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Instruction on the Appropriate Utilisation of Antibiotics to Safeguard the Community Against the Threat of Resistance

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ABSTRACT

Irrational drug utilisation has emerged as a global issue, with around 50% of medications being prescribed, distributed, marketed, and utilised incorrectly by patients. The primary concern with the irrational use of medications pertains to the inappropriate application of antibiotics, which includes unsuitable drug types, incorrect dosages, prolonged administration, and excessive usage in non-bacterial infections. This syndrome induces antibiotic resistance. Individuals frequently use various antibiotics to address non-infectious ailments such as coughs, influenza, and fevers without a physician's prescription, and these medications are readily available at certain health institutions that lack comprehension of the requirements. This initiative aims to inform the public about the hazards associated with the incorrect use of antibiotics. This community outreach initiative involved counselling and video screenings around antibiotic usage in DAGUSIBU. We evaluated the activity's success by administering pretests and distributing posters to the participating community. We determined the overall percentage of individuals who could accurately answer questions. The data processing results indicate a rise in public comprehension and awareness of antibiotic resistance following counselling sessions.

Keywords: Antibiotics; Dagusibu; Resistance;

INTRODUCTION

Based on data from the World Health Organisation (WHO) in 2015, antibiotic usage climbed by 91% globally, and there was an increase of 165% in poor nations. Antibiotics are a category of substances that are either naturally synthesised by microorganisms or manufactured synthetically. Antibiotics reduce bacterial growth by slowing, halting, or eliminating biochemical activities in microorganisms. Antibiotics are employed for infectious infections

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and must be prescribed by a physician, rather than being available over-the-counter in certain healthcare facilities, to mitigate the emergence of antibiotic resistance (Carlet et al., 2011). The excessive use of inappropriate drugs, such as antibiotics, might result in resistance. Resistance refers to the immunity of bacteria to antibiotics, characterised by their capacity to withstand the medication's effects, resulting in their survival post-administration and the ineffectiveness of the treatment in providing therapeutic benefits.

Antibiotic resistance in microorganisms can result in lethal therapeutic failure. The World Health Organisation found that the death risk associated with Escherichia coli infections is double that of non-resistant strains. In patients with pneumonia, resistant infections result in 25,000 fatalities annually and incur over $15 million in healthcare expenses and lost productivity. Antibiotic resistance resulted in an extension of the hospitalisation duration by 4.65 days and an increase in the ICU treatment duration by 6 days. The utilisation of antibiotics in Covid patients during the pandemic has resulted in an increase in the use of antibiotics lacking clinical testing validation. These developments will result in increased antibiotic resistance in the future (Adebisi, 2023). Resistance is a state in which the efficacy of antimicrobial agents against microorganisms has diminished. Resistance significantly impacts the propagation of infectious illnesses and the cost of treatment in Indonesia . We observed instances of resistance in the hospital. To address resistant instances, a policy was established by creating an Antibiotic Resistance Control (ARC) team of all healthcare professionals, including doctors, nurses, chemists, and microbiologists..

RESEARCH ELABORATIONS

The Community Service programme executes multiple phases of the methodology to achieve its intended outcomes. Preparation Phase: During the preparation phase, the extension worker evaluates the site designated for counselling sessions. The assessment of needs is influenced by various aspects, including the proximity of the place to the university, the population of families in the area, and the socioeconomic status of the neighbourhood. Subsequent to performing a location survey and organising permission acquisition for counselling, the extension worker compiles materials to be presented as a PowerPoint presentation. The extension worker additionally produced the Dagusibu movie to enhance public comprehension. Implementation Phase: Community education is conducted by descriptive and quantitative methodologies. The topic was presented descriptively, incorporating counselling alongside the screening of the Dagusibu Antibiotic movie. Extension workers using a projector to present the material to the community. Subsequent to the delivery

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of materials by the extension staff, a question-and-answer session with the community ensued. Evaluation Phase: We conduct an evaluation to ascertain the effectiveness of the administered counselling. The evaluation was conducted quantitatively by the administration of questionnaires prior to and following counselling, aimed at analysing the effectiveness of counselling in enhancing community comprehension post-intervention.

RESULTS AND DISCUSSIONS

Preparation Phase: During the preparation phase, the extension team undertakes many activities. We conducted the exercise offline in the vicinity of the residents' homes. The extension team collaborates with faculty officers to facilitate the provision of facilities and infrastructure for activity procurement. The deliverable consists of presentation slides covering the following topics: the definition of antibiotics, appropriate usage of antibiotics, the risks associated with antibiotic resistance, and strategies for preventing resistance. To enhance public comprehension, the extension staff produced a three-minute movie on the topics of acquiring, using, conserving, and disposing of antibiotics (Nguyen et al., 2013). The video recording took place at the Pharmacy of the Faculty of Pharmacy, University.

During the Implementation Stage, activities took place on July 19, 2022, and counselling activities were held from 13:00 to 15:00. The counselling session commenced with an address from the Chief Executive. A projector presented the material for forty minutes. The counselling team discussed the following issues during the activity: The extension team delivered instruction on disorders amenable to antibiotic treatment. The extension worker also stressed the need to continue adhering to prescribed treatment based on the specific illness, as antibiotics do not serve as a universal remedy. The imprudent use of antibiotics significantly contributes to the emergence of resistance. Resistance is a condition wherein an antibiotic ceases to be effective against microorganisms that were previously susceptible (Mendelson et al., 2016). The extension team offers guidance on strategies to prevent resistance, including: - Utilise antibiotics solely when recommended by a physician. - Administer medicines punctually and complete the prescribed course. - Refrain from using leftover antibiotics. - Prevent infections 4. To enhance public comprehension, the extension team presented a film of Dagusibu before commencing the question and answer session.

Evaluation Stage: To evaluate the efficacy of the extension team in executing activities, the team administers questionnaires prior to the activity (labelled "Pre") and subsequent to the extension (labelled "Post"). The community's questionnaire responses are subsequently analysed to determine the effectiveness of the counselling activities. The success indicators of counselling activities manifest in the increase in community comprehension percentages both

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before and after the session. Ten questions serve as markers for evaluating the effectiveness of counselling. The implementation of activities by the extension team has resulted in enhanced public comprehension of all questions posed. Enquiries coded A4 and A8 demonstrated a notable enhancement in public awareness. Prior to the counselling associated with Code A4, numerous individuals were unaware of the concept of antibiotic resistance. However, some individuals are aware that they must consume antibiotics until they deplete and can only obtain them with a physician's prescription. Prior to the guidance from the extension team, numerous individuals were unaware of the proper disposal methods for expired antibiotics or medications. The percentage of those aware of these precautions is below 10 per cent..

CONCLUSIONS

Community service activities are conducted using both descriptive and quantitative methodologies. Presentation slides provide the content, and we compute the overall percentage of those capable of accurately answering the questions. The data processing results indicate a rise in public comprehension and awareness of antibiotic resistance.

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