National Journal of Physiology, Pharmacy and Pharmacology

RESEARCH ARTICLE

Effect of prescription waiting time on patient satisfaction mediated by service quality of pharmacy unit in public hospital in Bandung city

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Received: June 21, 2017; **Accepted:** July 19, 2017

ABSTRACT

Background: The Indonesia National Health Insurance (NHI) is one of the social protections to ensure all people to health. Improving the quality of good service is a demand for pharmacy unit to improve the services quality, especially in improving the rate of pharmaceutical services and patient satisfaction that has been regulated in the Ministry of Health. **Aims and Objectives:** This study aims to measure influence between prescription waiting time and the level of patient satisfaction mediated by the quality of pharmacy unit service as a mediator at the public hospital in Bandung City. **Materials and Methods:** A cross-sectional questionnaire-based and direct observation method was conducted from February to April 2017. The questionnaire and observation sheet were used to obtain primary data to 302 NHI patients. Data were analyzed using structural equation modeling using software smartPLS. **Results:** Based on the result, general and compounding prescriptions' waiting time is not suited with the standard. The waiting time has no positive and significant effect on the quality of pharmacy unit service with *t*-value of 0.532. The quality of service has a positive significant effect on patient satisfaction with *t*-statistics of 14.477. The waiting time has a positive and significant effect on patient satisfaction with *t*-statistics of 1.771 (t-table > 1.96, $\alpha = 0.05$). **Conclusion:** The path model proposed did not fit and must be evaluated the length of waiting time and service quality as mediator. Waiting time has a positive influence on patient satisfaction even though the rate of services is slow. Then, the better pharmacy services given, then the much more patient satisfied to the hospital.

KEY WORDS: National Health Insurance; Pharmacy Unit; Waiting Time; Service Quality; Patient Satisfaction; Structural Equation Modeling

INTRODUCTION

In the era of globalization, there is a very rapid growth in various industrial sectors, including the health industry. The growth is accompanied by increasingly tight competition between health providers. Hospitals are vying to provide the best service to their customers, accompanied by modern and completed medical facilities and equipment, to be the leading hospital in providing health services.[1]

Access this article online	
Website: www.njppp.com	Quick Response code
DOI: 10.5455/njppp.2017.7.0621219072017	

In the statute 36 of 2009, it is explained that everyone has equal rights in obtaining safe, quality, and affordable health services,[2] and vice versa, every person has an obligation to participate in the national health insurance (NHI) program. Based on the statute 40 of 2004, the government guarantees thehealth of the Indonesian people through the NHI organized by the board.[3,4]

The quality of hospital services is one of the factors that support the increasing number of patients using health

facilities in the hospital if the quality of hospital services is good; it is able to influence the patient's interest to revisit the hospital.[5]

The hospital has pharmacy unit section under the direction of a pharmacist and is assisted by several pharmacists who meet the requirements of applicable and professionally competent legislation, with the aim of establishing, performing functions, and pharmaceutical services responsible for achieving results, which are obviously to improve the quality of life of individual sufferers and members of the community.[6]

The paradigm change demands an increase in the quality of pharmaceutical services in hospitals. According to the Indonesia Minister of Health regulation 129 of 2008, about minimum standards of hospital service, that the waiting time of general prescription service is ≤30 minutes, whereas the waiting time for compounding prescription is ≤60 minutes. Patients will be satisfied if the health services obtained are equal to or exceed expectations, but on the contrary, patient dissatisfaction will arise if the health services obtained did not meet expectations. The condition of patients will cause feeling uncomfortable so that patients expect pharmacy services fast.[7]

Based on this, it will be conducted research that aims to determine whether there is influence between prescription waiting time and the level of patient satisfaction mediated by the quality of pharmacy unit service at the public hospital in Bandung, knowing that the pharmacy unit can improve the quality, especially in improving the rate of pharmaceutical service and increase patient satisfaction in the era of NHI.

MATERIALS AND METHODS

A cross-sectional questionnaire-based and direct observation method was conducted from February to April 2017 in one of public hospitals in Bandung city, where this city is one of the metropolitan cities in Indonesia. The random sampling was conducted to inclusion criteria of NHI patients who were from the outpatient unit, approved informed consent, had literacy ability, and had at least one time a revisit at the pharmacy unit. A criterion excluded was respondent who did not complete the questionnaire data completely. The number of samples in this study obtained from the power analysis on software R v 3.3.1 as much as 267.6996 and in this study used a sample of 302 respondents.

The questionnaire was used in the study to obtain primary data that are using personally distributed where respondents are asked to fill the answers directly in the certain place. The other primary data were obtained from the measurement of pharmaceutical service waiting time in pharmacy unit that is conducted by direct observation at each stage of prescription in pharmacy unit.

Questionnaire in this research consists of three parts, similar as the research variables and used Likert Scale of 1-7 ranging from strongly disagrees to strongly agree is used. The first part is the questionnaire to know the quality of pharmacy unit service using service quality derived from Parasuraman et al.[8] which has been modified. The second part is a questionnaire to find out patient satisfaction from Taylor and Baker (1994)[9] which has been modified. The third part is a waiting time record form derived from Afolabi and Erhun, 2003[10] which has been modified. The items in the questionnaire and in the waiting time record form are adapted to this study, as proposed by Carman (1990).[11] Preliminary test to improve the content of the questionnaire conducted on 30 respondents[12] by performing validity test using correlation coefficient method Pearson product moment (r) and reliability test with Cronbach's alpha.[13] The preliminary test is performed using software R-studio.

Hypothesis testing in this research is used structural equation modeling method by SmartPLS V2.0 program because the type of data is ordinal scale. This research includes multivariable and multidimensional, and the path model is described in Figure 1.

RESULTS

Respond rate of the questionnaire is over 100% because the patients are observed directly. Characteristics of respondents include gender, education background, age, occupation, visit several times to pharmacy unit, and NHI membership. Majority of respondents were female (77.48%), high school education level (32.45%), with an age range of 50-59 years (23.51%). Based on the type of work, most of them are students, housewives, or not working (72.19%), with a membership status of non-subsidies NHI member (53.31%), and visitation to pharmacy unit is more than 5 times (78.81%).

Samples of prescription service waiting time were taken at one of the pharmacy units in the hospital and obtained 302 prescriptions of randomly selected NHI patients consisting of

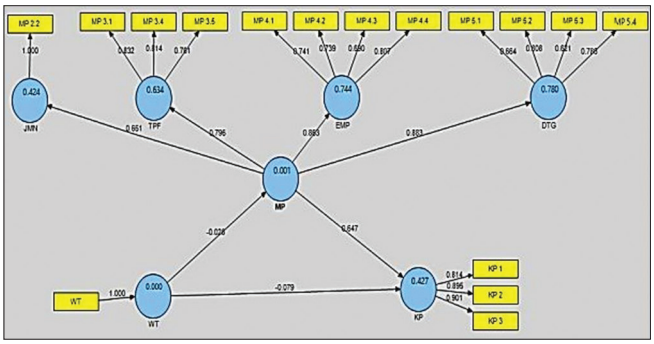

Figure 1: Path model, JMN: Assurance, TPF: Tangible, EMP: Empathy, DTG: Responsiveness, MP: Service quality, WT: Waiting Time, KP: Patient satisfaction

293 general prescriptions and 9 compounding prescriptions served at the pharmacy unit. The number of general prescriptions is much more than the number of compounding prescription sample because few physicians who prescribed are dermatologists and pediatricians. It was obtained that the waiting time of pharmacy unit is not so good because of 302 prescriptions that fulfil the minimum service standard, only 25 prescriptions consist of 23 general prescriptions and 2 compounding prescriptions.

Measurements of patient satisfaction were calculated by averaging the results of the patient satisfaction questionnaire. After averaging outcomes, the percentage of patient satisfaction was 76.95%. This value is close to the indicator of patient satisfaction based on the Indonesia Minister of Health regulation 129/2008 >80%.

Data Validity

The validity test of the data was obtained by looking at Figure 1 where convergent validity (loading factor and average variance extracted) and discriminant validity (cross loading) have the loading factor above 0.5. The results of the research indicate that the correlation value of all latent variables between the corresponding indicators is greater than the correlation of the indicator to the other latent variables. This shows that all latent variables have high discriminant validity.

Data Reliability

The reliability test is performed by looking at composite reliability. For the reliability test, the results obtained were as follows in Table 1.

The results show the composite reliability value of the construction above 0.7 so that all variables can be declared reliable.

Structural Modeling Testing

The structural model in the partial least square (PLS) is evaluated from the significance of the structural path corresponding to. The test of the structural model can be seen from the R^2 value as described in Table 2.

Furthermore, the structural model test is conducted by looking at the value of communality, which shows the correlation between indicators. The value can be seen in Table 3.

From the results of communality obtained, service quality shows a correlation between a low indicator where the value of communality ≤0.5. The variable of patient satisfaction and waiting time showed high correlation indicators where the value of communality is 0.5.

Table 1: Composite reliability value

Variable	Composite reliability
Service quality	0.8920
Patient satisfaction	0.9040
Waiting time	1.0000

Source: Data processing 2017

Table 2: R^2 results

Variable	R^2
Service quality	0.0008
Patient satisfaction	0.4273
Waiting time	0.0000
Average	0.21405

Source: Data processing 2017

Table 3: Communality result

Variable	Communality
Service quality	0.4110
Patient satisfaction	0.7580
Waiting time	1.0000
Average	0.7230

Source: Data processing 2017

Next, test to see if the model is feasible or not used using goodness of fit (GoF). The GoF value on PLS is searched manually using the Tenenhaus (2005), where the criteria for GoF values are small = 0.1; medium = 0.25; and big = 0.38.[14] If the result of GoF value obtained using the formula is 0.182, it means that the model has a small influence.

Hypothesis Testing

The first hypothesis is the waiting time does not significant to the quality of pharmacy unit services. The second hypothesis is that the service quality of pharmacy unit has a significant effect on satisfaction of NHI patients is acceptable. The third hypothesis is that the waiting time has a significant effect on NHI patient satisfaction is acceptable. The t-statistic can be seen in Table 4.

DISCUSSION

The results of this study indicate that the waiting time does not affect the quality of pharmacy unit services that have role as mediator variable. Good influence is showed by waiting time on patient satisfaction and service quality on patient satisfaction.

The waiting time is a sensitive matter in the sense of waiting time at risk of causing the quality of health services in pharmacy unit decline. Inefficient waiting times can invite patients' dissatisfaction with a health service obtained from a pharmacy unit patients will assume poor quality of health

Table 4: Path coefficient

Influence	Original sample (O)	Mean±SD	SE	*t*-statistics (O/STERR)
Waiting time → Service quality	−0.0285	−0.0286±0.0535	0.0535	0.5319
Service quality → Patient satisfaction	0.6466	0.6479±0.0447	0.0447	14.4773
Waiting time → Patient satisfaction	−0.0793	−0.0799±0.0448	0.0448	1.7712

Source: Data processing 2017, t-table 1,650 with alpha 5%, one tailed, SD: Standard deviation, SE: Standard error

services, long waiting times, and unfriendly health-care professionals. The results of Leddy et al. and Simunovic et al. studies showed that patients waiting to receive health services at pharmacy unit feel waiting can degrade their quality of life even allowing for a lower life expectancy.[15,16]

The results of second hypothesis support the previous research by Khudair and Raza, Panvelkar et al., Larson et al., Kamei et al., Briesacher and Corey, and MacKeigan and Larson (1989)[17-22] stating that the quality of pharmacy unit services has a positive and significant effect on patient satisfaction. Khudair and Raza[17] identified that the rate of service, officer attitudes, drug information, and location are factors of pharmaceutical service that has a positive and significant effect on patient satisfaction.

Parasuraman et al.[8] explain that the quality of service affects the expectations and realities received if the patient obtained services exceeding his/her expectations, then the customer will say the service is qualified and then develops into satisfaction with the hospital pharmacy unit. The condition will be in different side when the patient feels the service provided is not in accordance with expectations, and then, the customer will say that the service is not qualified so that later will affect patient satisfaction too.

In this study, the factors identified as the dimensions of latent variable formation of pharmaceutical service quality are reliability, assurance, empathy, physical appearance, and responsiveness. This indicates that NHI patient at the hospital expect a pharmacy unit, which is easy to reach, the officer should be more friendly, more responsiveness to the patient's needs, more willing to answer patient's questions, give the patients the drug within a reasonable time, clear labeling in drug package, and more convenient waiting room and cleaner pharmacy unit. The quality of service influences a patient's satisfaction and also the feelings of patients.

If the drug is not various or unavailable, then it will decrease patient's satisfaction on pharmacy unit. According to ifmaily (2006),[23] the availability of various drugs and accuracy of pharmaceutical services are major factors in dealing with competition to surrounding pharmacies. These results are supported by Kamei's research (2001)[20] and MacKeigan and Larson (1989),[22] who stated that the availability of drugs is one of the factors of pharmaceutical service that affects a patient's satisfaction.

The third hypothesis states that the waiting time has a significant effect on patient satisfaction. In this study, the waiting time is absolutely essential in realizing a patient's satisfaction. The minimum service standards of the general prescription must be ≤30 minutes and compounding prescription must be ≤60 minutes.[7] The length of the waiting time should depend on the content of prescription. If the prescribed medication is less, then the service waiting time will be fast. In contrast, if the prescribed medication contained more than five drugs and must be compounded or mixed, longer waiting time would be exceeded. In India, waiting time to get medicine is in average 30 min.[24]

One of the factors affecting a patient's satisfaction is the service waiting time. If service received by patient is fast, then the patient will feel satisfied. In contrast, if the waiting time of patient service is long, then the patient will feel dissatisfied. This is in accordance with Kristiani et al.[25] under the title "the relationship of waiting time with patient priority level three in the Waluya Sawahan Hospital Emergency Room" where higher level of satisfaction is big. According to Al Haratini,[26] in the Journal Care Kristiani et al., the waiting time is identical with the long dullness, anxiety, and long waiting time at risk of decreasing patient satisfaction and service quality. Supported by the result from Wijono,[27] patient waiting time is one of the potential components causing dissatisfaction. Patients will consider poor health services if the illness does not heal, long queues, and unfriendly health professionals though professional. According to Nursalam,[28] a patient's satisfaction is also influenced by the hospitals' hospitality, personnel's hospitality, and rate of service.

The findings of this research are remarkable when the time needed to finish drug dispense to the patients is outlying from the standard. In contrast, both pharmacy unit quality service and patient satisfaction are good. Patient seems like did not care when waiting time is longer than standard. These could be the limitation of the study when the result is logically contrasted.

Although the influence of the waiting time on a patient's satisfaction has a significant effect, it still should be evaluated frequently and more about the prescription waiting time of pharmaceutical service, at least per semester. The evaluation result would be useful to increase the satisfaction of patients visiting the pharmacy unit.

CONCLUSION

It can be concluded that from 302 prescriptions observed are only small numbers (25) that meet minimum standard of services. The waiting time for the prescriptions is too slow; however, the influences of pharmaceutical services rate indicated a positive and significant effect on patient satisfaction. It should be evaluated more about the correlation where the expected result should be in the opponent side.

On the other hand, waiting time has no positive and significant effect on the mediator service quality of pharmacy unit. The mediator did not fit with the propose path model. Furthermore, the service quality showed good influence to patient satisfaction as some references supported this finding. The better pharmacy services given, then the much more patient satisfied to the hospital.

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How to cite this article: Kautsar AP, Nurhayati NR, Gozali D. Effect of prescription waiting time on patient satisfaction mediated by service quality of pharmacy unit in public hospital in Bandung city. Natl J Physiol Pharm Pharmacol 2017;7(11):1230-1234.

Source of Support: Nil, **Conflict of Interest:** None declared.