

Outpatient department development in the situation of COVID-19 pandemic,**Koh Phangan hospital, Surat Thani province, Thailand**Worawut Pattanaporkrattana^{1*}, Suriya Sang², Anchana Sothon³¹Medical Physician, Senior Professional Level, Koh Phangan Hospital, Surat Thani²Bachelor of Nursing Science, Koh Phangan Hospital, Suratthani³PHD of Public Health, Suratthani Provincial Health Office*Corresponding author: Worawut Pattanaporkrattana, baanhinnok@gmail.com

ABSTRACT

Background: The outbreak of the novel coronavirus disease 2019 (COVID-19) has caused a huge impact on society including medical and public health service systems. It has also caused health care providers to be focused on adjusting the health service system of various departments to obtain patients' satisfaction and to provide safety for both providers and service recipients.

Objectives: This action research aimed to develop outpatient department (OPD) and compared the differences in satisfactory level before and after developing OPD in the situation of COVID-19 pandemic, Koh Phangan Hospital, Suratthani Province.

Methods: 4 steps were operated to OPD development: (1) Plan (2) Action (3) Observe and (4) Reflection. 310 samples were responded the satisfy questionnaire before and after developing OPD. Descriptive statistics including frequency, percentage, mean, minimum, maximum and standard deviation were used to analyze the data. Paired sample t-test was used to analyze the differences.

Results: Findings revealed that the setup of OPD improved the surroundings with symbols, signages and directions for social distancing of COVID-19 measure. Service system set up with KIOSK, face recognition, thermos scan and home delivery of medications were implemented. The average satisfaction scores before and after developing OPD was with statistically significant difference (Mean difference = -5.2 95%CI: -5.6 to -4.8).

Conclusion: Service recipients received good quality services from OPD in accordance with the measures to prevent Covid-19 infection, and they were satisfied with the service system.

Keywords: COVID-19, Outpatient Department, Satisfaction, Service System

1. Introduction

Pneumonia caused by Novel Coronavirus 2019 (COVID-19 Infectious Disease) began to spread to Thailand in early January 2020. Currently, all countries around the world are trying their best to prevent the infection from being imported from high-risk countries. To control the outbreak in the country, National Communicable Disease Committee Approved in principle the draft declaring COVID-19 infectious disease as the 14th dangerous communicable disease under the Communicable Disease Act B.E. 2558 (2015) for effective disease control. [1].

The outbreak of COVID-19 has caused a huge impact on society including medical and public health service systems. Coping with the long-term impact of the COVID-19 pandemic is therefore an important issue and turning crisis into opportunity to develop and improve the service system in Koh Phangan Hospital. The formulation of measures such as social distancing, and the change in people's behavior, reducing congestion in hospitals by adopting various technologies, increasing accessibility, and enhancing safety in preventing infection in hospitals such as site management and protective equipment is important [1-3].

Surat Thani Province found 1,195 cases of patients in the at-risk group for COVID-19 who

met the criteria for an investigation. Of which, 19 were infected with COVID-19, and 1,177 were found to be infected. Koh Phangan Hospital, a community hospital with a size of 30 beds is one of the hospitals with patients infected with COVID-19. There were 33 patients in the risk group of pneumonia from COVID-19 who met the criteria for an investigation. Of which, one patient was infected with COVID-19, and 32 cases were not found [4], It is necessary to develop the capacity of the hospital to accommodate service recipients, both Thai tourists and foreigners in the area that tend to increase every year [2].

Work system development is an important activity in management. Improving and changing the work system suitably and gradually requires cooperation and acceptance of future changes. To provide quality services for outpatients, it is necessary to be cautious about services such as hospitality, patient screening, helping the doctor during the examination, referring patients to returning to care and rehabilitating themselves at home; or sent to receive continuous treatment at other hospitals [5]. Good service relies on knowledge and capabilities of service providers and also requires a service system that is structured to facilitate good service [

5]. Service providers must consider about the convenience of service recipients by providing economical, quality services that continuously meet the needs of service recipients and the public [4].

Developing the health service system through introducing new technologies will increase the potential and promote a good image for the health system in government hospitals. In addition, the situation of COVID-19 currently caused providers to focus on adjusting the health service system of various departments, given more to achieve satisfaction and safety of both the provider and the service recipient. Therefore, this study aimed to know the development of the outpatient department were patients who received services at the OPD of the Hospital before and after the development. Of 310 people, 30% of the total population, aged 20 years and over were patients who had been scheduled for repeated examinations or come to receive services at the OPD at least 1-2 months/time between January 2021-March 2021 and willing to participate in this study.

2.1 Data collection and data analysis

The tools used in this study consisted of

1) questionnaires regarding personal characteristics such as gender, age, marital status, religion, educational level, occupation, income, income sufficiency and the right to

service system in the situation of the outbreak of COVID-19, Koh Phangan Hospital Surat Thani Province.

2. Methods

This action research developed an outpatient department service system and compared the level of satisfaction of service recipients before and after the development of the outpatient department service system in the situation of an COVID-19 outbreak, in Koh Phangan Hospital Surat Thani Province. The population in this study was people who received services in the OPD of the hospital. According to the patient registration, there were 1,022 people between August 2020 and December 2020. The samples used in this study

treatment, 2) The satisfaction assessment form which was divided into 3 levels, ranging from very satisfied (3 points), moderately satisfied (2 points) and low satisfied (1 point) and interpret the opposite effect for negative questions. All scores were summed up and compared with the specified criteria and divided the satisfaction score by applying the criteria of [6].

2.2 Ethical Clearance

This study has been certified by the Ethics Committee. Surat Thani Provincial Public Health Office No. STPHO 2020-0313.

3. Results

3.1 Steps of implementation for the development of the service system for the outpatient department in Koh Phangan Hospital

There are four steps in implementing the development of service system. They are:

3.1.1. Planning: Conducted a survey on the condition of the service system of the OPD consisted of 1) physical aspects, i.e. the cleanliness of the building, orderliness, beauty in proportion, 2) Service systems in four working groups, namely public relations, card room service and screening point, 3) Assess the satisfaction of the service recipients with the outpatient service system before development and 4) Determine the strategy for the development of the outpatient department service system. From the results of the SWOT analysis, it was found out that the outpatient department had weaknesses that should be improved to develop the organization to be more standardized and efficient for service recipients and service providers to be safe, to reduce the risk of contracting COVID-19.

3.1.2. Practice: By providing training to health personnel on COVID-19 infectious disease including reducing stress on infection and brainstorming for ways to develop an outpatient service system both environmental and service system. In accordance with the

COVID-19 Infectious Disease Prevention Section, develop an outpatient service system, both physical and service systems, e.g. Telling points for distance while waiting for service (Social distancing) Using the Thermo scan screening system while entering and leaving the hospital, using the automatic registration system and home dispensing services, etc. Observe and evaluate the developments that have been implemented to reflect the operating results and bring new development

3.1.3. Observation: By recording what happened from the practice. Collect information from the practice of evaluation of the development of the outpatient service system, both physical and service systems, including observing the clarity of symbols; The accuracy of the Thermo scan screening system while entering and leaving the hospital, convenience in using the automatic registration system, etc., to analyze the customer satisfaction scores towards the outpatient service system before development.

3.1.4. Reflection: By bringing the information obtained from step 3. Review of the results to assess the satisfaction of the patients with the outpatient service system. After the development, compare the customer satisfaction scores on the outpatient service system before and after the development. Decide whether the outcome of the practice is

desirable or not. Should there be any advice on how to proceed as well as information for the next step in the planning process.

Collect general information and assess the satisfaction of the clients before and after the development of the outpatient department service system. Analyze quantitative data, including personal characteristics. Satisfaction level using number, percentage, mean, median, standard deviation, highest value, lowest value, compared average scores of satisfactions with Paired sample t-test.

3.2 Findings on OPD Development

From the implementation of the development of the outpatient department service system, it was found that:

3.2.1 Physical Setting

Continue to improve the cleanliness of the hospital, improving the surrounding landscape. The service area is well ventilated and well-lit arranging the location of service recipients in order. Do not let the patient walk back and forth by creating a signpost for directions each service point to the service recipient. Arrange chairs/seats, waiting for adequate checks for service recipients and have a distance according to measures to prevent COVID-19 infection, including creating a symbol telling points for distance while waiting for service (Social distancing).

3.2.2 Service System

Determine the procedures for receiving services conveniently. The service recipient can register at the automatic kiosk (KIOSK) and pass through the screening point. Patients with fever, coughing, sneezing, or suspected symptoms of COVID-19 infection should wait for service at a sterile isolation room.

As for personnel, there are doctors and staff in all departments. That is enough for the number of service recipients and do not have to wait long. A doctor is available to check from 9:00 a.m. onwards.

In terms of equipment, the hospital has and uses modern and efficient equipment in the treatment of diseases such as examination and diagnosis equipment, X-ray machines.

There is a Thermo scan system that determines the entrance-exit of the hospital one way. Organize screening measures for all personnel and service recipients who pass in and out with a Thermo scan which is a system for detecting people with fever with infrared waves. Originally, the thermometer system was a standing thermometer, one person at a time, and the people had to stand nearby. Therefore, there is a risk of infection. Thermo scan to install at the entrance when people pass by. Each person's heating temperature can be seen from the monitor. temperature will be displayed If the temperature is below, the set

threshold will pass but when the temperature is above the threshold. The machine will have a warning system (Alarm) which has both sound and light alarms. Then medical personnel will use an Infrared Thermometer to measure again to confirm the body temperature.

There is an automatic registration kiosk (KIOSK) with a face recognition system (Face Recognition) and a queue system, passing from the temperature screening point with the Thermo scan machine to the card room. Patients can register for services in different departments by themselves by making transactions via KIOSK with a face recognition system (Face Recognition), a tool designed to help facilitate to reduce the waiting time for registration. Accurate and linked to the hospital database can register new patients automatically receive que cards, check appointments and check treatment rights to reduce exposure. Reduce the time spent in close contact with the service recipient increased safety as well. In addition, it also increases communication channels with patients and relatives who sit and wait. Can

know the process of receiving services such as seeing a doctor, waiting for medicine, waiting for laboratory results, etc.

There is a dispensing system at home causing the service recipient to reduce the time in waiting to receive the medicine after seeing the doctor where multidisciplinary team will dispense medications and follow up with patients at home every day. The service recipient will receive the correct, complete and timely medication and contact the staff relevant at any time.

3.3 Comparison of Satisfactory Score

In the situation of the outbreak of COVID-19, it was found that the sample group had an average score of satisfaction before the development of the outpatient department service system was 42.1 and after the development of the outpatient department service system was 47.3. It was statistically significant that the average score of satisfaction before and after the development of the outpatient department service system. (Table 1).

Table 1: The results of the comparison of the average score of satisfaction before - after the development of service systems - Outpatient Department (n=310)

Satisfaction	Average Rating	Standard Deviation	Mean different and 95%CI	P value
Before joining the program	42.1	5.9	-5.2 (-5.6 to-4.8)	<0.001
After joining the program	47.3	3.5		

4. Discussion

From the development of the outpatient department service system physically by

improving the surrounding landscape and not let the patient walk back and forth. There is a signpost indicating directions each service point to the service recipient. Reduce the risk of contracting COVID-19 including the arrangement of chairs/seats. Waiting for adequate checks for service recipients and have a distance while waiting for service (Social distancing).

It can be seen that Koh Phangan Hospital has introduced Intelligent Healthcare or health care by using intelligent technology. Both the Smart KIOSK and the Thermo scan system are the key challenges in enhancing service capability with the technologies used, in addition to reducing the risk of COVID-19 infection but also reducing costs. Increase the number of service recipients and increase the capacity to support patients and service recipients create a good image for the hospital.

Before the development of the outpatient department service system, it was found that sample group's satisfaction was at a high level (62.3 percent). Most of them are satisfied with the issue, "Examination rooms have clear signs/symbols that are easy to find" and "around the service area is well-ventilated and well-lit"(64.2 percent). After the development, the sample group had a high level of satisfaction (95.2%), most of which were satisfied with the issue, "Examination rooms

have clear signs/symbols that are easy to find" (90.0 percent). Thus, after developing the service system of the outpatient department, satisfaction of the sample group increased from 27.7% and was satisfied with the examination room. It is important to facilitate the service recipients, setting the waiting point spacing at different points according to measures to prevent the spread of COVID-19, which is consistent with the study of Net Phetcharasmith Boonnet family (2017). It is also in accordance with the study of Akranee Phakdiwong (2018) which observed the high satisfactory level for the service in OPD of Ban Phaeo Hospital (Public Organization) [7].

Moreover, after the development of the outpatient department service system, it was found that the sample group had a higher average score of satisfaction compared to before the development of the outpatient department service system statistically significant. This might be due to the hospital has developed an outpatient department service system both physically by improving the landscape environment conducive to patient service and making various signs according to measures to prevent COVID-19 disease and develop a service system by bring new technologies into use by including smart cabinets, KIOSK and Thermo scan systems that can facilitate quick to receive service. It

also helps to increase confidence in service recipients that they are safe from contracting COVID-19 as well as create satisfaction for staff, operators and service recipients as well.

5. Conclusion

This present study found that the development of the service system in the outpatient department in the epidemic situation of the COVID-19 infectious disease, service recipients received good services. Quality according to the measures to prevent COVID-19 and are satisfied with the service system.

The study would like to recommend:

1. The hospital should develop other service points which is considered as a service point of the outpatient department in the future, such as the emergency room, the autopsy room, the X-ray room, etc.

2. The hospital should continuously assess the satisfaction of the service recipients from time to time. To maintain good service quality forever including the development and maintenance of service standards continually regardless of whether there is an outbreak of COVID-19 infection or not.

3. The results of each assessment should be used as a guideline for serious and concrete improvements in each aspect of work to lead to continuous work development.

Acknowledgement

I would like to express my sincere thanks to all staff of Koh Phangan Hospital for the development of the service system in the outpatient department during epidemic situation of the COVID-19 pandemic.

Conflict of Interest

There is no conflict of interest.

References

- [1] Department of Disease Control. Public health practices for managing the outbreak of COVID-19 in the requirements issued under Section 9 of the Royal Decree on Public Administration in an Emergency Situation 2005. Nonthaburi: Division of General Communicable Diseases. 2020.
- [2] Net Phetcharasmi the Boonnet family. Customer satisfaction with the services provided by the outpatient department Nawut Somdet Ya Hospital. Police Nurse Journal. 9(2): 64-74. 2017.
- [3] Yongyuth Pongsuphap. Family Medicine Development: A Case of Nakhon Si Ayutthaya Community Medical Center. Bangkok: Premax Group. 1998.
- [4] Koh Phangan Hospital. Situation report of coronavirus disease 2019. Surat Thani: Koh Phangan Hospital. 2020.
- [5] Wanwilai Chantrapha and Kanya Kanchanaburanan. Nursing administration in hospitals. Teaching Documents for Hospital Administration Courses. Sukhothai Thammathirat Open University. 5th printing Bangkok: Chuan Printing Press. 1995.
- [6] Seri Ratcharot. Criteria and methods for measuring and evaluating school education. Teaching Document on Administration and Management of Educational Measurement and Evaluation Unit 3. Sukhothai Thammathirat Open University: Nonthaburi. 1994.
- [7] Akaranee Phakdiwong. Survey of service recipients' satisfaction towards the services of Ban Phaeo Hospital (Public Organization) Outpatient Service inpatient services and community service Fiscal Year 2018. Bachelor of Science in Statistics, Silpakorn University. 2018.