

Effect of Anti-Hypertension Counseling Training on Increased Pharmacist Knowledge in Public Health Centers in Pandeglang Regency

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Abstract

Pharmaceutical Care by Pharmacist at Public Health Centers in Pandeglang is not considerably optimal. This can be seen from the increasing of the using anti-hypertensive drugs from year to year at Public Health Center, as the biggest cause of death in Pandeglang Regency categorized to non-communicable diseases. This requires pharmacists to optimize their roles further by increasing their knowledge and capability through training. This study aimed to assess knowledge level and ability of Pharmacists in Public Health Centers in Pandeglang Regency and to find out whether a significant influence could be emerged before and after training. This research was a pre-experimental study with the design of one group given pretest and posttest. Training was held twice. The first training was held in Pandeglang Regency and about Communication Skill and the second one was held in Bandung City and about Anti-Hypertensive Therapy. The results of this study indicated that in the first training the number of respondents who was not good or respondents classified as poor knowledge was 42.86% before training, the number declined after training to 7.14% and the increasing on the number of respondents classified as good enough or fair respondents, from 57.14% before training to 92.86% after training. The average score was 66.57 after training higher than the score before training was 55.36. Moreover, the second training indicated that the number of respondents who classified as poor knowledge before training was 85.71%, the number of declined after training to 14.29% and the increasing on the number of respondents classified as knowledgeable or good respondents, from 0% before training to 14.29% after training. The average score after training was 68.9 higher than the score before training was 42.5. In conclusion, both the first training and the second training can increase Pharmacist knowledge and ability to give Pharmaceutical Care about anti-hypertension.

Keywords: *Anti-hypertension, Counseling Training, Knowledge Level, Pharmacists.*

Introduction

Hypertension is a rather simple phenotype characterized by an increase in systemic blood pressure above an arbitrarily defined threshold and is a major global health problem, which condition of a person increases in blood pressure above normal, namely systolic blood pressure ≥ 140 mmHg and or diastolic blood pressure ≥ 90 mmHg. Yet, the mechanisms leading to the increase in blood pressure are extremely complex and involved a wide variety of neurohormone, renal, metabolic, and vascular factors [1, 3].

Hypertension is the biggest health problem in the world, especially in developing countries. The survey on the prevalence of hypertension in 2007 was based on the results of measurements in Indonesian population aged over 18 years was 31.3% for men while women reached 31.9% of the population total aged > 18 years. The rate of hypertension sufferers reached 32% in 2008 with a range of patients aged > 25 years. The number of male sufferers reached 42.7%, while 39.2% were women.

Sometimes hypertension causes symptoms such as headache, shortness of breath, dizziness, chest pain, palpitations of the heart and nose bleeds, but not always [4, 7].

The scientific literature has established the clinical and financial benefits of medication adherence and the role of dispensing channel in impacting adherence to medications. Medication adherence, defined as taking medications as prescribed, is a key component in controlling disease progression and managing chronic illnesses such as hypertension [8, 9]. Patient self-management is a key approach to manage non-communicable diseases.

A pharmacist-led approach in patient self-management means collaborative care between pharmacists and patients with a Pharmaceutical Care approach [10]. Pharmaceutical Care is a direct and responsible service toward patients related to Pharmacy supply in order to achieve definite results for improving the quality of patients' life [11]. Multiple terms and definitions exist to describe specific aspects of pharmacy practice and service provision, yet none encompass the full range of professional services delivered by community pharmacy.

The majority of current pharmacy service definitions and nomenclature refer to either the professional philosophy of pharmaceutical care or to specific professional pharmacy services; particularly Pharmaceutical Care provided by pharmacists with a focus on drug safety, effectiveness and health outcomes. A professional pharmacy service is defined as "an action or set of actions undertaken in or organized by a pharmacy, delivered by a pharmacist or other health practitioner, who applies their specialized health knowledge personally or via an intermediary, with a patient/client, population or other health professional, to optimize the process of care, with the aim to improve health outcomes and the value of healthcare" [12].

Clinical pharmacy services are part of Pharmaceutical Care that are directly and accountable to patients in connection with Medicines and Medical Materials, with the aim of achieving definite results to improve the quality of life of patients. one of the clinical pharmacy services is counseling [13]. Issues related to pharmacists in community health centers in most regions in Indonesia

are the availability and the number does not match to the workload, so that pharmaceutical cares have not been going well due to limitations of time and effort. Also there are pharmacists feel less capable in providing drug information to other health professionals, especially medical specialist several health centers, so it is still necessary coaching and training [14].

From the results of in-depth interviews with the Head of the Health Service and Pharmacists at the Public Health Center in Pandeglang, some of the services needed to optimize clinical pharmacy services (counseling) include communication skills and knowledge of anti-hypertensive therapy. both of these can be achieved through training [15]. It is important that pharmacists giving counseling to patients about their prescribed medicines, as it leads to improving therapeutic outcomes, increases compliance, and decreases confusion and insecurity [16].

One of the important things in Pharmaceutical Care is communication skill because it is first to stepped to make the patient understand the information more accurately and quickly about drug use and therapy. Poor communication skill leads to frequent misunderstanding and can make a mistake on medication.

The role of the pharmacist as a "communicator" of information and advice between patients, other healthcare practitioners, and the community is recognized as a vital component of the responsibilities of a practicing pharmacist [17]. Thus, the first training is needed by Pharmacists, because it can improve their confidence and knowledge in terms of providing drug information to patients. Also, the second training aims to improve Pharmacist ability specifically for the management of antihypertensive therapy. It relates to the fact that hypertension is the biggest cause of death in Indonesia, including in the Pandeglang Regency, as the category of non-communicable diseases [18, 19].

The purpose of this study was to determine the knowledge level of pharmacists about communication skills and anti-hypertension therapy before and after training and to find out whether a significant influence could emerge before and after training. The hypothesis states that "Ho" there is no the

difference in the knowledge level of Public Health Centre Pharmacists in Pandeglang Regency before and after training, while “Ha”, there are some differences before and after training on the knowledge level of Public Health Centre Pharmacists in Pandeglang Regency.

Material and Methods

Subject / Participants

All Pharmacists practicing in Public Health Centers in Pandeglang Regency.

Time

The data of this study were obtained from two trainings. The first training was held on April 24th-25th, 2018 in Pandeglang Regency, Banten Province. The second one was held on November 21st-23rd, 2018 in Bandung City.

Setting

Participants have given the pretest first to find out the competency standards of the trainees before attending the training. Once done, the training will contain material to be provided and role play. Participant assessments will be made from the results of written post-tests and role plays. An assessment will be given by the facilitator. The researcher used pre-experimental research design toward pharmacists with the design of one group given pretest, posttest and a questionnaire. Non-probability sampling was conducted for all Pharmacists at the training event.

Instrument

The validated questionnaire about Guideline to Measure Communication Skills of Counseling Pharmacist to Patients (the first

training, contained 22 closed questions) and Questionnaire about Management of Antihypertensive Therapy (the second training, 20 closed questions).

Statistical Analysis

Data was processed statistically using Statistical Products and Solution Services Version 25 (SPSS V.25) which was presented in the form of graphs and tables. Level of knowledge was categorized into good if percentage $\geq 75\%$, enough/fair if $56\% \leq$ percentage $< 75\%$, and not good/poor if percentage $< 56\%$ [22].

Ethics Approval

The research was approved by The Research Ethics Padjadjaran University, Indonesia which issued in Bandung, June, 08th 2018 with Number 637/UN6.KEP/EC/2018.

Results

The average value of Pharmacist pretest on first training was 55.36 and the average value of Pharmacist post-test was 66.57. In the other hand, the average value of Pharmacist pretest on second training was 42.5, while the average value of Pharmacist post-test was 68.93. Because the post-test score is greater than the pre-test, then descriptively there is a difference in the average training results between the pre-test and post-test.

Value of -11.2143 and -26.4286 is the result of the difference in the average value of the pre-test and post-test, both from the first training and the second training, with 95% confidence interval of difference lower and upper. This can be seen in Table 1 and 2.

Table 1: Pre-Test and Post-Test at Training 1. a. Guideline to Measure Communication Skills of Counseling Pharmacist to Patients (the first training)

No.	Assessment Aspect	Score
Opening Interview		
1	Greet the patient	0 - 2
2	Verifying Patient Identity, including: a. Full name b. Age	0 - 2 0 - 2
3	Introducing yourself by mentioning: a. Name of Pharmacist b. Position (as a pharmacist on duty) c. Delivering the purpose of counseling d. Asking the patient's willingness to receive counseling e. Deliver the time / duration of counseling (for 10 ' -15') f. Welcoming patients	0 - 2 0 - 2 0 - 2 0 - 2 0 - 2 0 - 2
4	Verifying the patient's general complaints	0 - 2

5	a. Asking patients about on-going treatment b. Asking a history of previous treatment (including consumption of herbal medicines and supplements)	0 – 2 0 – 2
Communication Skill on Counseling Session		
6	Asking whether the patient is a new or old patient / patient who received a new drug or not? a. (the situation for new patients to buy new drugs) Asking for an explanation that has been conveyed by the doctor to the patient related to the drug (three prime questions) 1. What did the doctor say about the patient's medication? 2. What did the doctor explain about hope after taking this medicine? 3. What is the doctor's explanation about how to take this medicine?	0 – 2 0 – 2 0 – 2 0 – 2
7	Asking patients about allergic history	0 – 2
8	Providing information about: a. Medicine name b. Indication c. Dosage and method of use / rules of use d. Duration of drug use In accordance with the interests of therapy and the patient's lifestyle	0 – 2 0 – 2 0 – 2 0 – 2
9	Providing information regarding drug interactions that may emerge between drugs and food	0 – 2
10	Providing related information: a. Possibility of side effects b. How to recognize signs of side effects c. Preventive actions that can be taken if side effects arise Note: Pay attention to drugs with a narrow therapeutic index	0 – 2 0 – 2 0 – 2
11	Providing additional information related to the drug: a. Storage method b. Drug expiration time c. Take actions if the dose is forgotten	0 – 2 0 – 2 0 – 2
Closing Interview		
12	Asking the patient if there is anything to ask about the drug information that has been given	0 – 2
14	Asking the patients to repeat important information that has been received, including: Indications, dosage, method of use / rules of use, method of storage, if the dose is forgotten, suitable with the interests of patient therapy.	0 – 2
15	Closing the interview with: a. Providing information about the actions taken if the desired the response is not achieved and when the patient needs to go back for treatment to the doctor b. Convincing patients to understand the given counseling c. Delivering motivational words and prayer for the successful treatment of patients.	0 – 2 0 – 2 0 – 2
16	Documenting the activities into counseling card for patients in taking patient medication records or patient medication record (PMR)	0 – 2
The Ability to Build Empathy and Communication with Patients		
17.	Brand Image of pharmacists: neat and friendly	0 – 2
18.	Using language that is easy to understand when counseling	0 – 2
19	Ability to ask and listen carefully to patients (if doing anything else, for example taking notes or writing, not happening while on-going interviews with patients.	0 – 2
20	Giving empathy and support to patients, motivating and encouraging behavioral change through understanding disease and its treatment to improve patient integrity.	0 – 2

21	Paying attention to eye contact and time during counseling	0 – 2
22	Conducting interviews in a logical or precise sequence and use language that is easily understood by patients	0 – 2
Total Score		80

1. b. Questions about Management of Antihypertensive Therapy (the second training)

No	Questions	Answers	Checklist
1.	Regulation related to Pharmaceutical Care Standard at Public Health Center is?	a. Law No. 36 of 2009 b. Law No. 36 of 2014 c. Government Regulation No. 51 of 2009 d. Minister of Health Regulation No.75 of 2014 e. Minister of Health Regulation No.74 of 2016	<input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/>
2.	A direct and responsible service toward patients related to Pharmacy supply in order to achieve definite results for improving the quality of patients' life is?	a. Recipe Service b. Drug Information Provision c. Drug Information Service d. Pharmacy service e. Counseling	<input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/>
3.	The basis used by pharmacy practitioners as a guideline in Pharmaceutical Care is?	a. Drug Information Service b. Operating Procedure Standard c. Pharmaceutical Care Standards d. Monitoring and Evaluation e. Evaluation of Pharmaceutical Quality Service	<input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/>
4.	Supervision of pharmacy stock management, based on the regulation of Health Minister No. 74 of 2016 which is different from the regulation of Health Minister No. 30 of 2014, be done by?	a. City Health Office b. Regency Health Office c. Provincial Health Office d. Head of BPOM e. Minister of Health	<input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/>
5.	Monitoring report of pharmacy stock management is reported to The Health Minister on?	a. Once a month b. Every three months c. Every six months d. Once a year e. Depending on the necessity (situational)	<input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/>
6.	What is the regulation about pharmaceutical stock management and BMHP in Public Health Center?	a. PMK No. 72 of 2016 b. PMK No. 73 of 2016 c. PMK No. 74 of 2016 d. Presidential Regulation No. 74 of 2016 e. Presidential Regulation No. 73 of 2016	<input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/>
7.	How many steps are there in the cycle of drug management in Public Health Center based on Regulation of Health Minister?	a. 5 b. 6 c. 7 d. 8 e. 9	<input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/>
8.	What is the planning method Involved in morbidity?	a. Consumptive b. Morbidity c. Combination d. A B C e. VEN	<input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/>
9.	What variable is needed in the Consumptive method?	a. Stock Necessity b. The number of sick patients c. The lost medicine d. The quantity of drugs e. Treatment Standard	<input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/>
10.	What is the difference between drug management in Public Health Center and in a hospital?	a. Destruction is not carried out directly b. Drugs selection from the formulary c. Direct procurement or others d. Planning method e. Calculation	<input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/>











11.	What is NOT included in the Calculation of drug needs?	a. Working Stock (Stock in the current period) b. Non-working Stock c. Necessity Stock d. Waiting Time Stock e. Alternative Stock	
12.	The storage of good Pharmaceutical stock is?	a. Tablet and syrup drugs with the same active substance are stored in the same place b. Storage of narcotic drugs along with hard drugs c. Piling the boxes up for room efficiency d. Storage of drugs on the floor using pallets e. Storage of the thermolabile drug in the drug rack	
13.	The following definitions of LASA, except?	a. Similar name b. Similar pronunciation c. Similar medicine with different strength d. Similar package e. Similar group/category	
14.	The requirements of Drug Services for Public Health Center accreditation is below, except?	a. There is a guarantee of waiting time for finished drugs and medicinal drugs b. Various types of required drugs are available in sufficient quantities c. Prescribing, ordering, and drug management are guided by effective policy and procedure d. Making mistake on drugs is reported through the procedure and fixed time by Public Health Center e. Side effect is documented in patient's medical record	
15.	What is the patient's characteristic required to be aware of giving Beta-antihypertensive blockers?	a. Heart disease b. Asthma c. Kidney disorders d. Uric acid e. Hyper cholesterol	
16.	What is the side effect to be aware of thiazide drugs?	a. Increasing of uric acid b. Increasing of cholesterol c. Increasing of potassium d. Decreasing of calcium e. Decreasing of heart beat	
17.	What kind of anti-hypertension could not be combined?	a. Captopril and amlodipine b. Bisoprolol and captopril c. Lisinopril and irbesartan d. Bisoprolol and amlodipine e. Captopril and Hydrochlorothiazide	
18.	Which of the following drugs can cause hypertension?	a. Domperidone b. Dexametasone c. Azithromycin d. Alprazolam e. Tramadol	
19.	What kind of anti-hypertension avoided by mono therapy at initial therapy?	a. Amlodipin b. Bisoprolol c. Captopril d. Hydrochlorothiazide e. Irbesartan	
20.	What counseling should be given regarding how to take captopril medicine?	a. Empty stomach b. One hour before eating c. 2 hours after eating d. Half before eating e. Half an hour after eating	

Table 2: Paired Samples Test Statistics on Training one and two

Training	Mean	N	Correlation	Sig.	t	df	Sig.(2-tailed)
Training I	11.2143		0.776	0.001	4.852	13	0.000
Pretest	55.3571	14					

Posttest	66.5714	14					
Training II	26.4286		0.302	0.293	7.741	13	0.000
Pretest	42.5000	14					
posttest	68.9286	14					

From the table 1 and 2, because the average value of the post test results is greater than the results of the pretest, then descriptively there is a difference in the average results between the posttest and the pretest. Because of the sig value on first and second training is $0.000 < 0.05$, there is a significant

difference among the knowledge both on the first and second training, before and after one, which means that there is an effect of training activities on Pharmacists, both from the aspect of communication skills and from the level of knowledge to the management of hypertension therapy. The results of SPSS can be seen in Table 2.

Table 3: Pharmacist Knowledge on Training One and Two

Category	Training One		Training Two	
	Before Training	After Training	Before Training	After Training
Good (76-100%)	0%	0 %	0%	14,29%
Enough/Fair (56 -75%)	57,14%	92,86%	14,29%	71,42%
Not good/Poor (under 56%)	42,86%	7,14%	85,71%	14,29%

In table 3, there is a change of respondents' knowledge which the number of respondents classified as poor knowledge before training was counted on 42.86%, the change declined to 7.14 % after training. However, there is an enhancement at the number of respondents who were good enough before, from 57.14% to 92.86%. On the other hand, there is no change for those who classified as good knowledge respondents before and after training is on 0%. Still in table 3, for the training two, there is a change of respondents' knowledge which the number of respondents classified as poor knowledge before training was counted on 85.71%, the change declined to 14.29% after training. Yet, there is an enhancement at the number of respondents who were good enough before, from 14, 29% to 71.42%.

Moreover, there is an increasing at the number of respondents classified as good knowledge before from 0% into 14.29% on getting knowledge of Pharmaceutical Care by Pharmacist. As a result, Pharmacist's knowledge about anti-hypertension increases after attending the training. The results obtained from the t-test analysis on the effect of training at the knowledge level of Pharmacists are p value is 0,000 smaller than the significant value of 0.05. It means that the training of public health center pharmacists in Pandeglang Regency is able to influence the pharmacist's knowledge about anti-hypertension. Therefore, it can be concluded that the score of both before and

after training is significantly different. It shows that the score after training is higher than the score before training. The increasing of knowledge which occurs after training proves that training affects to the knowledge level of the Pharmacist.

Discussion

This research is a collaboration between the Health Department of Pandeglang Regency, Pharmacy Faculty of Padjadjaran University, and Indonesia Pharmacist Association, and the first collaboration program in the field of health and pharmacy in Pandeglang Regency, which aims to increase the knowledge and abilities of Pharmacists in Public Health Centers, especially in terms of providing Pharmaceutical Care to patients, by training. The results are in accordance with what is expected, namely an increase in the knowledge and abilities of Pharmacists in Public Health Centers, which is seen from a significant increase between post test scores compared with pretest scores and an increase in the percentage of knowledge levels from not good levels before training, increases enough and good levels after training.

This was obtained because during the training, participants were given a variety of materials, start from good communication techniques, including attitudes and body language, voice, to etiquette in communication, which made Pharmacists understand how to be a good speaker.

Furthermore, during the second training, the Pharmacists were given material that was in accordance with the standards for the management of hypertension by using guidelines from the Ministry of Health of the Republic of Indonesia, which are not only related to pharmacological therapy, but also non-pharmacological therapies, such as diet, lifestyle and activities. Assessors and facilitators also played a major role in the success of this training, because besides they were academicians, they had also received training for trainers and obtained certificates from the Ministry of Health of the Republic of Indonesia.

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References

1. Burnier M, Wuerzner G (2015) Pathophysiology of hypertension. In: Pathophysiology and Pharmacotherapy of Cardiovascular Disease, doi:10.1007/978-3-319-15961-4_31
2. Chobanian A (2003) Prevention, Detection, Evaluation, and Treatment of. Blood Press, doi:10.1161/01.HYP.0000107251.49515.c2
3. Bernard RA (2018) Hypertension. In: Nutritional Aspects of Aging, 2 doi:10.1201/9781351075145
4. Anbarasan SS (2015) Gambaran Kualitas Hidup Lansia Dengan Hipertensi Di Wilayah Kerja Puskesmas Rendang, 4(1):113-124.
5. Badan Penelitian dan Pengembangan Kesehatan Departemen Kesehatan RI. Riskesdas 2007.; 2008.
6. Bustan (2007) Epidemiologi Penyakit Tidak Menular. Jakarta: Rineka Cipta.
7. WHO (2015) Q & As on hypertension. World Heal. Organ.
8. Iyengar RN, Balagere DS, Henderson RR, LeFrancois AL, Rabbitt RM, Frazee SG (2016) Association Between Dispensing

Conclusion

- Knowledge of respondents at the first training in a good category is 0% before and after training. The respondent's knowledge before training in sufficient/fair category increases from 57.14% before training to 92.86% after training. In the meantime, knowledge of respondents in poor category declines, before training 42.86% to 7.14% after training. Furthermore, at the second training respondents' knowledge in good category increases from 0% before training to 14, 29% after training. And for sufficient/fair category also increases from 14.29% before training to 71.42% after training. On the contrary, the knowledge of respondents in poor category decreases, from 85.71% previously to 14.29% after training.
- There is a significant effect on anti-hypertension training at the first and second training toward the knowledge level of PHC Pharmacists in Pandeglang Regency.

Channel and Medication Adherence Among Medicare Beneficiaries Taking Medications to Treat Diabetes, High Blood Pressure, or High Blood Cholesterol. J. Manag. Care Pharm., doi:10.18553/jmcp.2014.20.8.851

9. Wetzels GEC, Nelemans PJ, Schouten JSAG, Van Wijk BLG, Prins MH (2006) All that glitters is not gold: A comparison of electronic monitoring versus filled prescriptions - An observational study. BMC Health Serv. Res., doi:10.1186/1472-6963-6-8
10. Wong FYY, Chan FWK, You JHS, Wong ELY, Yeoh EK. Patient self-management and pharmacist-led patient self-management in Hong Kong: A focus group study from different healthcare professionals' perspectives. BMC Health Serv Res. 2011. doi:10.1186/1472-6963-11-121
11. Chalvy Wowiling dkk. Pengaruh Penyuluhan Penggunaan Antibiotika Terhadap Tingkat Pengetahuan Masyarakat Di Kota Manado. PHARMACON J Ilm Farm – UNSRAT. 2013;2(03):24-28.

12. Moullin JC, Sabater-Hernández D, Fernandez-Llimos F, Benrimoj SI. Defining professional pharmacy services in community pharmacy. *Res Soc Adm Pharm.* 2013. doi:10.1016/j.sapharm.2013.02.005
13. RI KK (2016) Permenkes No. 74 Tahun 2016, Standar Pelayanan Kefarmasian Di Puskesmas.
14. Supardi S, Raharni, Susyanti AL, Herman MJ (2012) Evaluasi Peran Apoteker Berdasarkan Pedoman Pelayanan Kefarmasian di Puskesmas. *Media Litbang Kesehat.*
15. Office PRH (2018) Reports from Coordination Meeting Between Pandeglang Pharmacist, Pharmacist Association and The Regency Health Office Pandeglang. Pandeglang.
16. Olsson E, Sc M, Ingman P, et al (2014) Pharmacist-patient communication in Swedish community pharmacies, 10:149-155. doi:10.1016/j.sapharm.2013.03.001
17. Wallman A, Vaudan C, Källemark Sporrang S (2013) Communications training in pharmacy education, 1995-2010. *Am J. Pharm. Educ.*, doi:10.5688/ajpe77236
18. Badan Penelitian Dan Pengembangan Kesehatan Kementerian Kesehatan RI (2013) Riset Kesehatan Dasar., 2013. doi:10.1007/s13398-014-0173-7.2
19. Office PRH (2016) Reports from The Field of Non-Communicable Diseases Pandeglang Regency Health. Pandeglang.
20. Indonesia IA (2016) Standar Kompetensi Apoteker Indonesia. Standar Kompetensi Apoteker Indonesia.
21. Padjadjaran FFU (2018) Pusat Studi Pengembangan Pelayanan Kefarmasian.
22. Helen Oktavia Sutiono, Arto Yuwono Soeroto BWL (2016) Knowledge, Attitude, and Practice Survey among Nurses in Dr. Hasan Sadikin General Hospital toward Tuberculosis-Human Immunodeficiency Virus Collaboration Program. *Althea Med J.*, 3(1):85-91. doi:10.15850/amj.v3n1.715