Causes of Obstruction in the Outpatient Department of National Hospital, Sri Lanka: A Qualitative Study

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ABSTRACT

Sri Lanka is a country with a well-established healthcare system in South Asia. The National Hospital, Sri Lanka (NHSL), located in Colombo, is the country's largest hospital and final referral centre, with a bed occupancy rate of 75% and an average length of stay of 3.7 days.

The OPD of the National Hospital of Sri Lanka (NHSL) has been overburdened with the problem of congestion. The goal of this study is to figure out what's causing the congestion at NHSL's OPD and what can be done about it. The approaches employed were key informant interviews with important stakeholders, focus group discussions, desk evaluation of secondary data, and direct observation of OPD operations. The deputy director, OPD, medical officer-in-charge, and nursing sister in charge of the unit were all interviewed by the primary investigator. Twelve randomly selected medical officers and ten nursing officers with a minimum of one

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year of work experience at the OPD participated in two focus group talks. Secondary data was obtained through a desk review of the admission book and OPD monthly statistics. The data was triangulated using direct observation.

The NHSL OPD treats around 690,000 patients each year. On a daily basis, the average number of OPD patients is around 1900. A doctor at NHSL's OPD examines 36 persons every hour on average. As a result, the consultation time is restricted to 1.6 minutes, which is insufficient. The Ishikawa diagram was used to investigate the root causes of congestion. The fundamental causes were identified as poor layout arrangements, doctor delays, and a quota system of examinations, non-availability of the patient information management system, lack of a good referral mechanism, and a higher amount of staff patients.

The major recommendations of this study to reduce congestion at OPD, NHSL, included improving the layout of OPD in a unidirectional manner, advising doctors to start duties on time, abolishing the quota system of examination, establishing a computer-based patients' registration system, establishing a laboratory within OPD, and establishing two more counters at OPD pharmacy.

Keywords: Outpatient Department, Congestion, Waiting Time, Patient Care Process

INTRODUCTION

Sri Lanka is a country with a well-established healthcare system in South Asia. The government hospitals under the Ministry of Health in Sri Lanka provide the majority of curative services and 345 public health areas are called "MOH offices" providing preventive care services. The National Hospital Sri Lanka, Colombo is the largest hospital in Sri Lanka and the final referral centre in the country consisting of 3404 beds and the bed occupancy rate is 75% with 3.7 days of average lengths of stay. The National Hospital has 18 well-equipped intensive care units and 17 high dependency units which are located at each major care-providing sector

such as the surgical department and the medical department. There are 19 surgical operation theatres. It is the training centre for undergraduates and post-graduate trainees of the faculty of Medicine (NHSL, 2015).

Outpatient care is defined as medical care or treatment that does not require an overnight stay in a hospital or medical facility (Andria, 2018). Since the outpatient department (OPD) is the first contact point of the hospital to the community, and more patients use its facilities than inpatient care, it is one of the most important departments in the hospital. The OPD must be placed with other sections of the hospital to deliver the best possible care to patients. The physical arrangement of the OPD is very important. It should allow the free flow of patients in one direction to minimize the congestion (Ministry of Health, 1995).

OPDs are considered as the gateway to hospital services and a patient's impression of the hospital initiates at the OPD. This impression often influences the patient's image of the hospital and therefore it is mandatory to ensure that OPD services provide reasonable care for customers. It is also well-established that around 10 percent of OPD patients need hospitalization. When the number of patients in OPD increases, congestion will result. Congestion renders doctors see more patients in each period. Consulting more and more patients by the available number of doctors will increase the doctor-patient ratio, thus reducing the consultation time at OPD. Furthermore, this creates long queues at OPD. Waiting time has its own opportunistic cost to the patient. With increasing waiting time, the cost of waiting will go high, and the effectiveness of consultation may reduce. At this point, the authorities must employ more doctors to bring down waiting time. Another option is to "speed up" the consultation, i.e. shorten the time spent on treatment. Speeding up consultations, on the other hand, will have a negative impact on diagnosis and therapy (Adisak and Higgins, 2012).

Hospital managers made several steps to make OPD a responsive place for patients. Establishing a reception counter near the entrance, unidirectional patient flow, and building spacious public areas, easy accessibility from other units, catering to patients with different physical abilities, placing units providing ancillary services at OPD to minimize cross traffic are some of the solutions (Gupta, 2007). Congestion in healthcare institutions is a common event also in Sri Lanka. Ministry of Health noticed that congestion is observed at larger hospitals while underutilization in primary care hospitals (Jayamanne, 2010).

To minimize the congestion and waiting time at OPD: the hospital management should streamline all processes at OPD. This process improvement must be done in the clinical process, management process, and ancillary process. When all these processes are streamlined, we can expect to observe the minimized waiting time and the congestion. OPD of the National Hospital of Sri Lanka (NHSL) also faces the problem of congestion. The media has discussed much of this (Wijewardena, 2010). This study aims to identify the causes of congestion at OPD of NHSL and provide solutions.

Therefore, this study was conducted to identify the causes of congestion and solutions for it and thereby improve the service delivery, decision making on patient management at OPD of NHSL, Sri Lanka.

METHODOLOGY

This descriptive cross-sectional study was conducted in 2018 at OPD, NHSL, Sri Lanka. Key informant interviews, focus group discussions (FGD), the desk review of secondary data, and direct observation, were used as study instruments. All study instruments were pretested at District General Hospital, Kalutara.

Administrative clearance for the study was obtained from the deputy director-general, NHSL, deputy director, OPD. Since patients were not included in the study and it was

conducted as a part of the quality improvement process of OPD, NHSL, ethical approval was not required.

The principal investigator used the validated interview guide to conduct key informant interviews with the deputy director, medical officer-in-charge, and nursing sister in charge of the OPD. Two focus group discussions were conducted, with 12 medical officers working in OPD and 10 nursing officers respectively. The focus group discussions were conducted on separate dates, and each discussion was last for 1 hour. Study participants with a minimum of one year of work experience at the OPD were selected out of all officers.

Discussions were conducted by the principal investigator in both English and Sinhala languages (first language) according to the participant's preference. The key informant's interview guides, formats for FGDs were predesigned and validated considering the ministry of health guidelines and circulars (Ministry of Health, 2012). Qualitative data were analyzed by using the content analysis method. All responses of key informants and participants of focus group discussions were audio recorded and transcribed by using the Jefferson transcription. Transcriptions were returned to the participants for comment and correction. Then, initial coding of data, arranging them into descriptive categories, subcategories, main categories were carried out. Finally, a narrative summary of the main finding was prepared. Secondary data was gathered from a desk review of the admission book of OPD, monthly statistics of OPD with the use of a checklist.

The process of service delivery of OPD was directly observed by all three investigators separately at randomly selected periods with the objective of triangulation of data gathered from key informants and focus group discussions. The observation was conducted during random 21 days from 8 am to 4 pm.

The time for data collection was discussed with the medical officer in charge, OPD, and the nurse in charge of OPD. Focus group discussions were conducted on 21st and 23rd August 2018 and key informant interviews were arranged on 28th, 29th, and 31st August 2018. Every possible measure had been made to prevent the disruption of routine works of OPD and interviews and focus groups were arranged between 4.00- 5.00 pm. All participants were given a brief introduction before the study. The participants were provided enough time to answer the questions and they were provided the contact details of the investigators and asked to contact them for any clarifications. Written administrative clearance for the study was obtained from relevant authorities.

The deficiencies and problems identified by the participants were prioritized by using standard priority techniques, and those identified as major problems were selected for further discussions and analysis.

RESULTS

The desk review and observations revealed the following data. About 690000 patients are treated annually in OPD of NHSL, Sri Lanka and the average number of OPD patients per day is about 1900. The average number of admissions per day was 653 in 2018. General OPD of the NHSL functions from 7.00 am. to 8.00 pm. Forty (40) medical officers are working in OPD and they start consultation of the patients at 7.00 am. Usually, a doctor at OPD of NHSL examines 36 patients per hour. Therefore, consultation time is limited to 1.6 minutes which is highly inadequate. Other than medical officers, there is an in-charge nursing officer and nurses as well as minor staff members. The process of service delivery at OPD, NHSL, Sri Lanka is given in Figure 1.
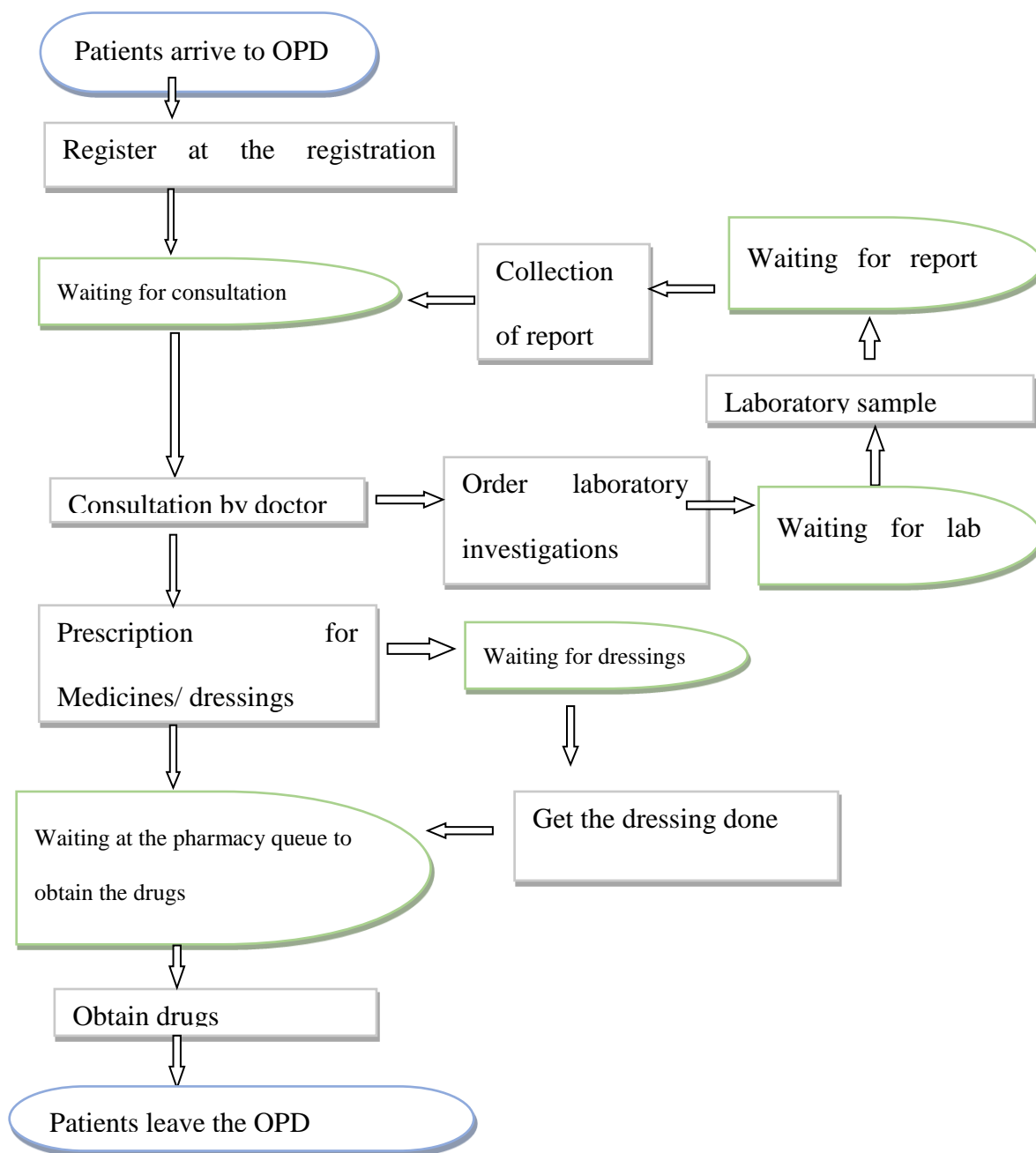
Figure 1: The process map of service delivery at OPD – NHSL, Sri Lanka.

The following major deficiencies of service delivery that caused congestion at the OPD, NHSL were identified at the focus group discussions and key informant interviews with the observational findings.

The majority emphasized the congestion of the OPD due to limited space in the waiting area and the patient consultation area. Twelve (12) doctors examined the patients in this small area and larger numbers of patients were in waiting without the seating facilities. Many complain of poor ventilation. Health care assistants registered the patients and arranged for them to sit in the waiting area accordingly. It was observed that there were considerable long queues at the registration desk and waiting room.

It was revealed that doctors of OPD examine only their quota of patients (a certain number of patients per hour). After finishing that quota, they leave the place, even the patients are in the queue. It also increases the congestion as the patient must wait for a long time at OPD. Some doctors are usually late for duties, especially for the morning shift. Doctors stop the consultation for tea, around 15 -20 minutes, and during that time patients have to wait in the queues.

Many considered the laboratory, X-ray room, and dispensary located a considerable distance away from the OPD also badly affect the waiting time and congestion. Even some patients had difficulty in finding those places. OPD laboratory is also located in a very small space within the congested OPD causing both patients and staff a lot of difficulties, and the condition was further aggravated due to the patients having to wait after collecting their sample for collection of reports. It was revealed that some patients had to visit the OPD just to show the lab reports, and they must take the number for it.

Many participants stated that the NHSL OPD dispensary's counters, pharmacists, and seating facilities are insufficient. As a result, the patient had to wait for a long time at the pharmacy in a crowded environment.

Many criticized the layout of the setting. Properly arranged clinic layout is very important in the smooth functioning of OPD. But the layout at OPD of NHSL was claimed not favourable as many participants. According to them, it does not facilitate the unidirectional flow at OPD

due to its disorganized arrangement. Although the space is not enough, they also suggested that if the unidirectional flow is arranged, changing the layout of the OPD from registration to leaving the examination room congestion can be minimized.

Many accused the patients of staff members who come bypassing the routine queue, and also large numbers of patients were brought by health care assistants into the consultation rooms outside the queue, violating the routine queue system, aggravating the problem of waiting time and congestion.

The priority causes for congestion and suggestions for improvements identified through the focus group discussions and the key informant interviews are given in Table 1.

Table 1: The causes for congestion in the service delivery process of OPD, NHSL, Sri Lanka, and interventions suggested to overcome it.

	Identified component for congestion	Proposed intervention
01	Lack of space and delay in registration	Well-trained nursing officers should be assigned to registration throughout the clinic time to provide necessary information to patients. The introduction of a computer-based registration system and barcode or patient identification number to the patient can minimize the time spent at registration.
02	Delay in consultation by doctors	Doctors should be advised to start the duties on time, not to take tea breaks as a group, and the quota system of patient examination should be abolished.
03	Delay in getting laboratory investigations	Sample collection for investigations should be done within the OPD. A computer-based system should be established at OPD of NHSL linking the laboratory, dispensary, and examination rooms.
04	Inadequate Pharmacists and counters at OPD dispensary	The number of counters and dedicated pharmacists to OPD should be increased.
05	Disorganized arrangement of OPD	The layout of OPD should be arranged to maintain the unidirectional patient flow from registration to leaving the examination room.
06	The high number of staff/pseudo staff patients	If management can arrange a separate doctor to see the staff patients and lab reports, the patients' congestion can be reduced. Furthermore, a mechanism should be developed to identify the real staff patients.

The causes identified for congestions and suggested improvements were further confirmed by random observations.

DISCUSSIONS AND CONCLUSIONS

Each doctor in the outpatient department must examine at least 150–200 patients per day in Vietnam earlier. However, continuous efforts of the Ministry of Health, Vietnam have resulted in a reduction in the number of patients per doctor per day to 50 in 2015, with a predicted drop to 35 in 2020 (Sakano, 2015). Another study conducted in the outpatient department of a hospital in Iran revealed that the specific time consumed for each patient's visit by a doctor is 5 minutes. This consultation time must be at least 15 minutes for each patient. Despite the different diagnostic approaches of a doctor for the patient and the amount of money paid by the patient for the consultation, it is a right of the patients to get examined for a considerable time (Mohebbifar et al., 2013). During this study, we found that medical officers who work at OPD of NHSL examine 36 patients per hour: which is a very high number. Therefore, consultation time is limited to 1.6 minutes which is highly inadequate to examine the patient, and quality of care may be compromised due to this low consultation time.

Another study revealed that the major cause for congestion is the type of appointment scheduling adopted in the unit. The schedule is inconsistent in terms of start time, number of patients per block, and time slots (Akintomide et al, 2019). The congestion varies depending on health facilities and many other factors, such as quality of medical facilities, quantity and quality of medical equipment, the capacity of human resources, and speed of a registration process (Babalola et al., 2013).

Another study conducted at the outpatient clinic of Thong Nhat Hospital in Vietnam showed that OPD is highly congested, and patients had to wait for a long time. Older age, early registration time, and undergoing several laboratory tests were significantly associated with a longer total waiting time. Longer registration time was found to strongly affect congestion and a total waiting time. Based on these results, establishing an appointment system, allocation and announcement of the time to get results of the blood test, as well as a flexible schedule for

doctors, may be recommended to reduce congestion and waiting time (Thi Thao Nguyen et al.,2018).

OPD patients and their needs are not homogenous. They are not satisfied when there is congestion and when they have to wait a long time before being attended. Their dissatisfaction ultimately affects the poor rating of the quality of care offered in the unit (Blomberg et al., 2010). This study also revealed that registration delays occur, and patients must wait for an extended period of time at the registration desk, causing congestion. This finding is quite similar to previously explained studies in different countries.

During focus group discussions and key informant interviews of this study, participants suggested that the introduction of a computer-based registration system and appointment system would be useful to overcome congestion and long waiting in OPD. A similar study conducted in South Korea explained that patients' basic information could be entered in the reception of the outpatient through the internet site of the hospitals. In this case, an officer in charge of the reception would organize the information and assign an appointment. By implementation of this method, when the patients require a consultation, they had to wait for less than a minute in the reception (Lee and Yoo, 1996)

Delay in consultation due to late reporting of doctors to duties, quota system of examination, group tea break, inadequate doctors, and examination rooms were identified as another major cause for congestion in this study. Queuing theory suggests that to reduce the queues of outpatient departments, there should be an increase in the number of examination rooms. This model is used when the outpatient number is too high. In addition, adequate doctors and physical resources must be present (Helbig et al., 2007). In another study, Osundina and Opeke (2017) recommended employing more primary care doctors in the general outpatient departments to reduce the congestion and waiting time. However, this will not be the most appropriate intervention in OPD, NHSL as doctors and examination rooms are limited.

Therefore, eliminating the quota system for patient examinations and taking tea as a group, as well as improving punctuality, would improve the situation.

Another study has revealed that three major factors associated with congestion are registration time, insufficient number of physicians, and insufficient number of counter staff (Babalola et al., 2013). These findings are also similar to the findings of this study.

A study conducted in India found that laboratory services at primary care settings should be strengthened; to improve the outpatient care at primary care settings. It gives evidence to policymakers that the laboratory is important in enhancing primary health care performance and achieving the greater goal of universal health coverage (Jain and Rao, 2019). This also supports the findings and suggestions to improve outpatient care in the current study.

Babalola et al., (2013) explained the importance of organized and unidirectional patient flow to improve service delivery in outpatient departments. After conducting, process evaluation in the current study also found that patient flow is not organized at OPD, NHSL, and participants of focus group discussions and key informant interviews suggested to establish a unidirectional flow.

In another study conducted in OPD, NHSL calculated the number of counters required to OPD pharmacy in 2016 according to the arrivals for the pharmacy. They suggested having four counters (Dilrukshi et al., 2016). Although considering the number of current patients and congestion, this study suggests increasing the number of counters at the OPD dispensary by two.

Lack of patient experience component and inability to calculate patient waiting time during an OPD visit were the limitations of the current study.

The standard service provision at OPD, NHSL was disturbed by congestion and long waiting. Congestion of OPD was mainly due to delays at registration, consultation delays, less

organized process flow, and inadequate resource availability. Establishing a proper registration system that links consultation, laboratory and pharmacy, improving punctuality and availability of doctors at consultation room during the whole duration, establishing laboratory facilities within OPD, arranging unidirectional patient flow, and increasing two more pharmacy counters at OPD will release the congestion at OPD, NHSL.

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