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Exploring the Relationship between Registration Flow and Patient Queues with the Quality of Outpatient Services at Kendari City Hospital

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ABSTRACT

Introduction: Initial surveys show that health service procedures at the Hospital have met standard operating procedures but there are still many online queues, due to network constraints when inputting visits for both general patients and National Health Insurance, while offline queues such as patient queues that are piling up and crowded so that service time is still constrained. This attracted researchers to investigate the Relationship between Registration Flow and Patient Queues with the Quality of Outpatient Services at Kendari City Hospital.

Method: The study used quantitative observational methods with a cross-sectional approach, the population was the number of outpatient visits at Kendari City Hospital from October to December 2023, which amounted to 34,304 visits with 96 samples, simple random sampling was used in drawing the samples.

Result: Statistical test of service flow X^2 count 14.096 > X^2 table 3.841 Phi value = 0.408 and sig. value = 0.000 and service queue X^2 count 24.690 > X^2 table 3.841 Phi value = 0.531 and sig. value = 0.000 means there is a relationship between service flow and service queue to the service system in the outpatient unit of Kendari City Hospital.

Conclusion: Increasing scientific knowledge in the field of public health, especially in providing information to the public through education regarding health services, in this case regarding service flows and patient queues.

Introduction

Queues generally occur anywhere when we are waiting for our turn to get a service. The queue process is a process related to the arrival of patients at a service facility; then waiting in a queue line if they have not been served and leaving the service facility when they have finished being served.[1] The use of information and communication technology applied to this

online queue system will create an orderly queue system and avoid the accumulation of customers at a service location. In addition, customers also do not need to waste more time to come repeatedly to the service location. However, customers only come according to the day and hour obtained from the online queue system website.[2]

The queuing process is a process related to the arrival of patients or customers at a service facility, then waiting in a queue before being served and leaving the service facility when they have finished being served, if the service facility or server is still busy then getting service and leaving the system after being served.[3] In a queuing system or waiting line where consumers and servers are human, several errors can occur that can make a queue or waiting line take a long time, namely, the server can serve quickly or slowly which is determined by the capacity of his ability so that the waiting time of a queue is difficult to predict.[4] A good queuing system service will certainly be very helpful, not only making the service more efficient and shorter, but the views of customers or patients will also provide a positive view so that it can improve the good image of the hospital in the long term.[5] Every day, patients must take a queue number first, in this case, patients feel very uncomfortable because they often have to wait a long time to queue at the registration counter, then there are many complaints from elderly parents whose conditions do not allow them to wait long, implementing this queue system is almost implemented in every hospital or polyclinic.[6] To overcome the above problems is to build an online queue system for outpatient visits, so that the process of taking a patient queue does not take a long time and becomes more efficient for patients.[7]

Research Journal conducted by Patmasari in 2019, the development of society and information technology is one of the reasons for the presence of the Pathilo application innovation by Wonosari Regional General Hospital with the hope that the public can access hospital services easily and quickly.[8] In addition, the acquisition of Public Health Science values that are still lacking, especially in the speed of service, is also a reference for creating the Pathilo Application. However, the Pathilo Application is still not widely accessible, so it can be said that the innovation of the Pathilo Application has not been adjusted to the needs of the Community. One example of the application of information technology is the use of information systems to process data into more accurate information.[8] An information system is very helpful in facilitating the delivery and receipt of information, because each information system has a role to provide information to users by processing existing data, so as to produce accurate information for users.[9]

The health service flow of Kendari City Regional General Hospital issued based on the Standard Operating Procedure, namely every patient who comes must take a queue number to register at the outpatient registration area. Every patient is also required to fill out a form that has been prepared by the health officer. Usually, the registration officer makes a patient identity card or medical card which is used as an identification and is brought for each subsequent visit. For examination files, health officers have usually prepared medical record files which will later be used during service. When the patient registration has been completed, the registration officer sends the medical record and patient files to the intended polyclinic. After the patient has finished receiving service, the medical record files will be sent back to the medical records unit.[10]

Based on data on the number of outpatient visits from the Kendari City Health Office, Southeast Sulawesi Province in 2020, the number of outpatient visits was 54,993 visits, in 2021 it was 77,504 visits and in 2023 it was 84,670 visits.[10] The increase in outpatient and inpatient visits does not necessarily indicate an increase in the number of residents of Southeast Sulawesi Province who are sick and receive outpatient or inpatient services, because in recording outpatients and inpatients it is very possible that one individual will undergo several outpatient or inpatient treatments, either with the same disease case or different diseases, this is also due to changes in the recording and reporting mechanism and operational definitions where in 2023 all types of existing service facilities must report the number of visits starting from health centers, hospitals, clinics, independent doctor practices, independent dentist practices, independent specialist doctor practices, independent midwife practices and independent nurse practices.

Based on an initial survey conducted by prospective researchers at the Kendari City Regional General Hospital, it shows that the health service procedures at the Hospital have met the standard operating procedures issued by the Kendari City Regional General Hospital in 2022, both for old and new patient registration services. The services provided from the beginning of the visit, the procedure until going home, but there are still many online queues caused by network constraints when inputting visits for both general patients and National Health Insurance, while offline queues such as queues of patients who are piling up and crowded so that service time is still constrained. The standard operating procedure for the waiting time for service per patient who visits the Kendari City Regional General Hospital is 5 minutes per patient starting from registration. While for the procedure, there are usually many patients so that it takes extra time, at the latest 5-10 minutes per patient when queuing to the polyclinic.

Some literature calls it Queuing Theory or Waiting Lines Analysis. Services in hospitals, especially services in patient registration, doctor examinations, taking medicines, and payments are common in every hospital. Therefore, good management is needed in managing a hospital queue. Queues are common things that are applied in various agencies or institutions to manage or serve their customers in a coordinated manner, the importance of queues is also to maintain an orderly atmosphere, so it is necessary to investigate the Relationship between Registration Flow and Patient Queues with the Quality of Outpatient Services at the Kendari City Regional General Hospital.

Method

The study used quantitative with observational methods with a Cross Sectional Approach, the population of the number of outpatient visits at the Kendari City Regional General Hospital from October to December 2023 was 34,304 visits with 96 samples. The sampling technique used in this study was Simple Random Sampling, a simple random sampling technique, using validity and reliability tests.

Result

Table 1 shows that out of 96 respondents of the outpatient service system, there are 66 respondents whose service flow is effective and 30 respondents who are less effective. Of the 66 respondents who are effective in the service flow, there are 55 (83.3%) respondents whose outpatient service system is effective and 11 (16.7%) respondents are less effective. Of the 30 respondents whose service flow is less effective, there are 13 (43.3%) respondents whose outpatient system is effective and 17 (56.7%) respondents are ineffective. The results of statistical tests using the Chi square test show that the calculated X^2 value of 14.096> X^2 table 3.841 Phi value = 0.408 and sig. value = 0.000 which means that there is a moderate relationship between the service flow and the service system in the outpatient unit at the Kendari City Regional General Hospital.

Table 2 shows that out of 96 respondents of the outpatient service system, there are 62 respondents whose service queue is effective and 34 respondents who are less effective. Of the 62 respondents who are effective in the service queue, there are 55 (88.7%) respondents whose outpatient service system is effective and 7 (11.3%) respondents who are less effective. Of the 34 respondents whose service queue is less effective, there are 13 (38.2%) respondents whose outpatient system is effective and 21 (61.8%) respondents who are less effective. The results of statistical tests using the Chi square test show that the calculated X^2 value is 24.690 > X^2 table 3.841, the Phi value = 0.531 and the sig. value = 0.000, which means that there is a moderate relationship between the service queue and the service system in the outpatient unit of the Kendari City Regional General Hospital.

Table 1.
Distribution of the Relationship Between Service Flow and Service Systems in Outpatient Units Kendari City Regional General Hospital

Service Flow	Outpatient service system				Total		Statistical Analysis
	Effective		Less Effective				
	n	%	n	%	n	%	
Effective	55	83.3	11	16.7	66	100	X^2count = 14,096
Less effective	13	43.3	17	56.7	30	100	Sig = 0.000
Total	68	70.8	28	29.2	96	100	Phi = 0.408

Table 2.
Relationship Between Service Queues And Service Systemsin Outpatient Units Kendari City Regional General Hospital

Service Queue	Outpatient service system				Total		Statistical Analysis
	Effective		Less Effective				
	n	%	n	%	n	%	
Effective	55	88.7	7	11.3	62	100	X^2count = 24,690
Less effective	13	38.2	21	61.8	34	100	Sig = 0.000
Total	68	70.8	28	29.2	96	100	Phi = 0.531

Discussion

Relationship between service flow and outpatient service system in the outpatient unit of Kendari City Regional General Hospital

Standard Operating Procedure of health services is health that has a health service function. The purpose of Standard Operating Procedure is to create a work commitment to implement good management as a tool for evaluating internal and external performance.[11] To improve hospital efficiency effectively and efficiently, technical, administrative and procedural standard operating procedures are needed as guidelines for implementing hospital efficiency. Guidelines for creating hospital standard operating procedures refer to the Ministry of Health and the Ministry of Finance. Both guidelines are adjusted to local hospital conditions, both private and government hospitals.[12] Hospital standard operating procedures are patient safety guidelines for obtaining optimal health services and services.[13] There are still many hospitals, both government hospitals and private hospitals, in compiling the standard operating procedures for Receipt and Discharge that are not yet optimal. These are used to measure the efficiency of health services and services optimally related to the rules or procedures for health services from a service agency.[14]

The results of the statistical test using the Chis square test show that the calculated X^2 value is 14.096 > X^2 table 3.841, the Phi value = 0.408 and the sig. value = 0.000, which means that there is a moderate relationship between the service flow and the outpatient service system at the Kendari City Regional General Hospital in 2024.

The standard operating procedure owned by the Kendari City Regional General Hospital already contains detailed, step by step and automatic work instructions or a series of standard written instructions on various organizational activity procurement processes, how and when to apply, where and by whom to practice. The standard operating procedure for outpatients at the Kendari City Regional General Hospital has been running well but there are still a few complaints

from patients regarding the time of service so it needs to be improved again.

Based on the results of the study, it shows that the majority of respondents received very good service and in accordance with standard operating procedures, namely from the patient's waiting time at the time of registration to the action and taking medicine, which is 60 minutes, but there are still some respondents who are not satisfied with the service received, this is due to the doctor's waiting time which is quite long and the consultation and action in the action room which is quite long, namely more than 30 minutes.

Waiting time is one of the minimum standards for pharmaceutical services in hospitals. Waiting time for services in hospitals in the Decree of the Minister of Health of the Republic of Indonesia Number 129 of 2008 concerning Minimum Hospital Service Standards is defined as the time used by patients to obtain health services starting from the registration point to entering the doctor's room and finally receiving health services. Prescription waiting time is the time period from the patient submitting a prescription until the patient receives the medicine from the pharmacist within a period of ≤60 minutes.[15]

Research conducted by Andini shows that the Outpatient Flow is a sequence of patient care processes from registration to examination to leaving the service area and if necessary for further care at home according to patient needs.[16] Indirect registration (online registration) is a patient or patient's family getting registration to get an examination from a health service facility and also utilizing remote technology facilities, such as for example a patient registering by utilizing the facilities that have been provided.[17]

Study of Wibowo shows that the waiting time for outpatient medical record services at the Temanggung District General Hospital" obtained the average waiting time for outpatient registration patients, namely 1 hour 8 minutes, not including new patients and old patients, the service provided by officers to patients is less than optimal because the registration counter at the Temanggung District General Hospital only has 3 counters so that the response time to the service takes longer.[18]

The relationship between service queues and service systems in the outpatient unit of Kendari City Regional General Hospital

Online queue is a queue system that adopts online technology. The conventional queue system that previously used numbers or paper directly at the queue location has changed into a queue system using an android application that can take queue numbers from anywhere and does not have to be at the queue location first.[19] With this change from the conventional system, it is hoped that the online queuing system can provide many conveniences, especially in relation to services to the public that are increasingly easier and faster.[19]

Online services are usually through the national health insurance mobile application. Mobile is an application that allows you to do mobility using equipment such as PDAs, mobile phones or mobile phones. Mobile website or commonly referred to as mobile website application is a website that can be run or accessed on mobile devices such as mobile phones, tablets and so on.(20)Mobile applications are supported by the development of an operating system on smartphones. Data processing and presentation play an important role in software. Examples of mobile phone-based technology such as cellular phones, smartphones or smart phones and tablet computers. The national health insurance Mobile Application is a digital-based non-face-to-face service channel to facilitate participants in obtaining information and administrative services for participants related to the National Health Insurance program, by utilizing information technology in the form of applications via smartphones.[9]

Offline services at the Kendari City Regional General Hospital are through direct visits starting from taking a queue number and registration to getting treatment and medication services. The results of statistical tests using the Chis square test show that the calculated X^2 value

is 24.690> X^2 table 3.841 Phi value = 0.531 and sig. value = 0.000, which means that there is a moderate relationship between the service queue and the outpatient service system at the Kendari City Regional General Hospital in 2024.

Based on the results of the study, it shows that the majority of respondents who register for the offline system. This is due to interference with the national health insurance mobile application, where patients are constrained because they do not yet understand the online queue through the national health insurance application when inputting the BPJS number so that patients must register offline, but there are several respondents who register for the online system because the patient's national health insurance mobile application runs smoothly and there are no obstacles when inputting the BPJS number.

Research journal shows that good queuing system service will certainly be very helpful, not only making the service more efficient and shorter, but the views of customers or patients will also provide a positive view so that it can improve the good image of the hospital in the long term.[21] Every day patients must take a queue number first, in this case the patient feels very uncomfortable because they often wait a long time to queue at the registration counter, then there are many complaints from elderly parents with conditions that do not allow them to wait long, implementing this queuing system is almost implemented in every hospital / polyclinic. To overcome the above problems is to build an online queuing system for outpatient visits, so that the process of taking a patient queue does not take a long time and becomes more efficient for patients.[22]

Factors that can cause patients to experience difficulties in dealing with technology include lack of education and training.[23] In theory, difficulties in dealing with technology can be reduced by providing education about technology which can make things easier for patients.

Conclusion

Increasing scientific knowledge in the field of public health, especially in providing information to the public through education regarding health services, in this case regarding service flows and patient queues. Can increase public understanding and knowledge about the quality of health services by always providing education about health services and assisting in managing patient administration.

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