Effect of Education on Improvement of Attitude to Generic Drugs, An Experimental Study to In-Patient at Aloei Saboe Hospital in Gorontalo City, Indonesia

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ABSTRACT

Objective: The objectives of this research was to observe the effect of education and information on the alteration of in-patient's knowledge, perception, and attitude to the generic drug.
Methods: An experimental study was conducted with a simple random sampling with a total sample of 45 people. They divided into three group, first group educated by the nurse, second group by the pharmacist, and third group by collaboration of nurse and pharmacist. The data were analyzed with Wilcoxon Sign Rank Test to verify the alteration.
Results: The results of data analyze showed a significant alteration of knowledge, perception, and attitude before and after education by the nurse, by the pharmacist and by the collaboration of nurse and pharmacist (the value of $p \leq 0.05$). There was no significant difference level of perception and attitude on in-patient whom educated by pharmacist, nurse, and collaboration of nurse and pharmacist. The significant difference showed on in-patient's knowledge that educated by pharmacist and collaboration of them (p-value 0.025).
Conclusion: The results indicated that there was a significantly increased level of knowledge, perception, and attitude on the in-patient that have been educated about the generic drug. Education by nurse, pharmacist, and collaboration of nurse and pharmacist had the same result to increase the level of perception and attitude of the generic drug, but the best method used to increased knowledge was done by the pharmacist.

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Keywords

"Education", "Generic drug", "Pharmacist"," Nurse"

INTRODUCTION

One of the single, largest cost components and rapid increase of health expenditure are pharmaceuticals. It has a high proportion of total health spending [1]. It accounting for more than 15.2% of total health spending in the world in 2000 [1,2]. Medicine price and quantity of consumption are most expenditure in pharmaceutical [1,3,4], so access to affordable essential medicines that generic medicines are needed to decrease pharmaceutical consumption so that reduce rising health care [5] medicines [6,7], no exception in Indonesia [8,9].

The official name of International Proprietary Names (INN) that assigned active ingredients in Pharmacopeia or another standard book names generic medicines [10,11]. It is manufactured without a license from innovator company after the expire date of the patent [10,12] and thus becomes a multi-sources medicine [13].

Indonesia sale volume was 38%, below branded. The prescription of a physician can influence patient to choose the medicine kind [14]. The effect of generic medicines due to a low price and effective utilization of financial resources have motivated the health regulating authorities to promote the use of them [10,15–17]. Indonesian Government has implemented a now well-established policy around medicines [12] that set the

obligation to prescribe generic medicine at government health facility [11].

There is some misperception about generic medicine, especially at medical student and practitioners [9,15,18,19]. In Australia [20] and Denmark [21] study evaluated pharmacist and patient perception. Whatever, study comparative about effectiveness generic and brand-names on patient outcome have been done [22]. Study at Magetan, Indonesia [23] shown that there is a relationship between the level of knowledge with the attitude people to choose of generic medicines. Basic Research of Health [24] shown that in Indonesia only 31.9% household in Indonesia has known or ever hear about generic medicine. 85,9% of them didn't have a right knowledge of generic medicine. But in Gorontalo, only 39.2% knows about generic medicine and 69.1% didn't have a right one.

The most source information [24] about generic medicines at urban and rural is health profession (63,1%). The objective of this research was to acknowledge alteration of knowledge, perception, and attitude of inpatient that educate of the generic drug and compare the method used.

MATERIALS AND METHODS

Materials

The education process in this study was done by the professional nurses and pharmacist at Prof. Dr. Aloe Saboe Hospital, Gorontalo City in September until November, 2017. They gave an education about the generic drug to in-patient. In-patients were from the internal first class ward, second class ward, and VIP ward.

Data collected using pre and post questionnaire that contain 4 section, that first section about patient characteristic, the second about knowledge of the generic drug, the third about the perception of the generic drug, and the fourth about the attitude to the generic drug.

Methods

An experimental study was conducted with simple random sampling. There was 3 group arrange that group A that 15 in-patients educated by the nurse, group B that 15 patients by the pharmacist, and group C by the collaboration within nurse and pharmacist. Data collected before and after education done. Characteristic was analyzed by descriptive analyzed. The level of knowledge, perception, and attitude to generic drug processed by grouping all criteria become good if the percentage was 61-100 % and bad if ≤60 %. Wilcoxon Sign Rank was used to analyze the level of knowledge, perception, and attitude for 3 scheme, that intervention with the nurse, pharmacist, and collaboration nurse and pharmacist.

RESULTS AND DISCUSSION

Characteristic of respondent

The respondent were 45 patient that divided into 3 group. Group A was inpatient that educated by nurse, B by pharmacist, and C by collaboration of nurse and pharmacist. The patient characteristics was presented in table 1.

Table 1: Patient Characteristics

Patient Characteristic	Category	Percentage (%)			
		A	B	C	Total
Age (years)	10-25	33,3	-	13,3	15,6
	26-41	40,0	53,3	46,7	46.7
	42-57	26,7	33,3	13,3	24.4
	58-73	-	13,3	26,7	13.3
Sex	Male	53,3	40,0	40,0	44.4
	Female	46,7	60,0	60,0	55.6
Level of Education	Elementary School	6,7	20,0	13,3	13.3
	Yunior High School	20,0	6,7	6,7	11,1
	Senior High School	53,3	60,0	33,3	48.8
	Diploma	6,7	-	6,7	4.4
	Bachelor	13,3	13,3	40,0	22.2
Occupation	Employed	13,3	13.3	33,3	20.0
	Enterpreur	13,3	13,3	20,0	15.5
	Pensioner	-	6,7	13,3	6.6
	Housewife	26,7	40,0	26,7	31.1
	Others	46,7	26,7	6,7	26.6

A : Group educated by nurse
B : Group educated by pharmacist
C : Group educated by collaboration of nurse and pharmacist.

Based on table 1, the majority of the respondents were female (55,6%), in the productive ages (26 – 41 years) 46.7%, senior high school (53.3%), and housewife (31.1%).

Level of Knowledge, Perception, and Attitude of Generic Drug

Study measure the level of knowledge, perception, and attitude of inpatient about generic drug befor dan after education by nurse, pharmacist, and collaboration of nurse and pharmacist. Level of knowledge, perception, and attitude of inpatient about generic drug were listed at table 2.

Table 2. Level of Knowledge, Perception, and Attitude of Inpatient about Generic Drug

Categories	Before (%)		After (%)		Wilcoxon Test
	Good	Bad	Good	Bad	Asymp.Sig
Educated by nurse					
Knowledge	13.3	86.7	93.3	6.7	0.001
Perception	20.0	80.0	66.7	33.3	0.020
Attitude	13.3	86.7	100.0	0.0	0.000
Educated by pharmacist					
Knowledge	13.3	86.7	100.0	0.0	0.000
Perception	20.0	80.0	60.0	40.0	0.034
Attitude	46.7	53.3	100.0	0.0	0.004
Educated by Collaboration of nurse and pharmacist					
Knowledge	46.7	53.3	66.7	33.3	0.366
Perception	13.3	86.6	66.7	33.3	0.011
Attitude	40.0	60.0	93.3	6.7	0.005

Based on table 2, there was some level alteration of knowledge, perception, and attitude before and after education by the nurse. Before education, a majority of patient knowledge, perception, and attitude to generic drug existed at a bad level. It describes the generally negative perception of generic medicine in Indonesian population [24]. Inpatient toward the brand one [15]. This condition alter become good after education by the nurse. This alteration have a significant level, with p-value 0.001 ≤ 0.05 (increase of knowledge), 0.020≤ 0.05 (increase of perception) and

0.000 ≤ 0.05 (increase of attitude). Nurse have more access to the patient [25]. These data can give an analysis that nurse can increase in-patient knowledge, perception and attitude of the generic drug to a good level. The nurse has a responsibility to communicate their knowledge about the patient's condition and treatment plan. Nurse as care-giver can give advice to a patient to choose and use generic medicine.

Level alteration of knowledge, perception, and attitude before and after education by pharmacist ensue. Before education, majority patient knowledge, perception, and attitude of generic drug existed at a bad level and altered become good after education. This change because of education of pharmacist. This alteration has a significant level, with p-value 0.000≤0.05 (an increase of knowledge), 0.034≤0.05 (an increase of perception) and 0.004 ≤ 0.05 (an increase of attitude). The inpatient sure that generic medicines have the same quality and equally efficacious as brand one [22]. A pharmacist can increase inpatient knowledge of generic drug to a good level. Pharmacists professional roles have maturated to include provision of information, education, and pharmaceutical care services. These changes have resulted in a focus on collaborative pharmacist-patient professional relationships, in which pharmacists and patients both have roles and responsibilities.

Level of knowledge, perception, and attitude after education by a collaboration of pharmacist and nurse also increased. Before education, a majority of patient knowledge, perception, and attitude to generic drug existed at a bad level and altered become good after education. The collaborate education between pharmacist and nurse have altered this movement. This alteration has a significant level, 0.011 ≤ 0.05 (an increase of perception) and 0.005 ≤ 0.05 (an increase of attitude). But this alteration not significant enough for knowledge, that have p-value 0.366 ≥ 0.05. These data can give an analysis that collaboration nurse and pharmacist can increase inpatient perception and attitude of the generic drug to a good level. Perception also influences their attitude. Education can increase their attitude to generic medicine by the increase of their positive perception. This can alter by give them some studies about efficacy and bioavailability of generic medicine compare with brand one. Interprofessional Collaboration involves working together with one or more members of the health team who each make a unique contribution to achieving a common goal, enhancing the benefit for patients. It is a process for communication and decision making that enables the separate and shared knowledge and skills of different care providers to synergistically influence the care provided through changed attitudes and behaviors, all the while emphasizing patient-centered goals and values. While collaborative, team-based care has the potential to improve medication use and reduce adverse drug events and cost, less attention is paid to understanding the processes of well functioning teams. The result of this treatment that it cannot increase the knowledge at significant level. This is possibly because the process of education that have been undertaken by not simultaneously. Other reasons the respondents in this group in very important person (VIP) patients that having higher barier to receive education of the team the collaborative.

Comparation analysis of inpatient level of knowledge, perception and attitude

Comparation analysis of inpatient level of knowledge, perception, and attitude purpose to definite best methode (education by nurse, by pharmacist, or collaboration nurse and pharmacist) that can altering 3 dimension above. This analysis used *Wilcoxon test*. The comparation level of knowledge, perception, and attitude about generic drug inpatient educated by nurse, pharmacist and collaboration of nurse and pharmacist were shown in table 3.

Table 3. Comparation Level of Knowledge, Perception, and Attitude about Generic Drug Inpatient Educated by Nurse, Pharmacist and Collaboration of Nurse and Pharmacist Ranks

	Knowledge	Perception	Attitude
Pharmacist – Nurse	0.317	1.000	1.000
Collaboration – pharmacist	0.025	0.655	0.317
Collaboration – Nurse	0.102	0.564	0.317

Based on table 3, level of inpatient knowledge that educated by the nurse, pharmacist, and collaboration of nurse and pharmacist indicate there was not a significant level between educated by the pharmacist and educate by the nurse (p-value 0.317 > 0.05). It means that nurse can educate inpatient about the generic drug as good as the pharmacist. Education by the pharmacist can raise up knowledge much better than the collaboration of the nurse and pharmacist, showing by p-value 0.025 ≤0.05. But collaboration pharmacist and nursing and nursing alone educate generic drug in the same level, that shown by p-value 0.102, where p-value ≥ 0.05.

Level of perception after education had been compared. The results were there is no significant level of perception between educated by pharmacist and nursing (p-value 1.000≥ 0.05), collaboration and pharmacist alone (p-value 0.655≥ 0.05), and nursing and collaboration (p-value 0,564 ≥ 0.05).

Level of attitude after education had been compared. The results were there is no significant level of perception between educated by pharmacist and nursing (p-value 1.000≥ 0.05), collaboration and pharmacist alone (p-value 0.317≥ 0.05), and nursing and collaboration (p-value 0.317 ≥ 0.05). The nurse can influence patient to choose the generic one, together with physician and pharmacist [15,16].

The result of this study gives us some hope that by increasing the knowledge of the generic drug, in-patient negative perception of the generic drug in hospital population will be decreased. Finally, the use of the generic drug will be promoted.

CONCLUSION

1. There was a significant alteration of knowledge, perception, and attitude before and after education by nurse with p-value 0.001, 0.020, and 0.000, where the value of $p \leq 0.05$.
2. There was a significant alteration of knowledge, perception, and attitude before and after education a pharmacist with p-value 0.000, 0.034, and 0.004, where the value of $p \leq 0.05$.
3. There was a significant alteration of perception, and attitude before and after education by collaboration of nurse and pharmacist, with p-value 0.011 and 0.005 but nonetheless for knowledge with p-value 0.366, where the value of $p \leq 0.05$.
4. Based on Wilcoxon test, there was no significant difference between the level of perception and attitude that educate by pharmacist, nurse, and collaboration of nurse and pharmacist. The significant difference showed on inpatient knowledge that educated by pharmacist and collaboration of pharmacist and nurse (p-value 0.025)

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