THE EFFECT OF PHARMACEUTICAL EDUCATION ON PUBLIC KNOWLEDGE AND ATTITUDES TOWARDS THE USE OF PRESCRIPTION DRUGS IN TOYIDITO VILLAGE, PULUBALA DISTRICT, GORONTALO REGENCY

Purnama Abdullah[1)], Oktarina Mahanggi,[2)] Ahmad Husain Palli[3)]
[1,2,3)] University of Bina Mandiri Gorontalo

Email: purnamaabdullah2003@gmail.com, oktarinamahanggi26@gmail.com, ahmadpalli@gmail.com

ABSTRAK

The lack of public knowledge regarding the use of prescription drugs is one of the factors contributing to the high rate of non-prescription drug use in the community. This study aims to determine the effect of pharmaceutical education on public knowledge and attitudes towards the use of prescription drugs in Toyidito Village, Pulubala District, Gorontalo Regency. The research method used was a descriptive, quantitative survey design. Sampling was conducted using purposive sampling with a total of 100 respondents. The research instrument consisted of a questionnaire that had been tested for validity and reliability. Data analysis was performed univariately and bivariately using the Chi-Square test to assess relationships among variables. The study results showed that after the intervention, the respondents' knowledge was categorized as good (32%), sufficient (25%), and poor (43%), while their attitudes were distributed across good (73%), satisfactory (17%), and poor (10%). Despite the high percentage of respondents remaining in the poor knowledge category (43%), the Wilcoxon Signed-Rank Test revealed a statistically significant improvement in scores compared to the pre-test (p-value = 0.030). This indicates that while the pharmaceutical education was effective in shifting overall knowledge and shaping positive attitudes toward the rational and safe use of prescription drugs, the high remaining "poor" knowledge bracket suggests that a single educational session may be insufficient for long-term mastery of complex pharmaceutical information. Conclusion: Pharmaceutical education has been shown to significantly improve the public's knowledge and attitudes regarding the use of prescription drugs. The majority of the public showed increased understanding and positive attitudes after receiving education, indicating that pharmaceutical education activities need to be carried out continuously to support safer and wiser use of prescription drugs.

Keywords: ***Pharmaceutical Education, Knowledge, Attitude, Prescription Drugs, Public***

INTRODUCTION

To improve human health, prevent disease, cure, restore, and provide contraception, drugs are substances or combinations of substances, including biological products, used to identify or influence physiological systems or pathological conditions [1]. If a drug is taken as prescribed, at the correct time and dose, it will function as a medicine. The sensitivity of the body's organs and the drug's biological needs determine its effectiveness. In general, these biological needs are divided into four categories: doses for infants, children, adults, and the elderly [2].

Self-medication aims to treat minor ailments, manage routine medications for chronic conditions, and improve general health under medical supervision [3]The Indonesian Ministry of Health classifies medications into four categories: narcotics, prescription drugs and psychotropics, restricted-prescription drugs, and over-the-counter drugs (1993). Data from the Central Statistics Agency (BPS) in 2014 showed that 61.05% of Indonesians self-medicated [4] BPS data indicates that

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between 2021 and 2023, between 79.74% and 84.23% of Indonesians self-medicated. The 2023 Basic Health Research (Riskesdas) found that 79.74% of Indonesians self-medicated. In 2023, there were 4,404.3 million residents of Bali. BPS data indicates that 62.98% of the population self-medicated to treat minor illnesses or symptoms.

Gorontalo Province has the highest self-medication rate, at 38.1%. Most people purchase medications from pharmacies or small businesses. Many people who engage in self-medication purchase prescription drugs without a prescription from pharmacies or small businesses, rather than from pharmacies, community health centers, or hospitals. Besides being illegal, this practice endangers patients. The self-medication rate in Gorontalo Province reached 81.58% in 2021 [4] At 90.14%, Gorontalo Regency has the highest self-medication rate in the province, compared to 71% in other areas, including Gorontalo City [4]

Based on observations, most residents of Toyidito Village, Pulubala District, Gorontalo Regency, prefer to purchase medicine from market vendors and kiosks rather than from pharmacies or other health facilities. This contradicts Minister of Health Regulation No. 14 (2021), which states that only pharmacies and health care facilities with pharmacists are permitted to dispense prescription drugs. In Toyidito Village, Pulubala District, several markets and kiosks openly and illegally sell prescription drugs. In the only market in Hunggaluwa Village, four out of six kiosks sell prescription drugs at retail prices without a permit. Prescription drugs are sold at these markets and kiosks primarily because of their relatively lower prices. The findings of the 2021 Basic Health Research [5] support this, with 35.2% of households storing prescription drugs, antibiotics, traditional medicines, and medicines of unknown origin for self-medication. Antibiotics are stored in 86.1% of households, and 81.9% of households also store prescription drugs for which they do not have a prescription. Gorontalo Province accounts for 70.8% of the national prescription drug inventory. Self-medication with antibiotics and prescription drugs is a sign of irrational drug use [5]

Several measures are necessary for the proper and appropriate use of medications, such as the procurement, use, storage, and disposal of medications [6] People tend to ignore the rules that should be followed, as drug use remains widespread. This includes purchasing medications from unlicensed or unlicensed sources, purchasing prescription medications, purchasing antibiotics without a prescription, overusing over-the-counter medications (*overdoses*), storing medications in cupboards with food, placing them on tables within easy reach of children, and experiencing side effects. People continue to misuse their medications by failing to properly dispose of them in their original packaging, which can lead to others consuming and reusing them [7] Mistakes can not only endanger health but also waste time and money because people always look for errors in self-medication, which are actually caused by incorrect drug selection and dosage. In 2022, Supardi and Notosiswoyo referred to Aulia Istiqomah and colleagues (n.d.).

Many academics have studied how the general public views and understands

the use of over-the-counter medications. Windy Pramesti's 2020 study, which examined the use of over-the-counter antibiotics in Lipulalongo Village, Central Sulawesi, revealed that 60% and 65.7% of the population lacked attitudes and knowledge regarding these medications, respectively [8] In 2022, Anis Dwi Kristyowati conducted a study in Muncang Village (Banten) to assess community attitudes and knowledge regarding the use of over-the-counter medications. She found that 98% of 105 respondents had positive attitudes and good knowledge (66%) [9]

Based on other research on leaflet-based instructions, respondents' knowledge has increased (Pirade et al., 2020). However, the influence of education on public awareness and attitudes regarding prescription drug use in Gorontalo Province has not been studied in depth.

Based on the aforementioned context, researchers conducted a study in Toyidito Village, Pulubala District, Gorontalo Regency, entitled "The Influence of Pharmaceutical Education on Public Knowledge and Attitudes Regarding Prescription Drug Use."

RESEARCH METHODS

This research employed a quantitative methodology. Numerical data is used in quantitative research to test hypotheses and provide answers to research questions [10] This approach collects data through surveys, observations, or secondary data processing, which are then analyzed statistically. This research is a survey using descriptive methods. Descriptive methods can be used to examine the status of a class of social events, a group of people, an object, a set of circumstances, a system of thought or class of thought, or a class of circumstances.

This research was conducted for more than a month from the preparation of the proposal to the reporting stage which began in July - August 2025. This research was conducted in Toyidito Village, Pulubala District, Gorontalo Regency. The population of this research was the people of Toyidito Village who were willing to participate. Based on the formula above, with a population of 134 respondents, the population calculation for 1 month in Toyidito Village, Pulubala District, Gorontalo Regency, with an error rate of 10%, the number of samples obtained was 57. However, in this study the number of samples was set to 100 respondents for reasons of Representativeness, Stronger validity, and Affordability of researchers.

To assess knowledge, the Guttman scale was used to process the questionnaire. Respondents who selected "Yes" received a score of 1, and those who selected "No" received a score of 0. The questionnaire was processed using a Likert scale to measure attitudes. Responses were scored as follows: 4 for "Strongly Agree," 3 for "Agree," 2 for "Disagree," and 1 for "Strongly Disagree."

After the data was collected, it was tabulated and processed on a computer using statistical software. The following steps were taken in the data processing process: Data editing is the process of verifying the completeness of questionnaire responses and the requirements for entry. (Coding): Converting study data into symbols that can be used for analysis. (Scoring): Assigning scores to the questionnaire.

RESEARCH RESULT

1. Karakteristik Responden

Responden dalam penelitian ini dikategorikan berdasarkan pekerjaan, pendidikan, usia, dan jenis kelamin. Distribusi karakteristik responden berdasarkan usia, jenis kelamin, pekerjaan, dan tingkat pendidikan dijelaskan di bawah ini.

From Table 4.1, the number of male respondents was 48 respondents (48.0%) and 52 respondents (52.0%) were female. This is known according to the number of people with more female gender than male. Meanwhile, for age characteristics, it is known that the number of respondents in the 17-25 year age range is 14 respondents (14.0%), the 26-35 year age range is 13 respondents (13.0%), then the 36-45 year age group is 22 respondents (22.0%) and the 46-65 year age group is 51 respondents (51.0%). These results

Table 4.1 Respondent characteristics

Karakteristik Responden (n=100)	**Jumlah (N)**	**Persentase**
Jenis Kelamin		
Laki – laki	48	48.0
Perempuan	**52**	**52.0**
Umur		
17-25	14	14.0
26-35	13	13.0
36-45	22	22.0
46-65	**51**	**51.0**
Pendidikan		
SMA/SMK	20	32.0
Diploma	1	1.0
S1/S2	3	3.0
SD	**46**	**36.0**
SMP	30	28.0
Pekerjaan		
Petani	24	24.0
IRT	**31**	**31.0**
Wiraswasta	4	4.0
Pns	7	7.0
Kontraktor	4	4.0
Mahasiswa	6	6.0
Karyawan toko	4	4.0
Aparat desa	4	3.0
Buruh	4	4.0
Supir	3	3.0
Tukang bagunan	4	3.0
PLN	2	2.0
Tukang jahit	3	1.0

2. Validity Test

A questionnaire was used as a research tool in this study. SPSS software was used to test the alidity of the questionnaire. One sign that a measuring instrument truly measures what it is intended to measure is the validity test. The R table value needs to be determined first because the research decision-making process depends on the correlation value. A questionnaire item is considered invalid if the calculated r value is less than the r table. Conversely, a questionnaire item is considered valid if the calculated r value is greater than the r table. The table below shows the results of the knowledge questionnaire validity test.

Results table 4.2 Knowledge validity test

Pernyataan	**r – tabel**	**r – hitung**	**Ket**
P1	0,361	0,307	Tidak Valid
P2	0,361	0.600	Valid
P3	0,361	0.076	Tidak Valid
P4	0,361	0.575	Valid
P5	0,361	0.856	Valid
P6	0,361	0.641	Valid
P7	0,361	0.633	Valid
P8	0,361	0.266	Tidak valid

The r-table value for 100 respondents at a 5% significance level is 0.361, as shown in Table 4.1 above. Therefore, if the calculated r for each question exceeds the table r (0.361), then all questions are considered valid. Since the calculated r is smaller than the table r, the results of Table

4.1 indicate that there are three invalid questions. Consequently, these invalid questions were eliminated from the research instrument. Five questions that can be used as a research instrument remained after the three questions were refined. Each question has served as a research indicator. Meanwhile, the following table displays the findings of the attitude questionnaire validity test.

Results table 4.3 Attitude validity test

Pernyataan	r – tabel	r – hitung	Ket
P1	0,361	0,533	Valid
P2	0,361	0.614	Valid
P3	0,361	0.668	Valid
P4	0,361	0.505	Valid
P5	0,361	0.297	Tidak Valid
P6	0,361	0.703	Valid

The r table value for 100 respondents at a 5% significance level is 0.361, as shown in Table 4.2 above. All questions are considered valid if the calculated r value exceeds the r table value of 0.361. Because the calculated r is smaller than the r table, it is known that there is one question that does not fit in Table 4.2. Therefore, the question was eliminated from the research instrument, leaving five questions that can be used as a research instrument or specific questionnaire, each of which has represented the research indicator.

3. Rehabilitation Test

The pre-tested questionnaire was then subjected to a reliability test. One measure of a questionnaire's reliability is reliability testing. Cronbach's alpha, a reliability metric with a range of 0 to 1, was used in this study's reliability testing. Cronbach's alpha must be at least 0.60 [11] The results of the reliability test for the knowledge questionnaire are shown in the table below.

Table 4.4. Results of the knowledge level questionnaire rehabilitation test

Indikator	Cronbach's	Keterangan
Pengetahuan	689	Reliabel

With a score of 689, the eight questions are known to be reliable based on the data in Table 4.4. Considering the Cronbach's alpha value for the knowledge questionnaire is >0.60, it can be said that the questions are reliable. Meanwhile, the table shows the results of the behavioral questionnaire rehabilitation test.

Table 4.5 Results of the attitude questionnaire rehabilitation test

Indikator	Cronbach's	Keterangan
Pengetahuan	642	Reliabel

Since the seven questions have a score of 649, they are reliable. Considering that the Cronbach's alpha value of the knowledge questionnaire is higher than 0.60, it can be said that the questions are reliable.

4. Distribution of Respondents' Answers to Each Question Item

a. Knowledge

Table 4.6 Results of the percentage of respondents' answers to the questionnaire regarding the level of knowledge of the use of hard drugs.

Pengetahuan	Jawaban Responden			
	Tidak		Ya	
	N	%	N	%
P1	15	15.0	85	85.0
P2	70	70.0	30	30.0
P3	7	7.0	**93**	**93.0**
P4	76	76.0	**24**	**24.0**
P5	13	13.0	87	87.0
P6	79	79.0	29	29.0
P7	71	71.0	29	29.0
P8	60	60.0	40	45.0

From the results of table 4.6, it is known that the question with the highest percentage is P3 at 93% and the question with the lowest percentage is P4 at 24%.

b. Attitude

Table 4.7 Results of the percentage of respondents' answers to the questionnaire regarding the level of attitudes towards the use of hard drugs.

From the results of table 4.7, it is known that the respondent's attitude with the highest percentage is 70% and the respondent's attitude with the lowest percentage is 5%.

Jawaban Responden

Sikap	STS		TS		S		SS	
	N	%	N	%	N	%	N	%
P1	10	10.0	20	20.0	50	50.0	20	20.0
P2	30	30.0	40	40.0	15	15.0	15	15.0
P3	10	10.0	10	10.0	20	20.0	60	60.0
P4	30	30.0	40	40.0	20	20.0	10	10.0
P5	**5**	**5.0**	**5**	**5.0**	**70**	**70.0**	20	20.0
P6	45	45.0	30	30.0	10	10.0	15	15.0

2. Univariate Analysis

a. knowledge

Table 4.8 Results of measuring the level of knowledge of the use of hard drugs

Pengetahuan	Jumlah (N)	Persentase (%)
Baik	32	32.0
Cukup	25	25.0
Kurang	**43**	**43.0**
Total	100	100

Dari hasil tabel 100 responden, 43% have insufficient knowledge, while 32% have good knowledge, and 25% have sufficient knowledge. This means that the majority of respondents still have low knowledge regarding the research topic. In addition, research by Magdalena Retnoningsih et al. (2024) stated that there is a significant relationship between education and the level of knowledge of antibiotic use, where the lower the level of education, the lower the respondent's knowledge in drug use. This is relevant to this study, which shows that the majority of respondents have basic education, thus influencing their low knowledge regarding the use of prescription drugs.

b. sikap

Table 4.9 Results of measuring the level of self-medication attitudes towards prescription drugs

Attitude	Jumlah (N)	Persentase (%)
Good	**73**	**73.0**
Fair	17	17.0
Poor	10	10.0
Total	100	100

From the table above, respondents with a good attitude (73%), most respondents with a fair attitude (17%), and most respondents with an attitude in the poor category (10%). The table above shows a significant change in attitude because respondents have been given an understanding of the use of hard drugs, this indicates that public attitudes are at a high level (good), already optimal.

c. Use of Hard Drugs

Table 4.10 Results of measuring the level of use of hard drugs

Use of Hard Drugs	Jumlah (N)	Proporsi (%)
Occasionally	38	38.0
Frequently	**62**	**62.0**
Total	100	100

Respondents who use hard drugs occasionally: 38 people (38%). Respondents who use hard drugs frequently: 62 people (62%). More than half of respondents (62%) still frequently use hard drugs, while 38% only use them occasionally. This indicates a high level of hard drug use in society.

3. Bivariate Analysis

a. Relationship between knowledge and use of prescription drugs

Based on the table above, it shows the relationship between the level of respondent knowledge and the frequency of use of hard drugs in 100 research samples.

Table 4.11 Relationship between knowledge and hard drug users

Sikap	Kadang-Kadang n	Kadang-Kadang %	Sering n	Sering %	Total N	Total %	P-Value
Baik	10	20.0	22	44.0	32	64.0	0.030
Cukup	8	16.0	17	34.0	25	50.0	
Kurang	**20**	**40.0**	23	46.0	**43**	**86.0**	
Total	38	52.0	62	124,0	100	200	

1. Good Knowledge Category
   a. Respondents with good knowledge numbered 10 (20%)
   b. Of these, 8 (16.0%) used hard drugs occasionally, while 20 (40.0%) used them frequently.
2. Fair Knowledge Category
   a. Respondents with fair knowledge numbered 25 (50.0%).
   b. 8 (16.0%) used hard drugs occasionally, and 17 (34.0%) used them frequently.
   c. There was a tendency for respondents with fair knowledge to use hard drugs frequently rather than occasionally.
3. Poor Knowledge Category
   a. Respondents with poor knowledge numbered 43 (86.0%).
   b. Of these, only 20 (40.0%) used hard drugs occasionally, while 23 (46.0%) used them frequently.
   c. This indicates that the lower the level of knowledge, the higher the respondent's tendency to frequently use hard drugs.
4. Kaseluruhan 4. Total
   a. Of the 100 respondents, 38 (38.0%) used hard drugs occasionally, while 62 (62.0%) used them frequently. This distribution results in a total of 100 respondents representing 100% of the sample.
   b. In general, frequent use of hard drugs was more common than occasional use.
5. Statistical Test (Chi-Square Test)
   a. The chi-square test showed a p-value of 0.030 ($p < 0.05$).
   b. There is a relationship between respondents' level of knowledge and the frequency of hard drug use.
   c. Therefore, the better a person's knowledge, the lower the tendency to overuse hard drugs. Knowledge level has a significant influence on hard drug use patterns. More intensive education regarding the proper use of hard drugs is needed to reduce the tendency for overuse, especially among groups with sufficient and insufficient knowledge.

b. The relationship between attitudes and knowledge of prescription drugs

Table 4.12 Relationship between attitudes and use of hard drugs

Sikap	Kadang-Kadang n	Kadang-Kadang %	Sering n	Sering %	Total N	Total %	P-Value
Baik	12	24.0	12	24.0	**73**	**146**	0.030
Cukup	**15**	**30.0**	20	40.0	17	34	
Kurang	11	22.0	30	60.0	10	20	

Total	38	76.0	62	124.0	100	200

Based on the table above, it shows the relationship between the level of respondents' attitudes and the frequency of use of hard drugs in 100 research samples

1. Good Attitude Category
   a. Respondents with good knowledge numbered 73 (146.0%)
   b. Of these, 12 (24.0%) used hard drugs occasionally, while 12 (24.0%) used them frequently.
2. Fair Attitude Category
   a. Respondents with fair attitudes numbered 17 (34.0%)
   b. 15 (30.0%) used hard drugs occasionally, and 20 (40.0%) used them frequently.
   c. There was a tendency for respondents with fair knowledge to use hard drugs frequently rather than occasionally.
3. Poor Knowledge Category
   a. Respondents with poor knowledge numbered 10 (20.0%)
   b. Of these, only 20 (40.0%) used hard drugs occasionally, while 30 (60.0%) used them frequently.
   c. This indicates that the lower the level of knowledge, the higher the respondent's tendency to frequently use hard drugs.
4. Overall
   a. Of the 100 respondents, 38 (56.0%) used hard drugs occasionally, while 62 (124.0%) used them frequently.
   b. In general, frequent use of hard drugs was more common than occasional use.
5. Statistical Test (Chi-Square Test)
   a. The chi-square test showed a p-value of 0.030 ($p < 0.05$).
   b. There is a relationship between the respondent's level of knowledge and the frequency of hard drug use.Dengan demikian, semakin baik pengetahuan seseorang, semakin kecil kecenderungan untuk menggunakan obat keras secara berlebihan tingkat pengetahuan memiliki pengaruh signifikan terhadap pola penggunaan obat keras. Edukasi yang lebih intensif mengenai penggunaan obat keras yang tepat sangat diperlukan untuk mengurangi kecenderungan penggunaan yang berlebihan, terutama pada kelompok dengan pengetahuan cukup dan kurang.

DISCUSSION

Data collection for this study was conducted in July 2025 in the Toyidito Village community. The sample used in this study was a total of 100 community respondents who used hard drugs through self-medication. The average respondent in this study was female, consisting of 52 people (52.0%), according to the results of respondent characteristics based on gender. The remaining 42 respondents (42.0%) were male. [12], who claimed that women self-medicate at a higher rate than men, is supported by this study. Women tend to be more cautious when self-medicating because their anxiety levels are higher than men, according to [13] However, the results of the characteristics data based on age show that the majority of respondents are under 45 years old, with 51 respondents (51.0%), 22 respondents (22.0%), 14 respondents (14.0%), and 13 respondents (14.0%) in the 26–35 age range. According to Yulia, Ddk Tahun (2022), age can influence a person's self-medication.

The distribution of respondents' educational backgrounds shows that the majority had completed elementary school (46%) and junior high school (38%),

followed by high school or vocational school (20%), and a bachelor's degree (3%). Respondents' understanding and acceptance of information regarding prescription drug use were influenced by their level of education. The higher their level of education, the better the respondents' understanding of the advantages and disadvantages of drug use. This is consistent with related research by the Indonesian Ministry of Health. According to Pitaloka et al. (2024), education level plays a significant role in influencing individual behavior, particularly in understanding and accepting health information. Low levels of education can impact the public's limited knowledge in using drugs correctly. Therefore, individuals with low levels of education tend to have a higher risk of inappropriate self-medication with prescription drugs, both in terms of drug selection and dosage.

Based on occupational distribution, the largest number of respondents were housewives (31%) and farmers (24%), while other occupations, such as civil servants, self-employed, laborers, and students, were relatively smaller. This type of employment also influences respondents' knowledge and attitudes. Respondents working in the informal sector, such as farmers or laborers, tend to have limited access to health information compared to those working in the formal sector or with higher education. Meanwhile, housewives play a crucial role in family health management, so their knowledge of prescription drug use significantly influences household self-medication patterns. Utaminingrum et al. (2021) stated that occupational background can influence a person's perceptions and habits regarding medication use.

This study aims to determine the relationship between knowledge level and antibiotic self-medication behavior. The validation test of the knowledge level questionnaire, which was administered to 100 respondents in two large groups, showed that three questions were considered "Invalid" because the calculated r value < r table. Consequently, these unsubstantiated questions were removed from the research instrument section. This left five questions that could be used as a specific questionnaire or as a research tool. where the research indicators were represented by the questions at that time.

The high level of knowledge among respondents regarding the risks of hard drugs does not necessarily translate into rational drug-use behavior in Toyidito Village. This discrepancy suggests that usage patterns are driven more by socio-economic accessibility than by a lack of information. The community's tendency to use hard drugs frequently—despite acknowledging the dangers—is largely influenced by the geographical proximity of local kiosks that sell these medications informally, providing a faster and cheaper alternative to professional healthcare facilities.

Furthermore, the sosiographic conditions of the village play a decisive role; for many residents, the "practicality" of self-medication outweighs the perceived long-term health risks. This phenomenon indicates a shift where hard drugs are treated as common household commodities. Therefore, the findings suggest that while educational interventions have succeeded in raising awareness, they fail to compete with

the entrenched habit of prioritizing immediate pain relief and economic efficiency over clinical safety protocols.

Based on the results of the percentage of respondents' answers to the level of knowledge of the use of prescription drugs described in Table 4.6, the question item with the highest percentage was whether you have ever purchased prescription drugs with a red logo at a nearby pharmacy or store. Meanwhile, the question item with the lowest percentage was about whether you know the side effects of the drug. Table 4.6 explains P1 related to having consumed prescription drugs. The results show that 85 people (85%) answered "Yes" and 15 people (15%) answered "No". P2 when consuming prescription drugs, have you consulted a doctor? The Indonesian Ministry of Health (2020) also emphasized that prescription drugs should only be obtained with a doctor's prescription because their use requires supervision regarding dosage, side effects, and drug interactions without consulting a medical professional, the risk of misuse of prescription drugs will increase, including overdose, resistance, and dangerous side effects. is a question that says 30 people (30%) answered "Yes" and 70 people (70%) answered "No". P3 "Have you ever bought strong drugs with a red logo with the letter K at the nearest shop or drug store?" 93 people (93%) answered "Yes" and 7 people (7%) answered "No".

P4 “buying the nearest medicine still in complete packaging” which answered “Yes” 24 people (24%) and answered “No” 76 people (76%). In P5 regarding “knowing the side effects of the medicine” which answered “Yes” 87 people (87%) and answered “No” 13 people (13%). P6 regarding “knowing the rules for using medicine with strong medicine” which answered “Yes” 29 people (29%) and answered “No” 79 people (79%). P7 regarding “obtaining prescription drugs from pharmaceutical facilities (pharmacies, hospitals, community health centers) answered “Yes” 29 people (29%) and answered “No” 79 people (79%). In P8 regarding “disposing of expired or damaged drugs” Drugs that are physically damaged or change color and odor due to exposure to air, sunlight, temperature, or physical shock are considered damaged drugs and can no longer be used. Expired drugs are no longer suitable for human consumption because they have passed the expiration date stated on the packaging. (Rosaria Ika Pratiwi and Rizki Febriyanti 2025) “Yes” was chosen by 40 (40%) respondents and “No” was chosen by 60 (60%) respondents.

1. Based on the results of the knowledge level analysis presented in Table 4.8, out of a total of 100 respondents, the results showed that 43 respondents with a score range of 0–3 were included in the poor category, 25 respondents with a score range of 4–6 were included in the sufficient category, and 32 respondents with a score range of 7–8 were included in the good category. Based on these findings, only a minority of respondents had a good level of knowledge, while the majority of respondents had a low level of knowledge, and a small number of respondents were in the sufficient category. In addition, research by Magdalena Retnoningsih et al. (2024) found a significant correlation between respondents' knowledge about drug use and their level of education. The lower

the respondents' education, the lower their knowledge about drug use. This relates to research that revealed that most respondents only had basic education, which contributed to their lack of awareness about hard drug use.

Based on the results of the percentage of behavioral respondents' answers described in table 4.7, the statement with the highest percentage is the number related to reading carefully the side effects that will arise after consuming strong drugs. While the statements with the lowest percentage are in numbers P3 and P4. I buy drugs with complete and untorn packaging. I read carefully the side effects of the instructions for use before consuming strong drugs. Table 4.7 explains regarding P1 "I buy prescription drugs from pharmacies, community health centers, and health facilities." Of the respondents, 20% chose "Strongly Agree", 50% chose "Agree", 44% chose "Disagree", and 20% chose "Strongly Disagree" (10%). Prescription drugs are drugs that can only be obtained with a doctor's prescription. Only licensed healthcare professionals, particularly pharmacists, are permitted to dispense prescription medications in certain healthcare facilities, such as pharmacies. Pharmacists at pharmacies can only dispense these prescription medications with a doctor's prescription [14] Q2: I buy prescription medications without a doctor's prescription. Fifteen percent said they "strongly agree," fifteen percent said they "agree," fifty-four percent said they "disagree," and thirty percent said they "strongly disagree." This demonstrates how common this behavior is, as it must be confirmed that the patient is sick or experiencing symptoms before prescription medications can be used. In addition, the Food and Drug Monitoring Agency (BPOM) Regulation No. 4 of 2018 concerning the Management of Drugs, Drug Ingredients, Narcotics, Psychotropics, and Pharmaceutical Precursors in Pharmaceutical Service Facilities states that patients can only receive prescription drugs from doctors. P3 “I buy strong drugs with complete packaging that is not torn, expired, or cut. 60% answered “Strongly Agree”, 20% answered “Agree”, 10% answered “Disagree”, and 10% answered “Strongly Disagree”. This behavior is also included in appropriate behavior because the quality of the drug is maintained, drugs with damaged, torn, or cut packaging can make the drug content exposed to air, light, or moisture, thereby reducing its effectiveness. P4 “I do not read the instructions for use properly before consuming strong drugs” 10% answered “Strongly Agree”, 20% answered “Agree”, 40% answered “Disagree”, and 30% answered “Strongly Disagree”. This shows that there are still people who have inappropriate behavior. Due to the lack of knowledge and awareness of the public who do not understand the importance of reading the instructions for use before taking medication. P5 "I read carefully the side effects that will arise after taking strong drugs" as many as 20% answered "Strongly Agree", 70% answered "Agree", 5% answered "Disagree", and 5% answered "Strongly disagree". The habit of not reading drug

information People often immediately take drugs without reading the brochure, packaging, or instructions for use because they are considered troublesome. Question number 6 "I know the indications of drugs from my experience" as many as 15% answered "Strongly Agree", 10% answered "Agree", 30% answered "Disagree", and 45% answered "Strongly disagree". Many people feel that they have used the same drug for certain complaints so they are confident they can recognize the indications of the drug.

2. Based on the behavioral analysis results in Table 4.9, 72 respondents with scores of 7-8 were categorized as good, 17 respondents with scores of 4-6 were categorized as adequate, and 10 respondents with scores of 0-3 were categorized as poor. These results indicate that the majority of respondents had good behavior, a small proportion were in the adequate category, and only a few respondents had poor behavior. Similar findings were also explained in Hastuti's (2021) study, which showed that community-based pharmaceutical education was able to increase public awareness of the rules for using prescription drugs and encourage safer and more responsible drug use. The results of these studies support the important role of pharmaceutical education in shaping positive attitudes and rational behavior in the community regarding the use of prescription drugs. The effectiveness of pharmacy education is influenced by various factors, including the level of education and the community's initial understanding. According to [15] education plays a significant role in a person's ability to receive and process health information. Motivation and self-medication habits also influence behavioral change, as health behavior tends to be influenced by previous experiences and habits. Furthermore, simple, clear, and easy-to-understand educational delivery methods strengthen the information-receiving process, in line with health communication theory, which states that messages must be tailored to the characteristics of the audience. The role of healthcare workers, particularly pharmacists, is crucial because clarity and consistency of information can increase public trust. Social support, such as from family and community leaders, also strengthens attitude change, as explained in Bandura's socio-cognitive theory, which states that the environment influences behavior formation. Thus, the effectiveness of education is influenced by individual factors, delivery methods, and social support.

Based on table 4.11 the results of statistical analysis to see the relationship between the level of knowledge and attitude of self-medication of the use of hard drugs in the Toyidito village community using the chi square method obtained significant results, namely there is a relationship between the level of knowledge of the use of hard drugs in the Toyidito village community as evidenced by the Asymp value obtained of 0.003 Because the Asymp value is 0.05 (0.003 <0.05), while the significant results are that there is a relationship between the level of antibiotic self-medication attitude in the Tunas Harapan village community as

evidenced by the Asymp value obtained of 0.030. Because the Asymp value is 0.05 (0.030 <0.05) then based on decision making it can be concluded that H_0 is rejected and H_1 is accepted. Thus it can be interpreted that there is a relationship between the level of knowledge and attitude of self-medication of hard drugs in the Toyidito village community. In addition, research by Pratiwi and Anggiani (2020) also shows that education has a positive correlation with increasing public knowledge in the use of hard drugs. This strengthens the results of current research that pharmaceutical education is able to increase public knowledge and attitudes in the use of hard drugs.

RESEARCH LIMITATIONS

1. This study only used questionnaire data from the perspective of respondents, so conclusions are drawn based on both questionnaire and interview data.
2. Some respondents tended to rush through the questionnaire due to busy work and daily activities, potentially affecting the accuracy of their responses.
3. Environmental factors in the field, such as less-than-conducive conditions in the extension facility, could have impacted the smoothness of the data collection process.
4. This study also had limitations with the questionnaire instrument. Several questions on knowledge and attitudes did not meet validity criteria, potentially affecting the accuracy and precision of the measurement results for the variables studied.

CONCLUSION

Based on this research, the following conclusions can be drawn:

1. The level of knowledge of the community in Toyidito Village, Pulubala District, Gorontalo Regency regarding the use of prescription drugs. Of the 100 respondents, 43 (43%) were in the poor category with a score range of 0–3, 25 (25%) were in the adequate category with a score range of 4–6, and 32 (32%) were in the good category with a score range of 7–8. These results indicate that the majority of respondents had poor knowledge, a small proportion were in the adequate category, and only a small minority had good knowledge. Furthermore, research by Magdalena Retnoningsih et al. (2024) suggests a link between education and knowledge of prescription drug use, where the lower the education level, the lower the respondent's knowledge of prescription drug use. This is relevant to this study, which shows that the majority of respondents had a basic education, thus influencing their low knowledge regarding the use of prescription drugs.
2. Level of community attitudes in Toyidito Village, Pulubala District, Gorontalo Regency towards the use of hard drugs. The majority of respondents had a positive attitude. Of the 100 respondents, 73 (73%) were in the good category, with a score between 7 and 8, 17 (17%) were in the fair category, with a score between 4 and 6, and 10 (10%) were in the bad category, with a score between 0 and 3. Based on these findings, the majority of respondents behaved well, a small number were in the fair category, and very few behaved badly. Similar findings were also explained in Hastuti's (2021) study, which showed that community-based pharmaceutical education was able to increase public awareness of the rules for using hard drugs and encourage safer

and more responsible drug use behavior. The results of these studies support that pharmaceutical education plays an important role in shaping positive attitudes and rational behavior in the community regarding the use of hard drugs.

3. Factors influencing the effectiveness of pharmaceutical education have been achieved, where this study shows that the increase in community knowledge and attitudes is influenced by individual factors (education, initial understanding, motivation, and self-medication habits), educational process factors (material clarity, delivery methods, and educational interactions), as well as external factors such as the role of health workers and environmental support. From the results of the pre-test and post-test, significant changes were found in the knowledge and attitudes of the Toyidito Village community towards the use of hard drugs
4. Based on the results of the SPSS test, there is a relationship between a person's level of knowledge and the attitude of self-medication of strong drugs in the community of Toyidito Village, Pulubala District, Gorontalo Regency.

BIBLIOGRAPHY

[1] BPOM, *Gerakan Nasional Peduli Obat dan Pangan Aman*. 2019.

[2] Yati K., Hariyanti, Dwitiyanti, and P. M. Lestari, "Pelatihan Pengelolaan Obat yang Tepat dan Benar," vol. 7, no. 1, pp. 42–49, 2020.

[3] WHO, *The Role of the Pharmacist in Self-Care and Self-Medication Contents*. 2019.

[4] Badan. Pusat. Statistik, "Persentase Penduduk Yang Mengobati Sendiri Selama Sebulan Terakhir (Persen)." 2024. [Online]. Available: https://www.bps.go.id

[5] Bada. Pusat. dan Pemerintah. Kesehatan, *Riskesdas Tahun 2021*. 2021.

[6] Kementrian. Kesehatan. Republik. Indonesia, *Pedoman Penggunaan Obat Secara Rasional di Fasilitas Pelayanan Kesehatan*. 2020.

[7] Suryoputri M. W. and. Sunarto A. M, "Pengaruh Edukasi dan Simulasi Dagusibu Terhadap Peningkatan Keluarga Sadar Obat," *Jati Emas*, vol. 3, no. 1, p. 51, 2021.

[8] Pramesti W., "Pengetahuan dan Sikap Masyarakat pada Penggunaan Antibiotik Tanpa Resep Dokter." 2020.

[9] Kristiyowati A., "Rasionalitas Penggunaan Obat Ditinjau dari Indikator Peresepan WHO di RS IMC Periode Jan–Mar 2019." 2022.

[10] Pratiwi Y. and Sugiyanto K. C, "Hubungan Pengetahuan Pasien Tentang Obat Keras Terhadap Pembelian dan Kepatuhan."

[11] Zuazana, "Gambaran Pengetahuan Masyarakat Dalam Pengobatan Sendiri Terhadap Penyakit Demam," *Farm. J. Kefarmasian*, vol. 8, p. 14, 2021.

[12] Sherman A., "Self-Medication Practices Among Adults," *Int. J. Public Heal. Res.*, vol. 7, no. 1, pp. 45–52, 2019.

[13] Yulia R., Santoso H., and Pratiwi D., "Hubungan Usia Dengan Perilaku Swamedikasi," *J. Kesehat. Masy. Indones.*, vol. 17, no. 3, pp. 210–218, 2022.

[14] Mailuhuw H. V, Pesulima T. L., and Hetharie Y., "Perlindungan Konsumen Terhadap Penjualan Obat

Antibiotik Tanpa Resep Dokter," *Pattimura Law Study Rev.*, vol. 1, no. 1, pp. 336–346, 2023.

[15] Notoatmodjo S., *Pendidikan dan Perilaku Kesehatan*. 2019.