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COMMUNITY EDUCATION IN REDUCING THE RISK OF DIMENHYDRINATE MISUSE AS A SEDATIVE-HYPNOTIC IN LAMASI VILLAGE IN 2024

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ABSTRACT

The misuse of dimenhydrinate as a sedative-hypnotic can pose serious health risks. Dimenhydrinate, which is commonly used to prevent nausea and dizziness due to motion sickness, is often misused as a sleep aid. This study aims to educate the community of Lamasi Village about the risks of dimenhydrinate misuse and to enhance their understanding of the safe use of this drug. Using a quasi-experimental method with quantitative analysis, this study involved 30 respondents selected through purposive sampling. Data was collected using pre-test and post-test questionnaires via a door-to-door method. The results show a significant improvement in the community's understanding and compliance after the educational intervention. The average pre-test attitude score increased from 8.10 to 9.83, and the compliance score increased from 17.07 to 23.90. The education provided proved effective in reducing the misuse of dimenhydrinate and improving the community's understanding of its risks.

KEYWORDS

Dimenhydrinate; Education; Drug Misuse; Sedative-Hypnotic; Lamasi Village

INTRODUCTION

Indonesia, with its rich cultural diversity, abundant natural resources, and position as one of the largest archipelagic countries in the world, has the potential to become a global power. In realizing the grand vision of Indonesia Emas 2045, a strong leadership strategy is required to tackle increasingly complex global challenges (Nasrul, 2023). As the most populous country in Southeast Asia, Indonesia faces unique challenges in addressing health issues, including the side effects of drugs that often occur. With such a large and diverse population, Indonesia is confronted with various complex health problems, including both mental and physical health issues. These health challenges are closely linked to drug misuse, which can lead to undesirable side effects.

Education plays a crucial role in influencing individuals, groups, and communities to adopt behaviors that align with the objectives of the educational initiative (Ns. Fitri Mailani, 2022). In public health theory, drug misuse encompasses several aspects, including using drugs without prescriptions, exceeding recommended dosages, and lacking adequate knowledge about side effects and proper usage. While drugs can be beneficial when used correctly to treat specific conditions, they may become toxic if misused or consumed in excessive doses, potentially leading to drug poisoning or intoxication (Kesehatan et al., 2019). Knowledge is a vital predispositional factor that significantly influences individual behavior regarding drug use. It can be acquired either naturally or through direct or indirect interventions. In Indonesia, public knowledge about drug use remains at a moderate level, indicating there is room to enhance the community's understanding of drugs and their subsequent effects (Kesehatan et al., 2019).

Self-medication is a common practice in Indonesia, where people attempt to address minor health complaints or symptoms without professional medical advice. The reasons for self-medication include convenience, privacy, cost-effectiveness, long distances from healthcare facilities, and dissatisfaction with available health services. Typically, individuals engaging in self-medication experience mild conditions, such as muscle pain, headaches, or other minor ailments, and commonly use over-the-counter (OTC) analgesics (Kesehatan et al., 2019). One such drug frequently used is dimenhydrinate.

Dimenhydrinate is an over-the-counter (OTC) antihistamine/anticholinergic of the ethanolamine class, known for its sedative-hypnotic and antiemetic effects. Dimenhydrinate works by blocking central and peripheral H1 histamine receptors to relieve nausea. The sedative and cognitive effects of dimenhydrinate may arise from reduced cerebral oxygenation and altered secretion of chromogranin. While dimenhydrinate is available OTC, its accessibility is increasingly restricted due to concerns over misuse (Bahji et al., 2021).

In 2023, a case involving a housewife and a pharmacist raised concerns about the misuse of sedative-hypnotic drugs. The case involved the inappropriate use of dimenhydrinate for a child under the age of two, despite health guidelines advising against its use for young children. The involvement of Dr. Afferino, a health professional, highlighted the lack of proper understanding regarding the correct usage of medications and the risks associated with administering drugs to children under inappropriate age guidelines. This case underscores the importance of education and awareness among both the general public and healthcare professionals about the proper use of medications and the risks associated with incorrect usage, especially in vulnerable populations like children (Qommarria Rostanti, 2023).

A 2019 study on OTC drug usage in a community-based pharmacy identified consistent reports of dimenhydrinate use. One study reported that 68.5% of participants had used dimenhydrinate in the past month, with many of them exhibiting symptoms of dependence and tolerance to the drug. This study suggests that more frequent usage of dimenhydrinate correlates with a higher incidence of antihistamine-related side effects (Bahji et al., 2021).

Kelurahan Lamasi is a region within the Lamasi District of Luwu Regency, covering an area of 169.316 hectares and home to a population of 2,980 residents. Despite having adequate educational facilities, including schools up to the high school level, the community's understanding of dimenhydrinate use remains limited. In this area, dimenhydrinate is often viewed as a common over-the-counter remedy, with its side effects frequently utilized as a sedative-hypnotic.

Given the potential risks of irrational drug use leading to acute poisoning, it is essential to implement educational programs aimed at reducing the misuse of dimenhydrinate as a sedative-hypnotic in Kelurahan Lamasi in 2024. This study aims to educate the community about the dangers of misusing dimenhydrinate, promote proper drug use, and enhance the public's awareness of the associated risks.

MATERIALS AND METHODS

Research Design and Framework

This study employs a quasi-experimental design with a quantitative approach. A quasi-experiment is a type of research aimed at evaluating the effects of an intervention without using full randomization in assigning subjects to control or experimental groups. In quasi-experimental designs, researchers often use pre-existing groups or form groups through non-random methods (Sentosa, 2018). The quantitative method involves the collection and analysis of numerical data. Quantitative data allows researchers to perform statistical analysis to determine the significance of observed changes or differences (Wahyudi, 2022).

Research Location and Time Frame

a. Location: This research is conducted in Lamasi Village, Lamasi District, Luwu Regency, Indonesia.
b. Time Frame: The study will take place in June 2024.

Population and Sample

a. Population: The population for this study consists of the entire community of Lamasi Village, totaling 2,980 residents.
b. Sample: The sample is selected using purposive sampling. The sample is drawn from the population based on inclusion criteria that represent the characteristics of the desired population, specifically the residents of Lamasi Village who meet certain inclusion criteria. A total of 30 individuals will be selected as the sample.
c. Inclusion Criteria: Non-healthcare professionals, Aged 16-65 years, Willing to participate as respondents in the study.
d. Exclusion Criteria: Healthcare professionals, Individuals below 16 years of age or above 65 years, Individuals unwilling to participate as respondents.

Data Collection Method

The data for this research is collected using the door-to-door method. The door-to-door method is a valid and effective technique for gathering data, particularly when the goal is to achieve a good representation of the population and ensure high response rates. This method allows researchers to:

a. Ensure Participation: By visiting households directly, the researcher can ensure that both pre-test and post-test questionnaires are completed by participants.
b. Increase Compliance: Participants are more likely to complete the questionnaires with direct guidance.
c. Overcome Literacy Barriers: The researcher can assist participants who may have difficulty understanding the questionnaires.
d. The research is divided into several stages to facilitate the research process:
e. Pre-test: The pre-test questionnaire will be distributed to 20 participants door-to-door to measure their initial knowledge and attitudes.
f. Educational Intervention: The intervention will involve delivering educational content through face-to-face sessions, lectures, or other suitable media.
g. Post-test: The same post-test questionnaire will be administered to the same participants after the educational intervention to measure changes in knowledge and attitudes.

Research Instruments

The research instruments used are pre-test and post-test questionnaires. These questionnaires are designed to gather data about the participants' initial knowledge before receiving the educational intervention and to measure any changes in knowledge after the intervention.

Data Analysis

The data analysis will be conducted using descriptive statistics and paired sample T-test. Descriptive statistics will be used to analyze demographic data and the distribution of pre-test and post-test scores, while the paired sample T-test will be used to compare pre-test and post-test scores to assess the effectiveness of the educational intervention (Misdariani Nur et al., 2023).

Ethical Clearance and Fit Test

Ethical considerations in this study include ensuring informed consent from all participants, maintaining confidentiality, and protecting participant privacy throughout the research process. Ethical clearance has been obtained from the appropriate institutional review board. Furthermore, a fit test will be conducted to ensure the suitability and validity of the instruments used in the study.

RESULTS

Based on the research conducted within the community of Lamasi Village, data collection was performed using a door-to-door approach from June 11 to June 11, 2024. A total of 30 participants agreed to serve as respondents for the study. The collected data was then analyzed, and the results showed a significant effect between the educational intervention and the level of compliance among the community in Lamasi Village.

1. Characteristics of Respondents

Table1. Distribution of Respondents Based on Gender in Lamasi Village

Gender	Frequency	Percent	Valid Percent	Cumulative Percent
Male (P)	18	60.0%	60.0%	60.0%
Female (L)	12	40.0%	40.0%	100.0%
Total	30	100%	100%	100%

Interpretation: Majority of respondents were female (60%), while 40% were male.

Table 2. Distribution of Respondents Based on Age in Lamasi Village

Age Range	Frequency	Percent	Valid Percent	Cumulative Percent
16-25 Years	23	76.7%	76.7%	76.7%
26-35 Years	2	6.7%	6.7%	83.3%
36-45 Years	1	3.3%	3.3%	86.7%
46-55 Years	3	10.0%	10.0%	96.7%
>55Years	1	3.3%	3.3%	100.0%
Total	30	100%	100%	100%

Interpretation: Majority of respondents are in the 16-25 years age range (76.7%).

Table 3. Distribution of Respondents Based on Education in Lamasi Village

Education Level	Frequency	Percent	Valid Percent	Cumulative Percent
Junior High (SMP)	4	13.3%	13.3%	13.3%
Vocational High (SMK)	3	10.0%	10.0%	23.3%
Senior High (SMA)	17	56.7%	56.7%	80.0%
Associate Degree (D3)	2	6.7%	6.7%	86.7%
Bachelor's Degree (S1)	3	10.0%	10.0%	96.7%
Master's Degree (S2)	1	3.3%	3.3%	100.0%
Total	30	100%	100%	100%

Interpretation: The majority of respondents had completed senior high school (56.7%).

Table 4. Distribution of Respondents Based on Occupation in Lamasi Village

Occupation	Frequency	Percent	Valid Percent	Cumulative Percent
Student	17	56.7%	56.7%	56.7%
Housewife (IRT)	2	6.7%	6.7%	63.3%
Entrepreneur (Wiraswasta)	2	6.7%	6.7%	70.0%
Private Sector Employee (Pegawai Swasta)	7	23.3%	23.3%	93.3%
Civil Servant (PNS)	2	6.7%	6.7%	100.0%
Total	30	100%	100%	100%

Interpretation: The majority of respondents were students (56.7%).

Table 5. Distribution of Respondents Based on Length of Residence in Lamasi Village

Length of Residence	Frequency	Percent	Valid Percent	Cumulative Percent
<10 Years	4	13.3%	13.3%	13.3%
11-25 Years	21	70.0%	70.0%	83.3%
26-35 Years	3	10.0%	10.0%	93.3%
36-45 Years	1	3.3%	3.3%	96.7%
>55 Years	1	3.3%	3.3%	100.0%
Total	30	100%	100%	100%

Interpretation: The majority of respondents (70.0%) have lived in Lamasi Village for 11-25 years

Table 6. Statistical Analysis Normality Test Results (Kolmogorov-Smirnov and Shapiro-Wilk)

Group	Test Statistic	p-value
Pre-Test Control	0.169	0.029
Post Test Control	0.140	0.066
Pre-Test Experiment	0.140	0.052
Post Test Experiment	0.186	0.191

Interpretation: Based on the normality test results, the "Post Test Experiment" data follow a normal distribution, allowing for parametric tests to be applied for further analysis.

Table 7. Paired Sample t-test Results

Test Type	Mean Difference	Std. Deviation	t-value	p-value
Pre-Test vs Post-Test	-1.733	1.982	-4.791	0.000

Interpretation: The paired sample t-test shows a significant difference between the pre-test and post-test scores, demonstrating the effectiveness of the educational intervention. The p-value is less than 0.05, indicating a statistically significant change in knowledge and compliance.

Hypothesis	Test Statistic	p-value	Conclusion
Null Hypothesis (H0)	-4.791	0.000	Rejected
Alternative Hypothesis (H1)	-4.791	0.000	Accepted

Interpretation: The paired sample t-test confirms that the educational intervention significantly improved the respondents' knowledge and compliance, leading to the rejection of the null hypothesis (H0) and acceptance of the alternative hypothesis (H1).

DISCUSSION

This study identifies various factors influencing the use of dimenhydrinate within the community of Lamasi Village. These factors include motivations for use, social and environmental influences, health awareness and education, accessibility and regulation, as well as knowledge about alternatives and solutions. The majority of respondents use dimenhydrinate to prevent motion sickness because it is effective and easily accessible at local pharmacies, often based on recommendations from friends and family who perceive it as a safe remedy. However, public awareness regarding the sedative-hypnotic side effects and proper use of this drug remains limited, indicating a gap in health education provided by local clinics and health centers.

In this study, a purposive sampling method was applied, involving 30 respondents selected based on specific inclusion criteria. Data were collected using a door-to-door approach, distributing pre-test and post-test questionnaires to assess changes in community understanding and attitudes before and after the educational intervention. The research team began by visiting households to better understand the behaviors surrounding dimenhydrinate usage. One of the households visited was that of Mrs. A, a 40-year-old housewife who welcomed the researchers warmly. Mrs. A frequently used dimenhydrinate during long trips to prevent motion sickness, but she was unaware of its sedative-hypnotic side effects. The research team began with distributing the pre-test questionnaire, which contained questions on understanding and attitudes toward the use of dimenhydrinate. Mrs. A carefully answered each question and revealed her lack of knowledge regarding the risks associated with the drug.

One week later, the research team returned to Mrs. A’s home, this time bringing educational leaflets containing detailed information on the proper usage and side effects of dimenhydrinate. During this educational session, Mrs. A attentively listened to the researchers’ explanations and promised to be more cautious in using the drug. Several days later, the research team returned to administer the post-test to measure changes in Mrs. A’s understanding. The post-test results indicated a significant improvement in Mrs. A’s awareness of the risks of side effects and the importance of following the recommended dosage.

This study also involved 30 other respondents selected through purposive sampling, coming from

diverse educational and occupational backgrounds, including students, housewives, entrepreneurs, private sector employees, and civil servants (PNS). All respondents had lived in Lamasi Village for over 10 years. The majority of respondents were female, with the highest age range being between 16 and 25 years. Before the educational intervention, many respondents were unaware that dimenhydrinate, although effective in preventing motion sickness, had dangerous side effects if used incorrectly. After the intervention, there was a notable change in their understanding and attitudes toward the use of dimenhydrinate. For example, a student named R, who often used dimenhydrinate in high doses to help him sleep, now understands the risks of overuse and has begun to follow the recommended dosage. The education delivered via a personal door-to-door approach proved to be effective, as it allowed direct interaction between the researchers and respondents, ensuring that the information was conveyed clearly and comprehensively.

The results of this study indicate that the educational intervention successfully improved the public's understanding and attitudes toward the use of dimenhydrinate. The personal and direct educational approach was highly effective in conveying important information to the community. With this approach, it is hoped that safe drug use practices will be more widely understood and practiced in daily life, helping to prevent drug misuse and improve overall public health.

The paired sample t-test was selected as the bivariate test for this study for several reasons relevant to the research design and objectives. First, the study employed a pre-post design, where data were collected before and after the educational intervention. The paired sample t-test is ideal for comparing two related datasets, such as the pre-test and post-test results from the same subjects. Second, the paired sample t-test allows for the analysis of changes in the measured variables, such as understanding and attitudes toward the use of dimenhydrinate. By measuring changes in the same individuals, this test provides more accurate results regarding the effects of the intervention. Third, the data obtained in this study were normally distributed for most variables, making the use of parametric tests like the paired sample t-test more appropriate than non-parametric alternatives. Additionally, the sample size was not large enough to require complex tests like ANOVA, which is typically used for comparing means across three or more groups. Since this study only compared two conditions (pre-test and post-test) within the same group, the paired sample t-test was the most suitable choice. The results of the paired sample t-test confirmed that the educational intervention led to significant improvements in both understanding and attitudes.

The results of this study show that the community education intervention significantly improved public understanding and compliance with the safe use of dimenhydrinate. The null hypothesis (H0), which states that there is no relationship between educational intervention and reduced misuse of sedative-hypnotic side effects in the community, was rejected. This result aligns with the findings of Hannan, Pratiwi Wikaningtyas, and I Ketut Adnyana (2019), who also demonstrated the positive effect of education on drug misuse prevention in a study conducted with elementary school students in Palu City using card-based quartet media. Similarly, the study by Rasydy et al. (2023) showed that educational interventions significantly increased knowledge regarding the dangers of drug misuse, as evidenced by significant improvements in knowledge distribution frequencies.

The recent findings of this study highlight that through education, public knowledge regarding the proper use of dimenhydrinate can be significantly improved, preventing its misuse and contributing to better public health in Lamasi Village.

CONCLUSIONS

Based on the results of this study, it can be concluded that the educational intervention provided to the community of Lamasi Village significantly improved both their understanding and compliance regarding the use of dimenhydrinate. The significant increase in pre-test and post-test scores indicates that the education effectively enhanced the community's knowledge about the proper usage and potential side effects of dimenhydrinate. Furthermore, the door-to-door educational method using leaflets proved effective in raising awareness and improving compliance with the prescribed dosage. These findings support the hypothesis that effective education can reduce the risks of misuse and side effects, highlighting the importance of educational initiatives in promoting safer medication practices.

For future research, it is recommended that studies investigate the long-term effects of educational interventions on drug misuse and compliance. A follow-up assessment conducted several

months after the intervention would provide valuable insights into the sustainability of the knowledge gained and whether the improvements in medication compliance are maintained over time. Additionally, further studies could expand the focus to include a broader population and assess the effectiveness of similar educational approaches in preventing drug misuse in diverse communities.

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