Indonesian Journal of Global Health Research
Volume 6 Number 4, August 2024
e-ISSN 2715-1972; p-ISSN 2714-9749
http://jurnal.globalhealthsciencegroup.com/index.php/IJGHR

OVERVIEW OF COMMUNITY KNOWLEDGE ABOUT THE DAGUSIBU OF ANTIBIOTICS

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ABSTRACT

The Antimicrobial Resistance Control Committee explains that the rate of bacterial resistance in Indonesia has continued to increase from 40% in 2013 to 60.4% in 2019. One of the causes of antibiotic resistance is the lack of information regarding antibiotic knowledge among the general public. Preliminary study results show that the community knowledge in Banjaran Hamlet about the use of antibiotics is still low at 40%. The Indonesian Pharmacists Association created the health education program DAGUSIBU (Get, Use, Store, Dispose) as part of the Family Medicine Awareness Movement to improve the quality of life for the community. This study aims to determine the level of community knowledge about DAGUSIBU antibiotics in Banjaran Hamlet, Wonosari District, Klaten Regency. The method used in this study is descriptive quantitative, utilizing a questionnaire to assess community knowledge about DAGUSIBU antibiotics. The sample size was calculated using the Slovin formula, resulting in a sample of 190 respondents. The study results in Banjaran Hamlet showed that 71.58% fell into the good knowledge category, while 28.42% fell into the poor knowledge category. The results of this study are expected to help the community improve their knowledge about the proper use of DAGUSIBU antibiotics.

Keywords: antibiotics; community; dagusibu; knowledge; level

First Received	Revised	Accepted
12 March 2024	22 April 2024	29 April 2024
Final Proof Received		**Published**
25 May 2024		01 August 2024

How to cite (in APA style)
Anggraini, T., & Angelica, J. S. (2024). Overview of Community Knowledge about the Dagusibu of Antibiotics. Indonesian Journal of Global Health Research, 6(4), 2213-2220. Retrieved from https://jurnal.globalhealthsciencegroup.com/index.php/IJGHR/article/view/3422.

INTRODUCTION

The use of antibiotics is also increasing in developing countries such as Indonesia, as well as in developed countries like the United States. The use of antibiotics sold over the counter without a doctor's prescription can lead to drug resistance (Gunawan et al., 2021). According to the Antimicrobial Resistance Control Committee, the rate of bacterial resistance in Indonesia has increased from 2013, 2016, to 2019. Cases of bacterial resistance have risen significantly from 40%, 60%, to 60.4% in 2019 (Marsudi, 2021). Antibiotic resistance is a common condition that is crucial to address. Due to antibiotic resistance, the potential of antibiotics to treat infections and diseases in humans, animals, and plants is diminishing. Antibiotic resistance can also increase treatment costs, leading to the use of more expensive and more toxic antibiotics (Poudel et al., 2023).

DAGUSIBU (Get, Use, Store, Dispose) is a program of the Family Medicine Awareness Movement (GKSO) created by the Indonesian Pharmacists Association to achieve the goal of understanding and raising awareness about the rational use of medications. The DAGUSIBU activities aim to improve the quality of life for the community to achieve the highest possible

level of health. One of its health activities includes the safe handling and use of pharmaceutical preparations and medical devices (PP IAI, 2014).

According to a study by (Putri et al., 2017) titled "Evaluation of Community Knowledge Levels About Antibiotic Use in Klaten Regency," a non-experimental (observational) method was used. Data collection in this study utilized a questionnaire consisting of 13 statements that had undergone reliability testing. The results showed that in the good knowledge category, there were 8 respondents (6%), in the moderate knowledge category, there were 36 respondents (28%), and in the poor knowledge category, there were 83 respondents (65%). It was concluded that the majority fell into the poor knowledge category. Another study by (Ningsih et al., 2023) titled "Overview of Community Knowledge About DAGUSIBU in Dukuh Poko Rt 02 Rw 05 Desa Duwet Wonosari Klaten" found that 57 respondents (66%) had good knowledge, 23 respondents (27%) had moderate knowledge, and 6 respondents (7%) had poor knowledge. Based on the above background, the researcher aims to determine the level of knowledge about DAGUSIBU antibiotics in Banjaran Hamlet, Teloyo Village, Wonosari District, Klaten Regency, with the goal of improving the quality of life for the community.

METHOD

This research is a descriptive quantitative study to determine the level of knowledge among the community in Banjaran hamlet, Teloyo village, Wonosari subdistrict, Klaten regency regarding the appropriate use of antibiotics (DAGUSIBU). The sampling in this study was purposive sampling based on inclusion criterias from November to January 2023. The sample size calculated using the Slovin formula was 190 respondents. The inclusion criteria for this study were individuals aged 18 to 60 years old, who were willing to be respondents, able to communicate well, and had previously consumed antibiotics. The exclusion criteria were incomplete questionnaires and respondents who were healthcare professionals. The data collection instrument used was a questionnaire consisting of 10 statements about knowledge of DAGUSIBU antibiotics. The data obtained were then processed using Microsoft Excel. The questionnaire data containing respondents' answers were analyzed using the Gutman scale, with a score of 1 for correct answers and a score of 0 for incorrect answers. Knowledge was categorized based on the scores obtained: >50% (good) and ≤50% (poor) (Budiman, 2013).

RESULTS

Table 1.
Respondents Level of Knowledge (n= 190)

Level of Knowledge	f	%
Good	136	71,58
Insufficient	54	28,42

Table 1, the level of knowledge about the appropriate use of antibiotics (DAGUSIBU) among the community in Banjaran hamlet, Teloyo village, Wonosari subdistrict, Klaten regency, categorized as low knowledge, includes 54 respondents, predominantly female, 38 respondents. This dominance is likely because the majority of respondents were female. By age, 24 respondents were aged 46-60 years, making this age group more dominant compared to other age ranges. This is because, as individuals enter late adulthood, their cognitive patterns and memory tend to decline (Notoatmodjo, 2014). Regarding the last level of education, 28 respondents had completed senior high school (SLTA). The higher the level of education, the better the knowledge, as education imparts knowledge on various health-related matters, that improve the quality of life. However, it should be emphasized that individuals

with higher education levels do not necessarily have advanced knowledge about health, particularly about the appropriate use of antibiotics (DAGUSIBU). This could also be due to the fact that the majority of respondents' highest level of education was senior high school (SLTA). By occupation, 25 respondents worked in the private sector, which could be because most of the respondents were private sector workers.

Table 2.
Characteristics of Respondents (n= 190)

Category	Characteristics of Respondents	f	%
Gender	Male	74	38,9
	Female	116	61,1
Age	18-25	34	17,9
	26-35	38	20,0
	36-45	54	28,4
	46-60	64	33,7
Latest Education Attainment	Elementary School	23	12,1
	Junior High School	32	16,8
	Senior High School	106	55,8
	University	29	15,3
Occupation	Private	100	52,6
	Civil Servants (PNS)	9	4,7
	Student	16	8,4
	Housewife	43	22,6
	Farmer	10	5,4
	Trader	12	6,3

Table 2, the respondents were predominantly female, with 116 respondents. This occurred because when distributing the questionnaires, the researcher visited a Family Welfare Empowerment (PKK) event, where all the members were women. According to the demographics of Banjaran hamlet, the difference in the number of males and females is minimal. The age range of respondents was 46-60 years, categorized as early elderly, with 64 respondents. This was due to the majority of PKK members in Banjaran being aged 46-60 years. Additionally, as people reach the age of 46-60 years, they tend to experience health complaints and thus use medications. Consequently, the researcher included many respondents in this age group. The most common last level of education was senior high school (SLTA), aligning with the demographic data of Banjaran hamlet, where most of the community members have completed senior high school. The majority occupation was private sector employees, with 100 respondents. This corresponds with the demographics of Banjaran hamlet, where most of the community members are freelance laborers. The private sector jobs in this study include factory workers, workers in individually or organizationally managed eateries, and other non-governmental jobs.

Table 3.
The level of knowledge of respondents regarding DAGUSIBU antibiotics (n= 190)

The list of statements	The number of respondents who answered correctly according to the key	(%)
Antibiotics can be purchased at pharmacies without a doctor's prescription	101	53,2
Antibiotics can be bought at drugstores or convenience stores	125	65,8
Antibiotics are only prescribed by doctors	133	70,0
Antibiotics are used to reduce fever	104	54,7

Antibiotics should be consumed until finished	142	74,7
Antibiotic syrup can still be consumed even after 35 days of opening from its packaging	129	67,9
Antibiotic syrup is stored in the refrigerator (at a cold temperature of 2-8°C)	103	54,2
Antibiotic tablets can be stored at room temperature (15-30°C)	160	84,2
Opened antibiotic eye drops that exceed 28 days since opening follow the expiration date on the packaging for storage limits	107	56,3
When disposing of antibiotic tablets, I will separate the medicine from its packaging first, then crush and bury the medicine	157	82,6

Table 3, respondent's knowledge of how to get antibiotics is still not perfect. This is caused by the lack of understanding of the people of Dukuh Banjaran regarding how to get antibiotics properly and correctly. As stated in (Permenkes RI, 2021) that to get an antibiotic drug you have to use a doctor's prescription. People still think that they can get antibiotics without a doctor's prescription. Because the facts in the field state that quite a few pharmacies refuse to provide antibiotics without a doctor's prescription, but the response from pressing patients states that other pharmacies are willing to accept the purchase of antibiotics without a doctor's prescription. This causes difficulties in implementing regulations on the sale of antibiotics in the community (Wulandari & Rahmawardany, 2022). The percentage of those who have less knowledge about how to get antibiotics is 37%. This will have an impact on the uncontrolled use of antibiotics and will cause antibiotic resistance. This will cause patients to undergo more serious treatment and will incur higher medical costs (Lubis & others, 2022).

Table 4.
Level of knowledge about the antibiotic DAGUSIBU based on indicators

Category	%
Respondent's knowledge about how to get antibiotics	63
Respondent's knowledge about how to use antibiotics	65,77
Respondent's knowledge about how to store antibiotics	64,9
Respondent's knowledge about how to dispose of antibiotics	82,6

DISCUSSION

Based on Table 3, statement number 1 regarding how to obtain medication shows that most of the Banjaran hamlet community knows that antibiotics cannot be purchased at a pharmacy without a doctor's prescription. Therefore, when buying antibiotics at a pharmacy, a prescription must be provided. There were 89 respondents with incorrect answers to statement number 1, indicating that some are still unaware that a prescription is needed to buy antibiotics at a pharmacy. Obtaining antibiotics with a prescription ensures proper use, correct indications, accurate dosing, appropriate usage methods, and correct duration (Dewi & Juliadi, 2021).For statement number 7 about storing antibiotics, most of the Banjaran hamlet community knows that antibiotic syrups should not be stored in the refrigerator as this can cause sedimentation and reduce effectiveness. There were 87 respondents with incorrect answers to statement number 7, indicating some still believe antibiotic syrup can be stored in cold temperatures. Antibiotic syrup should not be stored in the refrigerator because it affects the stability of the medication and causes sedimentation. The correct storage for antibiotic syrup is at room temperature (15-30°C) (Ivanca et al., 2023).

Regarding statement number 4 on how to use antibiotics, most of the Banjaran hamlet community knows that antibiotics are not used to reduce fever. There were 86 respondents with incorrect answers to statement number 4, indicating some still believe that antibiotics can treat fever. Antibiotics are used to treat bacterial infections (Dongoran et al., 2024). Although fever is a protective response, it can also be caused by non-bacterial agents such as viruses, parasites, and others. Therefore, inappropriate use of antibiotics can lead to antibiotic resistance (Kemenkes RI, 2022). The misconception that antibiotics can be used to reduce fever may be due to the belief that antibiotics are effective for treating all illnesses (Sari et al., 2023). For statement number 9 regarding the storage duration of antibiotic eye drops, most of the Banjaran hamlet community knows that the shelf life is only 28 days. There were 83 respondents with incorrect answers to statement number 9, indicating some are still unaware of the 28-day storage limit. The 28-day limit for antibiotic eye drops is essential because using them beyond this period can cause severe irritation due to reduced drug stability (Kemenkes RI, 2022).

Statement number 2 about how to obtain antibiotics shows that 125 respondents correctly knew that antibiotics are not sold in drug stores or general stores, indicating that most respondents are aware of this. However, 65 respondents answered incorrectly, indicating some are still unaware that these stores only provide over-the-counter or limited over-the-counter medications. The free sale of antibiotics in drug stores can lead to improper purchase and use without a doctor's prescription, increasing antibiotic resistance (Zoorob et al., 2016). For statement number 6 on the usage of antibiotics, 129 respondents correctly knew that antibiotic syrup cannot be consumed after 35 days from opening. However, 61 respondents were incorrect, indicating some respondents still think it can be consumed even after 35 days. Generally, opened syrup can be used for up to a month, but for antibiotic syrup, the usage period is shorter, 1-2 weeks after opening (Handini et al., 2021).

Statement number 3 about obtaining antibiotics shows that 133 respondents knew that only doctors can prescribe antibiotics, indicating that most respondents understand this. However, 57 respondents were incorrect, indicating some still believe that pharmacists or pharmacy technicians can provide antibiotics without a prescription. This misconception can lead to antibiotic misuse (Kemenkes RI, 2017). For statement number 5 on the usage of antibiotics, 142 respondents correctly knew that antibiotics should be finished entirely as prescribed. However, 48 respondents were incorrect, indicating some stop taking antibiotics once they feel better. Antibiotics must be taken until finished to ensure all bacteria are killed, preventing recurrent infections and antibiotic resistance (Mahbub et al., 2023). For statement number 10 on disposing of antibiotics, 157 respondents knew the proper method of separating tablets from packaging, crushing, and burying them. However, 33 respondents were incorrect, indicating some are still unaware of the correct disposal method.
Pembuangan obat yang sembarangan berdampak memberikan kesempatan orang lain untuk menyalahgunakan obat tersebut (Fauziah et al., 2023).

Finally, for statement number 8 on storing antibiotics, 160 respondents knew that antibiotic tablets should be stored at room temperature. However, 30 respondents were incorrect, indicating some still do not know that tablets should be kept at room temperature (15-30°C) and away from direct sunlight to maintain stability and effectiveness (Kemenkes RI, 2022). Respondents' knowledge of how to use antibiotics is also still not perfect. This is caused by the lack of understanding of the people of Dukuh Banjaran regarding how to use antibiotics properly and correctly. The use of antibiotics will result in therapeutic success if used rationally. However, inappropriate use of antibiotics will cause antibiotic resistance (Samosir

et al., 2023). People still use antibiotics incorrectly, for example they don't consume the antibiotics until they're finished. This often happens among the public, because when people feel that the symptoms of the disease have disappeared and feel that they have recovered, they do not take the remaining antibiotics that have been prescribed by the doctor. The percentage of those who have insufficient knowledge of how to use antibiotics is 34.23%. This will have an impact on the irrational use of antibiotics, causing an increase in cases of antibiotic resistance (Evelina et al., 2024).

Respondents' knowledge of how to store antibiotics is also still not perfect. This is caused by the lack of understanding of the people of Dukuh Banjaran regarding how to store antibiotic drugs properly and correctly. Ways of storing antibiotic drugs that must be considered include storage places out of reach of children, storage temperature and storage time. Regarding the storage time for antibiotic eye drops, it should be no more than 28 days after opening the packaging. In fact, some people still use and store eye drops for more than 28 days. The percentage of those who had less knowledge about how to store antibiotics was 35.1%. This will have an impact on changes and the effectiveness of antibiotic drugs will decrease so that their benefits are not maximized (Ministry of Health of the Republic of Indonesia, 2022).

Respondents' knowledge of how to dispose of antibiotics is also still not perfect. This is caused by the lack of understanding of the people of Dukuh Banjaran regarding how to dispose of antibiotics properly and correctly. Based on (Indonesian Ministry of Health, 2008) attention must be paid to how to dispose of antibiotics. For example, antibiotic tablets must be crushed first and then buried in the ground. In contrast, people still throw away antibiotics without paying attention to these regulations. The percentage of those who have insufficient knowledge of how to dispose of antibiotics is 17.4%. This will pose a risk of misuse of antibiotic preparations and packaging (Ministry of Health of the Republic of Indonesia, 2022) The level of knowledge of the Banjaran hamlet community regarding DAGUSIBU antibiotics, the lowest percentage is in the indicator of how to get antibiotic drugs at 63%. Previous research conducted by (Misbachul, 2022) in Kemulan Village on the indicator of getting medicine had a percentage of 62%

CONCLUSION

The level of knowledge about the appropriate use of antibiotics (DAGUSIBU) among the community in Banjaran hamlet, Teloyo village, Wonosari subdistrict, Klaten regency is 71.58%, which falls into the category of good knowledge, while 28.42% falls into the category of poor knowledge.

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