International Journal on Culture, History, and Religion
https://ijchr.net | eISSN: 3028-1318
Volume 7 Special Issue 3 | doi: https://doi.org/10.63931/ijchr.v7iSI3.309

Article

Understanding Sociocultural Beliefs and Practices on Antimicrobial Resistance among the Health Workers of Lakewood, Zamboanga del Sur, Philippines

Rovy M. Banguis[1], Sheila G. Magolama[1], Jennifer V. Castillano[1], Grace M. Taruc[2], Monalinda E. Doro[2], & Beverly B. Amparado[2]
[1]Mindanao State University - Buug & [2]Mindanao State University – Main Campus
Correspondence: rovy.banguis@msubuug.edu.ph

Abstract

Antimicrobial resistance (AMR) is shaped by social, cultural, behavioral, and economic factors influencing the misuse and overuse of antibiotics. This study used a descriptive qualitative design to examine knowledge, cultural beliefs, and health-seeking behaviors related to antibiotics in Lakewood, Zamboanga del Sur. Twenty participants joined focus group discussions, 14 from Barangay Poblacion and six from Barangay Bag-ong Kahayag, composed of barangay health workers and nutrition scholars. Four key informants, including three pharmacists and one physician, were also interviewed. Findings showed that most respondents understood only the general use of antibiotics and the need for a doctor's prescription. However, pharmacists noted that some clients insisted on obtaining antibiotics without prescriptions, and these requests were occasionally accommodated. Many participants preferred alternative remedies such as sinew-sinaw, lagundi, and guava leaves, using antibiotics only when traditional treatments failed. Awareness of the link between antibiotic overuse and resistance was limited. The results suggest that inappropriate antibiotic use cannot be explained solely by lack of knowledge. Cultural norms, economic limitations, and entrenched practices in prescribing and self-medication also play a role. Addressing AMR therefore requires not only public education but also culturally sensitive and community-based interventions that consider the broader socio-cultural context of health-seeking behaviors.

Keywords: *antibiotics, antimicrobial resistance, cultural beliefs, health-seeking behavior, knowledge*

Suggested citation:
Banguis, R., Magolama, S., Castillano, J., Taruc, G., Doro, M., & Amparado, B. (2025). Understanding Sociocultural Beliefs and Practices on Antimicrobial Resistance among the Health Workers of Lakewood, Zamboanga del Sur, Philippines. *International Journal on Culture, History, and Religion, 7*(SI3), 105-123. https://doi.org/10.63931/ijchr.v7iSI3.309

Introduction

Antimicrobial resistance (AMR) is a pressing global health concern that poses heightened risks for populations in economically disadvantaged regions. In such areas, the interplay between limited resources, cultural beliefs, and health-seeking behaviors can significantly influence the spread and management of resistant pathogens. Lakewood, a 4th-class municipality in Zamboanga del Sur, exemplifies these challenges. With a poverty incidence of 39.14% and a population of 21,559 (Philippine Statistics Authority, 2022), the community faces socio-economic constraints that may shape its knowledge, cultural perceptions, and practices related to AMR.

Daily social interactions within households, workplaces, healthcare facilities, and other communal spaces create multiple opportunities for pathogen transmission (Ahmed et al., 2007). Without adequate hygiene supplies and preventive measures, particularly in low-resource settings, latent pathogens can enter susceptible hosts through lapses in precautionary practices, culturally influenced health behaviors, or unrestricted social contact. These risks are magnified in clinical environments, where patients and health workers can acquire hospital-associated multidrug-resistant organisms (MDROs), returning to the community and perpetuating a cycle of transmission.

The World Health Organization emphasizes that health outcomes are profoundly shaped by the social and environmental contexts in which people live. Understanding these contexts is essential for addressing AMR, especially in regions like Lakewood, where sociocultural and economic factors intersect with healthcare practices. Through the lens of the One Health Approach, which recognizes the interconnectedness of human, animal, and environmental health, this study seeks to explore how the knowledge, cultural beliefs, and health-seeking behaviors of health workers influence AMR prevention and control.

Although global and national initiatives against AMR have been widely discussed, there is limited research on how frontline health workers in rural, resource-limited municipalities in the Philippines understand and respond to AMR. Most existing studies focus on urban healthcare facilities or general community knowledge, overlooking rural health workers' unique cultural and professional perspectives. This gap is critical because health workers serve as care providers and community influencers, shaping health behaviors through their practices and advice.

To address this gap, the present study aims to determine the knowledge, cultural beliefs, and health-seeking behaviors related to AMR among the health workers in Lakewood, Zamboanga del Sur. Focusing on this specific group in a

resource-limited setting, the research seeks to generate contextually relevant evidence to inform targeted interventions, strengthen local AMR awareness campaigns, and disrupt the transmission cycle between healthcare facilities and the community. Findings from this study may also serve as a reference for similar rural settings in the Philippines and other low- to middle-income countries facing the growing threat of AMR. Understanding how health workers and patients perceive their respective roles in AMR prevention provides a foundation for exploring how deeper cultural beliefs and everyday health-seeking behaviors further influence antibiotic use within the community.

Objectives

This study primarily aims to determine the sociocultural dimensions affecting AMR in the community near the selected hospital in Lakewood, Zamboanga del Sur.

Specific objectives are as follows:

1. To determine the knowledge of antimicrobial resistance among the community in the vicinity.
2. To determine the cultural beliefs of the said residents on antimicrobial use.
3. To determine the health-seeking behavior of the said residents.

Review of Related Literature

Antimicrobial resistance is a problem for all countries at all income levels. Its spread does not recognize country borders. Contributing factors include lack of access to clean water, sanitation, and hygiene (WASH) for both humans and animals; poor infection and disease prevention and control in homes, healthcare facilities, and farms; poor access to quality and affordable vaccines, diagnostics, and medicines; lack of awareness and knowledge; and lack of enforcement of relevant legislation. People living in low-resource settings and vulnerable populations are especially impacted by both the drivers and consequences of AMR.

Apart from the misuse and overuse of antimicrobials, what the World Health Organization (2020) enumerated as the main drivers of antimicrobial resistance mostly point to the direction of people's poverty – lack of access to clean water, sanitation and hygiene (WASH) for both humans and animals; poor infection and disease prevention and control in healthcare facilities and farms; poor access to quality, affordable medicines, vaccines and diagnostics. These all entail corresponding infrastructures, possible only with appropriate budget and political will, which people with low

incomes continue to want. Life situations like lack of awareness and knowledge add to the identified drivers of AMR (WHO, 2020). These, too, may have sprung from poverty.

The study on the determinants of the antibiotic resistance process by Franco et al (2009) concluded that the main determinants of antibiotic resistance are irrational use of antibiotic drugs in humans and animal species, insufficient patient education when antibiotics are prescribed, lack of guidelines for treatment and control of infection in hospitals, lack of awareness and relevant scientific information for physicians prescribing antibiotics, and lack of official government policy on the rational use of antibiotics in the public and private sectors. The authors recommended that every country take proper measures to control these determinants to check antibiotic resistance.

Numerous and diverse determinants to future dissemination and control of antimicrobial resistance were categorized into four by Harbath and Samore (2005). The first category pertains to the molecular characteristics of pathogens, such as virulence, transmissibility, and survival fitness. Progress in microbiological detection and identification of infectious pathogens will likely influence diagnostic uncertainty and prescribing patterns of antimicrobial drugs. The second category encompasses the prescribers of antimicrobial drugs (physicians) who may change their prescription patterns. The authors contend that recent data from different parts of the world show promise. The third category is the characteristics of patient populations and host-related factors. This includes consumer attitudes and global migration patterns. The fourth category of determinants is linked to macro-level factors related to the healthcare environment. These factors include regulatory policies that may influence the use of antimicrobial drugs, infection control practices, technological development, and drug discovery (Harbath and Samore, 2005).

The humane society's three-phase demographic transition theory, by renowned economist Thomas Malthus, argued that the second phase, characterized by the onset of industrialization with decreased death rates, was due to greater food supplies and scientific medicine (Macionis, 2012). The first phase was beset with high rates in both births and deaths that exacted a toll on the many facets of society's development. Without a doubt, the advent of medicine paved the way to better health outcomes in the curative aspect of healthcare delivery to the community.

Bacterial resistance is the capacity of bacteria to withstand the effects of antibiotics intended to kill or control them. One of the main drivers behind the development of AMR is the misuse and overuse of antibacterial agents. Presence of AMR bacteria in hospital fomites, such as inanimate objects within the hospital, can

frequently become contaminated with pathogens and serve as sources for contamination and potential colonization of individuals who encounter them. These important fomites can travel between hospital rooms and patients, serving as a mechanical vector in pathogen spread (Dalton et al., 2020). Implicated transmission sources include patients, health care workers, and environmental contamination. Many objects persistently contaminate floors, beds, gowns, tables, faucets, doorknobs, blood pressure cuffs, and computer terminals, even after terminal cleaning. Selective stress exerted by antibiotics may favor bacteria expressing resistance mechanisms and their dissemination.

A prospective observational study that investigated antibiotic use before hospital consultation in 2015 at San Lazaro Hospital, Manila, Philippines, using urine as a sample, concluded that there was unnecessary antibiotic use for febrile illnesses before hospital consultation among low-income, highly populated urban communities in Manila (Saito et al, 2018). The study's methodology included the patients' or caregivers' report on their medication history, clinical information, and socio-economic status. The study had a total of 410 patients as respondents. The research recommended education for this group to reduce unnecessary antibiotic use.

Another study on the prevalence and correlation of antibiotic sharing in the Philippines concluded that it was common and associated with misconceptions about proper antibiotic use (Barber et al., 2017). Specifically, the study documented that antibiotics were widely available in sari-sari stores, usually without expiration information. This study recommended that multipronged and locally tailored approaches to curbing informal antibiotic access are needed in the Philippines and similar Southeast-Asian countries.

The discovery and clinical introduction of penicillin in the 1940s is arguably one of the most important scientific achievements in the history of medicine. Unfortunately, penicillin-resistant Staphylococcus aureus strains were identified in hospitals very soon after the widespread use of penicillin. The emergence of multidrug-resistant (MDR) bacteria (bacteria resistant to more than three antibiotic classes) has been paralleled by a waning antibiotic development pipeline (Sommer et al., 2017). Several studies revealed the association between infections caused by antibiotic-resistant bacteria and adverse patient outcomes, such as extended hospital stays, higher morbidity, and mortality (Benko et al., 2020).

Antibiotic resistance is a serious threat to human health and a significant challenge for modern medicine (Renner et al., 2017). The U.S. Centers for Disease Control and Prevention (CDC) and the World Health Organization (WHO) categorize antimicrobial-resistant (AMR) pathogens as a looming threat to human health. One of

the main drivers behind the development of AMR is the misuse and overuse of antibacterial agents. The presence of AMR bacteria in hospital fomites can be a source of infection for individuals who encounter them. These important fomites can travel between hospital rooms and patients, serving as a mechanical vector in pathogen spread (Dalton et al., 2020).

Despite improvements in hospital infection prevention and control, hospital-acquired infections (HAIs) remain a challenge with significant patient morbidity, mortality, and cost for the healthcare system. Transmission via inanimate sources may be highest in ICUs because of comorbidities and the intensity of medical care (Huang et al., 2006). In the study of Ayalew et al. (2019), bacterial contamination of health care workers' fomites is one cause of the spread of infection. Multidrug-resistant isolates are alarmingly high; thus, Health Care Workers (HCWs) in hospitals need to implement proper handling of fomites to reduce contamination and the spread of drug-resistant pathogens. Contamination of most-touched surfaces with MDROs such as methicillin-resistant Staphylococcus aureus, vancomycin-resistant Enterococcus, and Clostridium difficile for a prolonged time can serve as a potential reservoir for onward infections to patients and healthcare workers. Given these risks, prevention of transmission has become increasingly important (Dalton et al., 2020).

According to Zhen et al. (2019), in their studies on the economic burden of antibiotic resistance of ESKAPE pathogens, from both clinical and research and development aspects, and on overall mortality and economic impact, the so-called "ESKAPE" group of pathogens ranks the highest. Since these pathogens were the most prevalent causes of life-threatening infections, their ability to acquire and disseminate antimicrobial resistance is common. Moreover, methicillin-resistant Staphylococcus aureus (MRSA) and vancomycin-resistant enterococci (VRE) are antibiotic-resistant pathogens responsible for substantial hospital morbidity and mortality. Given the above-mentioned premises, knowledge, cultural beliefs, and health-seeking behavior of local susceptibility patterns are crucial in antimicrobial stewardship.

Research Methodology

A qualitative explorative research design was used to collect data through focus group discussions (FGDs) and key informant interviews (KIIs). FGDs provide insights into behavior by generating a process that helps participants to self-disclose and are particularly useful to explore a group's norms and the range of viewpoints within a population. Key informant interviews are qualitative in-depth interviews with people who know what is happening in the community. Key informant interviews aim to collect information from a wide range of people, including community leaders,

professionals, or residents, who have firsthand knowledge about the community. This study was designed and conducted per good practice guidelines, including recommendations for focus group discussions.

Locale of the Study

This study primarily covers two research sites in Lakewood, Zamboanga del Sur. Barangay Poblacion is the nearest barangay to the hospital, and Barangay Bag-ong Kahayag is the farthest barangay from the hospital. The selection of study sites primarily anchors on the World Health Organization's recognition that the context of people's lives determines their health (2017). The greater the gap between the richest and poorest people, the greater the differences in health practices. These largely influence knowledge, beliefs, and health-seeking behaviors of the family and community that affect health; thus, Lakewood, Zamboanga del Sur, was chosen as the locale of the study.

Respondents

Twenty (20) participated in the focus-group discussion on the two survey sites, and four (4) Key Interview Informants. Fourteen participants (7 barangay health workers and seven barangay nutrition scholars) from Barangay Poblacion, and only six (3 barangay health workers and three barangay nutrition scholars) from Barangay Bag-ong Kahayag. One doctor and three pharmacists served as the key informants. Part of the study's limitation was the doctor's unavailability at the health center because it fell on Saturday; hence, only one doctor was available at the hospital, and very few licensed pharmacists were available.

Data Gathering Instruments

After ensuring the ethical considerations, data were gathered using focus group discussions, key informant interviews, and an observation guide. These instruments were translated into the Filipino vernacular for better understandability of the ordinary residents. The two sites' Barangay health workers and nutrition scholars have undergone focus group discussions, while the doctors, nurses, and pharmacists have undergone key informant interviews. The transcripts were coded manually and analyzed inductively using thematic content analysis.

Research Ethics

Permission to conduct community surveys was obtained from local government units before entry into the community. Individual oral consent was also

obtained from the sample respondents in the community before conducting the interviews. Oral consent was also obtained from respondents in the community and hospital settings. Oral consent was obtained from the selected local leaders, namely the Municipal Mayor of Lakewood and the barangay chairpersons of the two research sites. Before the interviews, permission from the hospital administrator and the owners of the pharmacies was sought since their health care providers were considered key informants. An oral consent form was also given to the selected survey respondents, explaining to them the purpose of the discussion, specifying that the discussion will only be done upon their given consent in the form of a signature, and that even during the discussion, they may not answer questions that they do not feel the need to respond to. An oral consent form was designed as an integral part of the data collection instrument with the request for voluntary participation in the study. Before the survey and in-depth interviews started, informed consent was obtained from the respondents and the key informants. In the report write-up, respondents whose verbatim answers were quoted and coded with numbers had no record of how the codes relate to the Identifiers. To manage possible risks, all human respondents included in the study are held in utmost confidentiality through anonymity, with the data generated untraceable to the individuals in the community and the hospital setting. The respondents' codes were used to ensure the completeness of entries in the interview schedules.

Results and Discussions

The study aimed to answer the following problems:

What is the knowledge of health workers about antimicrobial resistance?

Most respondents demonstrated limited awareness of the broader concept of antimicrobial resistance (AMR), with their understanding primarily confined to the general use of antibiotics and the need to obtain a doctor's prescription before consumption. Their knowledge centered mainly on the role of antibiotics in treating specific illnesses, including cough, colds, high fever, pneumonia, urinary tract infections, diarrhea, and infected or swollen wounds. This was evident in their statements during the interviews, as illustrated in the excerpts below.

Respondent 4

Katong nahospital akong bana, giresitahan cya sa 112octor og antibiotics para mawala ang iyang ubo, sip-on og taas niyang hilanat nga sige og balik2 kay gineumonia diay cya, tulo ka adlaw cya naadmit sa hospital unya sa balay nalang gipatiwas og inom ang mga tambal kay naghangyo nami nga mogawas nami kay dako na among bayrunon sa hospital.

(When my husband was admitted to the hospital, the doctor prescribed him antibiotics to treat his cough, cold, and recurring high fever, which caused his pneumonia. He was confined for three days, then he continued his medication at home since we requested the doctor to allow us to check out because the hospital bill was too expensive.)

Respondent 5

Niadto ko sa health center para maresitahan ko sa doktor og antibiotics para mawala ang akong samad sa tuo nga paa nga ningdako kaayo akong hubag unya galisud kog lakaw adto. Kay dili mi tagaan og antibiotics sa parmasiya og walay resita. Pag inom nako sa tambal sulod sa pito ka adlaw naayo na akong hubag.

(I went to the health center so that the doctor would prescribe me antibiotics to cure my wound in my right leg, which was swollen, which impeded my walking. My wound was cured when I finished taking my medicine for 7 days.)

This finding is consistent with several studies conducted in rural and low-resource settings, where the term *"antimicrobial resistance"* is often unfamiliar, and understanding is instead anchored to personal or community experiences with common infections (Chokshi et al., 2019). In such contexts, the concept of AMR may be overshadowed by immediate health concerns, with antibiotics perceived primarily as a curative *"first line"* for a wide range of symptoms, regardless of etiology.

Notably, respondents' recognition of the need for a doctor's prescription reflects a partial awareness of antibiotic regulation. However, the absence of knowledge about resistance mechanisms or prevention strategies indicates a significant information gap. Similar patterns were observed in the study where health workers and community members alike understood antibiotics as powerful medicines yet lacked an appreciation for the risks associated with misuse, overuse, or incomplete treatment courses.

However, a few respondents, particularly pharmacists, acknowledged that there are instances when customers insist on obtaining antibiotics without presenting a doctor's prescription, and in some cases, these requests are granted. This practice, though occasional, highlights gaps in the enforcement of prescription-only antibiotic regulations. Similar findings have been reported in studies from other low- and middle-income countries, where pressure from customers, perceived urgency of illness, and the desire to maintain good client relationships often lead to non-compliance with dispensing laws (Auta et al., 2019; Sakeena et al., 2018).

Respondent 20

Naay time nga mohangyo mi sa parmacya nga baligyaan mi og antibiotics bisag walay resita kay wala man ang doctor sa center basta Sabado og Domingo unya kaila ra namo ang nagbantay sa parmacya.

(There are times that we appealed to the pharmacy to allow us to buy antibiotics even without a doctor's prescription because the doctor was not around on Saturdays and Sundays, and we knew the one in charge of the pharmacy).

Respondent 22

Usahay 114ak mga customers namo nga manghangyo gyud especially among mga higala og silingan nga mopalit og antibiotics para tambal sa kalibanga bisag walay resita sa 114aki t, tagaan nalang pud namo kay maluoy mi.

(Sometimes, some customers insisted on us, especially our friends and neighbors who want to buy antibiotics for diarrhea without a doctor's prescription, and we gave them out of pity.)

Only a few participants demonstrated awareness of who holds responsibility for addressing antimicrobial resistance (AMR), what such responsibility entails, and where accountability should be placed. Many believed everyone shares responsibility, grounded in the belief that all individuals contribute somehow to the problem. Physicians were perceived to bear greater responsibility due to their central role in prescribing antibiotics. At the same time, patients were also seen as accountable, particularly in influencing prescribing decisions, often driven by financial constraints. These perspectives are illustrated in the excerpts below.

Respondent 19

Klaro man nga kitang tanan 114ak tagsa-tagsa nga responsibilidad. Nagkinahanglan ta og antibiotics. Pero nakadepende lang pud na sa atoa og unsaon nato pagtambal ang atong 114aki tog kung gusto kita nga maulian. Atoa man ng katungod if muinom ta og antibiotics. Walay makapugos nako bisag ang atong gobyerno dili nako mabasol sa akong pag gamit sa antibiotics.

(Obviously, we have a personal responsibility. Antibiotics are needed in our lives. It depends on how somebody wants to overcome an illness and how much they want to suffer. It is a personal matter if I take antibiotics. No one obliges me in the end. The state is not responsible for my reckless use.)

Respondent 22

Kung mofollow lang ta sa correct dosage sa antibiotics, naa gyud better nga result. To what extent ang akong responsibility towards my customers? I believe nga ang issue is naa ra gyud between sa doktor and patient kay we have individual choice on how to take the antibiotics dili ta makadecide for them, ako igo ra gahatag sa tambal based sa giresita sa ilang doktor.

(We can have better results when we follow the correct dosage and do not misuse antibiotics. Now, to what extent can I be responsible for my customers? I believe the issue is purely a matter of physician responsibility because each of us individually cannot decide for them; my role here is just to give the antibiotics as their doctor prescribes.)

Respondent23

Dili nato maimpose ang pagfollow sa giprescribed sa ilang doktor kay naay times nga kulang ang kwarta sa mga customers so instead nga for 7 days ang antibiotics, good for 3 days lang ilang paliton.

(You cannot force a prescription on an adult, especially if some have a limited budget, so instead of buying good antibiotics for 7 days, they will buy them for 3 days only.)

Respondent 8

Wala nami naghuna-huna og mga negatibong epekto sa pag- inom og antibiotics, basta kay giresita sa doktor mutuo dayun mi nga epektibo kini kay importante sa amo nga mawala na dayun ang sakit sa akong anak, kay isa ra gyud among anak, magpanik daun ko kay sa una taas ang iyang hilanat og gikombulsyon siya mao ng pag naa siyay gibati adto na dayon mi sa hospital bahalag wala mi igo nga kwarta.

(We have not thought of the adverse side effects of taking antibiotics, as long as the doctor prescribes it, we believe that its effective because what is important to us is that my child's illness will be cured because we only have one child, I usually panic because she had already experienced high fever accompanied with convulsion, so every time she has illness I always rushed her to the hospital even if we do not have enough money).

This perception of shared accountability aligns with the World Health Organization's (2021) framework for AMR containment, which emphasizes that tackling resistance requires coordinated action from multiple stakeholders, including healthcare providers, patients, policymakers, and the community. However, while recognizing collective responsibility is important, attributing greater responsibility to physicians reflects an understanding that clinical decision-making is a critical control point in antimicrobial stewardship (Charani et al., 2019).

The mention of patients' roles, especially in financial constraints, highlights how socio-economic factors can shape health-seeking behaviors and influence prescribing patterns. Studies in low- and middle-income countries have shown that patient requests, cost considerations, and perceived accessibility often lead to deviations from standard prescribing protocols (Barker et al., 2017). Such dynamics

underscore the need for provider-targeted interventions, such as continuous training on rational prescribing, and patient-focused strategies, including accessible public education campaigns that address misconceptions and promote adherence to proper antibiotic use.

Furthermore, for most participants, the notion of collective responsibility remained abstract and poorly defined; the idea that society could unite around a shared purpose and take coordinated action was perceived as unlikely or impractical. This skepticism reflects a broader challenge in AMR containment, where the absence of visible, coordinated efforts and the fragmentation of roles across sectors can weaken public confidence in collective action and reduce motivation to participate in stewardship initiatives, as proven in the following excerpts:

Respondent 21

Busa dili kinahanglan nga atubangon kini sa atong katilingban. Gawas sa pag gamit og mga antibiotics, naglibog na ang publiko, sa kinatibuk-an pero dili nato mabasol ang atong gobyerno kay lahi lahi ta og kahibalo sa pag gamit og antibiotics.

(So, our society does not have to deal with it. Beyond antibiotics, there is public confusion, in general, but we cannot blame our government for that because we have different knowledge on the use of antibiotics.)

Respondent 8

Wala ko nakasabot anang inyong gi ingon nga AMR kay wala ko nakahuman og haiskul. Pero sa tan aw nako wala man siguroy dautan if mogamit ta og antibiotics, dili rapud na makadaot sa ubang tawo. Matud pa sa akong mga higala nga gainom og antibiotics sa dugay ng panahon dili man daw makaoverdose ang pag inom og antibiotics. Ako pud mga silingan diri gainom gyud og antibiotics bisag mahal ang tambal para maulian ang mga sakit.

(I do not understand the things you said about AMR because I have not finished high school, but to my understanding, there is nothing wrong about using antibiotics, and it might not cause harm to other people. According to my friends who have been taking antibiotics for a long time, it cannot cause an overdose. Some of my neighbors here are also taking antibiotics even if it is expensive, to cure their illness.)

What are the cultural beliefs of the respondents relating to antimicrobial resistance?

Most respondents expressed a preference for alternative health practices and the use of herbal medicines to prevent or manage bacterial infections, thereby reducing their reliance on antibiotics. Commonly cited remedies included the shining blush plant (sinew-sinaw), lagundi, and guava leaves. Antibiotics were generally viewed as a last resort, used only when these traditional treatments failed to alleviate their illness, as reflected in the following statements.

Respondent 10

Gipangita nako kini ug nakit-an ang mga pamaagi para sa himsog nga panglawas sama 117in is inom og daghan tubig og pag gamit sa herbal nga 117in i-sinaw para malikayan ang pagbalik sa akong UTI og nakatabang 117in isa matag adlaw nga pag-atubang sa mga problema sa kahimsog sa akong lawas. Naningkamot ko nga dili moabot sa punto nga magtomar ug antibiotic para sa impeksyon.

(I looked it up on my own and found health practices such as drinking more water and using herbal medicine such as the shining bush plant to avoid having UTI again, and it also helps me to deal with the health problems I have/had. I am trying not to get to the point of taking antibiotics for an infection.)

Respondent 11

Kung mag ubo og sip- on akong mga anak, paimnon sa nako og mga herbal sama sa lagundi kung dili sila maulian sulod sa lima ka adlaw, ayha pa dayon nako sila dad -on sa health center para makainom og tambal.

(When my children cough and have a cold, I give them herbal teas such as lagundi. If they do not get better within five days, I will take them to the health center for medicine.)

Respondent 15

Katong nagkalibanga akong bana, akong gipainom og sabaw sa butong og tubig nga naay asin ky wala mi oresol, kaluoy sa Ginoo, Nawala ra baya iyang gibati pagkagabie.

(When my husband was having diarrhea, I made him drink broth with salt and water, because we did not have Oresol; by God's mercy, he was feeling alright at night).

Respondent 18

Kanang duga sa dahon sa bayabas mao ra nay among kasagaran nga gihimong tambal kung naa mi samad epektibo raman pud kay mawala raman ang samad.

(That guava leaf juice is the only medicine we usually use when we have a wound. It is also effective because the wound disappears.)

Respondent 19

Epektibo pud ang kalabo tambal 117octor117 nga ubo sa akong mga anak, halubon sa kalayo dayun ipainom ang iyang duga.

(Oregano is also an effective medicine for my children's cough, put it on fire and then drink its extracted juice).

This preference for herbal remedies reflects deep-rooted cultural beliefs and traditional health-seeking behaviors common in rural communities, where plant-

based medicine is often trusted for its perceived safety, accessibility, and affordability. Similar patterns have been documented in other low-resource settings, where traditional medicine serves as both a first-line treatment and a cultural anchor in healthcare decision-making (WHO, 2013; Tilburt & Kaptchuk, 2008). While such practices may help reduce unnecessary antibiotic use, the lack of standardized dosing and clinical validation for some remedies raises concerns about delayed medical intervention and the potential progression of bacterial infections. This interplay between cultural preferences and biomedical care highlights the need for AMR awareness programs that respect traditional health practices while promoting timely and appropriate antibiotic use.

What is the health-seeking behavior of the respondents relating to antimicrobial resistance?

Participants shared their views on the societal norms and unwritten rules they perceive as established and internalized within their community, shaping people's thoughts, attitudes, and behaviors. In Lakewood, Zamboanga del Sur, antibiotic use was regarded as a routine and accepted practice for treating illnesses, with little awareness of its potential negative consequences, including antimicrobial resistance. Both an individual's social circle and physicians were identified as exerting considerable influence on the tendency toward excessive antibiotic use, as illustrated in the excerpts below:

Respondent 1

*Pag maabtan 118octo lima ka adlaw akong ubo og sip -on unya wala pa mawala, muaodto nako sa health center og magparesita sa 118octor og antibiotics kasagaran c** og c*** ang ginaresita sa akoa sa 118octor.*

(If my cough and cold are not cured for five days, I will go to the health center and ask for the doctor's prescription, and the usual prescribed antibiotics are c** and c***).

Respondent 2

Katong gasige og balik-balik ang hilanat sa akong anak, nagpakonsulta gyud mi sa 118octor, pag gawas sa resulta sa laboratory, gi UTI diay cya mao to nagresita ang 118octor og antibiotics, epektibo gyud kayo kay naulian dayon akong anak human sa pila lang ka adlaw.

(When one of my children had a recurring fever, we consulted a doctor. Then the laboratory results came and revealed that she had a urinary tract infection, the doctor prescribed her antibiotics, which were indeed very effective since my daughter became well after several days of medication.)

Respondent 3

*Basta gani molapas na og tulo ka adlaw ang ubo sa akong mga anak, ako na dayon sila ipakonsulta sa doktor sa health center para makainom og antibiotics nga c*** kay dili mi tagaan sa parmasya og walay resita sa doctor.*

(If my children's cough lasts more than three days, I will seek a doctor's consultation at the health center so that he will prescribe us antibiotics, namely c***, because the pharmacy will not give us medicine without a doctor's prescription.)

Respondent 6

Mahadlok mi nga mograbe ang gibati sa akong anak basin mahulog na hinuon og pneumonia pareha sa anak sa akong silingan mao ng paimnon daun nako og antibiotics kay epektibo gyud kini labina kong gabalik-balik ang hilanat sa akong mga anak ,naa raman pud sa health center pwede rami mangayo.

(We were afraid that the illness of my child will become worst, or it will develop to pneumonia just like what happened to the child of my neighbor, that is why we resorted to taking antibiotics because we believe that antibiotics are effective in curing the recurring fever of my children, we can also ask some in the health center since they are available there).

Respondent 10

Nagsige kog inom adtong antibiotics, p man siguro to tungod kay wala naulian akong samad sa kamot pila na kabulan unya kapuyan nako magbalik-balik sa hospital unya mahal ang bayad mao tong ang resita sa doktor para sa isa ka semana ghihimo nako og tulo ka bulan taman sa naulian ko. Mao ra na akong gihuna-huna, dili nako mgpastress anang AMR.*

(I always take antibiotics, I think the brand was p*, because my wound in my hands were not cured for several months and I was tired of going back to the hospital to have follow-up checkups and it was costly too, so I decided to extend my intake of the antibiotics instead of one week, I took it for about three months until my wound was healed. That is what I thought, and I will not be stressing myself on AMR.)

This finding underscores the role of social norms in driving health behaviors, where the habitual use of antibiotics becomes normalized within communities and reinforced through interpersonal relationships and medical authority. Similar patterns have been reported in other rural contexts, where collective attitudes toward antibiotics are shaped by shared experiences, anecdotal success stories, and trust in physicians' recommendations (Wong, 2017). However, when these norms operate without adequate understanding of AMR risks, they can perpetuate misuse and overuse, contributing to resistance. The influence of physicians is particularly critical, as their prescribing decisions address immediate patient needs and set expectations for future antibiotic use. This aligns with research showing that physician behavior

can challenge and reinforce community norms around antibiotics, making them pivotal actors in AMR stewardship.

Summary of Findings

Antibiotic resistance is an abstract concept for community dwellers, who may have little knowledge about biology, bacteria, and infection compared to healthcare professionals. Inappropriate use of antibiotics due to inadequate knowledge and inappropriate behaviors is an alarming problem in most countries and even the Philippines; however, it is not so alarming in Lakewood, Zamboanga del Sur, since only very few have practiced the misuse of antibiotics.

The use of antibiotics by the public is related to the prescription practices of doctors, public health knowledge, and policies governing the purchase of antibiotics. Although the public cannot change the prescribing practices of medical practitioners, they should be informed not to demand antibiotics from the doctor and to follow the doctor's advice when taking antibiotics. Healthcare professionals are essential in disseminating information to hospitalized patients and community members to reduce the overuse of antibiotics. Information that antibiotics do not cure colds or flu, and their rational use for children and the young, could be emphasized. Participants have expressed opinions about the rules or standards of behavior established in their society and internalized, influencing people's thoughts, feelings, and behavior. Despite their awareness of the necessity of a doctor's prescription before purchasing it, they looked upon antibiotic consumption as a consolidated practice to cure illness in Lakewood, Zamboanga del Sur. They are not aware of its adverse side effects, including antimicrobial resistance. Individuals' social circles and physicians were referred to as exerting considerable influence on excessive use of antibiotics.

The focus group discussions and interviews reveal that most respondents' knowledge is limited to antibiotics and the necessity to secure a doctor's prescription before use. However, a few respondents revealed that on some occasions, there are customers who would appeal and be given antibiotics even without a doctor's prescription. Most of the respondents preferred the use of alternative health practices and herbal medicines which help them prevent or cope with bacterial infections and avoid antibiotics.

Conclusion

The limited understanding of antimicrobial resistance among health workers has important implications. Without a clear grasp of AMR and its public health consequences, health workers may unintentionally reinforce misconceptions within their communities, thereby sustaining inappropriate antibiotic use. As highlighted by the World Health Organization (2021), targeted education and awareness campaigns among frontline healthcare providers are critical to improve their practices and enable them to serve as effective educators and role models for the public. This underscores the critical role of health workers, not only as service providers but also as key educators, who can influence community perceptions, correct misconceptions about antibiotic use, and promote responsible practices to curb the spread of AMR.

Furthermore, the study makes explicit attitudes, perceived norms, and values that, besides limited awareness, may contribute to non-judicious antibiotic use in Lakewood, Zamboanga del Sur. These sociocultural determinants of antibiotic resistance warrant further research and should be considered when designing measures to mitigate this problem. When educating the public on the proper use of antibiotics and antibiotic resistance, the strategies should be multifaceted and focus on both long-term and short-term outcomes. Despite the antibiotic consumption in Lakewood, Zamboanga del Sur, both at the community and healthcare level, few residents are relatively aware of the connection between antibiotic overuse and antibiotic resistance. This suggests that a lack of awareness cannot simply explain their non-judicious use but may relate to other factors.

Acknowledgment

This research was funded by the Department of Science and Technology Grants-in-Aid (DOST-GIA) program. It was closely monitored by the Philippine Council for Health Research and Development (PCHRD). The authors gratefully acknowledge their support in making this study possible.

References

[1] Ayalew, S., Wegayehu, T., Taye, H. L., Girma, S., Berg, S., & Mihret, A. (2021). Drug resistance-conferring mutation and genetic diversity of Mycobacterium tuberculosis isolates in tuberculosis lymphadenitis patients, Ethiopia. Infection and Drug Resistance, 14, 1437–1447. Taylor & Francis Group. https://doi.org/10.2147/IDR.S298683

[2] Barber, D. A., Casquejo, E., Ybañez, P. L., Pinote, M. T., Casquejo, L., Pinote, L. S., & Young, A. M. (2017). Prevalence and correlates of antibiotic sharing in the

Philippines: Antibiotic misconceptions and community-level access to non-medical sources of antibiotics. Tropical Medicine & International Health, 22(5), 567–575. https://doi.org/10.1111/tmi.12859

[3] Barker, A. K., Brown, K., Ahsan, M., Sengupta, S., Safdar, N., & Ahmed, S. (2017). Social determinants of antibiotic misuse: A qualitative study of community members in Haryana, India. Antibiotics, 6(4), 31. https://doi.org/10.3390/antibiotics6040031

[4] Benkő, R., Gajdács, M., Matuz, M., Bodó, G., Lázár, A., Hajdú, E., & Pető, Z. (2020). Prevalence and antibiotic resistance of ESKAPE pathogens isolated in the emergency department of a tertiary care teaching hospital in Hungary: A 5-year retrospective survey. Antibiotics, 9(9), 624. https://doi.org/10.3390/antibiotics9090624

[5] Chokshi, A., Sifri, Z., Cennimo, D., & Horng, H. (2019). Global contributors to antibiotic resistance. Journal of Global Infectious Diseases, 11(1), 36–42. https://doi.org/10.4103/jgid.jgid_110_18

[6] Dalton, K., Rock, C., & Davis, M. (2020). One health in hospitals: How understanding the dynamics of people, animals, and the hospital-built environment can better inform interventions for antimicrobial-resistant Gram-positive infections. Antimicrobial Resistance & Infection Control, 9, 74. https://doi.org/10.1186/s13756-020-00737-2

[7] Department of Health (DOH). (2015). Field Health Service Information System Annual Report. Epidemiology Bureau, Department of Health, Philippines.

[8] Department of Health–RITM. (2020). Antimicrobial Resistance Surveillance Program Annual Report 2020. Manila: Antimicrobial Resistance Surveillance Program.

[9] Department of Health–RITM. (2021). Antimicrobial Resistance Surveillance Program Annual Report 2021. Manila: Antimicrobial Resistance Surveillance Program.

[10] Harbarth, S., & Samore, M. (2005). Antimicrobial resistance determinants and future control. Emerging Infectious Diseases, 11(6), 794–801. https://doi.org/10.3201/eid1106.050167

[11] Franco, B., Martinez, M., Rodriguez, M., & Wertheimer, A. (2009). The determinants of the antibiotic resistance process. Infection and Drug Resistance, 2, 1–11. Dove Medical Press. https://pmc.ncbi.nlm.nih.gov/articles/PMC3108730/

[12] Macionis, J. (2012). Sociology (14th ed.). Pearson. https://www.scirp.org/reference/referencespapers?referenceid=3839750

[13] Saito, N., Takamura, N., Reuterma, G., Frayco, C., & Solano, P. U., Ubas, C. (2018). Frequent community use of antibiotics among a low-economic status population in Manila, the Philippines: A prospective assessment using a urine antibiotic bioassay. American Journal of Tropical Medicine and Hygiene, 99(1), 123–129. https://doi.org/10.4269/ajtmh.17-0564

[14] Sakeena, M., Bette, A., & McLachlan, A. (2018). Enhancing pharmacists' role in developing countries to overcome antimicrobial resistance: A narrative review. Antimicrobial Resistance & Infection Control, 7, 63. https://doi.org/10.1186/s13756-018-0351-z

[15] Sommer, M., Munck, C., Kehler, R., & Anderson, D. (2017). Prediction of antibiotic resistance: Time for a new clinical paradigm. Nature Reviews Microbiology, 15, 689–696. https://doi.org/10.1038/nrmicro.2017.99

[16] Wong, A. (2017). Epistasis and the evolution of antimicrobial resistance. Frontiers in Microbiology, 8, 246. https://doi.org/10.3389/fmicb.2017.00246

[17] World Health Organization (WHO). (2020, July 23). Antimicrobial resistance. WHO. https://www.who.int/health-topics/antimicrobial-resistance

[18] Zhen, X., Lundborg, C., Sun, X., Hu, X., & Dong, H. (2019). Economic burden of antibiotic resistance in ESKAPE organisms: A systematic review. Antimicrobial Resistance & Infection Control, 8, 137. https://doi.org/10.1186/s13756-019-0590-7