RESEARCH ARTICLE

Impact of TeleHealth Services through "Shastho Batayon 16263" for Tackling the COVID-19 pandemic in Bangladesh

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Abstract

Background: The National Telehealth Service,"Shastho Batayon 16263" was launched on April 2016. The aim was to provide cost effective and less time-consuming health care delivery service over one call, by certified health professionals and efficient counsellors 24/7. It has been financed by MOHFW through Directorate General of Health Services (DGHS) and implemented by Synesis IT. To use the service of Shastho Batayon, dialing 16263 from any phone to reach healthcare professionals and health information officers who can give evaluations, treatment and counseling, referral services, emergency ambulance services, and complaint management based on the needs of the customer. Since the outbreak began, Shastho Batayon played significant role regarding delivering health services more than 10 million citizens of Bangladesh by managing of patients with COVID-19 or other diseases in 2020. **Methodology:** Shastho Batayon 16263 operates on three 8 hourly shifts everyday where 15 doctors and 8 HIOs are engaged per shift initially. During the pandemic situation, calls jumped up to 85,000 per day. Therefore, overall, 150 doctors and 30 HIOs served to tackle the pandemic crisis. Implementation of the telehealth consultation has been conducted according to Standard Operating Procedure (SOP) developed and approved for Shastho Batayon by DGHS through a 24/7 service package. Data was collected by integrated Customer Relationship Management (CRM). While serving the customer, Doctors and HIOs input the required data in the CRM which is analyzed by the integrated software developed by Synesis IT. The CRM also consists patients' earlier information and his history, previous medication and it can generate prescription through mobile phone. **Result:** In the first 6 months of 2021, Shastho Batayon successfully managed to serve 1.58 million callers. However, the majority of calls (average 80%) from March to June 2021 were related to COVID-19. Among all the calls from January 2021 to June 2021, 952,646 calls made for doctor's consultancy (highest in April), 70,413 calls for health information, 104,341 calls for ambulance information, 73,119 complaints were registered and 383,517 people called to know about the service. Shastho Batayon received most of the calls from Dhaka (38%), followed by Chittagong (15%), Barisal (13%) and Khulna (10%) division. Least number of callers were from Mymensing (5%) and Sylhet (3%) division. The proportion of calls received from males were 69% while the rest of the calls were done for females and age distribution was mostly from 21 to 30 years old. Most of the patients called with symptoms of flu like symptoms such as, fever, cough, runny nose, sore throat, weakness and so on. The source of knowing about Shastho Batayon was mostly from Friends & Family. These repeat callers increased drastically up to 41%. **Conclusions:** During pandemic where face-to-face health assistance is not possible there Shastho Batayon call center platform could serve as a model for underdeveloped countries. TelemHealth is able to provide low-cost, trustworthy health services while maintaining privacy, earning individuals' appreciation and contributing to the government's current health system.

Keywords: COVID-19- National Telehealth Service- Bangladesh

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Introduction

The occurrence of COVID-19 threatened China in December 2019 and by March WHO declared it as a pandemic when it affected almost 200 nations worldwide [1]. Therefore, to preserve public health and right to remain safe, Bangladesh has been promoting e-health services which includes telehealth, video consultation and so on. But the digital health service was inaugurated in Bangladesh long before the outbreak began [2,3].

The National Telehealth Service, "Shastho Batayon 16263" was launched by honorable Minister, Ministry of Health and Family Welfare (MoFHW) on April 2016 under direct supervision of Directorate of General of Health Services (DGHS). The aim was to provide cost effective and less time-consuming health care delivery service over one call, by certified health professionals and efficient counsellors [4]. It has been financed by MoHFW through DGHS and implemented by Synesis IT [4-6]. It is a bilateral agreement that is integrated through an action plan for long-term digital health services for citizens [5]. To use the service of Shastho Batayon, dialing 16263 from any phone or health related apps is only thing to reach healthcare professionals and health information officers who can give evaluations, treatment and counseling, referral services, emergency ambulance services, and complaint management based on the needs of the customer. Primary health care is uninterruptedly provided by the doctors of Shastho Batayon, but if required patients are referred to medical specialists, Government or

Figure 1. Shastho Batayon at a Glance (Total Service Provided to the Citizen)

Figure 2. Daily Calls from January 01 to June 07, 2021

Figure 3. Number of Doctors' Consultation in 2021

private health facilities in terms of getting higher level of health services [2,7].

Since the outbreak began, Shastho Batayon played significant role regarding delivering health services more than 10 million citizens of Bangladesh by managing of patients with COVID-19 or other diseases in 2020 [3]. Till today, Shastho Batayon is working 24/7 to manage every health issue including COVID-19 and post-covid complications with the help of 50 medical professionals and 10 health information officers (HIO) per shift of 8 hours for 24/7 and functioned as the 'Digital Hospital' of Bangladesh. In past one year, repeat callers have increased up to 30% which shows the level of satisfaction of the patients nationwide. Therefore, Shastho Batayon strongly contributes to strengthen the health administration of Bangladesh and helps in aiming the SDGs.

Since India declared the 2nd wave of the virus, Government of Bangladesh tried their best to restrain the spread of the virus from India [8]. But the virus began to spread in the peripheral districts of Bangladesh, next to border of India. Therefore, citizens of Bangladesh are now choosing telehealth consultation mostly for COVID-19 infection of this new delta version of coronavirus before visiting hospital. It proves that people are inclined to the digital health service from experience of getting served by Shastho Batayon during the 1st wave of the pandemic. In July 2020, Bangladesh Government has developed telemedicine guidelines which enables the constant growth of telemedicine sector which strengthened the telehealth section to fight back the 2nd wave of COVID-19 outbreak and contribute to reduce the mortality rate
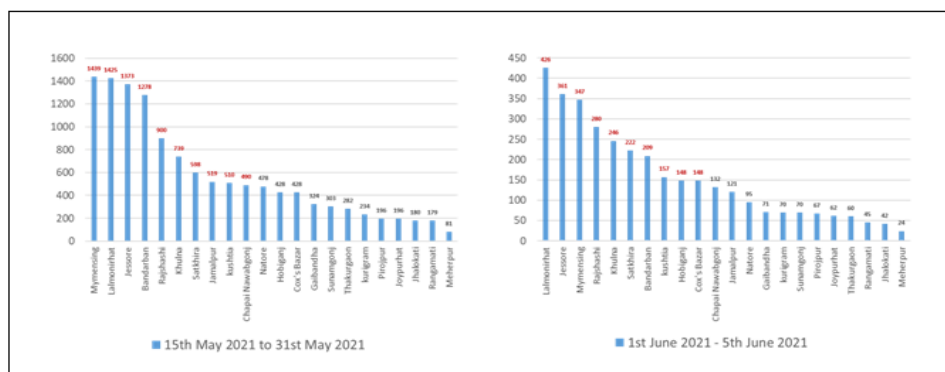

Figure 4. Proportion of Calls Based on Division

Figure 5. COVID-19 Related Calls from Border Districts

due to coronavirus. Figures 1-5 present the total service provided to the citizens by Shastho Batayon, daily calls from January 01 to June 07, 2021, number of doctors' consultation in 2021, proportion of calls based on division, and COVID-19 related calls from border districts.

Operational Modality

SB provides the services listed below:

1. 24-7 consultation by experienced health care professionals for treatment and counseling.

2. Providing information in terms of contacting public and private hospitals, specialists, clinics, blood bank, vaccine booth (EPI, COVID-19 and others) and so on.

3. Emergency ambulance service-related information, for instance, contact number, booking facilities etc. are also provided.

4. Maintenance of referral system according to health service system.

5. Registration of complaints on health service related discrepancies which auto escalate to DGHS digital platform for further action.

6. Collection of information regarding emergency conditions and notify relevant authorities.

Shastho Batayon operates on three 8 hourly shifts everyday where 15 doctors and 8 HIOs are engaged per shift initially. BDT 3.6 is costed for 5 minutes call in

Shastho Batayon and generally the service received about 3,000 calls per day. After the outbreak, the calls jumped up to 85,000 per day. Therefore, overall, 150 doctors and 30 HIOs served to tackle the pandemic over telephonic consultation till December 2020.

Methodology

Implementation of the telehealth consultation has been conducted according to Standard Operating Procedure (SOP) developed and approved for Shastho Batayon by DGHS through a 24/7 service package. The services include health consultation, counseling, health information, COVID-19 vaccine related information for national, international and dual citizens, complain receiving and feedback, emergency services etc. Shastho Batayon has specific e-consultation protocol for COVID-19. Figure 6 presents reasons for call and top 10 disease distribution in Shastho Batayon. So, data was collected by integrated Customer Relationship Management (CRM) and analyzed automatically by the software implemented by Synesis IT. The CRM also consists patients' earlier information and his history, previous medication and it can generate prescription through mobile phone. Patients call at 16263, then they prefer from the option to seek either doctor's or health information officer's (HIO) help according to their requirement. While serving the customer, Doctors and HIOs input the required data in the CRM which is analyzed
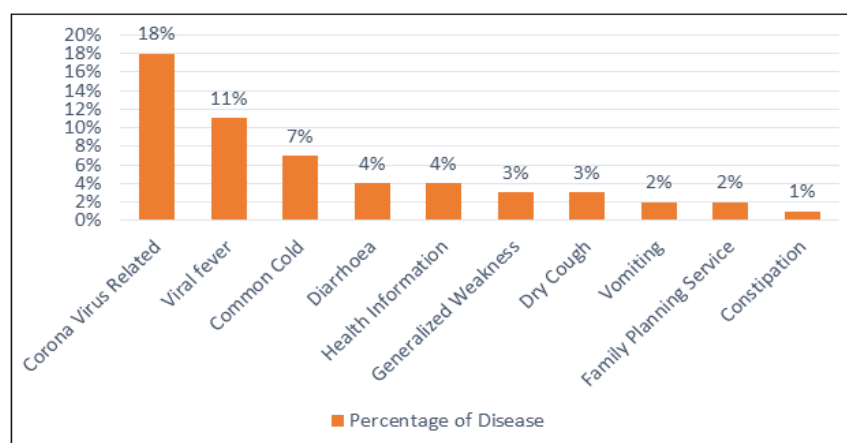

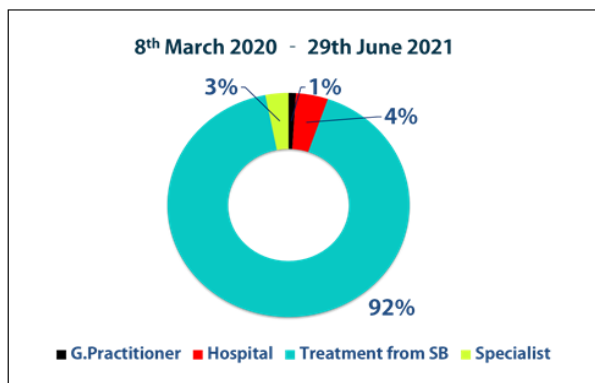Figure 6. Top 10 Disease Distribution in Shastho Batayon

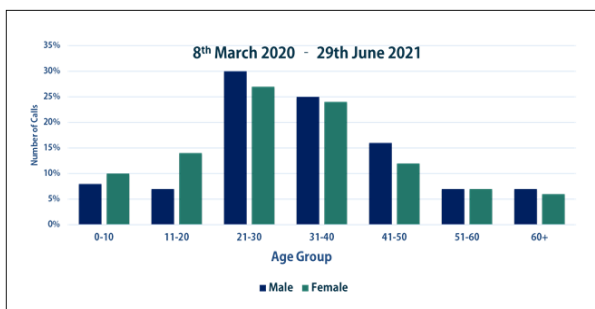Figure 7. Proportion of Calls Based on Referred Medical Officer
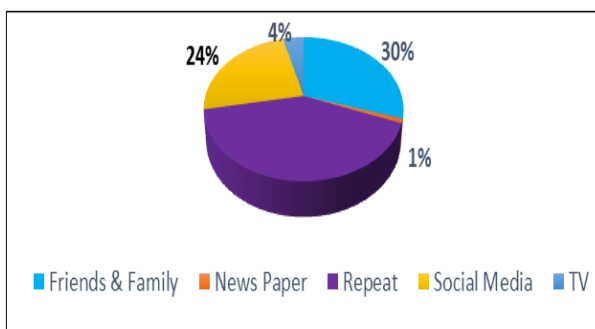

Figure 8. Proportion of Calls Based on Age & Gender

Figure 9. Proportion of Repeat Callers from January to June 2021

by the integrated software developed by Synesis IT.

Shastho Batayon During 2ⁿᵈ Wave of COVID-19

Since March 2020, organizations, business companies, schools, educational institutes and public transports were closed or partially closed to prevent community spread. Figure 7 presents proportion of calls based on referred medical officer. Through various media outlets, public health messages about COVID-19 signs/symptoms, prevention, and testing facilities were delivered. As the casualty rate from COVID-19 increased around the world, causing disruptions in trade, travel, and employment on a national and global scale, preventative action such as effective lockdowns nationwide have resulted in increased stress and loss of livelihood, particularly among the poor. This circumstance created opportunity for Shastho

Batayon to fill up the gap in terms of health service delivery when movement from home is restricted. To provide an impactful service to the people of Bangladesh, the Ministry of Health and Family Welfare decided to make 'Shastho Batyon' services toll free and publicized the number '16263' from various national media. As a result, the calls from March 2020 moved up drastically high from 30,000 to 80,000 calls per day on average. Till the end of December, 2020 the COVID-19 related monthly call rate began to decline.

In March 2021, when India declared its 2ⁿᵈ Wave of COVID-19, Bangladesh also started struggling with rising number of COVID-19 infected citizens. From January to March 2021, the number of calls were 258,788/ month but till June 2021 it increased significantly up to 304,620 callers (Figure 1). To sum up, in first 6 months of 2021, Shastho Batayon successfully managed to serve 1.58 million callers. However, the majority of calls (average 80%) from March to June 2021 were related to COVID-19.

Among all the calls from January 2021 to June 2021, 952,646 calls made for doctor's consultancy (highest in April), 70,413 calls for health information, 104,341 calls for ambulance information, 73,119 complaints were registered and 383,517 people called to know about the service. However, in 2021, SB got the highest number of calls in the month of April (321849 calls) followed by June (304620 calls) (Figure 2).

Geographically, in first 6 months of 2021 Shastho Batayon received most of the calls from Dhaka (38%), followed by Chittagong (15%), Barisal (13%) and Khulna (10%) division. Least number of callers were from Mymensing (5%) and Sylhet (3%) division.

Since the 2ⁿᵈ wave of mutated delta version of coronavirus entered in Bangladesh from the border with India, Shastho Batayon found that in May and June 2021, most of the covid infected calls were from peripheral zones near India- Bangladesh border such as Rajshahi, Jessore, Khulna, Satkhira, Lamonirhat, Mymensingh etc (Figure 3). It may come to a conclusion the delta virus is spreading from border periphery throughout the nation. The proportion of calls received from males were 69% while the rest of the calls were done for females. Shastho Batayon found that, males are mostly infected by the virus in the month and age distribution was mostly from 21 to 30 years old, particularly in border zone. Figure 8 present Proportion of Calls Based on Age & Gender.

However, during the 2ⁿᵈ wave of COVID-19 outbreak, most of the patients called with symptoms of flu like symptoms such as, fever, cough, runny nose, sore throat, weakness and so on. Therefore, the doctors could make the provisional diagnosis related to respiratory tract infection by distinguishing high risk of infection by coronavirus, viral or seasonal flu, dry cough and so on.

Reliability of Citizen on Shastho Batayon During 2ⁿᵈ Wave of COVID-19 Outbreak

In 2020, we found that the source of knowing about Shastho Batayon was mostly from friends & family in the initial period of the outbreak. Experience of calling in SB

was also found to be a significant source of enhancement of call rate. These repeat callers increased drastically up to 41% in 2021, which shows that people are relying on the health service of Shastho Batayon to combat the 2nd wave of COVID-19 using their previous experience. Also, Friends and Family (18%) members play an important source for the introduction of Shastho Batayon to other people recently. Figure 9 presents the callers sources of information about Shastho Batayon and the proportion of repeat callers.This data clearly depicts the improvement of relationship of Shastho Batayon with the citizen of Bangladesh, thus, processing for strengthening the health administration of Bangladesh.

In conclusion, the Shastho Batayon call center platform could serve as a model for underdeveloped countries opting for a substitute of primary healthcare during worldwide crisis where face-to-face health assistance is not possible. However, with the unexpected increase in daily call rates, it is critical to ensure that appropriate resources are made available in terms of space, equipment, human resources, and training to maintain service quality. Nevertheless, telemedicine is able to provide low-cost, trustworthy health services while maintaining privacy, earning individuals' appreciation and contributing to the government's current health system.

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