction. Web-based and mobile-based technologies are two forms of information technologies that healthcare executives are increasingly looking to merge as an opportunity to develop such systems. Web mobile-based applications for healthcare management address the difficult task of managing admissions and waiting lists while ensuring a quick and convincing response to unanticipated changes of the clinical needs. Web mobile-based applications for healthcare management tackle the limitations of traditional systems and take into consideration the dynamic nature of clinical needs, scarce resources, alternative strategies, and customer satisfaction in an

environment that often imposes unexpected deviation from planned activities. The World Wide Web Consortium's goal of integrating web-based with mobile based technologies is "to make browsing the Web from mobile devices a reality". These technologies, however, do not routinely reduce costs, improve quality, or achieve customer satisfaction unless they create, from the customer's perspective, a value-added service. From the healthcare angle, these emerging technologies considerably improve three critical value-added service dimensions in relation to information flow between hospital personnel as well as between hospitals and patients. These dimensions are timeliness, accessibility, and mobility. The third dimension is the result of integrating mobile-based applications with web-based systems.

With the rapid development of smart phones and mobile devices [1], it becomes very popular that people more prefer to access the information through this flexible way. So the requirement of proper interface according to different devices become a hot topic and the goal will motivate the use of RWD [2](Responsive Web Design). It aims at crafting sites to provide an optimal viewing experience in easy reading and navigation with a minimum of resizing, panning, and

scrolling across a wide range of devices such as from desktop computer monitors to mobile phones. What's more, now days E-health has gradually aroused great attention all over world. And the modern-day healthcare needs and delivery is complex, and the use of ICT [3] has made some positive impact in attending to such needs that e-health applications require. The project is about E-health [4] web application framework and responsive web design which base on the cloud platform. This idea comes from instructor Dr. Eric Chen's project proposal. Though there are some existing researches in above fields, there is less or almost none related work which combines these fields to provide a basic frame specifically focusing on the e-health. Right information at right time saves lives, So an E-health web application framework and platform based on the cloud is a part of information and communication technology supported self-care system for the diabetes. This project will closely collaborate with another group working data collection and presentation application.

The prevalence of malnutrition in Bangladesh is among the highest in the world. Millions of children and women suffer from one or more forms of malnutrition including low birth weight, wasting, stunting, underweight, Vitamin A

deficiencies, iodine deficiency disorders and anemia. Today malnutrition not only affects individuals but its effects are passed from one generation to the next as malnourished mothers give birth to infants who struggle to develop and thrive. In this chapter we focus mainly on the nutrition problem in our country.

BACKGROUND

Access to quality health services and associated costs are a threat to Bangladesh's current momentum for universal health coverage (UHC). The existing health system is largely (>60%) dependent on out-of-pocket payments [1]. Among many health system concerns, a serious lack and unequal distribution of qualified health human resources (HHR) [2] is a harsh reality. Furthermore, high population density and rapid urbanization is resulting in new and unfamiliar public health challenges [3]. Given the assumption that a combination of tools can better equip health care providers, enhance the quality of care and reduce existing disparities in health, electronic health (eHealth) and mobile health (mHealth) have rightly gained considerable attention as a potential tool for healthcare delivery. Globally, there is a close correlation between the concentration of qualified health workers (doctors, nurses, dentists and midwives together) and key health

outcomes such as immunization coverage, primary health care outreach, and infant, under-5 and maternal survival. This is because "in health systems, workers function as gatekeepers and navigators for the effective, or wasteful application of all other resources such as drugs, vaccines and supplies" [4]. Mobile health, better known as mHealth is an emerging discipline for medical and public health practice. The Global Observatory for eHealth (GOe) of the World Health Organization (WHO) defined mHealth or mobile health as medical and public health practice supported by mobile devices, such as mobile phones, patient monitoring devices, personal digital assistants. (PDAs), and other wireless devices. mHealth applications include the use of mobile devices

Proper referral system

- Medical tele-consultations even from the most remote areas within the telecom network
- collection of clinical data for monitoring of patients' vital signs/test results real-time
- supporting treatment and medication compliance
- collecting community health data
- advising on health issues
- sending health alerts and reminders, and

- communicating between health-care workers

Mobile Health may catalyse the healthcare delivery model from a historical, episodic model into a tangible, patient-centric model. mHealth is being viewed increasingly by many as an important technology metaphor to achieve rich, robust patient engagement; ultimately, achieving a patient-centric paradigm change. As mHealth expands access, availability and/or delivery like no other technology solution—health outcomes across the entire care continuum can be transformed. mHealth solutions hold the promise to provide new, innovative care access and delivery models that produce better outcomes, with reduced healthcare costs and innovative patient safety practices. To determine why mHealth is such an important Health Informatics topic today, a working mHealth context is necessary. Given the complexity and multiplicity of industry interests, there are as many definitional permutations as there may be organizations. As an emerging field, however, mHealth may be best defined as the access, provision and/or delivery of healthcare interactions—anywhere, anytime—facilitated by mobile and/or wireless technologies.

Two billion people in the world suffer from malnutrition. Some 45% of deaths of children under five years of age are attributable to under-nutrition. Malnutrition is an underlying cause of death of 2.6million children each year – a third of child deaths globally [5]. More than 165 million children under the age of five worldwide are affected by stunting. In some countries as many as half of all adolescent girls and women of child-bearing age are stunted, increasing the risk of poor fatal growth and low birth weight among their children. This project aims towards to health workers to give proper information of nutrition to mothers.

Design and implementation of an Android based mobile application for health workers to ensure that all pregnant women are getting the proper nutrition messages for them while they actually needed. This application provides a detail information regarding nutrition facility along with some other major information (i.e., LMP, contact number, address etc.). Android studio is used to develop this android application and Java language is used to program the application. We use SQLite database in order to store data for this android application. This Android application also has an online database system, to synchronize data among multiple users'/health workers in a certain area. To develop online data synchronization functionality, we use PHP

scripting language for coding and eclipse IDE is used for writing the code. MySQL database is used for storing the online data.

II. LITERATURE SURVEY

Systematic research is taken to generate meaningful result of our purpose. Two main steps were taken to search and evaluate the results:(1) Gathering sources, it contains a broad search using the most relevant key words for more potential hits and what's more, a good literature review requires that you isolate key themes or issues related to your own research interests, so more restriction was added to filter the articles. (2) Evaluating sources, reading all the final articles with some questions kept in mind: Does the evidence support the conclusion? Is the argument or evidence complete? Does all research arrive at the same conclusion or are there differing? At last, eliminating un-useful articles with this merit and classifying all the remained articles.

People are increasingly viewing their connection to the internet, including their gadgets, as their lifeline. Your patients keep their address book, calendar, and more on their mobile devices. They rely on them. Ensuring that your website is easily accessible and properly optimized for mobile devices just makes sense. The trend towards patients using their mobile devices

to access information will only continue to grow. In fact, some sources claim that by 2015, nearly everyone will access the internet from a mobile device. With such a trend, it makes sense to consider responsive web design for your medical or dental website.

As it is in our E-health model, the patient prefer text in large font and input data without typing manually. A simple and straightforward user interface design is significant factor for the patient. Furthermore, especially for the diabetes patients in our application, it can not only help user easier to learn how to use the website to record their daily indicators but also delight the patients because they don't need zoom the website surface to a proper size.

This cluster-randomized interventional trial at peri-urban settings of Karachi was conducted to evaluate the impact of maternal educational messages regarding appropriate complementary feeding (CF) on the nutritional status of their infants after 30 weeks of educational interventions delivered by trained community health workers. Mothers in the intervention group received three education modules about breastfeeding (BF) and appropriate CF at a baseline visit and two subsequent visits 10 weeks apart. The control group received advice about BF according to national

guidelines. Infants' growth [weight, length, and mid-upper arm-circumference (MUAC), stunting, wasting, and underweight] were measured at four time points.

Extant research suggests that eHealth tools supporting patient-HCP interaction, patient self-management, and HCP-HCP interactions (through electronic health record integration) are of great benefit to patients. These benefits may increase further, as the COVID-19 crisis has triggered additional demand for remote care models and systems. Previous studies have pointed out a number of critical issues concerning complex health care populations, since these include different subpopulations that pose specific medical and organizational challenges for the design of public service provision. These issues include the accurate assessment of the levels of services and needs, implementation of services and resources tailored to specific needs, coordination and integration of family-cantered care planning, promotion of health systems based on patient or family self-management, and the redefinition of models of multidisciplinary team care.

According to the 2012-2020 eHealth Action Plan, in 2011, the Italian Public Administration promoted a high-communication health care project and a citizen's Electronic Health Dossier (*Fascicolo Sanitario Elettronico*), but the project encountered difficulties in getting under way and proved difficult to implement. The few ongoing initiatives have not received positive feedback from users due to usability problems and the low digital literacy of both HCPs and families

This paper focuses on the provision of adequate training in nutrition education to health and other community development workers for their improved performance and achievement. The difficulties encountered and special care needed when dealing with low-income, chronically deprived communities are raised. A brief analysis of past and present trends in nutrition education is presented to show the progress made from restricted, authoritative and not very successful proposals to more comprehensive and participatory approaches. The need to train and update regional and field-level personnel on the new approaches, theories and models offered by nutrition education is highlighted, but the scant availability of resources for training activities may be a great limitation for this undertaking. The contribution of educational, social, psychological and communication sciences, as well as marketing, in improving and broadening the performance of health and

nutrition education is recognized. Some successful nutrition education projects, implemented in different regions, using various approaches.

III. PROPOSED WORK

Bringing ANMs online in an effort to improve data collection and the overall standards of child and maternal health service provision in India, the Ministry of Health and Family Welfare, we are introduced a web-based application to help ANMs. ANMOL or ANM.

Online is a solution that aims to bring better healthcare services to millions of pregnant women, mothers and new-borns in India. The application ends drudgery and repetitive processes for ANMs by making their work paperless. They are able to use the tablets to enter and update the service records of beneficiaries on real time basis, ensuring prompt data entry and updates. Since it is a completely digitalized process, the high quality of the data and accountability is maintained. All of the data that ANMs put into the application gets updated automatically in the central server. ANMOL is aimed at improving the quality, effectiveness and timeliness of the delivery of quality services, specifically to rural populations,

to ensure better healthcare for women and children. The application aims at bringing awareness to the remotest populations, underserved communities and urban slums and through images and videos, and educating them about initiatives on health, maintenance of good hygiene, basic health care and precautions." In addition to data collection, the applications have a number of other key functions. They complement ANMs' roles as counselors by providing readily available information about new borns, pregnant women and mothers in their areas. ANMs can also use pre-loaded audio and video files on ANMOL to counsel women and couples on subjects like high-risk pregnancies, immunization and family planning. The tablets maintain an auto-generated list of pending tasks as well.
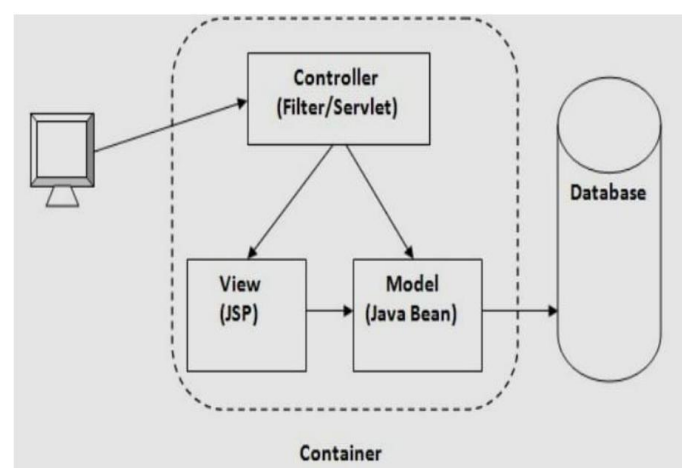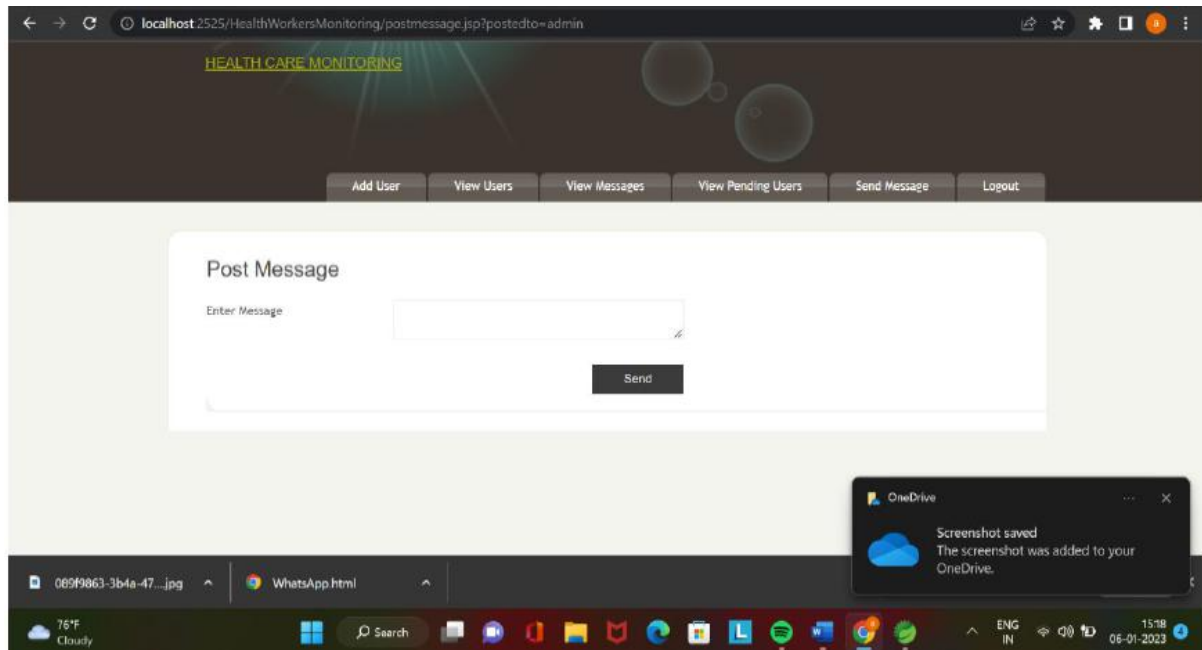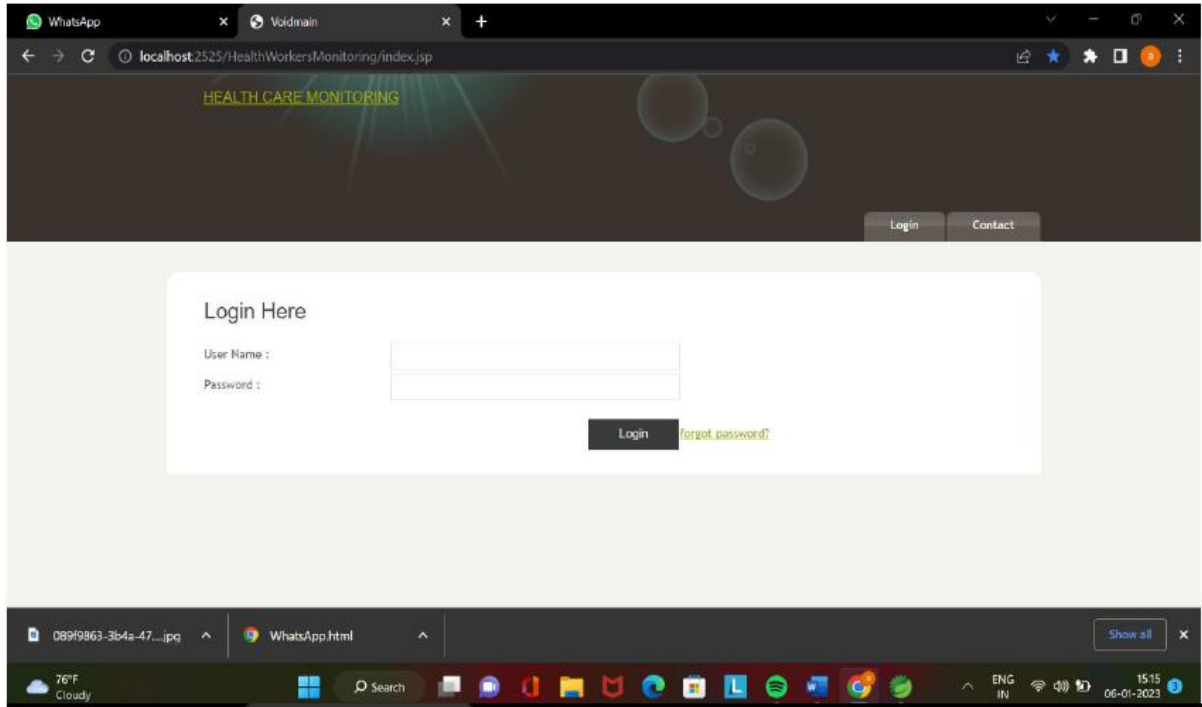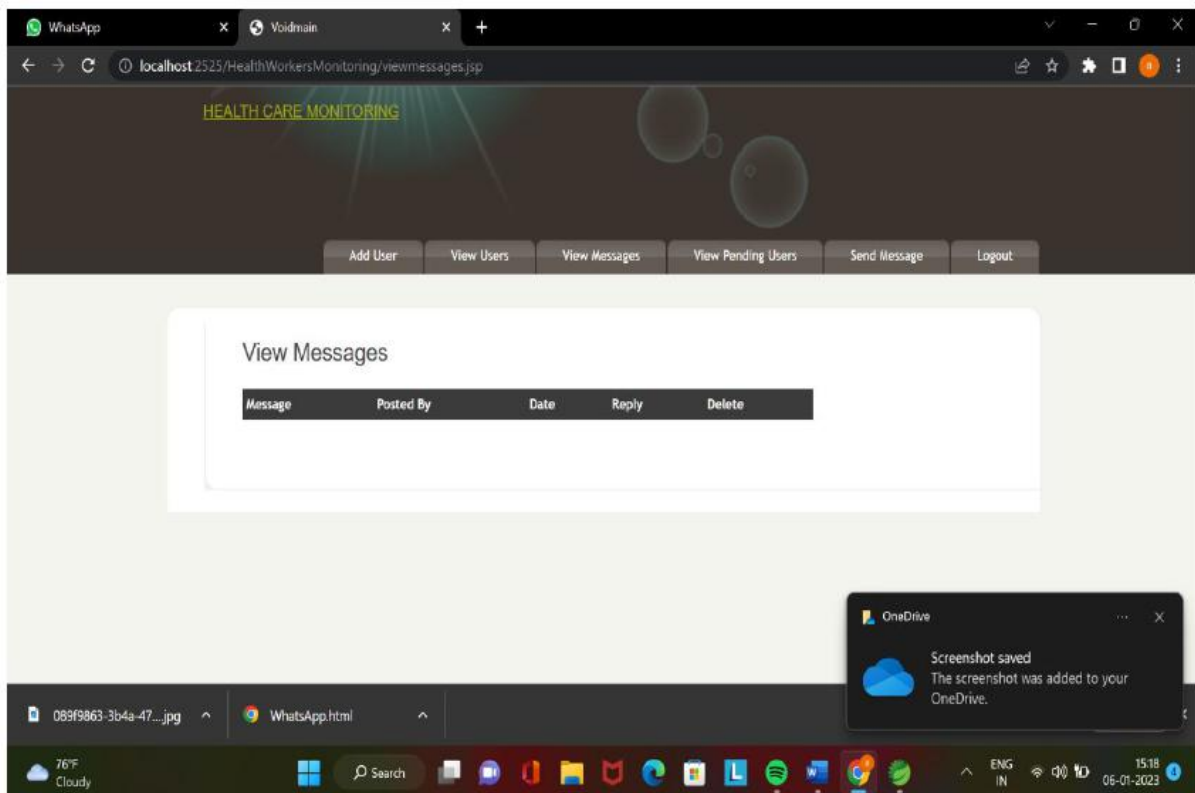
SYSTEM ARCHITECTURE

Fig.1 System architecture.

IV. RESULTS
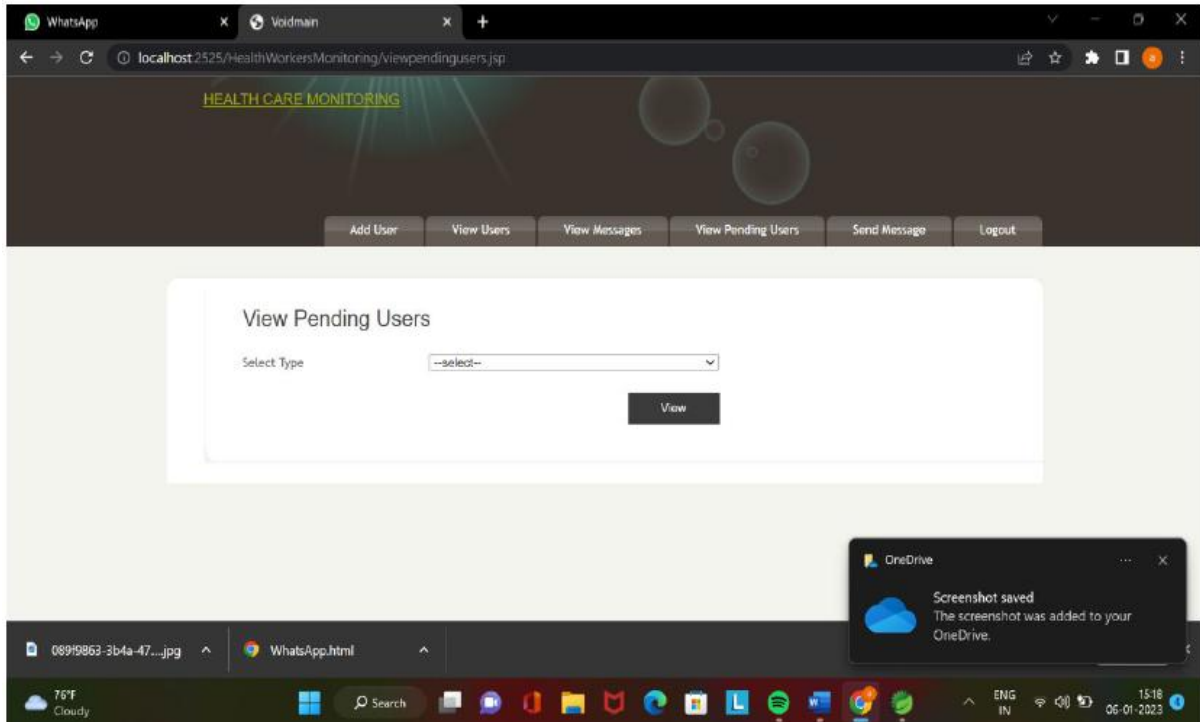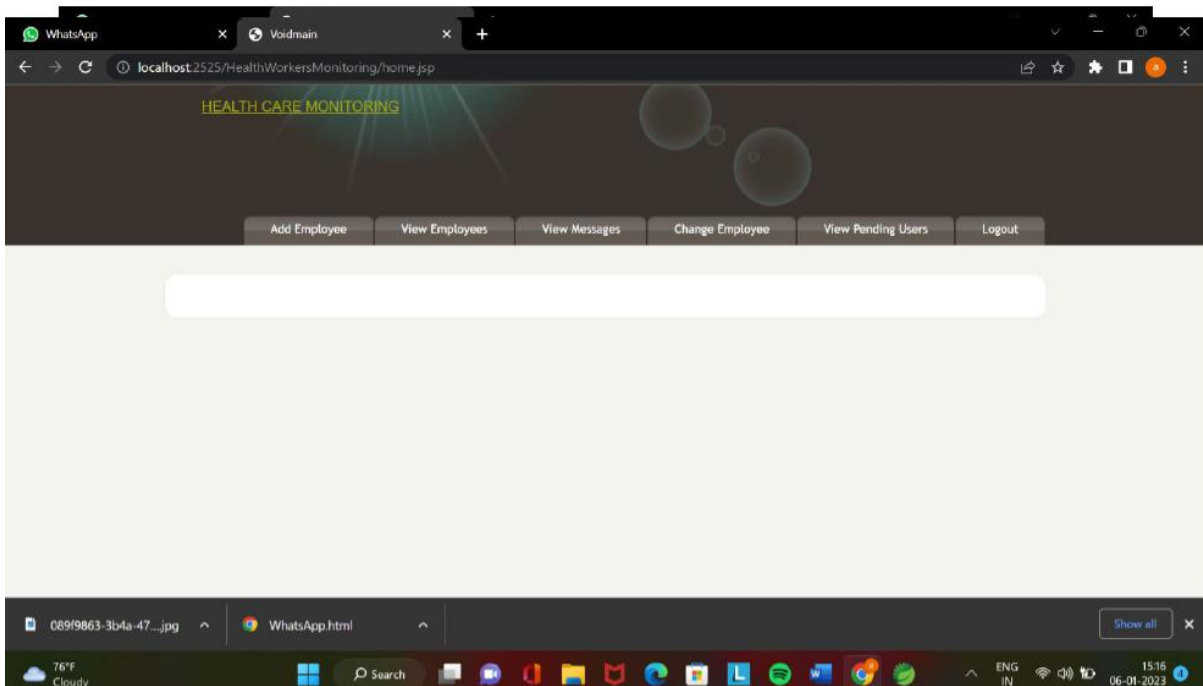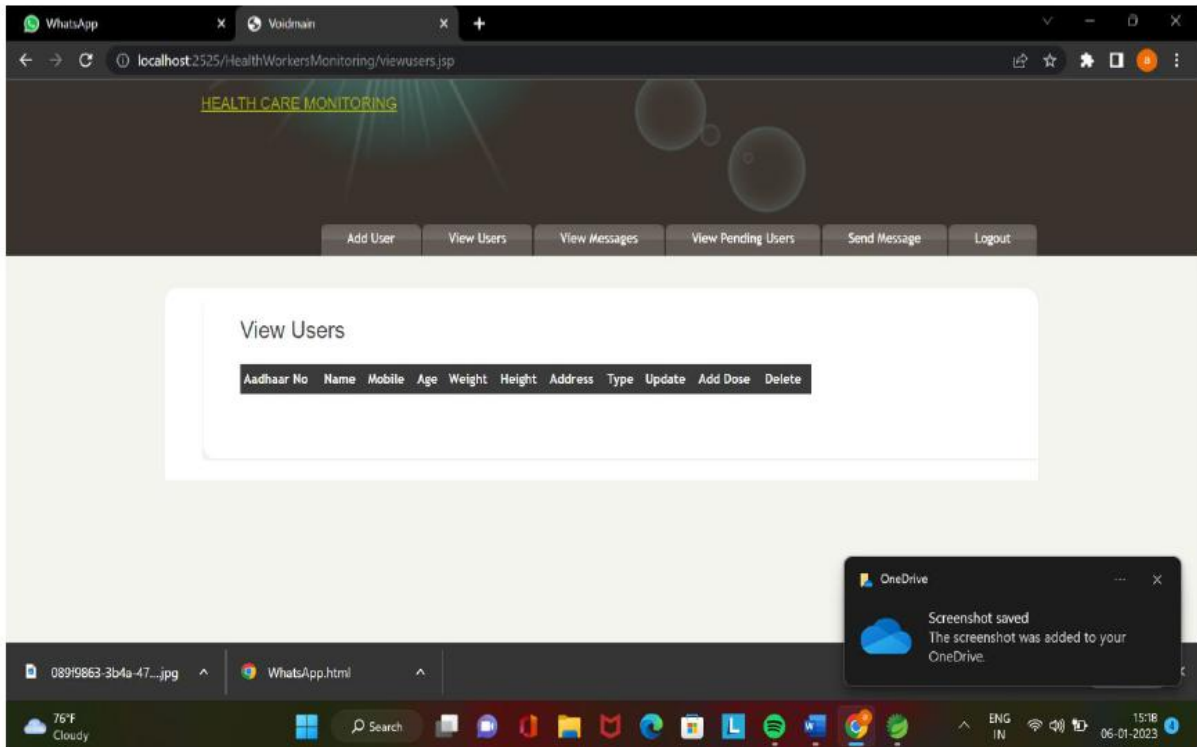
V.   CONCLUSION

High levels of malnutrition in young children in the hill tribes of northern Thailand have persisted over several decades. While growth monitoring and accompanying activities have greatly improved child nutrition in much of Thailand, this model has not been as successful in these remote and poor villages for a range of contextual factors, from the local to the global. To be effective, counselling must be integral to a growth monitoring program, with ANMs s well trained, supported, and supervised—and remunerated for their time. This model is not as inexpensive as it was thought to be 40 years ago, and the lives of subsistence farmers have become harder. However, engaging with communities and building trust through respectful dialogue, opportunities that the model could provide, remain essential to changing practices. The admin who oversees ANMs s also need appropriate skills and ongoing support. However, investment in the workforce at the periphery has been difficult in India in the face of competing health system priorities and impacts of globalization and international financial crises. Consideration needs to be given to preventing the poor from getting poorer and to the livelihoods of the poor who service their communities.

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