The Influence Of Doctors And Patients' Perception On The Drugs Availability In The Hospital During The Era Of National Health Insurance

Satibi Satibi[1], Pratiwi Ayu Dritani[2], Dwi Yufenita[3], Septimawanto Dwi Prasetyo[4]

[1,4]Department of Pharmaceutics, Faculty of Pharmacy, Universitas Gadjah Mada, Sekip Utara Road, Sleman, 55281, Special Region of Yogyakarta, Indonesia[1]

[2,3]Student of Magister Program, Faculty of Pharmacy, Universitas Gadjah Mada, Sekip Utara Road, Sleman, 55281, Special Region of Yogyakarta, Indonesia[2]

Email: [1]satibi@ugm.ac.id

Abstract: ***The drug availability is still a problem in the JKN (National Health Coverage) era in Indonesia, this is the role of pharmaceutical industry in support the drugs availability by implementing good supply chain management. The research aims to identify the factors of production planning, production capacity and procurement of raw material in the pharmaceutical industry in support the drugs availability in the JKN era. This research is descriptive study with qualitative methods. This research uses primary data form in-depth interviews with employees at four national pharmaceutical companies that won the e-Catalogue tender as a producer of generic drugs in Jakarta. The sampling in this research is by purposive sampling with 6 key informants on supply chain management. The data was analyzed by interview transcripts, interpretation data and checking the validity of the data by triangulation. Production planning, production capacity and procurement of raw material have an influence on pharmaceutical companies in support the drugs availability. Production planning, production capacity and procurement of raw material have an influence on pharmaceutical companies in supporting drugs availability, because the RKO (drug requirement planning) used as the basis for procurement of drugs in e-Catalogue is inaccurate so the pharmaceutical companies can't make accurate production planning and quantity of public drugs aren't right amount, time and aren't available when needed and procurement of material still depends on imported raw material with lead time 1-3 months so it can be increase of potentially a public drug stock out.***

Keywords: doctors, patients, drugs availability, national health coverage

I. INTRODUCTION

Health development constitutes integral part of national development in realizing health development of Indonesia country, so the Constitution Number 40 year 2004 regarding National Social Security Sytem (SJSN) was creatted. National Health Insurance or JKN constitutes the part of National Social Security System (SJSN) to fulfill the basic need of worthy public health given to everybody that has paid the premium or the premium is paid by the government(Kemenkes, 2004). Health service system is good if the structure and function of health service fulfill the following conditions: available, equity, can be assecced and can

be reached, can be accepted, exact, effective, efficient, comprehensive, intergral, have a certain quality and sustainable (Kemenkes, 2004).

Drugs management ensure the availability of drugs well, the sorts and the total number are right, and at right time along with the drugs used rationally and the available fund can be used well and sustainalbe to fulfill the community needs who get treatment in the health service unit (Kemenkes, 2004). One of the main problem that always happens in the health development is the national availability of drugs. The availability of drugs in hospitals are so influenced by JKN system that the procurement of drugs refers to *e-catalog* (Kemenkes, 2016; Mendrofa and Suryawati, 2016). In the implementation by JKN, the drugs that are given to patients guided by national formulary and *e-catalog* (Carolien, Fudholi and Endarti, 2017). During the implementation, the availability of drugs in hospitals can be influenced by many kinds of factors such as epidemiology at the hospitals, and patients factor, even from the writer of prescription such as general doctors' factor and the specialist doctors alone.

The doctor's prescription pattern is not static or standardized, but dynamic and individual. One of the factors that influence the rationality of doctor's prescription is the characteristic of the doctors. The availability of drugs in hospitals is influenced by doctors, pharmacysts and patiens factors (Satibi *et al.*, 2017). The other research also mentions that the availability of drugs in hospital other than influenced by the goverment policy also influenced by doctors (Latifah *et al.*, 2018). Patients are able to influence the availability of drugs in hospitals, because they willl need the drugs in accordace to the medical condition at certain time. Factors that are related with patients as patients' demographic characteristic and the financial condition of patients also influence on the pattern of doctors' prescription. So that if we know the doctors and patients' characteristic, it will give effective result of drugs procurement at the hospital.

The purposed of this research is to understand the influence of doctors and patiens' characteristic factors toward the drugs availability, and by looking at the doctors and patients' perception that influence the drugs availability in Pharmacy Installation of Gajah Mada University (UGM) Hospital.

II. METHODS

The Design of Research

This research constitutes a descriptive analysis research that has non-experimental/ observational character, and by using quantitative data that the purpose of that is to make a description regarding the situation objectively and to compare between free and bound variables, along with to understand how and why this health phenomenon is possible to happen(Mendrofa and Suryawati, 2016).

Location and Sample of Research

The location of research at in the University of Gajah Mada (UGM) Hospital, that is on Kabupaten North Ring Road, Kronggahan, Trihanggono, Gamping, Sleman, Yogyakarta during the month of February–March 2016. For the doctor's respondent didn't do any the samping, but it was taken from all of doctors in that hospital who fulfill the inclusive and exclusive criteria, as many as 61 respondents. The patients' respondence was taken as many as 250 respondents with accidental sampling method. The total number of patients' samples that were taken had already been representative, because it was on the basis of a calculation by using Kothari formula, for the total number of population as big as 11,645 patients with the level of trust 95%, the minimum amount sample of 29 respondents was needed (Notoatmodjo, 2010).

Subject of Research

The subject of this research was the doctors and patients. The inclusive criteria of doctors who work at the Gajah Mada Univesity (UGM) Hospital are the doctors who are not grantees or are not on leave or the doctors who serve National Health Insurance (BPJS) patients, while the exclusive criteria are the doctors who do not wish to be respondents.

Inclusive criteria of cooperative patients and are able to communicate well, patients who become out-patients of specialist doctors in the Gajah Mada University (UGM) Hospital, the patients are the members of National Health Insurance, at least has visited two times since the National Health Insurance system enforced, while for the exclusive criteria are the patients who didin't fill out the questiionaire completely and didn't wish to be respondents.

The Research Instrument

The Research Instrument used are questionnaire, that contains the questions regarding the respondent's perception of drugs availability that reviewed from doctors and patients' perspective, the influence of doctors' factor toward the availability of drugs, as well as the influence of patients' factor toward the availability of drugs. The validity questionnaire is tested by the Product Moment Coefficient of Correlation method dan the reliability of it is tested by Cronbach Alpha method.

The Questionaire that contains the questions with structural answer including various aspects from the viewpoint of patients and doctors, along with the matter that influence the availability of drugs. The Questionaire is arranged on the basis of the set standard (World Health Organization, 1993; Siaahaan, 2013). The data gotten was direct data collected and the questionaire is in the form of permanent questions where one of the choice of the most appropriate answer or the most appropriate with the respondent's condition is available (multiple choice items).

From the research for the doctors' questionaire, all of the statements have the r-count value that is bigger than r-table and can be concluded that all items of statement was stated valid and included in the next analysis, while for patient's questionaire from 16 items of questions where there is one item of questions that was not valid, it is the item of the first question in the category of the patient's behavior. The statement of item that is not valid, further will not be included in further anaylisis.

In this research to measure the realibility of questionaire the method of Cronbach's Alpha with the scale of Cronbach's Alpha 0 up to 1, where the questionaire items were said reliable if the scale of Cronbach's Alpha is more than 0.600. The result of realibility test showed that the value of each variable of Cronbach's Alpha was bigger than 0.600, so that it can be concluded that the instrument of research used in this research was fullfil the reliable condition.

III. RESULTS AND DISCUSSION

The Doctor's Perception toward the Drugs Availability

On the basis of research toward doctors regarding the availability of drugs showed that as many as 63% of respondents agreed that BPJS Drugs (National Formulary) has already available in the Pharmacy Installation of Hospital (IFRS), and as many as 80% of respondents stated that BPJS drugs in the hospital was never out-of-stock in a long time. But there were 22% of respondents of doctors who stated that sometimes BPJS drugs (National Formulary) were out-of-stock in the hospital, although this matter didn't happen for a long time. The result of research shows that there is a problem related with drugs availability in

the hospital that is strengthened by the research done in Soedono hospital, Madiun, where the secure drugs availability was 45.2% in the year of 2015 that was not better if we compare with in the year of 2014 (92,2%). The research related with drugs availability at several hospitals in Sulawesi also was delivered that the secure drugs availability was still around 12-29%. While for the developing countries the drugs availability is still become a problem and needs an enhancement (Latifah *et al.*, 2018).

From the result of a deep interview, information was gotten, if the BPJS drugs that prescribed are not available in the pharmacy, so it will be replaced by the other alternative drugs that the same group, active substance and the same therapy index. Other than that, regarding out-of-stock of BPJS drugs was usually happened only around one week. As for, if the out-of-stock of drugs happened more than 1 month, that matter was possible because the out-of-stock of drugs from the factory and the pharmaceutical whole seller (PBF) factors do not produce the drugs anymore, and the drugs procurement team was fail to conduct an auction of drugs where that matter is time consuming, so that the out-of-stock of drugs is longer.

Table 1

The Persepsion of Patients toward the Drugs Availability

Table 2

On the basis of Table 2 we can understand that 88% of patients rated that the drugs availability at the Gajah Mada University(UGM) Hospital has been good already. All this time when the patients brought the prescription to the pharmacy, 97% of patients fetl that they were always served well and got the total number and sort of drugs that were in accordance to the prescriptions.

Other than that, they also got the result that all of respondents stated their agreement of the drugs given to them were complete and not expired, That matter drew that the quality of drugs physically had been great already, according to the patients. On the basis of patients' perception, Pharmaceutical Installation at Gajah Mada University (UGM) Hospital had fulfilled the condition of quality assurance of drugs preparation in accordance to the pharmaceutical service standard that is regulated by the Ministry of Health.

This result of research was in line with the research done in several hospitals, where the patients hoped that the drugs are always available in the pharmacy service and patients factor influenced significantly toward the drugs availability (Prabowo and Gunawan Pamudji, 2015; Dritani, 2016).

Statistical Analysis Test

Correlation Test

Table 3

Result of test on the basis of Table 3, doctors' perception factor seen from doctors' involvement in drugs procurement, variable of doctors' understanding, and information to the doctors from the pharmacist toward the availability of drugs had a significant correlation because the value of significant count of *Kendall* formula is smaller than 0,05 where significant value of doctors' understanding had a value as big as 0,033; significant value of doctors' understanding had a value of 0,038; and information perception factor from the pharmay had significant value as big as 0,014. Whereas doctors' obedient perception factor and doctors' behavior perception did not have a significant correlation because the significant calculation value of *Kendall* formula was more than 0,05 with each significant value of 0.535 and 0.192.

From the analysis result, variable perception factors of doctors' involvement in the drugs procurement, doctors' understanding variable and information variable from the pharmacy

toward the availability of drugs had a correlation toward the perception of the drugs availability, so it would be analysed furthermore by using ordinal regression test if the three factors have a significant influential correlation or not toward the drugs availability at the Gajah Mada University hospital in the JKN era. One of the Health Human Resources, the doctors, had a significant role in determining the availability of sort and total number of drugs in the hospital.(Prabowo and Gunawan Pamudji, 2015).

Table 4

On the basis of Table 4, the drugs availability and the patients' behavior variables stated had not significant correlation, because the sig. count value whether by Kendall formula as well as Spearman produced a significant value above 0.05, whereas patients' behavior variable and information or promotion of direct drugs to the patients has a significant correlation, because the significant value was under 0.05. This matter indicate that the regression test that was necessary to be done was regression test between patients' behavior variable with direct drugs information or promotion variables to the patients, whereas regression test between the drugs availability variable and patients behavior was not necessary to be done. In this research, for conforming the result of research, regression test toward those two variables was done constantly. The behavior of using of drugs by the patient influenced by the information got by the patients from the doctors and the environment(Prabowo and Gunawan Pamudji, 2015).

Ordinal Regression Test

Table 5

On the basis of Table 5 correlation factors of doctors and information from the pharmacy toward the drugs availability had a significant value under 0.05, it meant that positive and significant influence was available. This matter shows that doctors' involvement in the drugs procurement and information factors from pharmacy had an influence correlation toward the drugs availability at the Gajah Mada University (UGM) Hospital in the JKN era, whereas the doctors' understanding factor didn't have an influence correlation toward the drugs availability at the Gajah Mada University (UGM) hospital in the JKN era because it had a significant value that was bigger than 0.05. The procurement of drugs influence toward the drugs procurement through *e*-purchasing. The involvement of doctors in the drugs procurement was related tightly with the need of doctors in prescribing for patients at the hospital (Ningsih, Fudholi and Sumarni, 2015)' (Prabowo and Gunawan Pamudji, 2015).

The result of ordinal analyze of regression test showed that the doctors' perception factor can be seen from variable factor of doctors' involvement had a significant value as big as 0.022 where that value was smaller than the significant value of 0.05, so it was concluded that doctors' involvement factor had a influential correlation toward the drugs availability at Gajah Mada University (UGM) Hospital in the JKN era. This matter was in accordance with some other researches, where the doctors' factor, Pharmaceutical Human Resources and patients factors influenced significantly toward the drugs availability (Satibi *et al.*, 2017).

In the perception factor, information variable from pharmacy gotten a significant value as big as 0.026 that shows the result had an influence correlation toward the drugs availability at Gajah Mada University (UGM) Hospital in the JKN era, because it had a significant value under 0.05. Also it was explained that the supporting data as a result of a deep interview with the respondents that certainly every 3-4 months the Pharmacy side informed the data of drugs availability stock in the form of the out-of-stock data, pile of drugs, expired date of drugs and non-prescribed drugs directly or indirectly, so from the doctors side would give a priority for using those drugs, so that it will not be a problem of the drugs availability. The existence of regular communication with the doctors and paramedics a long with always conducted

evaluation periodically and regular was indispensable so that the drugs availability would not be disturbed because all of the data of drugs was documented well. Because of that, variable information factor from the pharmacy had an influence correlation toward perception factor of drugs availability at Gajah Mada (UGM) University Hospital in the JKN era.
In the variable perception of doctors' understanding factor showed that the result was having correlation but there was no influence toward the drugs availability factor at Gajah Mada University (UGM) Hospital in the JKN era with the significant value was bigger than the significant value of 0.05, it was as big as 0.232. From the supporting data gotten from the result of a deep interview with the respondents of drugs service system at the University of Gajah Mada (UGM) hospital that has already had the Information Technology (IT) basis system by using *Electronic Health Record (EHR*) so that it would make be easy for the Medical Human Resources to serve the patients faster.

Table 6
On the basis of analysis result with ordinal regression test toward Hipotesis I, it was concluded that the patients' behavior was influenced by the drugs information or promotion directly to the patients. The analysis result with orginal regression test toward Hipotesis II showed that patients' behavior didn't influence the drugs availability. *Chi Square* test shown on Table 6 also showed that there was no characterisctic influence of patients toward the drugs availability. This matter was in accordance with the other research where the drugs availability at the hospital was not influenced by patients' factor (Partini, Andayani and Satibi, 2014).

IV. CONCLUSION

On the basis of the analyse result and discussion in this research, the conclusion was the involvement of doctors' factor in the procurement of drugs and information from pharmacy factors had an influent correlation toward the drugs availability, whereas patients' perception factor didn't influence toward the drugs availabilty at the Gajah Mada University (UGM) Hospital in JKN era.

Acknowledgements
For the Faculty of Pharmacy Universitas Gadjah Mada which support finance for this research.

Conflict Of Interest
The authors declare there is no conflict of interest in the subject matter or materials discussed in this article.

V. REFERENCES

[1] Carolien, I., Fudholi, A. and Endarti, D. (2017) 'Evaluasi Ketersediaan Obat Sebelum dan Sesudah Implementasi JKN pada Puskesmas di Kabupaten Keerom Provinsi Papua', *Jurnal Manajemen dan Pelayanan Farmasi*, 7, pp. 30–39.
[2] Dritani, P. A. (2016) Pengaruh Faktor Dokter Terhadap Ketersediaan Obat Di Rumah Sakit Universitas Gadjah Mada Pada Era Jaminan Kesehatan Nasional. Universitas Gadjah Mada.
[3] Kemenkes (2004) Undang Undang Nomor 40 Tahun 2004 tentang Sistem Jaminan Sosial Nasional. Jakarta: Departemen Kesehatan RI.

[4] Kemenkes (2016) Permenkes Nomor 74 Tahun 2016 tentang Standar Pelayanan Kefarmasian di Puskesmas, Jakarta. Jakarta: Kementerian Kesehatan RI.
[5] Latifah, E. *et al.* (2018) 'Overview of Drug Availability and Influencing Factors in Several Low, Lower and Upper- Middle Countries: A Systematic Review', *Systematic Reviews in Pharmacy*, 10(1), pp. 67–72. doi: 10.5530/srp.2019.1.11.
[6] Mendrofa, D. E. and Suryawati, C. (2016) 'Analisis Pengelolaan Obat Pasien BPJS Di Instalasi Farmasi Rumah Sakit Panti Wilasa Citarum Semarang Rumah Sakit Panti Wilasa Citarum memiliki visi dan misi dalam melayani Rumah Sakit Panti Wilasa Citarum melayani', *Manajemen Kesehatan Indonesia*, 4(3), pp. 214–221.
[7] Ningsih, A., Fudholi, A. and Sumarni, S. (2015) 'Hubungan Penerapan Elektronik Katalog Terhadap Efisiensi Pengadaan Dan Ketersediaan Obat', *Journal of Management and Pharmacy Practice*, 5(4), pp. 233–240.
[8] Notoatmodjo, S. (2010) *Metodologi Penelitian Kesehatan*. Jakarta: Rineka Cipta. doi: 10.2969/jmsj/03920233.
[9] Partini, Andayani, T. M. and Satibi (2014) 'Analisis faktor yang mempengaruhi pelaksanaan sistem pelayanan farmasi satu pintu', *Jurnal Manajemen dan Pelayanan Farmasi*.
[10] Prabowo, P. and Gunawan Pamudji, dan W. (2015) 'Analisis Faktor-Faktor yang Mempengaruhi Ketersediaan Obat di Era JKN pada Rumah Sakit Umum Daerah Dr. Soedono Madiun', *Jurnal Manajemen dan Pelayanan Farmasi*, pp. 213–218.
[11] Satibi *et al.* (2017) 'Factor Analysis that Influence the Availability of Drugs During JKN Era', *Indonesian Journal of Pharmacy*, 29(1), p. 37. doi: 10.14499/indonesianjpharm29iss1pp37.
[12] Siaahaan (2013) 'Analisis Ketersediaan Dan Pola Peresepan Obat Di Rumah Sakit Pemerintah Di Indonesia', *litbang departemen kesehatan Republik Indonesia*, pp. 373–379.
[13] World Health Organization (WHO) (1993) Investigate Drug Use in Health Facilities. Selected Drug Use Indicators. Genewa.
[14] Yufenita, D. (2016) Pengaruh Faktor Pasien Terhadap Ketersediaan Obat Di Rumah Sakit Universitas Gadjah Mada Pada Era Jaminan Kesehatan NasionalNo Title. Universitas Gadjah Mada.

Table 1. The Perception of Docotrs toward the Drugs Availability

No.	Statements	Agree (%)
1	The availability of drugs of BPJS at the Pharmacy Installation of the Hospital (IFRS)	63
2	The out-of-stock of BPJS drugs for a long time	20
3	There was no out-of-stock of BPJS drugs in the IFRS	22

Table 2. The Persepsion of Patients toward the Drugs

No.	Statements	Agree (%)
1	The BPJS drugs procurement in IFRS was complete	88
2	The patients got the drugs with the total number and sort of it in	97

	accordance to the prescription.	
3	The drug given was still in good condition and had not expired.	100

Table 3. The Result of Correlation Test of Doctors' Respondent (Dritani, 2016)

Correlation Test	***Sig. Value* Count Control**
Involvement of Doctors	
1. Doctors are included in the planning of drugs at the hospital 2. Doctors are included in the procurement of drugs in the hospital	0.033*
Doctors' Understanding	
1. The drugs prescribed by doctors were available at the BPJS (Fornas) 2. The drugs prescribed by doctors were at the Hospital Formulary 3. The Hospital Formulary was in accordance with National Formulary 4. Essential drugs policy at a hospital was indispensable	0.038*
The Doctors' Obedient	
1. The Doctors always prescribed the drugs in accordance with National Fornulary 2. The doctors prescribed the generic drugs 3. The doctors always prescribed the drugs from certain industry 4. There was a restriction to prescribe certain drugs	0.535
The information from Pharmacy	
1. The Pharmacy always informed Fornas drugs related 2. The Pharmacy always informed the out-of-stock of drugs	0.014*
The Doctors' behavior	
1. The doctors always prescribed the drugs in accordance with the patients' need. 2. The doctors always prescribe the drugs in accordance with the request of patients 3. The doctors prescribed the drugs in accordance with affordable price for patients 4. The doctors prescribed >5 drugs on a piece of prescribtion	0.192

*sig value under 0.05 showed there was a significant correlation on the basis of *Kendall correlation test*

Table 4: Result of *Kendall* Correlation Test of Patients Respondent (Yufenita, 2016)

Correlation Test	***Sig. Value* Count Kendall**
The correlation between the patients' behavior and the drugs availability.	0.67
The correlation between the information and promotion of direct drugs to patients with patients' behavior.	0.000

Table 5: The Result of Regression of Doctors Perspective Test (Dritani, 2016)

Ordinal Regression Test	Sig. *Value* Count
Doctors' Involvement	
1. The Doctors were involved in the planning of drugs at the hospital 2. The Dotors were involved in the procurement of drugs at the hospital.	0.022*
Doctors' Understanding	
1. The drugs that the doctors prescribed were available at the BPJS (Fornas) 2. The drugs that the doctors prescribed were available at the Hospital Formulary. 3. The Hospital Formulary was in accordance with the National Formulary. 4. The essential drugs policy at the hospital was indispensable.	0.232
Information from the Pharmacy	
1. Pharmacy always informed Fornas drugs related 2. Pharmacy always informed the out-of-stock of drugs	0.026*

*sig. value under 0,05 showed that there was a significant correlation on the basis of orginal regression test.

Table 6. The Result of Patients' Regression Perspective Test (Yufenita, 2016)

Ordinal Regresion Test	Sig. Value Count	Conclusion
The influence of direct information or promotion of drugs to patients toward the patients' behavior.	0.000	Direct information or promotion of drugs to patients influenced the patients' behavior
The influence of patients' behavior toward the drugs availability	0.07	Patients' behavior didn't influence the patients' perception regarding the drugs avaiability