Assessment of experience about e - OPD among patients attending to the Out Patient Department of Base Hospital, Elpitiya, Sri Lanka

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Abstract- Under the e-health project of the Ministry of Health, digitalization of the Out Patient Department (OPD) of the Base Hospital, Elpitiya, named as e-OPD was implemented with the objective of providing a methodical, hassle free and faster service, easy retrieval of patient records, electronic queue management system to reduce waiting time and to provide a paperless service. Each patient who was registered at the OPD was provided with an electronic health card with a unique PHN number and a bar code which could be used to retrieve all the previous medical records. The study was designed to assess the experience and level of satisfaction about e - OPD among patients attending to the OPD of BH, Elpitiya. A total of 244 patients participated for the study during the month of July 2018. Majority of patients attending to the OPD were females and below the age 40 years and had a low economy. There was a marked improvement on waiting time after implementation of the e-OPD. However, a bottle neck was identified at patient arrival to registration. Vast majority of patients were satisfied with the e-OPD system. Further actions are needed to increase awareness about the e-OPD system to the public with more user friendly technology and with staff training.

Index Terms- Outpatient Department, e – health, satisfaction, waiting time

I. Introduction

The e-health project was initiated by the Ministry of Health, Nutrition and Indigenous medicine of Sri Lanka through funding from Second Health sector Development Project (HSDP) of the World Bank. The objective of the project was to design a Healthcare Recipient Identification System (HRIS) for proper functioning of the Hospital Information Management System (HIMS) and e- Indoor Morbidity and Mortality Report (e-IMMR) which will allow policy makers to capture the disease trends and disease burden of the country. Steps were also taken to introduce a Master Patient Index (MPI) at district level, and expansion to the national level which would benefit the patient, where all medical records are in one place. Patients are no further need to carry medical records with them when they seek medical care. This would further enhance the interoperability of health records among institutions [1]. Issuing of e-health card to patients which contains a unique Personal Health Number (PHN), which stores important information related to health condition of the card holder has a lot of benefits [2]. It was observed that patients who had PHN number were identified properly and they were channeled to respective service points of the hospital. This markedly reduce the long waiting time in queues.

Under the e – health project of the Ministry of Health Base Hospital (B H), Elpitiya was selected as one of the first hospitals to implement the project. B H Elpitiya is a 338 bedded type A base Hospital in Southern province of Sri Lanka. The Out Patient Department (OPD) received an average of 380 patients per day during the year 2017 [3]. The e-health project started from digitalization of the OPD named as e- OPD. Objectives of implementation of e- OPD of B H Elpitiya were to provide a methodical, hassle free and faster service, to interconnect the service points to provide a quality service, fast and easy retrieval of patient records which help more accurate diagnosis by the doctor, electronic queue management system which help manage long queues and reduce waiting time and to provide a paperless service [3].

II. Process of implementation of e-OPD at Base Hospital, Elpitiya

Digitalization project of the OPD of B H Elpitiya started on 29th of January 2018. All the patients who seek medical care from the OPD were initially registered and basic data related to the patient, like name, age, national identity card number, address and any further remarks were entered to the system. Each patient was provided with an electronic health card free of charge with a unique PHN number and a bar code. In a subsequent visit patient produced the e- health card to the OPD front desk, then the bar code was scanned and the patient was given a token for the day. The token contained the consultation room number and a serial number. If a patient had forgotten to bring the e-health card the PHN number could be traced according to his first name, surname, ID number or the address and a token could be given.

The OPD of B H Elpitiya functioned from 8.00 a.m. to 4.00 p.m. where there were three OPD consultation rooms each occupied by two doctors. The next serving number was displayed in front of each room. At the consultation room the doctor scanned the bar code of the patient's e-health card and retrieve all the previous medical records. After examining the patient the doctor entered the treatment prescription to the system. The system also contained user friendly options like templates for prescription

selection, notification of allergies, dosage suggestions and quick notification of notifiable diseases. When the patient went to the dispensary, again the bar code was scanned and after getting the prescription through the system, the patient was dispatched the necessary medication.

III. Aim of the Study

To assess the experience and level of satisfaction about e - OPD among patients attending to the Out Patient Department of Base Hospital, Elpitiya, Sri Lanka

IV. Methods

A descriptive cross sectional study was conducted among the patients attended to OPD of Base Hospital, Elpitiya. The study was conducted during the month of July 2018. Patients attending to OPD of B H Elpitiya who were 16 years or older were included in the study. Ten participants were recruited randomly on each day excluding Sundays during the month of the study making a total of 260 participants. Seriously ill and mentally subnormal patients were exclude from the study. The selected patients were followed from time of arrival, registration, consultation and dispensing of drugs to find out the waiting time at different service points. Finally an interviewer administrated questionnaire was completed for each patient to find out their socio-demographic characteristics and satisfaction about the e- OPD of BH Elpitiya after getting their informed consent. Patients were asked about their experience at the OPD of B H Elpitiya. Patients' perception about the service were assessed by five point Likert scale on five major areas; communication, technical quality, waiting time, physical environment and accessibility of service. Finally, their overall satisfaction was assessed.

V. Results

A total of 260 patients were recruited for the study and 244 responded to the questionnaire making the response rate 93.8%.

Table 1: Socio-demographic characteristics of the study population (n=244)

Characteristic	Number	Percentage
Gender		
Male	88	36%
Female	156	64%
Age (years)		
16-30	112	45.9%
31-40	42	17.2%
41-50	34	13.9%
51-60	31	12.7%
> 60	25	10.2%
Education		
No education	21	8.6%
Primary education	64	26.2%
Secondary education	103	42.2%
Higher education	43	17.6%
Other	13	5.3%
Employment status		
Public sector	37	15.2%
Private sector	26	10.7%
Self employed	66	27.0%
Unemployed	51	20.9%
Students	34	15.2%
Other	27	11.1%
Average monthly income		
Less than Rs. 20,000	111	45.5%
Rs. 20.001 – 40,000	72	29.5%
Rs. 41,001 – 60,000	41	16.8%
More than Rs. 60,001	20	8.1%
Visit to hospital		
New patient	82	33.6%
Follow up patient	158	64.8%
Other	4	1.6%

Majority of participants were females (n=156, 64%) and more than half of them (n=154, 63.1%) were below the age 40 years. Two third of participants (n=167, 68.4%) had secondary education or higher. Half of them (n=129, 52.9%) were employed and majority of them were self-employed. Nearly half of the participants (n=111, 45.5%) had a monthly income below 20,000 rupees. Two third of the patients attended to OPD (n=158, 64.8%) were follow up patients.

Table 2: Average waiting time of OPD service in July 2017 and July 2018

Service point	Average waiting time	
	July 2017	July 2018
Arrival to registration	00:54:00	00:22:41
Registration to consultation	00:40:00	00:14:12
Consultation to dispensing of drugs	00:16:00	00:11:44
Total waiting time	01:50:00	00:48:37

There was a marked improvement in average waiting time in all service points; arrival to registration, registration to consultation and consultation to dispensing of drugs. The total waiting time was reduced from 50% after the implementation of e-OPD. However, longest time spent at the OPD was from arrival to registration in both situations.

Table 3: Patients' perception on service quality

Category	Very Good	Good	Fair	Bad	Very Bad
Communication	16 (6.5%)	38 (15.6%)	21 (8.6%)	108 (44.3%)	61 (25.0%)
Technical quality	124 (50.8%)	53 (21.7%)	30 (12.3%)	24 (9.8%)	13 (5.3%)
Waiting time	137 (56.1%)	53 (21.7%)	10 (4.1%)	29 (11.9%)	15 (6.1%)
Physical environment	47 (19.3%)	112 (45.9%)	24 (9.8%)	39 (15.9%)	22 (9.0%)

Service accessibility	22 (9.0%)	32 (13.1 %)	28 (11.5 %)	117 (47.9 %)	45 (18.4 %)
Overall satisfaction	63 (25.8 %)	134 (54.9 %)	24 (9.8%)	17 (6.9%)	6 (2.5%)

Two third of patients experienced that technical quality and waiting time were good (n=177, 72.5% and n=190, 78.7% respectively). However, two third (n=169, 69.3%) had bad perception about the communication at the OPD. Majority (n=159, 65.2%) expressed that physical environment of the OPD was good. Further, 66.3% (n=162) of participants were on the opinion that service accessibility was bad. Vast majority of patients (n=197, 80.7%) mentioned their overall satisfaction of the OPD after e-health service was good.

VI. Discussion

With the implementation of the e- OPD, every patient who register at the OPD got a unique PHN number. With the development of the government e– health project the persons' data could be retrieved not only from the registered point but also from other hospitals which were interconnected with the Lanka Government Network (LGN) [1, 4]. This would be very important in an emergency or if the patient is unconscious and if the patient bares an e-health card, the patients past history could be easily retrieved and can provide immediate necessary treatment.

The current study was conducted at Base Hospital, Elpitiya six months after the implementation of e-OPD at B H Elpitiya. A higher prevalence of females attending the OPD was observed which was comparable to the results of studies conducted in Sri Lanka and Mexico [5, 6]. Half of the patients attending to the OPD were employed and was also compatible to the study conducted at TH Karapitiya [5]. The fact that 45% of the patients attending to the OPD had a monthly income less than 20,000 rupees, indicate that the government OPD was very much used by economically less privileged people. However, two third of patients who attended had secondary education or higher indicate their good educational level.

In comparison to a study conducted at B H Elpitiya in July 2017, there was a marked improvement in average waiting time at the OPD. However, arrival of the patient to registration took the longest time indicating a bottle neck. This might indicate lack of staff training on registration process or inadequacy of registration points [3]. This fact supports the findings of Sarath, where half of the nursing students has inadequate e–health literacy skills [7]. The marked improvement of registration to consultation time indicates that doctors were quicker in treating patients and clearing the crowd with the new system. This was compatible with the objective of the e –OPD system where patients past history is readily available and which reduces time taken for history taking and reduction in time taken for prescription writing as there were many templates for common ailments [4].

Most of the patients experience on bad communication could be due to the loss of communication skills due to mismatch of human-machine interphase which was also emphasized by a study conducted in a quaternary hospital in India [8]. Most of the participants who attended the OPD were from low economic community and a considerable proportion were unemployed. Hence, they find difficult to afford technically high equipment and their knowledge on current technology was also low and they find the service was less accessible to them.

VII. Conclusion and Recommendations

Out Patient Department is one of the most important section of hospital administration. Hence, it is of vital importance to improve the responsiveness of the OPD by using new technology. E - OPD project of B H Elpitiya was implemented to provide a better quality care for the patients attending to the OPD.

Assessing the experience of the patients are frequently needed to evaluate and upgrade the service provision and results based management. This study tried to find out the patients' experience after implementation of the e-OPD at Base Hospial, Elpitiya. It is worth to note that there was a marked improvement in waiting time after digitalization of the OPD. However, the bottle neck found where patient arrival to registration need to be further looked into for better quality care. Poor satisfaction about the service accessibility and communication is a signal to find out the reasons for less awareness of services and accessibility among the community and lack of e-literacy among the health staff.

It is recommended to take necessary measures to increase the public awareness about the new services and usability of the e-OPD system with the introduction of more user friendly technology for the patients attending to the OPD. Adequate staff should be employed and train them to address the bottle necks and long waiting time at registration desk. One suggestion could be to identify rush hours and increase the service points and staff to reduce the waiting time. A mechanism should be planned to provide necessary equipment with back up facilities and to ensure a sustainable supply of consumable to run the system smoothly. A 24 hour technical support or the hospital itself should have an IT unit for urgent technical assistance. With the growing interest in e – health in Sri Lanka, findings of this study would be beneficial to the policy makers to expand the access to primary care.

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