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Relationship Between Patient Knowledge Level And use Corticosteroid Drugs At Pharmacies X And Y

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Abstract

Corticosteroids are a class of drugs widely used in healthcare services due to their anti-inflammatory, anti-allergic, and immunosuppressant effects. These drugs are often prescribed in healthcare facilities, including pharmacies. The use of corticosteroids requires a good understanding from patients for safe use. The level of patient knowledge regarding corticosteroid drugs can be influenced by various respondent characteristics, such as age, gender, and occupation. Therefore, it is necessary to conduct research to determine the relationship between respondent characteristics and the level of patient knowledge regarding corticosteroid drugs in healthcare facilities. Objective: This study aims to determine the relationship between the level of patient knowledge and respondent characteristics (age, gender, and occupation) in healthcare facilities in pharmacies. This study is an observational analytical study with a cross-sectional design. Sampling was carried out using an accidental sampling technique on patients who obtained corticosteroid drugs at x Pharmacy and y Pharmacy in December 2025. The number of samples in this study was 100 respondents. The research instruments were a questionnaire on the level of patient knowledge and a questionnaire on respondent characteristics. The study showed that patients' knowledge of corticosteroids ranged from good (51.57%), sufficient (32.63%), and poor (15.78%). Chi-square test results showed no significant association between age, gender, and occupation with patients' knowledge of corticosteroids (p>0.05). There was no association between respondent characteristics (age, gender, and occupation) and patients' knowledge of corticosteroids at health care facilities in pharmacies.

Keywords: Corticosteroids, Knowledge Level, Respondent Characteristics.

INTRODUCTION

Corticosteroids are a class of anti-inflammatory drugs widely used in healthcare to treat various conditions such as allergies, asthma, inflammatory diseases, and autoimmune disorders. While corticosteroids offer broad therapeutic benefits, their use requires special attention due to the potential for serious side effects if not used according to the indications, dosage, frequency, or duration of use. According to the World Health Organization (2015), corticosteroid use must be carried out rationally to prevent side effects such as adrenal suppression, hyperglycemia, osteoporosis, and Cushing's syndrome. Therefore, the appropriate use of corticosteroids is crucial to ensure the safety and success of therapy.

In Indonesia, corticosteroid drugs are widely prescribed and obtained by patients through various primary healthcare facilities, including pharmacies, community health centers, and clinics. In the context of pharmaceutical services, patients not only act as recipients of therapy but also as those responsible for independently using medications according to the healthcare provider's instructions. Patients' knowledge of the indications, dosage, usage instructions, and potential side effects of corticosteroid drugs is a crucial factor influencing their appropriate use. This lack of understanding can lead to irrational use, such as use without clear indications, abrupt discontinuation, or use for longer than recommended periods (Siagian et al., 2019).

However, in practice, the use of corticosteroids is still found to be inconsistent with therapeutic guidelines. Use without clear indications, abrupt discontinuation of the medication, long-term unsupervised use, and inappropriate dosages are common problems. These conditions can increase the risk of side effects such as adrenal suppression, hyperglycemia, osteoporosis, and even Cushing's syndrome. These problems are influenced not only by prescribing patterns but also by patients' level of knowledge about the medications they are taking.

A patient's level of knowledge regarding the indications, usage instructions, dosage, and potential side effects of corticosteroids plays a crucial role in determining the appropriateness of their use. Patients with inadequate understanding tend to use their medications inappropriately according to healthcare providers' recommendations, either due to a lack of information, misperceptions about drug safety, or self-medication habits. Several studies have shown that low patient knowledge is associated with increased inappropriate use of corticosteroids.eroid.However, research specifically examining the relationship between patient knowledge and corticosteroid use in primary healthcare facilities, particularly community pharmacies, is limited. Pharmacies are one of the healthcare facilities most frequently accessed by the public for medication and information on their use, particularly regarding dosage and duration of use.

The use of corticosteroid drugs in healthcare continues to increase in line with the high prevalence of inflammatory diseases, allergies, and autoimmune disorders in the community. This class of drugs is available in various dosage forms such as tablets, injections, ointments, creams, and inhalations, making them easily accessible to patients through primary healthcare facilities, including pharmacies. Despite their significant therapeutic benefits, corticosteroid use requires strict monitoring due to the risk of serious side effects if used irrationally. According to the World Health Organization (2015), rational drug use must meet the appropriate indications, dosage, route of administration, and duration of use to ensure the safety and effectiveness of therapy.

One common problem is the use of corticosteroids without adequate understanding of the indications and risks of side effects. Some patients use corticosteroids for minor ailments without realizing that these drugs are a class of prescription drugs that require prescription and supervision from a healthcare professional. Furthermore, there is a tendency for repeated use without medical evaluation, abrupt discontinuation after long-term use, and use in doses that are not in accordance with recommendations. These conditions have the potential to cause serious side effects such as adrenal suppression, hyperglycemia, metabolic disorders, osteoporosis, and even Cushing's syndrome (Ferilda et al., 2023).

Another contributing issue is patients' limited understanding of the medication information provided. Information regarding dosage instructions, duration of use, side effects, and the importance of adherence is often incomplete. Patients tend to only understand the benefits of medication in relieving symptoms without understanding the long-term risks. Low levels of health literacy and suboptimal education and counseling processes in healthcare facilities can exacerbate this situation (Siagian et al., 2019).

Extensive research has been conducted on the use of corticosteroid drugs, particularly regarding rational use and side effects. Hidayah et al. (2025) reported a significant correlation between public knowledge and the appropriate use of corticosteroid drugs. Sholiha et al. (2019) also stated that low levels of knowledge contribute to inappropriate use, particularly regarding dosage and duration of use. Furthermore, Sinulingga and Anggraini (2021) found that good knowledge is associated with increased adherence to inhaled corticosteroid use in asthma patients. Another study by Ferilda et al. (2023) showed that inappropriate use of corticosteroids can increase the risk of Cushing's syndrome.

However, most of these studies focus on hospitals or groups of patients with specific diagnoses. Research specifically examining the relationship between patient knowledge and corticosteroid use in primary healthcare facilities, particularly community pharmacies, is limited. However, according to the World Health Organization (2015), rational medication use is key to ensuring the safety and effectiveness of therapy and preventing adverse side effects. Pharmacies, as one of the most accessible healthcare facilities, play a strategic role in providing education and counseling on appropriate medication use.

Based on this background, the aim of this study was to determine the relationship between patient knowledge and corticosteroid medication use in healthcare facilities, particularly pharmacies. This study also aimed to identify patient knowledge levels and evaluate the appropriateness of medication use based on indication, dosage, frequency, and duration of use.

The urgency of this research lies in the importance of improving patient safety in the use of high-risk medications such as corticosteroids. Inappropriate use can not only reduce the effectiveness of therapy but also increase the risk of serious side effects. By understanding the relationship between knowledge levels and medication use, the results of this study are expected to provide a basis for designing more effective education, counseling, and pharmaceutical intervention strategies in community pharmacies.

RESEARCH METHODS

Types and Methods of Research

This study uses an analytical observational approach with a cross-sectional approach, namely measuring data on the level of patient knowledge at pharmacies x and y in December 2025.

Population and Sample

The population in this study were patients at pharmacies x and y who received corticosteroid drug therapy. The sample of this study was 100. Sampling was carried out using a non-probability sampling technique with a purposive sampling approach with the inclusion of patients aged 15-64 and able to read, write and communicate well.

Research Instruments

This research instrument used a closed-ended questionnaire designed by the researcher containing 12 questions. The questionnaire was then tested for validity and reliability on 30 respondents to determine 12 valid and reliable questions.The validity test is said to be valid if the calculated r> r table (r table, df = n-2 = 28, then r table = 0.361 can be seen from the Corrected Item Total Correation and is reliable with a Cronbach's Alpha value > 0.60 (Cronbach's Alpha value = 0.916).

Data analysis

Data analysis was conducted quantitatively. Data came from respondents who agreed to complete a knowledge level questionnaire. The knowledge index was calculated by assigning a score of 1 to correct answers and 0 to incorrect answers. After the scores were totaled, the percentage knowledge level was calculated using the following formula:

$$\% \text{ value} = \times 100\% \frac{pertanyaan\ dijawab\ benar}{jumlah\ total\ pertanyaan}$$

The presentation results are categorized according to Masturoh (2018), namely:

a. Well, if the subject answers 76% - 100% of all questions correctly
b. Sufficient, if the subject answers 56% - 75% of all questions correctly
c. Less, if the subject answers less than 56% of all questions

Research Procedures

The data collected in this study was primary data obtained by the researchers on-going. The data collection technique used a closed-ended questionnaire, with pre-defined answer choices provided by the researchers. The questionnaire assessed patients' knowledge of healthcare facilities.

1. Researchers were present at the pharmacy with pharmacists.
2. Patients using corticosteroids were identified
3. The researcher explained the purpose of the research and provided a consent form.
4. Respondents filled out the questionnaire (self-administered)

The questionnaires were collected and checked for completeness.

RESULTS AND DISCUSSION

Validity and Reliability Test

Table1. Results of the Knowledge Level Validity Test

Item	r count	r table	Sig	Information
P1	0.700	0.361	< 0.05	Valid
P2	0.681	0.361	< 0.05	Valid
P3	0.679	0.361	< 0.05	Valid
P4	0.755	0.361	< 0.05	Valid
P5	0.761	0.361	< 0.05	Valid
P6	0.743	0.361	< 0.05	Valid
P7	0.752	0.361	< 0.05	Valid
P8	0.708	0.361	< 0.05	Valid
P9	0.689	0.361	< 0.05	Valid
P10	0.52	0.361	< 0.05	Invalid
P11	0.747	0.361	< 0.05	Valid
P12	0.786	0.361	< 0.05	Valid
P13	0.214	0.361	< 0.05	Invalid
P14	0.661	0.361	< 0.05	Valid

Table 2. Knowledge Reliability Results

Questionnaire	Cronbach's Alpha	Cronbach's Alpha Based On Standardized Items	N of items
Knowledge	916	.361	14

The validity test results showed that of the 14 items questioning the level of knowledge, 12 items were declared valid because they had a calculated r value > r table (0.361) and a significance value <0.05. Invalid items were P10 (r = 0.52 declared not to meet the criteria because it was not construct-consistent) and P13 (r = 0.214 <0.361). These invalid items were not used in further analysis because they were unable to measure the construct of the level of knowledge accurately. This validity test showed that most of the instruments were able to represent the variable level of knowledge regarding corticosteroid drugs accurately.

The reliability test results in Table 2.2 show a Cronbach's Alpha value of 0.916. This value is above 0.90, which is considered very high reliability, indicating that the questionnaire instrument has excellent internal consistency. This means that the questionnaire items are stable and consistent in measuring respondents' knowledge of corticosteroid drugs. Therefore, the research instrument is suitable for use as a measurement tool in this study.

Characteristics based on age and gender

Table2. Characteristics Based on Age and Gender

	Information	Frequency	Percentage (%)
Age	17-25	34	34%
	26-35	17	17%
	36-45	22	22%
	46-55	15	15%
	56-64	12	12%
	Total	**100**	**100%**
Type Sex	Woman	43	43%
	Man	57	57%
	Total	**100**	**100%**

Respondents in this study were aged 17–64 years with the majority being in the 17–25 age group (34%), followed by 36–45 years (22%), 26–35 years (17%), 46–55 years (15%), and 56–64 years (12%), so that it was dominated by young adults to productive age. The young adult group tends to utilize pharmacy services more due to high mobility, the need for fast health access, and relatively good health literacy as explained by the Ministry of Health of the Republic of Indonesia (2018). In addition, according to Notoatmodjo (2014), age influences the ability to receive and understand health information, where adults have better cognitive maturity. Based on gender, there were more male respondents (57%) than female (43%), although in theory women tend to be more active in seeking health information as reported by Rahmawati et al. (2023). In general, age and gender characteristics indicate that the productive age group dominates the use of pharmacy services, so pharmaceutical education needs to be tailored to patient demographic characteristics to be more effective and targeted.

Characteristics based on occupation and education

Table 3. Respondent Characteristics Based on Occupation and Education

	Information	Frequency	Percentage (%)
Work	Students	5	5%
	Students	14	14%
	Businessman	21	21%
	Civil servants	11	11%
	Private employees	17	17%
	Housewife	32	32%
	Total	**100**	**100%**
Education Final	Did not finish elementary school	4	4%
	Elementary School/Equivalent	8	8%
	Junior High School/Equivalent	17	17%
	High School/Equivalent	47	47%
	College	24	24%
	Total	**100**	**100%**

The occupational characteristics of respondents consisted of students, university students, civil servants, private employees, entrepreneurs, and housewives, with the highest percentage being housewives at 32%, followed by entrepreneurs (21%), private employees (17%), students (14%), civil servants (11%), and students (5%). The dominance of housewives indicates their central role in family health management and decision-making regarding medication use, resulting in more frequent use of pharmacy services, in line with research by Muslikah and Susilowati (2019) and Shava Mahira (2024). Meanwhile, the relatively large group of entrepreneurs and private employees indicates that productive-age workers tend to choose pharmacies because they are practical and easily accessible, as explained by the World Health Organization (2015) that work factors and time constraints influence the use of health services. Based on education, the majority of respondents had a high school education (47%), followed by college (24%), junior high school (17%), elementary school (8%), and not completed elementary school (4%), indicating a predominance of secondary education. Education level influences the ability to understand drug information, with those with secondary education generally able to understand basic drug use information, as noted by Notoatmodjo (2014). Overall, occupation and education play a significant role in pharmacy service utilization patterns, so pharmaceutical services need to tailor drug education to the patient's sociodemographic background to ensure effective and targeted information.

Knowledge Level Indicator Question Results

Table 4. Distribution of Knowledge Level Indicator Question Results

Indicator	Correct amount	Presentation (%)
Understanding corticosteroids	95	95%
Indications for Use of Drugs	191	63.67%
Corticosteroid Drug Dosage	50	50%
Rules for using corticosteroid drugs	140	70%
Side Effects of Corticosteroid Drugs	286	71.50%
Duration of Use of Corticosteroid Drugs	84	84%

Based on the research results in Table 5, the level of respondents' knowledge regarding corticosteroid drugs was analyzed through six indicators, namely understanding (95%), indications (63.67%), dosage (50%), instructions for use (70%), side effects (71.50%), and duration of use (84%). The results show that respondents' understanding was very good in the aspects of understanding and duration of use, sufficient in the instructions for use and side effects, but still low in the aspect of dosage which was the indicator with the lowest percentage. The high understanding of understanding is in line with the research of Sholehah (2025) which stated that basic drug information is easier for the public to understand, and in accordance with the theory of Setiawan (2023) that basic knowledge is the foundation of rational drug use behavior. Meanwhile, the less than optimal understanding of indications supports the findings of Dhaneswari (2025) that there is still the use of corticosteroids without proper indications, even though pharmacotherapeutic corticosteroids have specific indications and must be used under medical supervision as explained by Al-Kaf and Al-Yahawi (2025). The low understanding of dosage is also in line with the research of Sholeh et al. (2025) stated that dosage is often misunderstood in self-medication practices, even though accurate dosing is crucial to prevent serious side effects, as explained by Siagian (2019). Overall, these results indicate that although respondents already have good basic knowledge about corticosteroids, increased education is still needed, especially regarding dosage and indications, to ensure safer, more effective, and more rational use of the medication..

Knowledge Level Results

Table 5. Distribution of Pharmacy Knowledge Levels

Knowledge	Frequency	Percentage (%)
Good	49	51.57%
Enough	31	32.63%
Not enough	15	15.78%
Total	**95**	**100%**

Based on the distribution of respondents' knowledge levels, it shows that the majority were in the good category (49 people) (51.57%), followed by the sufficient category (31 people) (32.63%), and the poor category (15.78%). Thus, in general, the level of knowledge regarding corticosteroid use is considered good, although not evenly distributed. These results are in line with research by Sholeh et al. (2025) and Manurung et al. (2023), which showed that the majority of respondents had good to moderate knowledge, but errors were still found, especially in aspects of dosage and duration of use. Research by Kumala and Widianingtyas (2018) also emphasized that limited understanding of dosage and usage instructions has the potential to lead to inappropriate use. Theoretically, Siagian (2019) stated that knowledge is the main determinant of appropriate drug use, while Tjay and Rahardja (2017) emphasized that corticosteroids have broad benefits but carry the risk of serious side effects if used irrationally. This is further supported by Setiawan (2023) and Al-Kaf and Al-Yahawi (2025), who stated that a comprehensive understanding of indications, dosage, usage instructions, and duration of use is crucial because corticosteroids affect the immune system and metabolism. Therefore, although the majority of respondents had good knowledge, ongoing education is still necessary, especially for

those with sufficient and insufficient knowledge, to ensure safer, more effective, and more rational use of corticosteroids.

Chi-Square Correlation Test Results for Age

Table 6. Chi-square Correlation Test Results for Age

Level of knowledge	17-25	26-35	36-45	46-55	56-64	Total	Chi-Square calculation	Sig
Good	17	11	7	8	8	51		
Enough	13	5	8	4	5	35	7,160	0.519
Not enough	3	1	6	2	2	14		
Total	33	17	21	14	15	100		

Chi-Square Correlation Test Results for Gender

Table 7. Chi-Square Correlation Test Results for Gender

Level of knowledge	Woman	Man	Total	Chi-Square calculation	Sig
Good	27	24	51		
Enough	21	14	35	775	0.679
Not enough	9	5	14		
Total	57	43	100		

Chi-Square Correlation Test Results for Job Types

Table 8. Correlation Test Results*Chi-Square Job Type*

Level of knowledge	Students	Maha student	Hero business	Employee Country Civil	Employee Private	housewife ladder	Total	Chi-Square calculation	Sig
Good	4	6	12	4	9	16	51		
Enough	1	7	5	7	5	10	35	10,343	0.419
Not enough	0	1	4	0	3	6	14		
Total	5	14	21	11	17	32	100		

Final Education Correlation Test Results

Table9. Correlation Test Results*Chi-Square Last Education Type*

Level of knowledge	No The end sd	Elementary School	Junior high school	Senior high school	College High	Total	Chi-Square calculation	Sig
Good	3	6	10	21	11	51		
Enough	1	2	5	18	9	35	4,905	0.768
Not enough	0	0	2	8	4	14		
Total	4	8	17	47	24	100		

Based on the Chi-Square test per respondent characteristic, all demographic variables showed no significant relationship with the level of knowledge of corticosteroid use ($p > 0.05$). For age characteristics, a p value of 0.519 was obtained, indicating no significant relationship between age and level of knowledge. Therefore, increasing age does not automatically increase drug understanding, in line with research by Hidayah et al. (2025) and Manurung et al. (2023) which stated that knowledge is more influenced by exposure to information and education than age. For gender characteristics, a p value of 0.679 was obtained, indicating no significant relationship between men and women with the level of knowledge, in line with the findings of Sinulingga and Anggraini (2021) that gender differences do not statistically determine drug understanding. For occupational characteristics, a p value of 0.419 was obtained, indicating that work background is not related to the level of knowledge, in line with research by Kumala and Widianingtyas (2018). Meanwhile, the final educational characteristic obtained p =

0.768, indicating no significant relationship between formal education and knowledge level, as also reported by Manurung et al. (2023). Theoretically, Setiawan (2023) and Tjay and Rahardja (2017) emphasized that knowledge of corticosteroid use is more influenced by the quality of education and specific information received by patients than demographic factors. Therefore, pharmaceutical education needs to be provided evenly to all patients regardless of age, gender, occupation, or education level.

CONCLUSION

This study found that the level of patient knowledge regarding the use of corticosteroid drugs at Klumprit Mojolaban Pharmacy and DC Medika Karanganyar Pharmacy was mostly in the good category (51.57%), followed by sufficient (32.63%) and poor (15.78%), with low understanding especially on aspects of dosage and indications. The Chi-Square test showed no significant relationship between respondent characteristics such as age, gender, occupation, and education with the level of knowledge ($p > 0.05$). However, the limitations of the cross-sectional design hampered the determination of causality and temporal relationships, while the sample was limited to 100 respondents in two pharmacies and the accidental sampling technique has the potential to cause selection bias and low generalizability.

Practical implications emphasize the need for intensive pharmaceutical education in community pharmacies, focusing on dosage, indications, and side effects to promote rational use and prevent risks such as Cushing's syndrome. Suggestions for future research include longitudinal or interventional designs to test the causality of knowledge to use behavior, expanding the sample to multiple pharmacies, and evaluating the effectiveness of pharmacist counseling.

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