

# Evaluation of Physician and Pharmacy Services Quality in Out-Patient Unit at Private Hospitals Providing the National Health Insurance (NHI) Program in Indonesia

Syachroni, Anggita B. Anggraini, Rini S. Handayani, Yuyun Yuniar, and Ida D. Sari

Center for Research and Development for Health Resources and Services, National Institute of Health Research and Development, Ministry of Health, Jakarta, Indonesia

Email: {syachroni\_1987, anggita\_ba, rini11\_sasanti, dianna\_mko}@yahoo.com, yuyunyuniar2018@gmail.com

**Abstract**—The study aims to determine the quality of physician and pharmacy services based on patient perception measurement. **Method:** A cross-sectional study was carried out in 2019 through an exit poll of 300 patients/their companions in the out-patient unit at 10 Indonesia private hospitals providing the National Health Insurance (NHI) program. Data were collected using a questionnaire exploring patients' perceptions of the services, the length of consultation time, drug waiting time, and also by observing drug etiquette provided. Data were analyzed statistically using Chi-square and Mann-Whitney test. **Results:** Research shows significant differences between the two patients groups based on the type of insurance they used. Those belong to the NHI group had shorter consultation time and longer dispensing time compared with non NHI group. Differences reveals in the length of physician's consultation time for category 6-10 minutes ( $OR=3.3$ ;  $95\%CI=1.12-9.22$ ) and the length of pharmacist's consultation time for category more than 5 minutes ( $OR=8.12$ ;  $95\%CI=2.13-30.95$ ) between groups. The average drug waiting time was  $22.4 \pm 21.01$  min, in which NHI group waited 1.8 times longer than non NHI group ( $p=0.002$ ). Only 32.7% of drug etiquettes were properly prepared. The drug etiquette for liquid drugs tends to be more incomplete than solid/semi-solid drugs. **Suggestion:** The quality of physician and pharmacy services in terms of time allocation is essential to treat NHI patients properly. Drug label standardization policy enforcement is also inevitable to improve pharmaceutical services and patient safety aspects.

**Index Terms**—quality services, physician services, pharmacy services, national health insurance, drug etiquette

## I. INTRODUCTION

Public services include every activity carried out by public service providers as an effort to meet the needs of recipients and the implementation of statutory provisions as stated in the Minister of Administrative Reforms decree number 63 of 2003. According to Statute number 44 in 2009, private hospitals as public service providers have the same tasks as a public hospital to provide health services comprehensively. In order to carry out these

tasks, every hospital has 4 functions including the provision of medical services, maintenance, and improvement of individual health. Hospitals are supported by complex organizations consisting of service units, management units, as well as sub-units such as outpatient and inpatient units. Pharmaceutical services include as sub-units of services thus inseparable from the health care system in a patient services orientation perspective [1]. The Minister of Health Regulation No. 72 of 2016 regarding Pharmaceutical Services Standards states that pharmaceutical services include managing pharmaceutical products and conducting clinical pharmacy service.

In 2014 Indonesia started implementation of the National Health Insurance (NHI) program resulting in the tremendous rising of patient visits from 252,877 visits per day in 2014 to 640,765 per day in 2018. Approximately 26,000-27,000 of NHI members visited the hospitals in 2019 [2]. The high utilization rate in NHI era affects the quality of medical services, such as shorten consultation time while prolonging drug waiting time. Hospitals as referral health facilities are challenged by public demands which are more critical of the unsatisfactory quality of services. Some complaints arise due to perceived differences of services, infrastructures, and health providers between NHI patients and non NHI patients known as regular patients [3]. This problem has been caused by differences in patient satisfaction derived from their perceived service quality [4], [5]. Evaluation of hospital activities is important to achieve optimum implementation of its duties and functions as well as to develop health services quality for patients. In a management context, evaluation defines as an assessment of the implementation performance achievement aiming to measure the gap between achievement and expectations and to formulate efforts in reducing or closing the gap [6].

Evaluation of health services and the rational use of medicines are important parts in the implementation of high-quality health services at the hospital. Hospital service quality criteria are flexible according to patient preferences. Therefore, hospitals are required to continue

evaluating patients' preferences to meet the criteria of quality of service as they expected. There are various models to evaluate the service quality including CIPP models (context, input, process, product) targeting toward the management (management-oriented evaluation approach) which has been more widely used by the evaluators [7]. This model is more comprehensive as it consists of context evaluation, input evaluation, process evaluation, and outcome evaluation providing decision-oriented, and having an important goal that the evaluation is not to prove but to improve. Process evaluation is more appropriate in analyzing, prioritizing program implementation and providing information on what components need to be improved in the delivery of health services. Hence, this study aims to evaluate physician and pharmacy services quality at private hospital that cooperates with the Social Health Insurance Administration Body (BPJS Kesehatan) to provide National Health Insurance (NHI) program in Indonesia.

## II. METHOD

The cross-sectional study was carried out between Septembers to October 2019 at the out-patient unit in 10 private hospitals. This study used quantitative approach and supported by qualitative data. Quantitative method was used to evaluate both physicians and pharmaceutical service, while qualitative research was conducted through in-depth interview with physicians and pharmacists to obtain justification and to provide understanding on the quality of physician and pharmaceutical service.

The study location was selected by stratified random sampling to choose two provinces in every of the five regionals in Indonesia. The selected provinces were Aceh, Riau, Banten, West Java, Bali, South Sulawesi, South Kalimantan, Central Kalimantan, East Nusa Tenggara, and Papua. One private hospital providing NHI program was purposively selected in each province. The number of respondents were 30 in each hospital. They could be either patients, the companion, or parents of children patients. The inclusion criteria were participant who have finished treatment at out-patient unit (exit poll method), aged  $\geq 18$  years, and signing informed consent. An exclusion criterion was participant who did not complete the questionnaire data completely. Ethical approval was obtained from the Health Research Ethics Committee National Institute of Health Research and Development (NIHRD), Ministry of Health Indonesia Number: LB.02.01/2/KE.251/2019.

The data were collected using a structured questionnaire, consisted of socio-demographic characteristics, consultation experience with physicians and the information received, and consultation experience with pharmacists and the information received. The length of consultation time with physicians was based on the perceptions of the respondent, counted from the patient entering until leaving the examination room. Drug waiting time was calculated since the prescription is administered to the pharmacist/pharmacies until the drug is received by the patient. The length of pharmacists giving drug information was calculated as the pharmacist

started to explain the drug to patients until the participant leaves the pharmacy depot. Assessment of drug purchases outside the hospital based on the unavailability of drugs in the hospital to serve physician prescriptions. This assessment conducted by direct interviewing the patient and observing the number of drug items they obtained compared to prescriptions. Drug labeling etiquette was assessed through direct observation on the drugs received by patients. Observed drug label item was 1) hospital name; 2) hospital addresses; 3) hospital telephone numbers; 4) pharmacist names; 5) pharmacist license numbers; 6) prescription numbers; 7) prescription dates; 8) patient names; and 9) drugs administration information. Appropriate labeling drug etiquette based on availability these 9 components.

All statistical analyses were performed to determine the level of difference in perceived service quality between NHI patients and non NHI patients using Chi-square test for categorical data and Mann-Whitney test for numerical data. NHI patients are defined as patients paying medical expenses using the National Health Insurance (NHI), while non NHI patient are defined otherwise or patients who pay for themselves for all the expenses. The results are claimed to be statistically significant if probability value (p-value)  $< 0.05$ .

## III. RESULTS

A total of 300 patients and/or patient companions agreed to participate in this study resulting 100% response rate. The socio-demographic characteristics of the patient and/or companion of the patient are summarized in Table I.

TABLE I. PARTICIPANTS CHARACTERISTICS

Characteristics	Both Group	Patient Group			
		NHI patient		Non NHI patient	
		%	n	%	n
Age (years)					
< 48	46.0	118	43.1	20	76.9
$\geq 48$	54.0	156	56.9	6	23.1
Sex					
Male	40.0	108	39.4	12	46.2
Female	60.0	166	60.6	14	53.8
Education					
School unattended	2.7	8	2.9	0	0.0
Primary school	8.7	26	9.5	0	0.0
Junior high school	16.0	43	15.7	5	19.2
Senior high school	45.3	122	44.5	14	53.8
Graduates	27.3	75	27.4	7	26.9
Occupation					
Unemployment	7.7	22	8.0	1	3.8
Housewife	34.0	97	35.4	5	19.2
Schooling	3.7	11	4.0	0	0.0
Civil servant	18.3	52	19.0	3	11.5
Private sector	16.3	40	14.6	9	34.6
Entrepreneur	18.0	46	16.8	8	30.8
Others	2.0	6	2.2	0	0.0

Most of the participants (98.0%) received the consultation from the physician but there were no differences between two groups (Table II). Drug information given by physicians tends to be unequal to all patients. Overall, the patient felt that finite time

consultation with the physician, mostly under 5 minutes (45.6%). Physician consultation time based on the patient group was statistically difference between groups, time consultation 6-10 minutes more-likely 3.3 times applied to non NHI patients compared to NHI patients in the same period (day) of health services (OR=3.3; 95%CI=1.12-9.22). There is no statistical difference of more than 10 minutes consultation time category between both groups.

In contrast to the physician's services, all patients receive information from pharmacists (Table III). This information included drug dosage, drug administration, and drug indication. Drug side effects information was only received by less than one-tenth of patients (26.3%). There is a correlation according to allocated drug

information time by pharmacists based on patient group. Non NHI patient 8 times more-likely to get more than 5-minute consultation with a pharmacist than NHI patient (OR=8.12; 95%CI=2.13-30.95). The drug waiting time in was 22.4±21.01 minutes. Attributing to the previous indicator, there was a significant correlation between the average drug waiting times in both groups, non NHI patient got 1.8 times faster than NHI patient (12.35±9.67 minutes vs. 23.35±21.60 minutes). More than 80% of patients stated that they should not buy drugs outside of the hospital and not significant between groups. This result supported by the statement as follows:

*"...I personally do not differentiate the types of drugs between non NHI patients with NHI patients..."*  
(Cardiologist, female, 33 years).

TABLE II. CROSS TABULATION OF PHYSICIAN QUALITY SERVICE BY PATIENT GROUP

Physician Services	Both Group	Patient Group				OR	95%CI	P value
		NHI patient		Non NHI patient				
		%	n	%	n			
Consultation								
Absent	2.0	6	2.2	0	0.0	0.91	0.88-0.95	1.00
Present, concerning:	98.0	268	97.2	26	100.0	Ref		
Type of disease	85.0	225	95.1	25	96.2	0.79	0.01-6.25	1.00
Recommendations/ restrictions activity	68.0	182	67.9	18	69.2	0.94	0.39-2.25	1.00
Medication type	62.6	165	61.6	19	73.1	0.59	0.24-1.45	0.34
Drug dosage and administration	54.4	142	53.0	18	69.2	0.51	0.21-1.19	0.17
Drug side effects	19.0	48	17.9	8	30.8	0.49	0.20-1.20	0.12
Timing consultation								
≤ 5 minutes	45.6	128	47.8	6	23.1	Ref		
6-10 minutes	30.3	77	28.7	12	46.2	3.33	1.12-9.22	0.04
> 10 minutes	24.1	63	23.5	8	30.8	2.7	0.90-8.14	0.07

TABLE III. CROSS TABULATION OF PHYSICIAN QUALITY SERVICE BY PATIENT GROUP

Pharmaceutical Services	Both Group	Patient Group				OR	95%CI	P value
		NHI patient		Non NHI patient				
	%	n	%	n	%			
Pharmacist information								
Absent	0.0	0	0.0	0	0.0			Constant
Present, concerning:	100.0	274	100.0	26	100.0			
Drug indication	81.7	221	80.7	24	92.3	0.35	0.08-1.52	0.19
Drug administration	85.7	234	85.4	23	88.5	0.76	0.22-2.67	1.00
Drug dosage	96.7	265	96.7	25	96.2	1.18	0.14-9.68	0.60
Drug side effect	26.3	72	26.3	7	26.9	0.97	0.39-2.40	1.00
Drug Information Timing								
≤ 5 minutes	96.7	268	97.8	22	84.6	Ref		
> 5 minutes	3.3	6	2.2	4	15.4	8.12	2.13-30.95	0.007
Drug waiting time, minutes (mean ± SD)	22.4±21.01	23.35±21.60		12.35±9.67				0.002
Drugs purchasing outside the hospital								
Present	12.7	34	12.4	4	15.4	Ref		
Absent	87.3	240	87.6	22	84.6	0.78	0.25-2.40	0.76

Table III also shows that medication fulfillment for NHI patients was higher compared to non NHI patients. Contextually, the physician must adhere to the BPJS regulations in giving or prescribing medication to NHI patients and they are bound to these regulations. The variety of the drugs received by NHI patients was mostly generic drugs. In contrast with non NHI patients, physicians prescribed independently according to their basic knowledge and beliefs or sometimes also being influenced by patient preference. Our result supported by the statement as follows:

*"...generally, there is no difference, but if they (non NHI patients) ask for patent drugs or asked to be changed from generic to patent, I will give it but it's usually not available here. Subsequently, the drugs can be purchased outside the hospital using the prescription..."* (General practitioners, female, 30 years)

Assessment results for drug labeling (etiquette) sub-components received by patients (N=333) based on drug type can be seen in Table IV. The sub-components of drug etiquette comprised of hospital name, date prescription, patient name, drug dosage, and

administration are available for both liquid and solid/semisolid drugs. The sub-component of pharmacist in charge name complemented with the practice license number was rarely noticed in the drug label. Overall, drug etiquette appropriateness was only 32.7% and etiquette in solid/semisolid drugs was slightly considered better than liquid drug.

TABLE IV. EVALUATION DRUG LABELS (ETIQUETTE)

Sub-component drug label	Both Type	Drug type			
		Liquid drug (N=48)		Solid/ semisolid drug (N=285)	
		%	n	%	n
Hospital name	100.0	48	100.0	285	100.0
Hospital address	58.3	20	58.3	174	61.1
Hospital phone	67.0	25	52.1	198	69.5
Pharmacist name	48.3	13	27.1	148	51.9
Pharmacist license number	39.3	13	27.1	118	41.4
Prescription number	63.7	33	68.8	179	62.8
Prescription date	100.0	48	100.0	285	100.0
Patient name	100.0	48	100.0	285	100.0
Drug information	99.7	48	100.0	284	99.6
Overall appropriateness	32.7	12	25.0	97	34.0

#### IV. DISCUSSION

Health industry is one of the various industrial sectors growing rapidly in Indonesia especially in the NHI era. Private hospitals, including their sub-service component are more demanded by their customers to provide better service than the public hospitals. Personal dimension (human factor) is considered important in a health care service industry [8]. This factor can also be one of hospital indicators for quality. Good quality service is an attracted factor to gain patient loyalty and new patients as well as hospital cash flow. The quality of service expected by patients includes time responsiveness of service, good attitude and behavior of physicians and other health professionals, and the clarity of the information provided [9]. Minister of Administrative Reforms decree No. 63 in 2003 also states the principle of public service consisted of simplicity, clarity, time certainty, accuracy, security, responsibility, facilities and infrastructure completeness, accessibility, discipline, courtesy and hospitality, and comfortability.

##### A. Physician Service

Our study indicates slight differences in the physician services between NHI patients and general patients. Less than 3% of NHI patients expressed that they did not accept any consultations with the physician. A slightly higher proportion of regular patients received more information about the disease, medication plan, any avoidance or tolerated activities, and the potential side effects of the treatment. Our study findings also indicate the time that regular patients spend in the examination room is significantly different to be 5 minutes longer than NHI patients. A study mentions that doctors spend at least 2 to 3 minutes to proceed answers to patient questions during clinical treatment [10]. The length of physician consultation often varies among countries and

are determined by both physician and patient characteristics. In general, studies have shown that patients prefer longer consultations than their waiting time [11], [12]. As a comparison, several studies in primary health care show the average consultation time ranges between 10 to 15 minutes. Adequate time consultation allows the physician to provide advice on health-promoting activities [13]. The results of doctor's consultation disclosed that the provision of instigation or abstinence activity information was the second topic mostly received by patients. The service quality theory by Parasuraman (SERVQUAL) explains that differences in services whether tangible or intangible will bring about resentment among patients. This also violates the policies set by the national health insurance program in Indonesia that everyone should have the same right to get safe and quality health services.

##### B. Pharmacy Service

The pharmacy unit in Indonesian hospital is ordinarily under the management of a supervisor pharmacist responsible for daily pharmaceutical services and assisted either by other pharmacists or pharmaceutical technician meeting the competency requirement. The mandatory service starts with screening prescriptions given by a physician, validating prescriptions, ensuring the use of prescription drugs, drug preparation, and giving information to the patient. Based on service, our results show that pharmacists have carried out their duties in accordance with their functions in the hospital, especially of the respondents we interviewed expressed entirely get an the drug information explanation from pharmacist. The average waiting time for drugs from ten hospitals is also still meet the standards with the minimum service standard set by the Ministry of Health Indonesia number 129 in 2008, waiting time  $\leq 30$  minutes for general drugs and  $\leq 60$  minutes for concoction drugs.

Similar study results showed average drug waiting time in studies conducted in India and Southwestern Nigeria were less than 30 min [14], [15]. In Indonesia several studies reported average waiting time of out-patient pharmacy services ranging from 19.27 to 39.23 minutes with the longest service time reaching to 54.08 minutes [16], [17]. However, similar to physician services - in pharmacy services, duration of drug information (consultation) and waiting time for non NHI patients were differ from NHI patients. Even though there is no standardization for drug information given by pharmacist, the patients are more likely to be satisfied if their have longer time to get the information.

Overall on average participants always get their drug at the hospital pharmacy. Although only less than 15% of the patient not always filled their medication prescriptions at the pharmacy, this group of patients should not be ignored as long waiting time and their higher expectation to be filled at the pharmacy is important. In other hand, a number of studies result that drug waiting time is closely related to patient satisfaction besides factors helpful and caring from the pharmacy

staff and it can also lead to poor patient compliance with instructions given at the pharmacy [14]-[16].

Afolabi and W. O. Erhun deduce total waiting time in pharmacies mostly determined by delay component through the dispensing process, the circuitous procedure for prescription billing, and payments method [15]. Visiting hours of patients, availability of labor, and large number of patient's leads to long queues also affect dispensing and pharmacy service rates [16], [17]. Administrative screening process recipes in NHI patients also triggers longer drug waiting time compared to non NHI patients. On this case because the NHI patients must pass the validation process of the patient eligibility letter (*surat eligibilitas pasien*, SEP) and the list of drugs that can be covered by NHI program. Although in this study we did not assess patient satisfaction, a lot of scientific evidence that states if the realities conditions are lower than expectations it will make customers tend to talk that perceived service was not qualified and resulting in lower patient satisfaction. At the past studies, it is reported that unsatisfied patients when perceived waiting times are not equal than their expectations [18]. Some studies showed the rate of service was still a major issue among pharmacists and shorter drug waiting times surely giving a positive influence on patient satisfaction [19]. Therefore Kautsar et al in their study conclude the better pharmacy services are given, the more patients satisfied with the hospital [20].

Etiquette or drug labeling is a designation given by the health facilities (pharmacies) that used to provide information to the patient. This study revealed that appropriate drug labeling (etiquette) from 9 sub-component analysis remained low. Issue with inadequacies of drug labeling have been frequently reported among healthcare institutes in other countries. Even the missing drug labeling in our study mostly not have a direct impact to the patient but is it may be having issue with pharmaceutical management such as pharmacist in charge name, pharmacist license number, prescription number, and hospital address, then labeling for drug liquid form (syrup) were lower than solid/semisolid form. Based on observation we found that hospitals tend to not rewrite or attached the drug label either in bottle or box (liquid form) and for solid/semisolid drug they more often using a plastic pouch with seal and write directly on it without sticker so they didn't put information properly. In the United States, inappropriate medication label led to caregivers made errors in administering liquid medications to their children [21], [22].

Currently, Indonesia standardization regulation just classifying drug labels based on their use or function; white label is used for drugs consumed through the digestive tract (oral) while blue label is used for drugs that are not consumed through the digestive tract (topical). As there were many components to the drug labeling and variety between hospitals, it was possible to make unified set sub-component drug label. The future standardization will be useful for drug dispensing practice as Wolf et al suggestion through their randomized controlled trial

study that reasonable and appropriate drug labeling could contribute and simplify a daily drug regimen [23]. Chan et al also giving important insights in current Malaysia drug labeling practice. They suggest for developing a new label that incorporates a new format with additional information like pictograms for pediatric liquid medications [24].

This study has the limitation, the drug's list that purchased outside the hospital by patients was not collected. So, the assessment based on comparison of the number of drug items received by patients with prescribed and respondents' recognition.

## V. CONCLUSION

Our study provides strong evidence that service time given by physicians and pharmacy services tend to differ between NHI patients and non NHI patients. It is recommended for the hospital to take proper improving intervention since prolonging unresolved issues can affect and reduce patient satisfaction. Also, the practice of drug labeling among hospital pharmacies in Indonesia was various and less appropriate, so the improvement of drug etiquette standardization was necessary. Further evaluation of the benefit obtained from appropriate drug labels is necessary for both daily pharmacy practice and patient safety aspects.

## CONFLICT OF INTEREST

The authors declare no conflict of interest.

## AUTHOR CONTRIBUTIONS

Syachroni, Anggita B. Anggraini, Rini S. Handayani, Yuyun Yuniar, Ida D. Sari conducted the research. The research was organized by Rini S. Handayani. All of the authors contributed equally in the writing of the paper and all authors had approved the final version.

## ACKNOWLEDGMENT

We wish to thank the Director of Center for Research and Development for Health Resources and Services for his support to this study. Also, we thank all director of private hospital, head of health office both province and municipal in the tenth province for allowing this study and study of drug use in hospitals and clinics team researchers for their assistance as the hospital coordinators.

## REFERENCES

- [1] M. M. Puspita, A. M. Ulfa, and R. Chandra, "Waiting time for BPJS prescription in out-patient pharmacy installation RSIA Anugrah Medical Center Metro," *J. Farm Malahayati*, vol. 1, no. 2, 2018.
- [2] Mundiharno, "Building a culture of evidence based policy," *Info. BPJS Kesehatan*, pp. 10-11, 2019.
- [3] I. Ratnamiasih, R. Govindaraju, B. Prihartono, and I. Sudirman, "Human resources and quality of hospital services," *Trikonomika*, vol. 11, no. 1, pp. 49-57, 2012.
- [4] V. V. Thai, "Service quality in maritime transport: Conceptual model and empirical evidence," *Asia Pacific J. Mark. Logist.*, vol. 20, no. 4, pp. 493-518, 2008.

- [5] M. Duggirala, C. Rajendran, and R. N. Anantharaman, "Provider-perceived dimensions of total quality management in healthcare," *Benchmarking*, vol. 15, no. 6, pp. 693-722, 2008.
- [6] P. I. Pasaribu, A. Marom, and F. Fathurrochman, "Evaluation of hospital health services in the regional general hospital of Batubara Regency, Sumatera Utara post autonomy region," *J. Public Policy Manag. Rev.*, vol. 4, no. 3, pp. 261-276, 2015.
- [7] S. Maulana, B. Supriyono, and H. D. Hermawan, "Evaluation of health service in regional expansion with the CIPP method (Study at Tana Tidung Regency)," *Wacana*, vol. 16, no. 4, pp. 186-196, 2013.
- [8] E. Karassavidou, N. Glaveli, and C. T. Papadopoulos, "Quality in NHS hospitals: No one knows better than patients," *Meas. Bus. Excell.*, vol. 13, no. 1, pp. 34-46, 2009.
- [9] A. Chilgreen, "Managers and the new definition of quality," *J. Heal. Manag.*, vol. 53, no. 4, pp. 221-229, 2008.
- [10] G. D. Fiol, A. I. Weber, C. P. Brunker, and C. R. Weir, "Clinical questions raised by providers in the care of older adults: A prospective observational study," *BMJ Open*, vol. 4, no. 7, 2014.
- [11] A. B. Azraii, K. N. Kamaruddin, and F. Ariffin, "An assessment of patient waiting and consultation time in a primary healthcare clinic," *Malays. Fam. Physician*, vol. 12, no. 1, pp. 14-21, 2017.
- [12] M. Deveugele, A. Derese, A. V. D. Brink-Muinen, J. Bensing, and J. D. Maeseneer, "Consultation length in general practice: Cross sectional study in six European countries," *BMJ*, vol. 325, no. 7362, p. 472, 2002.
- [13] G. K. Freeman, J. P. Horder, J. G. R. Howie, A. P. Hungin, A. P. Hill, N. C. Shah, *et al.*, "Evolving general practice consultation in Britain: Issues of length and context," *Br. Med. J.*, vol. 324, pp. 880-882, 2002.
- [14] J. Tiwari, P. Kasar, and V. Kabirpanthi, "Assessment of patient satisfaction: A descriptive study at outpatient department of a tertiary care public hospital in Jabalpur," *Int. J. Med. Sci. Public Heal.*, vol. 3, no. 12, pp. 1511-1514, 2014.
- [15] M. O. Afolabi and W. O. Erhun, "Patients' response to waiting time in an out-patient pharmacy in Nigeria," *Trop. J. Pharm. Res.*, vol. 2, no. 2, pp. 207-214, 2013.
- [16] N. S. Febrianta, S. Sundari, and D. Pudjaningsih, "Waiting time analysis of pharmaceutical services with queue method in PKU Muhammadiyah Hospital Bantul," *Int. J. Sci. Res.*, vol. 7, no. 9, pp. 54-58, 2017.
- [17] I. Nurjanah, F. R. R. Maramis, and S. Engkeng, "The relationship between waiting time for prescription services and patient satisfaction in Kimia Farma Complement Pharmacy Prof. Dr. R.D Kandou Manado General Hospital," *Pharmacon*, vol. 5, no. 1, pp. 362-370, 2016.
- [18] K. Johnson, J. Parker, J. McCombs, and M. Cody, "The Kaiser Permanente/USC patient consultation study: Patient satisfaction with pharmaceutical services, University of Southern California," *Am. J. Heal. Syst. Pharm.*, vol. 55, pp. 2621-2629, 1998.
- [19] I. F. Khudair and S. A. Raza, "Measuring patients' satisfaction with pharmaceutical services at a public hospital in Qatar," *Int. J. Health Care Qual. Assur.*, vol. 26, no. 5, pp. 398-419, 2013.
- [20] A. P. Kautsar, N. R. Nurhayati, and D. Gozali, "Effect of prescription waiting time on patient satisfaction mediated by service quality of pharmacy unit in public hospital in Bandung city," *National Journal of Physiology Pharmacy and Pharmacology*, vol. 7, no. 11, pp. 1230-1234, 2017.
- [21] M. D. Smith, H. A. Spiller, M. J. Casavant, T. Chounthirath, T. J. Brophy, and H. Xiang, "Out-of-hospital medication errors among young children in the United States, 2002-2012," *Pediatrics*, vol. 134, no. 5, pp. 867-876, 2014.
- [22] H. S. Yin, B. P. Dreyer, H. A. Moreira, L. V. Schaick, L. Rodriguez, S. Boettger, *et al.*, "Liquid medication dosing errors in children: Role of provider counseling strategies," *Acad. Pediatr.*, vol. 14, no. 3, pp. 262-270, 2014.
- [23] M. S. Wolf, T. C. Davis, L. M. Curtis, S. C. Bailey, J. P. Knox, A. Bergeron, *et al.*, "A patient-centered prescription drug label to promote appropriate medication use and adherence," *J. Gen. Intern. Med.*, vol. 31, no. 12, pp. 1482-1489, 2016.
- [24] H. K. Chan, M. A. Hassali, C. J. Lim, F. Saleem, and N. A. Ghani, "Improving pediatric liquid medication labeling of the hospital information system in Malaysia: Qualitative analysis of pharmacists' perceptions," *Pharm. Pract. (Granada)*, vol. 14, no. 2, p. 699, 2016.

Copyright © 2021 by the authors. This is an open access article distributed under the Creative Commons Attribution License ([CC BY-NC-ND 4.0](https://creativecommons.org/licenses/by-nc-nd/4.0/)), which permits use, distribution and reproduction in any medium, provided that the article is properly cited, the use is non-commercial and no modifications or adaptations are made.

**Syachroni** is Master of Public Health, in the field of health service management from Universitas Airlangga. He is currently working as researcher at NIHRD, Ministry of Health Indonesia. His research interest includes medical microbiology, pharmaceutical care, and human resources management.

**Anggita B. Anggraini** is a Pharmacist from University of Indonesia and Master of Public Health, in the field of health service management from Universitas Indonesia. She is currently working as researcher at NIHRD, Ministry of Health Indonesia. Her research interest includes epidemiology, pharmacy, and health resources management.

**Rini S. Handayani** is a Pharmacist and Master of Clinical Epidemiology and Biostatistics from Gadjah Mada University. She is currently working as researcher at NIHRD, Ministry of Health Indonesia. Her research interest includes pharmaceutical care.

**Yuyun Yuniar** is a Pharmacist from Bandung Institute of Technology and Master of Art in Health Social Science from Mahidol University. She is currently the head of pharmaceutical and medical devices section. Her area of interest includes pharmaceutical management and policies, pharmaceutical services, medicines use and social aspect of medicines such as adherence.

**Ida D. Sari** is a Pharmacist and Master of Public Health from Gadjah Mada University. She is currently working as researcher at NIHRD, Ministry of Health Indonesia. Her research interest includes pharmacy management and human resources management.